



**Parker D. Kasmer
Regulatory Counsel**

August 2, 2019

By Email

Office of the Los Angeles City Attorney
James K. Hahn City Hall East, Suite 800
200 North Main Street
Los Angeles, CA 90012

Re: Flavored Tobacco Stakeholder Meeting – Follow-up Submission

To whom it may concern,

On behalf of JUUL Labs, Inc. (JLI or the Company), I am submitting additional materials as a follow-up to the Flavored Tobacco Stakeholder Meeting that was held on July 17, 2019. I want to thank you for allowing us to present on these critical issues. We must work together to address youth use of vapor products, while realizing their potential public health impact for adult smokers.

Vapor products present an unprecedented public-health opportunity to transition adult smokers from cigarettes and, ultimately, eliminate combustible use altogether. There are 34 million smokers in the U.S. and 1 billion smokers worldwide; yet one of two long-term users will die from sustained use and exposure to combustible smoke and the carcinogens and toxicants present therein. This results in 480,000 preventable deaths a year in the U.S. alone. It is critical that adult smokers continue to have access to non-combustible nicotine alternatives, like vapor products, that, while not risk free, have been demonstrated to be significantly less harmful than combustible cigarettes.¹

But it is equally imperative that we reverse the trend in youth use. No youth, or non-nicotine user for that matter, should ever use vapor products, including JUUL. As has been well-documented, based on the Centers for Disease Control and Prevention (CDC) 2018 National Youth Tobacco Survey (NYTS), current use of vapor products (i.e., use within the past 30 days) among high-school students has increased to 20.8%.² The data also suggest high levels of experimentation and social use driven by sharing among friends, family members, and peers, as opposed to

¹ See Nat'l Academies of Sciences, Engineering, & Med., *Public Health Consequences of E-Cigarettes*, pp. 6–11 (2018) (“[T]he evidence about harm reduction suggests across a range of studies and outcomes, e-cigarettes pose less risk to an individual than combustible tobacco cigarettes.”); Am. Cancer Society, *Position Statement on Electronic Cigarettes* (2018), available at <http://bit.ly/31z1s0J> (“Based on currently available evidence, using current generation e-cigarettes is less harmful than smoking cigarettes, but the health effects of long-term use are not known.”); Public Health England, *E-cigarettes: A New Foundation for Evidence-based Policy and Practice* (2015) (“The current best estimate is that e-cigarette use is around 95% less harmful to health than smoking.”); New Zealand Ministry of Health, *Position Statement on Vaping* (2018), available at <http://bit.ly/2Zt7G0R> (“Smokers switching to vaping products are highly likely to reduce the risks to their health and those around them.”).

² See CDC, 2018 NYTS; see also, CDC Morbidity and Mortality Weekly Report, *Vital Signs: Tobacco Product Use Among Middle and High School Students — United States, 2011–2018* (2019), available at <https://bit.ly/2GS7Zf6>. Comparatively, while current use rates of vapor products have increased among high-school students, “use within the past 30 days” of substances like alcohol (30.2%; 18.6%) and marijuana (22.2%; 16.7%) among 12th and 10th graders, respectively, remain higher and have been at stable levels for years. See *Monitoring the Future, National Adolescent Drug Trends in 2018*.

sustained individual use over time. For example, the 2018 NYTS revealed that frequent use (use on 20+ days within the past 30 days) of all high-school students was at 5.76% compared to current use (use, at least one time, within the past 30 days) at 20.8%. Another study has shown that, of adolescent users of vapor products (aged 15–17 years), a third “vaped” alone and only 16% had never shared a vapor device, suggesting use was far more common in social-settings where vapor products were passed around or shared.³ These types of data points are critical to understand the scope and impact of youth use and to develop effective measures to reverse this trend.

In addition to our presentation at the July 17 meeting, we wanted to provide information on specific issues that are before the City Attorney’s office as it considers the potential regulation of flavored tobacco products. As we discussed during this meeting, JLI does not currently market non-tobacco and non-menthol-based flavored products at traditional retail. Rather, JLI limits their sale to our ecommerce platform (JUUL.com) where we use automated third-party age verification against publicly-available records to ensure purchasers are 21+ (regardless of jurisdiction) and limit the amount of product that can be purchased (to prevent the potential for social sourcing or illegal resale).

Nonetheless, we believe it is imperative to understand the potential public-health impact of vapor products, particularly responsibly marketed flavors. Additionally, we want to highlight where youth are accessing vapor products, understanding that approximately 70–80% of use is driven by social sourcing — when a legal-age purchaser provides the product to an underage user. And finally, we offer technologically-based solutions that will restrict youth access effectively, while retaining reasonable availability for adult smokers.

POTENTIAL PUBLIC-HEALTH IMPACT OF VAPOR PRODUCTS FOR ADULT SMOKERS

The Company is starting to see the potential positive health impact of vapor products in its own data. In a recent clinical study of adult smokers which assessed biomarkers of exposure (BOEs) linked to tobacco-related cancers and heart and lung disease, we saw equivalent reductions between JUUL users and smoking abstainers. The study — a randomized, open-label, parallel group, five-day inpatient assessment — examined changes, relative to baseline, in primary urine and blood BOEs in 90 adult smokers. The selected short-term biomarkers were carcinogens and toxicants observed in the use of combustible cigarettes. Study subjects were randomized into six groups and, over five days, abstained from smoking, used JUUL products, or continued use of their usual brand of cigarettes. Before the baseline reading, subjects abstained from smoking for twelve hours to assess BOE impact across the three groups.

The study found that all eight non-nicotine urine BOEs were reduced by an aggregate of 85.3% in the abstinence group compared to an 85% aggregate reduction in the JUUL product group. This represented a 99.6% relative reduction in aggregate BOEs for the JUUL product group compared to smoking abstinence. In the cigarette group, the same BOEs increased by an aggregate of 14.4% from baseline.⁴

We also recently presented at a scientific conference the findings of environmental exposure (i.e., secondhand effects) of vapor products compared to combustible cigarettes. Researchers analyzed the content of exhaled breath and room air from three environments

³ Jessica K. Pepper, et al., How Do Adolescents Get Their E-cigarettes and Other Electronic Vaping Devices?, 33 Am. J. of Health Promotion 420 (2018).

⁴ See Changes in Biomarkers of Exposure Associated with Switching for 5 Days from Combusted Cigarettes to Nicotine Salt Pod System, Presented at the 2019 Annual Conference for the Society for Research on Nicotine and Tobacco, San Francisco, California (2019).

(residential, office, hospitality) after adult smokers used either: (i) a JUUL product; (ii) another vapor product; or (iii) their usual brand of cigarettes. The exhaled-breath analysis showed that levels of formaldehyde and carbon monoxide particles were reduced approximately 99% or more in JUUL users as compared to conventional cigarette smokers. For vapor use, the aggregate measurements of formaldehyde and carbon monoxide particles were not statistically different from the background levels measured without product use.⁵

In our behavioral research, we are seeing the effect of JUUL products to switch adult smokers from combustible cigarettes at unprecedented rates. One study, published in the Harm Reduction Journal, included a non-probabilistic sample of 15,456 U.S. adult smokers (21+) who purchased JUUL products either at retail or online through JUUL.com. Survey participants were assessed at monthly intervals through three months to determine use rates, use patterns, and past 30-day smoking history. The final follow-up assessment was conducted after three months of JUUL product use.

Based on the entire survey sample, 28.3% of JUUL product users had completely abstained from smoking cigarettes in the 30 days prior to the final three-months follow-up assessment (ITT sample). Of those users who completed the three-months follow-up assessment, 47.1% of JUUL product users had completely abstained from smoking cigarettes in the 30 days prior (Efficacy sample). Smoking abstinence was higher among retail purchasers (55.1%) versus online purchasers (40.3%). The researchers estimated that, at the three-months follow-up assessment, “between 30% and 55.1% of new retail purchasers of a JUUL vaporizer and between 26.5% and 40.3% of new online purchasers of a JUUL vaporizer, all of whom were current smokers at the point of first purchase of a JUUL vaporizer, had not smoked a cigarette in the past 30 days.”⁶

Among variables relating to the use of JUUL products and smoking abstinence, including frequency of JUUL use and intent to stop smoking cigarettes, the study assessed the role of flavors in transitioning adult smokers from cigarettes. Not only were non-tobacco flavors far more popular among JUUL users, but they also were significantly more impactful in switching adult smokers from combustible cigarettes completely.

Compared to those who primarily used Virginia Tobacco flavored JUULpods in the 30 days prior to the three-months follow-up assessment, those who primarily used Mint or Mango flavored JUULpods were 37% and 26% more likely, respectively, to have switched completely from combustibles. Mint and Mango were the most common primary flavors used, with primary users of Mint and Mango flavored JUULpods accounting for 44.7% of all participants who completed the three-months follow-up assessment and had not smoked a cigarette in the 30 days prior. Adult smokers who *exclusively* used JUULpods in non-tobacco flavors (Mint, Menthol, Mango, Cucumber, Fruit, and/or Creme) in the 30 days prior to the three-months follow-up assessment were 30% more likely to have switched completely from cigarettes than those who exclusively used tobacco flavors (Virginia Tobacco and Classic Tobacco).

Mint JUULpods not only are the most popular among adult smokers, but also the most effective at eliminating cigarette consumption. For JUUL users who purchased the product at retail,

⁵ Blair Evans, et al., An Open-Label Clinical Study to Evaluate Selected Constituents in Exhaled Breath and Room Air after the Use of Vapor Products and Conventional Cigarettes under Conditions of Residential, Office and Hospitality Environments, Presentation at the 6th Global Forum on Nicotine, Warsaw, Poland (2019), available at <http://bit.ly/2MPGecm>.

⁶ See Christopher Russell, et al., Factors Associated with Past 30-day Abstinence from Cigarette Smoking in a Non-Probabilistic Sample of 15,456 Adult Established Current Smokers in the United States Who Used JUUL Vapor Products for Three Months, Harm Reduction Journal (2019).

61% of respondents who primarily used Mint had not smoked any cigarettes in the 30 days prior to the three-months follow-up assessment. For Menthol, 40% of respondents who primarily used that flavor completely switched from cigarettes at the three-months follow-up assessment.

These are the data that drive us every day. Although we still have work to do to demonstrate the overall public-health impact of JUUL products, the data are becoming increasingly clear. These products offer a tremendous opportunity for adult smokers to eliminate the use of combustible cigarettes once and for all.

UNDERSTANDING HOW YOUTH ARE ACCESSING VAPOR PRODUCTS

Like other age-restricted items, youth obtain vapor products through a lack of age-verification and/or social-sourcing when a legal-age purchaser provides the product to an underage user for resale or shared use. Data suggest the overwhelming point of access relates to the latter. Specifically, approximately 70–80% of youth use of vapor products comes from social-sourcing.⁷ Based on the 2017 Youth Risk Behavioral Survey (YRBS), only 13.6% of high-school students (aged 17 years or younger) obtained a vapor product from a brick-and-mortar retail outlet, while only 6.7% obtained a vapor product from online.

Recent data from the 2018 NYTS tell a similar story: social-sourcing is the driver of youth access to and use of vapor products.⁸ Among underage e-cigarette users in high school, 58% obtained the product from a friend, 6.8% obtained the product from a family member, and 6.6% obtained the product from another person. Of commercial sources (less than 30%), specialty vape shops were the main contributors (12.9%), while gas and convenience stores were responsible for only 6.6% of underage access and use.

A separate study of adolescent users of vapor products (aged 15–17 years) found a similar outcome on the predominance of non-commercial sources.⁹ Of the 1,729 adolescent users surveyed, 31.1% purchased the product from retail (e.g., convenience store, vape shop, or online), while 31.3% either bought the product from another person or gave money to someone else to purchase the product. The remainder obtained the vapor product from other non-traditional commercial sources, including as a gift, from a parent, or it was stolen.

For those that purchased the vapor product from a traditional commercial source:

- 32.2% obtained the product from online
- 22.3% obtained the product from a vapor shop or lounge
- 16.4% obtained the product from a tobacco specialty store
- 5.6% obtained the product from a convenience, gas, or liquor store
- 5.4% obtained the product from a mall kiosk
- 2.2% obtained the product from a grocery, drug, dollar, or mass market store.¹⁰

⁷ See CDC, 2017 YRBS.

⁸ See CDC, 2018 NYTS; *see also*, Tobacco Truth, Some FDA Claims About Teen Vaping Confirmed, Others Evaporate (April 2, 2018), available at <https://rodutobaccotruth.blogspot.com/2019/04/some-fda-claims-about-teen-vaping.html> (last accessed April 5, 2019).

⁹ See Pepper, et al., *supra note 3*.

¹⁰ See *id.* 15.9% obtained the product from “other location.”

Another study, focused on access patterns among Californian high-school students who had used an e-cigarette within the last 30 days, further highlights the issue of social-sourcing and where youth are obtaining vapor products illegally.¹¹ In this survey, of the 13,902 respondents from the California Student Tobacco Survey, 52.9% did not pay for the vapor product. Of those who did make a purchase, 35.9% bought the product from another individual (i.e., non-commercial retailer). Of those who purchased the product from a commercial retailer, the majority accessed the product from a specialty vape shop or tobacco-only retailer.

TECHNOLOGICALLY-BASED SOLUTIONS TO RESTRICT YOUTH ACCESS

Any measure to restrict youth access must account not only for robust age-verification, but also the social-sourcing component, limiting the amount of product that can be purchased and ultimately sold or shared with youth. We believe enhanced, automated sales controls for vapor products at traditional retail can solve this problem. At the same time, we can retain reasonable availability for adult smokers to transition them from the most lethal consumer product ever marketed — combustible cigarettes.

Given advancements in point-of-sale (POS) systems, brick-and-mortar retail outlets can incorporate new technologies or update existing sales processes to restrict youth access through automated transactional-level controls. For example, retailers can now use barcode scanning software to verify age and ID validity automatically. Scanners can pull information from the barcode on government-issued IDs and determine whether the purchaser is of legal age and whether the ID has expired. If either check fails, the POS system can block the purchase from being completed.

Retailer POS systems also can set limits on the amount of product that can be purchased. For example, JLI currently requires its retailers to limit the sale of JUUL products to 2 devices and/or 5 pod packages per transaction.¹² Retailers that do not wish to enforce bulk-purchasing requirements through clerk intervention can upgrade their POS systems to block any transaction that exceeds similar limits, thus addressing the potential for social-sourcing.

Vapor products present an unprecedented opportunity to drive adult smokers from combustible cigarettes and the deadly carcinogens and toxicants associated with combustible smoke. We also fully appreciate that this significant public-health opportunity is at risk if youth use goes unabated. We remain committed to address this issue but are equally committed to preserve reasonable vapor access for adult smokers to stem the death and disease associated with cigarette use.

In addition to the information and research cited above, we also have enclosed two published studies in full. One is a peer-reviewed paper on the Company's behavioral research relating to the impact of its products to switch adult smokers from combustible use completely, including the critical role of certain flavors; while the other provides representative information on how youth are accessing vapor products in California.

¹¹ See Julian Ong, et al., *Where Do Californian Youth Get Their E-cigarettes?*, Presented at the 2019 Annual Conference for the Society for Research on Nicotine & Tobacco, San Francisco, California (2019).

¹² JLI currently secret shops retailers against this bulk-purchasing requirement, checking at least 500 stores per month (in addition to the 1,5000 in-store checks for age-verification compliance). Retailers that fail are penalized, including up to a potential sales ban.

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Sincerely,

A handwritten signature in black ink, appearing to read 'P. Kasmer', with a long horizontal flourish extending to the right.

Parker D. Kasmer

Enclosures: Attachments A-B

cc: Vanessa Rodriguez, Senior Manager, JUUL Labs, Inc.

Attachment A

RESEARCH

Open Access



Factors associated with past 30-day abstinence from cigarette smoking in a non-probabilistic sample of 15,456 adult established current smokers in the United States who used JUUL vapor products for three months

Christopher Russell^{*} , Farhana Haseen and Neil McKeganey

Abstract

Background: JUUL is the fastest growing and highest selling brand of e-cigarette/vapor products in the USA. Assessing the effect of JUUL vapor products on adult smokers' use of conventional tobacco cigarettes can help inform the potential population health impact of these products.

Methods: Online surveys assessed past 30-day use of conventional cigarettes, JUUL vapor products, and other e-cigarettes/vapor products, monthly for 3 months, in a non-probabilistic sample of 15,456 US adults (21+ years). Participants were established current smokers of conventional cigarettes and recruited at their first purchase of a JUUL Starter Kit in a retail store or through JUUL's website. Logistic regression models examined factors associated with participants' odds of reporting past 30-day abstinence from cigarette smoking at the 3-months assessment.

Results: Past 30-day smoking abstinence at the 3-months assessment was reported by 28.3% of the intent-to-treat (ITT) sample ($n = 15,456$) and 47.1% of an efficacy subset sample that completed the 3-months assessment ($n = 9272$). Covariate-adjusted odds for reporting past 30-day smoking abstinence at the 3-months assessment were significantly higher among participants who primarily used Mint or Mango flavored JUULpods (versus Virginia Tobacco flavor) in the past 30 days; exclusively used JUULpods in characterizing flavors (versus tobacco flavors) in the past 30 days; used a JUUL vaporizer on all 30 of the past 30 days; purchased their first JUUL vaporizer in a retail store (versus online); and first purchased a JUUL Starter Kit to help quit smoking completely. Odds for reporting past 30-day smoking abstinence were significantly lower among participants who, at study enrolment, had smoked regularly for ≥ 20 years, smoked ≥ 20 cigarettes per day, and smoked on all 30 of the previous 30 days.

Conclusions: At least 28.3% of adult smokers had quit smoking cigarettes completely after using a JUUL vaporizer for 3 months. More frequent use of a JUUL vaporizer and primary use of JUULpods containing characterizing flavors, particularly Mint and Mango, appears to be important to new JUUL users' chances of quitting smoking. The impact of banning retail sales of flavored JUULpods on adult smokers' likelihood of quitting should be closely assessed.

Keywords: JUUL, E-cigarettes, Vapor, Quitting, Smoking, Cigarettes, Tobacco harm reduction

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Background

Tobacco harm reduction (THR) products and policies aim to prevent or reduce harm by promoting substitution of combustible tobacco with less hazardous non-combustible sources of nicotine to smokers who are unable or unwilling to quit smoking in response to conventional tobacco control measures [1]. Tobacco and nicotine products that present a reduced risk of ill health to an individual relative to smoking cigarettes have potential to benefit the health of the whole population to the extent that (i) they are used in place of more harmful tobacco products (e.g., cigarettes) by individuals who currently use such products *and* were unlikely to have quit or reduced their use of such products in the absence of the reduced-risk product, *and* to the extent that (ii) they are not used by individuals who are not current users of more harmful tobacco products *and* would likely have not initiated or re-initiated use of such products in the absence of the reduced-risk product.

Electronic cigarettes (e-cigarettes)—hand-held devices that use battery power to heat a solution of propylene glycol, glycerol, and often flavorings and nicotine, to produce an aerosol that the user inhales—have emerged in the past decade with the greatest potential for meeting criteria for definition as tobacco harm reduction products. Since their introduction to the US market in 2007, e-cigarettes have rapidly grown in popularity among adults in several countries as an alternative to smoking conventional cigarettes [2–6], and the increasing use of e-cigarettes has been associated with significant increases in rates of smoking cessation at the population level [7–10]. E-cigarettes are now the most popular assisted method of quitting smoking in the USA, used in 35% of smokers' most recent quit attempts [11]. By comparison, nicotine patches or gums were used in 25% of most recent quit attempts. Though data on the safety of long-term use of nicotine by inhalation will not be available until e-cigarettes have been in widespread use for several decades, several US and global health authorities agree that the currently available evidence suggests e-cigarette use is likely to be less harmful than smoking cigarettes. The magnitude of potential reduced harm to the individual user and the potential impact of e-cigarettes on the health of whole populations, however, continues to be debated [12].

JUUL Labs Inc. is a San Francisco-based company that manufactures pre-filled e-liquid pods known as "JUUL-pods" for use in an electronic nicotine delivery system (ENDS) known as a "JUUL vaporizer." JUUL is the fastest growing and highest selling e-cigarette/vapor product in the US market, which is sized at approximately \$5.5 billion for 2018 [13]. According to Nielsen data, past 52-week retail sales of JUUL products in the US increased from \$150.0 million in July 2017 (+ 652.9%

versus July 2016) [14] to \$1.3 billion in August 2018 (+ 761.4% versus August 2017) [15], making JUUL the first e-cigarette brand to record over \$1 billion in sales in a 52-week period through tracked channels. With a past 52-week sales total more than three times higher than its nearest competitor (an e-cigarette called VUSE, \$404.0 million), JUUL now has a greater past 52-week share of the US e-cigarette market than all other e-cigarette brands combined, having increased its market share from 17.7% in July 2017 to 55.7% in August 2018 [5]. Nielsen additionally notes these are likely to be underestimates of JUUL's true sales and market share, as Nielsen does not track sales through several channels where JUUL products are sold, such as online and vape shops. Assessing the potential population health impact associated with the rapid and substantial increase in sales of JUUL vapor products in the USA has become vitally important.

According to JUUL's website, JUUL vapor products are intended for adult smokers who want to switch from combustible cigarettes. Under the Modified Risk Tobacco Product (MRTP) provision and the drug provisions in section 911 and section 201(g) of the Federal Food, Drug & Cosmetic Act (FD&C) respectively, manufacturers are prohibited from marketing a new tobacco product, including JUUL vapor products, as a safer, healthier, or less risky alternative to smoking tobacco, or effective as an aid to smoking cessation without FDA authorization to make such claims. Yet, anecdotal user testimonies, many of which are shared daily on social media platforms and internet discussion forums dedicated to vaping (e.g., E-Cigarette Forum), suggests many adult smokers in the USA started using a JUUL vaporizer with an intention to use it as an alternative to continuing to smoke regular cigarettes, and many report that, whether intended or not at the outset of use, using a JUUL vaporizer has helped them to quit smoking completely or to cut down the number of cigarettes they smoke. There are no published data, however, on the likelihood that adult tobacco smokers who begin using a JUUL vaporizer then switch completely to use of a JUUL vaporizer, or the likelihood that adult tobacco smokers who begin using a JUUL vaporizer then continue to use a JUUL vaporizer in addition to continuing to smoke conventional cigarettes. Additionally, no data are available on the user characteristics and product use factors that are positively and negatively associated with smokers' likelihood of quitting smoking through use of a JUUL vaporizer. Previous research has, for example, identified the frequency with which smokers use e-cigarettes and the use of e-cigarettes containing non-tobacco flavors as important determinants of a smokers' likelihood of completely substituting e-cigarettes for conventional cigarettes [16–21].

Understanding the role that flavors play in the population's use of e-cigarettes, and the impact that flavored e-cigarette products have on the population's use of more harmful tobacco products, like conventional cigarettes, has been identified by the US Food and Drug Administration (FDA) as a public health research priority. The ability to inhale e-cigarette vapor aerosol in a vast and growing variety of characterizing flavors—a distinguishable taste or aroma, other than the taste or aroma of tobacco—is thought to be a major feature accounting for the appeal of e-cigarettes to adult smokers as an alternative to continuing to smoke cigarettes. However, the same concerns that led the US Congress to ban the sale of cigarettes with characterizing flavors in 2009 now exist for e-cigarettes. In particular, concerns have been raised, and some evidence has been reported, that non-tobacco flavored ENDS products, particularly fruit and sweet e-liquid flavors, are driving the appeal of e-cigarettes to youth, and that youth who initiate nicotine use through ENDS products will be more likely to subsequently try using more harmful tobacco products that deliver nicotine more efficiently, such as cigarettes [22–28]. FDA Commissioner, Scott Gottlieb, has summarized the need to weigh the potential risks and benefits of flavored ENDS products to the whole population: “On this issue, we see two sides—on the one hand, we need to know the role that flavors, including menthol, play in attracting youth to initiate tobacco use. But on the other hand, we also need to know whether...certain flavors may help adult cigarette smokers switch to potentially less harmful forms of nicotine delivery; for example, when flavors are used in non-combustible products such as electronic nicotine delivery systems. It is possible for flavors to do both harm and good, perhaps in different product types” [29]. Collecting data that characterize the association between adults' use of flavored JUUL vapor products—the most widely used brand of vapor products in the USA—and their likelihood of quitting smoking in the short and long-term is therefore vitally important to estimating the potential population health impact of these products.

Through six monthly online surveys of a panel of US adult established current smokers recruited at the point of first purchase of a JUUL vaporizer in a retail store or through JUUL's e-commerce store, this study examined demographic, smoking-related, and JUUL-related factors associated with self-reported past 30-day abstinence from cigarette smoking after ad libitum use of a JUUL vaporizer for three and six months. Of specific interest was the extent to which smokers' odds of reporting past 30-day abstinence from smoking varied as a function of their frequency and volume of use of JUULpods in six non-tobacco flavors (versus two tobacco flavors). At the point of writing, data collection from the sixth and final

monthly survey had not yet completed. Results are therefore reported for the first 3 months of this study.

Methods

Sample and recruitment

Eligible individuals were US adults aged 21 years and older who had smoked at least 100 cigarettes in their lifetime, now smoke cigarettes “every day” or on “some days,” and had purchased their first JUUL Starter Kit from a US retail store or through JUUL Labs Inc.'s e-commerce store at <http://www.juul.com> within the past 7 days. *Veratad Technologies'* age verification software, *AgeMatchSM*, was employed by JUUL Labs Inc. to verify, at the point of an attempted online purchase, that individuals were of aged 21 years or older. A JUUL Starter Kit contains a JUUL vaporizer, a USB charging dock, and one e-liquid pod in each of four flavors (1x Virginia Tobacco, 1x Cool Mint, 1x Mango, and 1x Crème Brûlée). Each JUULpod contains 5% nicotine by weight, and each pod contains 0.7 ml, equivalent to 59 mg/ml nicotine per pod.

Individuals were invited to participate in this study in two ways. First, JUUL Labs Inc. sent email invitations to 37,536 age-verified adults who had purchased a JUUL Starter Kit through JUUL's e-commerce store between 4 April 2018 and 25 June 2018. The email invited individuals to participate in a 6-month online survey study about their use of combustible cigarettes, JUUL vapor products, and other e-cigarettes and vapor products. Invitations were sent to the email address associated with a customer's age-verified verified account. Email invitations containing a web-link to the survey were scheduled to be sent to these individuals approximately 4 days after completing their online purchase of a JUUL Starter Kit so as to be received by the individual within 1–2 days after the scheduled delivery of their purchased product(s).

Second, individuals who purchased a JUUL Starter Kit in a retail store were invited to participate via 3" × 2.5" cards that were manually inserted into the packaging of 500,000 JUUL Starter Kits, which were then distributed at random to approximately 10,000 licensed store retailers of JUUL vapor products across the USA. Starter Kits containing invitation cards were distributed across April 2018. Printed on each invitation card insert was the invitation text, the survey web address, and a unique six-digit alphanumeric code. Individuals who purchased a JUUL Starter Kit that contained an invitation card insert were invited to type the survey web address—survey.juul.com—into their web browser, and then, when prompted, type the six-digit code displayed on their invitation card insert. Entry of a valid code routed the individual to an Account Creation webpage, and then to the study Informed Consent Form. Each six-digit code was

valid for one entry; attempts to re-use the code were blocked. Requiring the entry of a unique, one-time access code ensured that only individuals who had purchased a JUUL Starter Kit in a retail store could proceed to the Account Creation webpage, and requiring individuals to create a user account ensured that only one survey could be completed per account.

Procedure

The first page of the survey displayed an Informed Consent Form (available upon request), which described the purpose of the survey, the names and contact details of the study investigators, information about who is eligible to take part and how survey data will be used, assurances of participant anonymity and confidentiality, and the source of funding for this study. Participants were informed that they were being invited to take part in six monthly online surveys about their use of combustible cigarettes, JUUL vapor products, and other e-cigarettes and vapor products. Individuals who satisfied eligibility criteria and gave informed consent to participate began the survey. Participants were routed to questions that were applicable to them on the basis of a response or combination of responses to a previous question or questions. The survey instrument was designed with the assumption that all respondents to a question would be asked the next question, unless there were specific instructions routing a subgroup of respondents to a different question. Participants answered survey questions at their own pace. If a participant did not complete the survey, all data provided up to the point of exit from the survey were not recorded.

The baseline survey took around 15–20 min to complete. Participants who completed the baseline survey received an automated email invitation to complete a follow-up survey every 30 ± 5 days for the next 6 months. An email invitation to participate in a follow-up survey was configured to be sent automatically to participants 25 days after the date of completion of the previous survey, with reminder emails sent 28 days and 31 days after the date of completion of the previous survey. Web-link access each follow-up survey expired 10 days after the first email invitation was sent. Participants received a USD\$30 virtual Visa Reward Card by email for each survey they completed.

Measures

Cigarette smoking in the past 30 days

The primary outcome measure in this study was past 30-day abstinence from smoking, which was determined at each assessment by a “No” response to the question, “In the past 30 days, have you smoked a cigarette, even one or two puffs?” Participants who indicated they have smoked a cigarette in the past 30 days were asked two

further questions about their frequency of smoking in the past 30 days—“Do you now smoke cigarettes...” (every day; some days; not at all), and “On how many of the past 30 days did you smoke cigarettes?”¹ (1–30 days)—and one question about their intensity of smoking in the past 30 days—“On those days that you did smoke, how many cigarettes did you usually smoke each day? A pack usually has 20 cigarettes in it”. Participants who did not provide valid answers to these four questions were excluded from the analytic sample.

Cigarette smoking history

Questions assessed the age at which participants first smoked a cigarette, first started smoking regularly, the number of months/years for which participants had been smoking cigarettes regularly, and the number of cigarettes participants had smoked in their lifetime.

Use of a JUUL vaporizer and JUULpod flavors in the past 30 days

Questions assessed the number of days in the past 30 days on which participants had used a JUUL vaporizer and the total number of JUULpods they had consumed in each of eight commercially available flavors (Virginia Tobacco, Mint, Mango, Crème, Fruit, Cucumber, Classic Tobacco, and Menthol) in the past 30 days. Participants were coded as a “primary user” of a specific flavor of JUULpod when they reported having consumed more pods in that flavor than in any other flavor. For example, a participant who reported having consumed ten Mango flavored JUULpods and five Mint flavored JUULpods in the past 30 days would be coded as a primary user of Mango flavored JUULpods.

Participants were coded as “past 30-day exclusive users to tobacco flavors” if they reported use of only Virginia Tobacco and/or Classic Tobacco in the past 30 days. Participants were coded as “past 30-day exclusive users to characterizing flavors” if they reported use of only Mint, Mango, Crème, Fruit, Cucumber, and/or Menthol in the past 30 days. Participants were coded as “past 30-day users of both tobacco and characterizing flavors” if they reported consumption of at least one pod in Virginia Tobacco or Classic Tobacco flavor and at least one pod in Mint, Mango, Crème, Fruit, Cucumber, or Menthol flavor.

Use of e-cigarettes other than a JUUL vaporizer in the past 30 days

Questions assessed participants’ frequency and intensity of use of e-cigarettes and vapor products other than JUUL vaporizer in the 30 days prior to the baseline survey. Participants who indicated they had used an e-cigarette other than a JUUL vaporizer in the past 30 days were asked about the characteristics of the

e-cigarette they used most often in the past 30 days, including the brand of this e-cigarette, whether it was rechargeable and refillable, and what flavors and concentration of nicotine they used regularly in this e-cigarette/vapor product.

Reasons for purchasing and using a JUUL starter kit

At baseline, participants were asked to identify which, if any, of a list of health, social, financial, sensory, and convenience reasons were reasons why they first decided to purchase a JUUL Starter Kit.

Demographics

Questions assessed age, sex, census region, race-ethnicity, educational attainment, and annual household income.

Data analysis

As this study is still collecting data, present analyses are restricted to data collected up to and including the 3-month follow-up survey assessment. Rates of past 30-day abstinence from smoking at the 3-month follow-up assessment are reported for the intention-to-treat (ITT) sample ($N = 15,456$) that completed the baseline survey assessment, stratified by place of first purchase of a JUUL Starter Kit (retail store purchasers $N = 7823$ vs. JUUL website purchasers $N = 7633$). In this analysis, at each follow-up assessment, participants with a missing response to the question “In the past 30 days, have you smoked a cigarette, even one or two puffs?” were recoded as “current smokers” under the worst-case scenario assumption that these participants had returned to baseline patterns of cigarette smoking.

Rates of past 30-day abstinence from smoking at the 3-month follow-up assessment are also reported for an efficacy subset comprising participants who provided smoking data at the 3-month follow-up assessment ($n = 9272$; 60.0% of the ITT sample), stratified by place of first purchase of a JUUL Starter Kit (retail store purchasers $n = 4260$ vs. JUUL website purchasers $n = 5012$). Rates of past 30-day point prevalence abstinence from smoking observed in the ITT sample and in the efficacy subset sample were therefore considered as lower and upper bound estimates of the rates of past 30-day point prevalence abstinence from smoking, respectively, at the 3-month follow-up assessment.

Factors associated with past 30-day abstinence from smoking at the 3-month assessment were examined through two logistic regression models, with each model conducted in two steps. In model 1 step 1, six demographic variables (age, sex, race/ethnicity, annual household income, education level, and US census region); four smoking history variables (age of first smoking, lifetime years of regular smoking, number of smoking days

in the 30 days prior to the baseline assessment, number of cigarettes smoked per day in the 30 days prior to the baseline assessment); one e-cigarette use variable (current use of a secondary e-cigarette); and four JUUL use variables (place of first JUUL purchase, number of days of JUUL use in the past 30 days, primary JUULpod flavor used in the past 30 days, and having purchased a JUUL to help quit smoking) were entered as predictor variables. To assess the extent to which the effect of participants’ primary use of JUULpod flavors on past 30-day abstinence from smoking at the 3-month assessment varied by place at which participants purchased their first JUUL, an interaction term for “primary JUULpod flavor use”*“place of first JUUL purchase” was entered at step 2. Model 2 replicated model 1 with the variable “primary JUULpod flavor used in the past 30 days” replaced by the variable “JUULpod flavors used regularly in the past 30 days.” Odds ratios are reported unadjusted and adjusted for the effects of other variables in the model. Odds ratios in these regression models indicate the proportionate change in a participant’s odds of reporting past 30-day abstinence from smoking associated with the indicator on the categorical predictor variable. P values < 0.05 were considered statistically significant.

Results

Past 30-day point prevalence abstinence from smoking at 3-months assessment

In the ITT sample, overall past 30-day point prevalence abstinence from smoking at the 3-month assessment was 28.3% ($n = 4367/15,456$), with past 30-day point prevalence abstinence from smoking higher among retail purchasers (30.0%; $n = 2346/7823$) than among online purchasers (26.5%; $n = 2021/7633$). When the analysis was restricted to only those participants who completed the 3-month assessment, past 30-day point prevalence abstinence from smoking was 47.1% ($n = 4367/9272$), with past 30-day point prevalence abstinence from smoking higher among retail purchasers (55.1%; $n = 2346/4260$) than among online purchasers (40.3%; $n = 2021/5012$). We therefore estimate that, at the 3-month assessment, between 30.0% and 55.1% of new retail purchasers of a JUUL vaporizer and between 26.5% and 40.3% of new online purchasers of a JUUL vaporizer, all of whom were current smokers at the point of first purchase of a JUUL vaporizer, had not smoked a cigarette in the past 30 days (Fig. 1).

Factors associated with past 30-day smoking abstinence at the 3-month assessment

Demographic, cigarette smoking, and e-cigarette use characteristics of participants who reported and did not report past 30-day smoking abstinence at the 3-month assessment are summarized in Table 1. In model 1 step

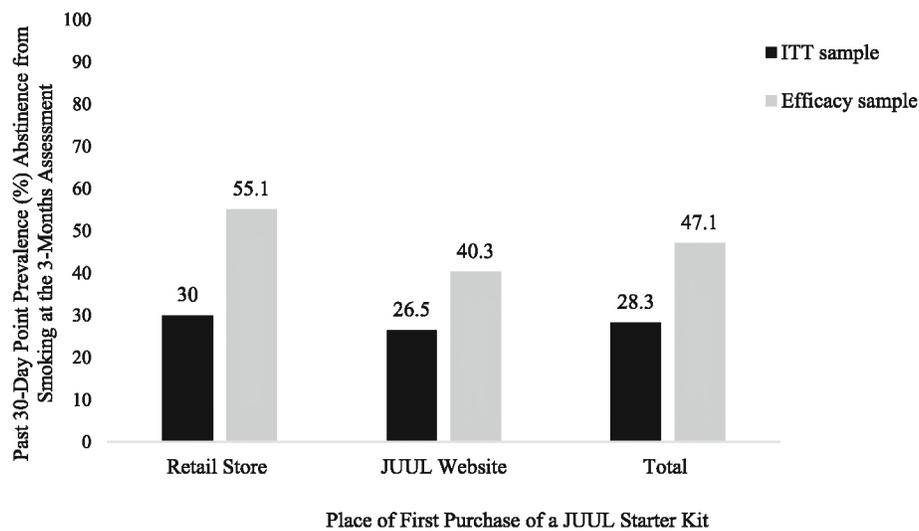


Fig. 1 Past 30-day point prevalence abstinence from smoking at the 3-month assessment. Self-reported past 30-day point prevalence abstinence from cigarette smoking associated with using a JUUL vaporizer for three months, stratified by place of first purchase of a JUUL Starter Kit and sample type

1, participants' adjusted odds of reporting past 30-day abstinence from smoking significantly varied by four JUUL-related variables—primary JUULpod flavor used in the 30 days prior to the 3-month assessment; number of days of JUUL use in the 30 days prior to the 3-month assessment; place of first purchase of a JUUL Starter Kit; and whether or not participants first purchased a JUUL Starter Kit to help them quit smoking cigarettes—three smoking-related variables—number of smoking days in the 30 days prior to the baseline assessment, number of cigarettes smoked per day at the baseline assessment, and lifetime years of regular smoking—and one demographic variable—education level (Table 2).

Model 1

JUUL-related predictors Compared to those who primarily used Virginia Tobacco flavored JUULpods in the 30 days prior to the 3-month assessment, those who primarily used Mint flavored JUULpods (aOR = 1.37; 1.13, 1.66) or Mango flavored JUULpods (aOR = 1.26; 1.05, 1.52) were 37% and 26% more likely, respectively, to have not smoked a cigarette in the 30 days prior to the 3-month assessment. Mint and Mango were the most common primary flavors, with primary users of Mint and Mango flavored JUULpods in the 30 days prior to the 3-month assessment together accounting for 49.8% of all participants who had not smoked a cigarette in the 30 days prior to the 3-month assessment, and 44.7% of all participants who completed the 3-month assessment. Compared to those who primarily used Virginia Tobacco flavored JUULpods, those who primarily used Classic Tobacco flavored JUULpods (aOR = 0.54; 0.35, 0.84)

were 1.85 times less likely to have not smoked a cigarette in the 30 days prior to the 3-month assessment. Compared to those who primarily used Virginia Tobacco flavored JUULpods, odds for reporting past 30-day smoking abstinence at the 3-month assessment were not significantly different among those who primarily used Crème, Fruit, Cucumber, or Menthol flavored JUULpods, or among those who did not have a primary flavor in the 30 days prior to the 3-month assessment. The interaction term entered at step 2 was non-significant, indicating that the association between primary JUULpod flavor used in the 30 days prior to the 3-month assessment and past 30-day smoking abstinence at the 3-month assessment was not significantly moderated by the place at which participants purchased their first JUUL vaporizer.

Compared to those who purchased their first JUUL vaporizer through the e-commerce store on JUUL's website, those who purchased their first JUUL vaporizer in a retail store were 37% more likely to have not smoked a cigarette in the 30 days prior to the 3-month assessment (aOR = 1.37; 1.22, 1.53). Compared to those who used a JUUL vaporizer on all 30 of the 30 days prior to the 3-month assessment, those who used a JUUL vaporizer on 20–29 days (aOR = 0.51; 0.45, 0.58), 10–19 days (aOR = 0.38; 0.32, 0.45), and 1–9 days (aOR = 0.56; 0.45, 0.68) in the past 30 days were 1.96 times, 2.63 times, and 1.79 times less likely, respectively, to have not smoked a cigarette in the 30 days prior to the 3-month assessment. Compared to those who did not purchase their first JUUL vaporizer in order to help them to quit smoking cigarettes completely, those who did purchase their first JUUL vaporizer in order to help them to quit

Table 1 Demographic, smoking, and e-cigarette use characteristics of participants who completed the 3-month follow-up assessment ($n = 9272$; 60.0% of ITT sample), by smoking status at the 3-month follow-up assessment

Variable	Smoking status at 3-month follow-up assessment		
	Smoked in 30 days ($n = 4905$) <i>N</i> %	No smoking in past 30 days ($n = 4367$) <i>N</i> %	Total ($n = 9272$) <i>N</i> %
Demographic variables			
Sex			
Male	2716 (55.4)	2607 (59.7)	5323 (57.4)
Female	2120 (43.2)	1706 (39.1)	3826 (41.3)
Transgender	27 (0.6)	24 (0.5)	51 (0.6)
Missing	42 (0.9)	30 (0.7)	72 (0.8)
Age			
21–24	1339 (27.3)	1731 (39.6)	3070 (33.1)
25–34	1689 (34.4)	1413 (32.4)	3102 (33.5)
35–44	1003 (20.4)	621 (14.2)	1624 (17.5)
45–54	539 (11.0)	339 (7.8)	878 (9.5)
55–64	267 (5.4)	236 (5.4)	503 (5.4)
≥ 65	68 (1.4)	27 (0.6)	95 (1.0)
Race/Ethnicity			
Non-Hispanic, White	3439 (70.1)	2895 (66.3)	6334 (68.3)
Non-Hispanic, Black	149 (3.0)	143 (3.3)	292 (3.1)
Non-Hispanic, American Indian/Alaskan	61 (1.2)	54 (1.2)	115 (1.2)
Non-Hispanic, Asian, Hawaiian, or PI ^a	514 (10.5)	438 (10.0)	952 (10.3)
Non-Hispanic, two or more races	1 (0.0)	1 (0.0)	2 (0.0)
Hispanic ^b	390 (8.0)	427 (9.8)	817 (8.8)
Missing	351 (7.2)	409 (9.4)	760 (8.2)
Education			
Not HS graduate	139 (2.8)	115 (2.6)	254 (2.7)
GED	186 (3.8)	178 (4.1)	364 (3.9)
HS graduate	689 (14.0)	890 (20.4)	1579 (17.0)
Some college or associate's degree	1901 (38.8)	1572 (36.0)	3473 (37.5)
Bachelor's degree or higher	1778 (36.2)	1362 (31.2)	3140 (33.9)
Missing	212 (4.3)	250 (5.7)	462 (5.0)
Household income			
< \$25,000	962 (19.6)	935 (21.4)	1897 (20.5)
\$25,000 to \$74,999	1979 (40.3)	1809 (41.4)	3788 (40.9)
≥ \$75,000	1381 (28.2)	1126 (25.8)	2507 (27.0)
Missing	583 (11.9)	497 (11.4)	1080 (11.6)
U.S. census region			
Northeast	1109 (22.6)	908 (20.8)	2017 (21.8)
South	1785 (36.4)	1640 (37.6)	3425 (36.9)
Midwest	1159 (23.6)	1010 (23.1)	2169 (23.4)
West	813 (16.6)	782 (17.9)	1595 (17.2)
Missing	39 (0.8)	27 (0.6)	66 (0.7)
Smoking and e-cigarette variables			
Age of first smoking			
≤ 11 years	191 (3.9)	126 (2.9)	317 (3.4)

Table 1 Demographic, smoking, and e-cigarette use characteristics of participants who completed the 3-month follow-up assessment ($n = 9272$; 60.0% of ITT sample), by smoking status at the 3-month follow-up assessment (*Continued*)

Variable	Smoking status at 3-month follow-up assessment		
	Smoked in 30 days ($n = 4905$) <i>N</i> %	No smoking in past 30 days ($n = 4367$) <i>N</i> %	Total ($n = 9272$) <i>N</i> %
12 to 14 years	1177 (24.0)	751 (17.2)	1928 (20.8)
15 to 17 years	1938 (39.5)	1552 (35.5)	3490 (37.6)
18 to 24 years	1497 (30.5)	1831 (41.9)	3328 (35.9)
≥ 25 years	87 (1.8)	94 (2.2)	181 (2.0)
Missing	15 (0.3)	13 (0.3)	28 (0.3)
Lifetime years of smoking			
≤ 1 year	315 (6.4)	513 (11.7)	828 (8.9)
1–5 years	1138 (23.2)	1485 (34.0)	2623 (28.3)
6–10 years	1071 (21.8)	870 (19.9)	1941 (20.9)
11–20 years	1265 (25.8)	784 (18.0)	2049 (22.1)
≥ 20 years	1029 (21.0)	601 (13.8)	1630 (17.6)
Missing	87 (1.8)	114 (2.6)	201 (2.2)
Number of smoking days in 30 days prior to baseline			
1–9 days	468 (9.5)	819 (18.8)	1287 (13.9)
10–19 days	456 (9.3)	686 (15.7)	1142 (12.3)
20–29 days	1031 (21.0)	1085 (24.8)	2116 (22.8)
30 days	2950 (60.1)	1777 (40.7)	4727 (51.0)
Cigarettes smoked per day at baseline			
1–9 cigarettes per day	2224 (45.3)	2626 (60.1)	4850 (52.3)
10–19 cigarettes per day	1609 (32.8)	1134 (26.0)	2743 (29.6)
≥ 20 cigarettes per day	1072 (21.9)	607 (13.9)	1679 (18.1)
Days of JUUL use in past 30 days at 3 months			
0 days	35 (0.7)	13 (0.3)	48 (0.5)
1–9 days	394 (8.0)	275 (6.3)	669 (7.2)
10–19 days	725 (14.8)	356 (8.2)	1081 (11.7)
20–29 days	1040 (21.2)	704 (16.1)	1744 (18.8)
30 days	2476 (50.5)	2710 (62.1)	5186 (55.9)
Missing	235 (4.8)	309 (7.1)	544 (5.9)
Current use of an e-cigarette other than JUUL			
Yes	568 (11.6)	407 (9.3)	975 (10.5)
No	4335 (88.4)	3958 (90.6)	8293 (89.4)
Missing	2 (0.0)	2 (0.0)	4 (0.0)
Place of first JUUL SK purchase			
Retail store	1914 (39.0)	2346 (53.7)	4260 (45.9)
JUUL website	2991 (61.0)	2021 (46.3)	5012 (54.1)
Bought JUUL SK 'to help me quit smoking'			
Yes	4069 (83.0)	3670 (84.0)	7739 (83.5)
No	835 (17.0)	696 (15.9)	1531 (16.5)
Missing	1 (0.0)	1 (0.0)	2 (0.0)
Primary JUULpod flavor used in past 30 days (at 3 months)			
Virginia Tobacco	529 (10.8)	371 (8.5)	900 (9.7)
Mint	863 (17.6)	1008 (23.1)	1871 (20.2)

Table 1 Demographic, smoking, and e-cigarette use characteristics of participants who completed the 3-month follow-up assessment ($n = 9272$; 60.0% of ITT sample), by smoking status at the 3-month follow-up assessment (*Continued*)

Variable	Smoking status at 3-month follow-up assessment		
	Smoked in 30 days ($n = 4905$) <i>N</i> %	No smoking in past 30 days ($n = 4367$) <i>N</i> %	Total ($n = 9272$) <i>N</i> %
Mango	1107 (22.6)	1168 (26.7)	2275 (24.5)
Crème	258 (5.3)	191 (4.4)	449 (4.8)
Fruit	202 (4.1)	127 (2.9)	329 (3.5)
Cucumber	242 (4.9)	193 (4.4)	435 (4.7)
Classic Tobacco	138 (2.8)	40 (0.9)	178 (1.9)
Menthol	187 (3.8)	119 (2.7)	306 (3.3)
Equal use of 2+ flavors, no primary	1087 (22.2)	838 (19.2)	1925 (20.8)
Missing	292 (6.0)	312 (7.1)	604 (6.5)
JUULpod flavors used in past 30 days (at 3 months)			
Only used JUUL tobacco flavors ^c	472 (9.6)	277 (6.3)	749 (8.1)
Only used JUUL characterizing flavors ^d	3209 (65.4)	3194 (73.1)	6403 (69.1)
Used both tobacco and characterizing flavors	941 (19.2)	591 (13.5)	1532 (16.5)
Missing	283 (5.8)	305 (7.0)	588 (6.3)

SK JUUL starter kit (JUUL vaporizer plus four disposable pods); 3 M 3 months follow-up assessment, HS high school, GED general educational development, PI Pacific Islander

^aIncludes Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese, Guamanian, Chamorro, and Samoan

^bIncludes Mexican, Cuban, Puerto Rican and "other Hispanic" ethnicity

^cJUUL tobacco flavors include "Virginia Tobacco" and "Classic Tobacco"

^dJUUL characterizing flavors include "Mint," "Mango," "Crème," "Fruit," "Cucumber," and "Menthol"

smoking cigarettes completely were 34% more likely to have not smoked a cigarette in the 30 days prior to the 3-month assessment (aOR = 1.34; 1.16, 1.55).

Smoking-related predictors Smoking heaviness, frequency, and duration at the point of first purchase of a JUUL Starter Kit were all negatively associated with participants' odds of reporting past 30-smoking abstinence at the 3-month assessment. Compared to those who had smoked cigarettes on all 30 of the 30 days prior to the baseline assessment, those who had smoked cigarettes on 20–29 days (aOR = 1.55; 1.36, 1.77), 10–19 days (aOR = 2.28; 1.91, 2.71), and 1–9 days (aOR = 2.87; 2.40, 3.43) of the 30 days prior to the baseline assessment were approximately 1.6 times, 2.3 times, and 2.9 times more likely to have not smoked a cigarette in the 30 days prior to the 3-month assessment. Compared to those who were smoking 1–9 cigarettes per day at the baseline assessment, those who were smoking 20 or more cigarettes per day at the baseline assessment were 19% less likely to have not smoked a cigarette in the 30 days prior to the 3-month assessment (aOR = 0.84; 0.71, 0.99). Compared to those had smoked regularly for 20 or more years in their lifetime at the baseline assessment, those who had smoked regularly for 0–12 months (aOR = 1.78; 1.29, 2.44) and 1–5 years (aOR = 1.57; 1.20, 2.05) were 78% and 57%

more likely, respectively, to have not smoked a cigarette in the 30 days prior to the 3-month assessment.

Demographic predictors Compared to those who had not graduated high school, those with a General Education Diploma (GED) were 51% more likely to have not smoked a cigarette in the 30 days prior to the 3-month assessment (aOR = 1.51; 1.02, 2.22).

Model 2

All eight variables that emerged as significant predictors of past 30-day smoking abstinence at the 3-months assessment in model 1 remained significant in model 2, with no non-significant predictors in model 1 becoming significant in model 2. The added variable—*JUULpod flavors used in the 30 days prior to the 3-month assessment*—was significantly associated with participants' odds of reporting past 30-day abstinence from smoking at the 3-month assessment. Compared to those who exclusively used JUULpods in tobacco flavors in the 30 days prior to the 3-month assessment, those who exclusively used JUULpods in characterizing flavors were 30% more likely to have not smoked a cigarette in the 30 days prior to the 3-month assessment (aOR = 1.30; 1.07, 1.57). Compared to those who exclusively used JUULpods in tobacco flavors in the 30 days prior to the 3-month

Table 2 Percent of participants reporting past 30-day point prevalence abstinence from smoking at the 3-month follow-up assessment and model information for two logistic regression analyses of factors associated with likelihood of reporting past 30-day abstinence from smoking at the 3-month follow-up assessment

Predictor variable	% P30A	Unadjusted Unadjusted OR (95% CI)	Model 1 adjusted		Model 2 adjusted	
			Step1 aOR (95% CI)	Step2 aOR (95% CI)	Step1 aOR (95% CI)	Step2 aOR (95% CI)
Sex						
Male	49.0	Ref.	Ref.	Ref.	Ref.	Ref.
Female	44.6	0.84 (0.77–0.91)***	0.93 (0.84–1.04)	0.93 (0.84–1.04)	0.92 (0.83–1.03)	0.93 (0.83–1.03)
Transgender	47.1	0.93 (0.53–1.61)	0.74 (0.38–1.45)	0.74 (0.38–1.43)	0.67 (0.35–1.30)	0.68 (0.35–1.31)
Age						
21–24	56.4	Ref.	Ref.	Ref.	Ref.	Ref.
25–34	45.6	0.65 (0.59–0.72)***	1.01 (0.87–1.18)	1.01 (0.87–1.18)	1.02 (0.87–1.19)	1.02 (0.87–1.19)
35–44	38.2	0.48 (0.42–0.54)***	0.93 (0.75–1.15)	0.93 (0.75–1.16)	0.93 (0.75–1.16)	0.93 (0.75–1.16)
45–54	38.6	0.49 (0.42–0.57)***	1.10 (0.84–1.46)	1.11 (0.84–1.46)	1.11 (0.84–1.46)	1.10 (0.84–1.46)
55–64	46.9	0.68 (0.57–0.83)***	0.91 (0.63–1.30)	0.90 (0.63–1.29)	0.91 (0.63–1.31)	0.91 (0.63–1.31)
≥ 65	28.4	0.31 (0.20–0.48)***	0.91 (0.47–1.75)	0.90 (0.47–1.74)	0.92 (0.48–1.76)	0.92 (0.48–1.76)
Race/Ethnicity						
Non-Hispanic, White	45.7	Ref.	Ref.	Ref.	Ref.	Ref.
Non-Hispanic, Black	49.0	1.14 (0.90–1.44)	1.01 (0.76–1.34)	1.01 (0.76–1.34)	0.99 (0.75–1.32)	0.99 (0.75–1.32)
Non-Hispanic, American Indian/ Alaskan	47.0	1.05 (0.73–1.52)	1.33 (0.85–2.08)	1.33 (0.85–2.09)	1.28 (0.82–1.99)	1.27 (0.81–1.98)
Non-Hispanic, Asian, Hawaiian or PI ^a	46.0	1.01 (0.88–1.16)	0.91 (0.77–1.07)	0.90 (0.77–1.07)	0.91 (0.77–1.07)	0.91 (0.77–1.07)
Non-Hispanic, two or More Races	50.0	1.19 (0.07–19.00)	1.33 (0.08–22.13)	1.30 (0.08–21.72)	1.49 (0.09–24.76)	1.45 (0.09–23.85)
Hispanic ^b	52.3	1.30 (1.12–1.51)***	1.08 (0.91–1.29)	1.08 (0.91–1.29)	1.07 (0.90–1.28)	1.07 (0.90–1.28)
Education						
Not HS graduate	45.3	Ref.	Ref.	Ref.	Ref.	Ref.
GED	48.9	1.16 (0.84–1.60)	1.51 (1.02–2.22)*	1.51 (1.03–2.23)*	1.55 (1.05–2.28)*	1.55 (1.05–2.28)*
HS graduate	56.4	1.56 (1.20–2.04)***	1.34 (0.97–1.84)	1.34 (0.97–1.85)	1.37 (0.99–1.88)	1.37 (0.99–1.88)
Some college or associate’s degree	45.3	1.00 (0.77–1.29)	0.99 (0.72–1.34)	0.99 (0.73–1.36)	1.00 (0.74–1.36)	1.00 (0.74–1.36)
Bachelor’s degree or higher	43.4	0.93 (0.72–1.20)	0.88 (0.64–1.20)	0.89 (0.65–1.22)	0.90 (0.65–1.22)	0.89 (0.65–1.22)
Household income						
< \$25,000	49.3	Ref.	Ref.	Ref.	Ref.	Ref.
\$25,000 to \$74,999	47.8	0.94 (0.84–1.05)	1.06 (0.93–1.21)	1.06 (0.93–1.22)	1.06 (0.93–1.21)	1.06 (0.93–1.21)
≥ \$75,000	44.9	0.84 (0.74–0.95)***	1.12 (0.96–1.30)	1.12 (0.96–1.30)	1.13 (0.97–1.31)	1.13 (0.97–1.31)
U.S. census region						
Northeast	45.0	0.85 (0.75–0.97)*	0.97 (0.82–1.15)	0.97 (0.82–1.14)	0.98 (0.83–1.15)	0.98 (0.83–1.15)
South	47.9	0.96 (0.85–1.08)	1.10 (0.94–1.28)	1.09 (0.94–1.27)	1.11 (0.95–1.29)	1.11 (0.95–1.29)
Midwest	46.6	0.91 (0.80–1.03)	0.95 (0.80–1.12)	0.94 (0.80–1.11)	0.95 (0.81–1.12)	0.95(0.81–1.12)
West	49.0	Ref.	Ref.	Ref.	Ref.	Ref.
Age of first smoking						
≤ 11 years	39.7	Ref.	Ref.	Ref.	Ref.	Ref.
12 to 14 years	39.0	0.97 (0.76–1.23)	0.87 (0.65–1.17)	0.88 (0.65–1.17)	0.87 (0.65–1.17)	0.87 (0.65–1.16)
15 to 17 years	44.5	1.21 (0.96–1.54)	0.93 (0.70–1.24)	0.93 (0.70–1.24)	0.92 (0.69–1.23)	0.92 (0.69–1.22)
18 to 24 years	55.0	1.85 (1.47–2.35)***	1.15 (0.86–1.54)	1.15 (0.86–1.54)	1.14 (0.85–1.53)	1.14 (0.85–1.52)
≥ 25 years	51.9	1.64 (1.13–2.37)**	1.34 (0.82–2.19)	1.35 (0.83–2.20)	1.32 (0.81–2.15)	1.31 (0.81–2.14)
Lifetime years of smoking						

Table 2 Percent of participants reporting past 30-day point prevalence abstinence from smoking at the 3-month follow-up assessment and model information for two logistic regression analyses of factors associated with likelihood of reporting past 30-day abstinence from smoking at the 3-month follow-up assessment (*Continued*)

Predictor variable	% P30A	Unadjusted Unadjusted OR (95% CI)	Model 1 adjusted		Model 2 adjusted	
			Step1 aOR (95% CI)	Step2 aOR (95% CI)	Step1 aOR (95% CI)	Step2 aOR (95% CI)
≤ 1 year	62.0	2.79 (1.22–1.59)***	1.78 (1.29–2.44)***	1.78 (1.30–2.45)***	1.80 (1.31–2.48)***	1.80 (1.31–2.48)***
1–5 years	56.6	2.23 (1.97–2.54)***	1.57 (1.20–2.05)**	1.57 (1.20–2.05)**	1.58 (1.21–2.07)**	1.59 (1.21–2.07)**
6–10 years	44.8	1.39 (2.35–3.31)***	1.26 (0.99–1.61)	1.27 (0.99–1.62)	1.28 (1.00–1.63)*	1.28 (1.00–1.64)*
11–20 years	38.3	1.06(0.93–1.21)	1.14 (0.92–1.40)	1.14 (0.92–1.40)	1.14 (0.93–1.41)	1.15 (0.93–1.41)
≥ 20 years	36.9	Ref.	Ref.	Ref.	Ref.	Ref.
Number of smoking days in 30 days prior to baseline						
1–9 days	63.6	2.91 (2.56–3.30)***	2.87 (2.40–3.43)***	2.88 (2.41–3.44)***	2.86 (2.40–3.42)***	2.86 (2.40–3.42)***
10–19 days	60.1	2.50 (2.19–2.85)***	2.28 (1.91–2.71)***	2.28 (1.92–2.72)***	2.26 (1.90–2.69)***	2.26 (1.90–2.69)***
20–29 days	51.3	1.75 (1.58–1.94)***	1.55 (1.36–1.77)***	1.56 (1.36–1.78)***	1.55 (1.36–1.78)***	1.55 (1.36–1.77)***
30 days	37.6	Ref.	Ref.	Ref.	Ref.	Ref.
Cigarettes smoked per day at baseline						
1–9 cigarettes per day	54.1	Ref.	Ref.	Ref.	Ref.	Ref.
10–19 cigarettes per day	41.3	0.60 (0.54–0.66)***	0.91 (0.80–1.03)	0.91 (0.80–1.04)	0.91 (0.80–1.04)	0.91 (0.80–1.04)
≥ 20 cigarettes per day	36.2	0.48 (0.43–0.54)***	0.84 (0.71–0.99)*	0.84 (0.71–0.99)*	0.84 (0.71–0.99)*	0.84 (0.71–0.99)*
Number of days of JUUL use in past 30 days (at 3 months)						
0 days	27.1	0.34 (0.18–0.64)	–	–	–	–
1–9 days	41.1	0.64 (0.54–0.75)	0.56 (0.45–0.68)***	0.55 (0.45–0.68)***	0.53 (0.43–0.65)***	0.53 (0.43–0.65)***
10–19 days	32.9	0.45 (0.39–0.52)	0.38 (0.32–0.45)***	0.38 (0.32–0.45)***	0.36 (0.31–0.43)***	0.36 (0.31–0.43)***
20–29 days	40.4	0.62 (0.55–0.69)	0.51 (0.45–0.58)***	0.51 (0.44–0.58)***	0.50 (0.44–0.57)***	0.50 (0.44–0.57)
30 days	52.3	Ref.	Ref.	Ref.	Ref.	Ref.
Current use of an e-cigarette other than JUUL						
Yes	41.7	0.79 (0.69–0.90)***	0.97 (0.82–1.15)	0.97 (0.81–1.15)	0.97 (0.82–1.16)	0.98 (0.82–1.16)
No	47.7	Ref.	Ref.	Ref.	Ref.	Ref.
Place of first JUUL SK purchase						
Retail store	55.1	1.81 (1.67–1.97)***	1.37 (1.22–1.53)***	1.39 (0.99–1.94)	1.38 (1.23–1.54)***	1.54 (1.04–2.26)*
JUUL website	40.3	Ref.	Ref.	Ref.	Ref.	Ref.
Bought JUUL SK “to help me quit smoking”						
Yes	47.4	1.08 (0.97–1.21)	1.34 (1.16–1.55)***	1.35 (1.17–1.55)***	1.36 (1.18–1.57)***	1.36 (1.18–1.57)***
No	45.5	Ref.	Ref.	Ref.	Ref.	Ref.
Primary JUULpod flavor used in past 30 days (at 3 months)						
Virginia Tobacco	41.2	Ref.	Ref.	Ref.	Ref.	Ref.
Mint	53.9	1.67 (1.42–1.96)***	1.37 (1.13–1.66)**	1.42 (1.11–1.81)**	NI	NI
Mango	51.3	1.50 (1.29–1.76)***	1.26 (1.05–1.52)*	1.27 (1.01–1.61)*	NI	NI
Crème	42.5	1.06 (0.84–1.33)	1.13 (0.86–1.48)	1.16 (0.83–1.62)	NI	NI

Table 2 Percent of participants reporting past 30-day point prevalence abstinence from smoking at the 3-month follow-up assessment and model information for two logistic regression analyses of factors associated with likelihood of reporting past 30-day abstinence from smoking at the 3-month follow-up assessment (*Continued*)

Predictor variable	% P30A	Unadjusted Unadjusted OR (95% CI)	Model 1 adjusted		Model 2 adjusted	
			Step1 aOR (95% CI)	Step2 aOR (95% CI)	Step1 aOR (95% CI)	Step2 aOR (95% CI)
Fruit	38.6	0.90 (0.69–1.16)	0.94 (0.69–1.29)	0.96 (0.63–1.46)	NI	NI
Cucumber	44.4	1.14(0.90–1.43)	0.88 (0.67–1.16)	0.85 (0.60–1.21)	NI	NI
Classic Tobacco	22.5	0.41 (0.28–0.60)***	0.54 (0.35–0.84)**	0.51 (0.30–0.86)*	NI	NI
Menthol	38.9	0.91 (0.70–1.18)	0.90 (0.66–1.24)	1.12 (0.76–1.66)	NI	NI
Equal use of 2+ flavors, no primary	43.5	1.10 (0.94–1.29)	0.99 (0.82–1.20)	0.93 (0.73–1.19)	NI	NI
JUULpod flavors used in the past 30 days (at 3 months)						
Only used JUUL tobacco flavors ^c	37.0	Ref.	NI	NI	Ref.	Ref.
Only used JUUL characterizing flavors ^d	49.9	1.70 (1.45–1.98)***	NI	NI	1.30 (1.07–1.57)**	1.33 (1.05–1.67)*
Used flavors from both tobacco and categories	38.6	1.07 (0.89–1.28)	NI	NI	0.88 (0.71–1.09)	0.97 (0.74–1.27)
Interaction term: primary JUULpod flavor used in past 30 days (at 3 months) ^c Place of first JUUL SK purchase						
Virginia Tobacco ^c Retail	-	-	-	Ref.	-	-
Mint ^c Retail	-	-	-	0.92 (0.62–1.37)	NI	NI
Mango ^c Retail	-	-	-	0.98 (0.67–1.44)	NI	NI
Crème ^c Retail	-	-	-	0.93 (0.53–1.63)	NI	NI
Fruit ^c Retail	-	-	-	0.96 (0.52–1.80)	NI	NI
Cucumber ^c Retail	-	-	-	1.08 (0.61–1.89)	NI	NI
Classic Tobacco ^c Retail	-	-	-	1.25 (0.47–3.35)	NI	NI
Menthol ^c Retail	-	-	-	0.55 (0.28–1.06)	NI	NI
Equal use of 2+ flavors, no primary ^c Retail	-	-	-	1.14 (0.77–1.69)	NI	NI
Interaction term: JUULpod flavors used in the past 30 days (at 3 months) ^c place of first JUUL purchase						
Only JUUL tobacco flavors ^c Retail	-	-	-	NI	-	Ref.
Only JUUL characterizing flavors ^c Retail	-	-	-	NI	-	0.92 (0.61–1.37)
Both flavor categories and tobacco ^c Retail	-	-	-	NI	-	0.77 (0.49–1.21)

Model 1: $N = 6968$, $\chi^2 = 836.329$, $df = 49$, $p < 0.001$

Model 2: $N = 6979$, $\chi^2 = 823.798$, $df = 43$, $p < 0.001$

P30A past 30-day abstinence from smoking at the 3-month assessment, SK JUUL starter kit (JUUL vaporizer plus four disposable pods), 3 M 3-month assessment, aOR adjusted odds ratio, HS high school, CPD cigarettes smoked per day, PI Pacific Islander, NI not included in the logistic regression model

Unadjusted ORs were estimated using only the relevant variable as the predictor variable

*** $p < 0.001$; ** $p < 0.010$; * $p < 0.050$

^aIncludes Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese, Guamanian, Chamorro, and Samoan

^bIncludes Mexican, Cuban, Puerto Rican and "other Hispanic" ethnicity

^cJUUL tobacco flavors include "Virginia Tobacco" and "Classic Tobacco"

^dJUUL characterizing flavors include "Mint," "Mango," "Crème," "Fruit," "Cucumber," and "Menthol"

assessment, those who had used JUULpods in both tobacco and characterizing flavors in the past 30 days were non-significantly less likely to have not smoked a cigarette in the 30 days prior to the 3-month assessment (aOR = 0.88; 0.71, 1.09). Finally, the interaction term entered at step 2 was non-significant, indicating that the association between past 30-day use of JUULpod flavor categories at the 3-month assessment and past 30-day

smoking abstinence at the 3-month assessment was not significantly moderated by the place at which participants purchased their first JUUL vaporizer.

Discussion

At least 28.3% of a large non-probabilistic sample of US adult established current smokers had not smoked any cigarettes for at least 30 days when assessed 3 months

after purchasing their first JUUL vaporizer from a retail store or e-commerce website. Of those who responded to the 3-month assessment, 47.1% reported having not smoked any cigarettes for at least the past 30 days. Eight variables were significant in predicting smokers' likelihood of reporting past 30-day abstinence from smoking after using a JUUL vaporizer for 3 months. Daily use of a JUUL vaporizer in the past month, primary use of Mint or Mango flavored JUULpods, exclusive use of JUULpods in characterizing flavors, purchasing one's first JUUL Starter Kit in a retail store, and purchasing one's first JUUL vaporizer to help to quit smoking completely were all associated with significantly higher adjusted odds of not having smoked any cigarettes in the 30 days prior to the 3-month assessment. Smoking regularly for more than 20 years, smoking more cigarettes per day and smoking on more days in the 30 days before purchasing one's first JUUL Starter Kit, and primary use of Classic Tobacco flavored JUULpods (versus Virginia Tobacco flavored pods) were all associated with significantly lower adjusted odds of not having smoked any cigarettes in the 30 days prior to the 3-month assessment.

JUULpods in non-tobacco flavors, particularly Mint and Mango, appeared to play an important role in helping smokers to quit within the first 3 months of using a JUUL vaporizer. In addition to being the most commonly used flavors in the JUULpod flavor range, smokers who *primarily* vaped JUULpods flavored to taste like Mint or Mango in the 30 days prior to the 3-month assessment were 37% and 26% more likely, respectively, to have not smoked any cigarettes in the 30 days prior to the 3-month assessment (compared to primary users of Virginia Tobacco flavored JUULpods). Likewise, smokers who had *exclusively* used JUULpods in characterizing flavors—Mint, Menthol, Mango, Cucumber, Fruit, and/or Crème—in the 30 days prior to the 3-month assessment were 30% more likely to have not smoked any cigarettes in the 30 days prior to the 3-month assessment (compared to exclusive users of JUULpods in tobacco flavors).

Purchasing one's first JUUL Starter Kit in a retail store also appeared to play an important role in the success of smokers' quit attempts. Compared to smokers who purchased their first JUUL Starter Kit through the e-commerce store at JUUL's website, smokers who purchased their first JUUL Starter Kit in a retail store were 37% more likely to have not smoked any cigarettes in the 30 days prior to the 3-month assessment. Additionally, a non-significant interaction term indicated that the beneficial effect of primary use of Mint or Mango pods (versus Virginia Tobacco pods) was statistically equivalent for individuals who purchased their first JUUL Starter Kit in a retail store and for individuals who purchased their first JUUL Starter Kit through the e-commerce store on JUUL's website.

Together with evidence that use of non-tobacco flavors (versus tobacco flavors) was more strongly associated with 3-month quit outcomes, the finding that smokers who purchased their first JUUL Starter Kit and e-liquid pods in a retail store are more likely to have quit smoking 3 months later is significant in the light of an announcement from JUUL Labs Inc. on 13 November 2018. This announcement stated that, in response to concern expressed by the FDA about the role of non-tobacco flavors in increasing the appeal of vaping to youth, JUUL Labs Inc. has stopped selling its Mango, Crème, Fruit, and Cucumber flavored pods to the over 90,000 retail stores in the USA that currently sell JUUL's flavored pods, including convenience stores and specialty vape stores. This voluntary action by JUUL Labs Inc. to suspend retail sales of flavored products preceded an announcement by FDA on 15 November 2018 of an intention to revisit its discretionary extension of the pre-market application compliance date to August 2022 for newly regulated non-combustible tobacco products that are flavored, including all flavors other than tobacco, mint, and menthol. The changes being sought by FDA Commissioner Gottlieb would require all flavored ENDS products (other than tobacco, mint, and menthol flavors or non-flavored products) sold in age-restricted, in-person locations, and, if sold online, under heightened practices for age verification.

FDA's proposal to ban the retail sale of flavored ENDS products is an effort to strike a careful balance between maintaining adult smokers' access to potentially less harmful sources of nicotine through ENDS for adults who want to transition away from combustible cigarettes, and reducing youth appeal and access to ENDS products. This policy will mean that, in the near future, adult smokers aged 21 years and older in the USA who want to purchase JUULpods flavored to taste like Mango, Crème, Fruit, and Cucumber will only be able to do so (legally) through the e-commerce store at JUUL's website. Adult smokers will still be able to purchase Mint flavored pods in retail stores, which present evidence suggests is both the most popular flavor and the flavor most strongly associated with past 30-day smoking abstinence at the 3-month assessment. Adult smokers will only be able to purchase JUULpods in four flavors in retail stores, three of which—Virginia Tobacco, Classic Tobacco, and Menthol—are considerably less popular than Mint and Mango and associated with significantly lower 3-month quit rates compared to Mint and Mango. In light of data from the present study then, the restrictions imposed by this policy will mean adults will be less able to purchase the flavors of JUULpods that are the most preferred and most strongly associated with short-term quitting success, from the points of purchase that are more strongly associated with short-term

quitting success. It will therefore be vitally important to measure the impact of suspending retail sales of flavored JUULpods on rates of use of JUULpods by both adult smokers and youth, and in turn, on associated rates of smoking cessation and initiation. In particular, there is a need for population surveillance systems through which researchers can compare the strength of the prospective association between adults' use of flavored ENDS products and smoking cessation at the population level, and the prospective association between youths' use of flavored ENDS products and smoking initiation at the population level.

It is possible that banning retail sales of flavored ENDS products could have little impact on adult smoking quit rates if smokers simply migrate to a retail-available second or third flavor choice that they also find to be a satisfying alternative to cigarettes. Present evidence of the stronger association between primary use of Mint and Mango JUULpods should not be interpreted as evidence that the retail availability of JUULpods in these flavors is *essential* to increasing rates of smoking cessation. It is possible that, when unable to purchase Mint and Mango pods in retail stores, a proportion of smokers who would prefer to purchase these flavors will switch to using JUULpods in the tobacco and mint/menthol flavors that will continue to be available, rather than discontinuing their use of a JUUL vaporizer altogether. The uncontrolled nature of our study design means we cannot know what proportion of those quitters who were retail purchasers and primary users of Mango flavored JUULpods would have used JUULpods in tobacco or mint/menthol flavors and quit smoking even if Mango flavored JUULpods had been unavailable for purchase in retail stores during this study.

It is perhaps more plausible, however, to expect the loss of retail store access to Mango flavored JUULpods—the second most popular flavor and a flavor associated with a significantly higher 3-month quit rate than flavors that will still be available for purchase in retail stores (Virginia Tobacco, Classic Tobacco, and Menthol)—will result in fewer adult smokers achieving smoking abstinence in the first 3 months of using a JUUL vaporizer, and may result in an increased drop-off in the number of primary retail-Mango pod users who had quit smoking at the 3-month assessment remaining quit at the 6-month assessment of this study. This latter hypothesis will be addressed by data from the 6-month assessment of this study when available.

A third and much less likely possibility is that the proportion of smokers who achieved smoking abstinence in the third month of using a JUUL vaporizer in this study would have been higher had Mango flavored JUULpods not been available to purchase in retail stores during the period of this study. Given evidence that Mint and

Mango flavored JUULpods are more strongly preferred by adult smokers to JUULpods in tobacco flavors, and significantly more strongly associated with smoking cessation within the first 3 months of using a JUUL vaporizer, regulatory actions that FDA may take to prevent youth access to flavored ENDS products that also have the effect of preventing or reducing adult smokers' access to JUULpods in these non-tobacco flavors risk losing a substantial number of successful smoking quit attempts that are solely or sufficiently attributable to use of JUULpods in these non-tobacco flavors. In this sense, the present study may provide useful reference information for studies of a similar nature conducted post-implementation of any policies that affect adult smokers' access to flavored ENDS products.

Smokers who used a JUUL vaporizer more frequently in the 30 days prior to the 3-month assessment were also significantly more likely to have not smoked a cigarette in those 30 days. This is consistent with findings from nationally representative surveys [16, 17]. For example, data from the 2014 and 2015 US National Health Interview Survey (NHIS) showed that over half (52%) of daily e-cigarette users had quit smoking in the last 5 years. Daily e-cigarette users were 3.15 times more likely to have quit smoking compared to those who have never used an e-cigarette (28.2%). Those who used e-cigarettes on only some days were least likely to have quit (12.1%). The observation of similarly strong associations between daily use of a JUUL vaporizer and past 30-day cigarette abstinence outcomes in this study reinforce the notion that adults who are using a JUUL vaporizer to help them to quit smoking should be encouraged to use their JUUL vaporizer as needed each day.

Adult smokers in this study were, at the point of their first purchase of a JUUL Starter Kit, more likely to be males aged 21–34, daily smokers of 1–9 cigarettes, and smoking cigarettes regularly for less than 10 years. Consistent with the literature on the negative association between severity of cigarette dependence and odds for quitting smoking, participants' likelihood of completely switching from combustible cigarettes to a JUUL vaporizer after 3 months decreased as their frequency, heaviness, and duration of cigarette smoking at baseline increased. These data have several important implications for the current and potential impact of JUUL vapor products on smoking cessation and smoking-related disease in the US adult population.

First, at present, new JUUL users are more likely to be lighter smokers who have been smoking for fewer years of their lifetime, and present data indicate that odds for quitting smoking within 3 months of initiating use of a JUUL vaporizer are highest among these smoker groups. By appealing more to younger, lighter, shorter-term

smokers who, by virtue of their reduced heaviness and duration of exposure to cigarette smoke are likely to be presently experiencing fewer health problems related to cigarette smoking, and by being more effective in helping these smokers to quit within 3 months, the use of a JUUL vaporizer for even a short period of time may be highly effective in diverting younger, less dependent smokers away from smoking before they begin to experience serious smoking-related health problems and become increasingly dependent on cigarettes. However, given that lighter smokers may have been comparably likely to try and succeed in quitting smoking with non-pharmacological interventions, and given that long-term inhalation of vapor from a JUUL vaporizer is unlikely to be without some health risks, the potential benefits of switching from light smoking to regular use of JUUL vaporizer need to be weighed against the potential risks that could be incurred through prolonged exposure to daily, high doses of nicotine and varying levels of other harmful and potentially harmful constituents of vapor if these switchers were to go on to become long-term or lifelong JUUL users.

Second, there is a need to understand the extent to which the lower proportions of older, heavier, longer-term, and female cigarette smokers who opted into this study are reflected in the whole population of JUUL users, and if so, why these smoking sub-groups, who are at greater risk for developing smoking-related diseases, are less likely to use JUUL vapor products. There is also a clear need to better understand why, beyond lifetime cigarette exposure, smokers who are at the greatest risk of developing smoking-related diseases—those smoking more cigarettes per day, smoking more days in the month, and have smoked for more years in their lifetime at the point of first purchase of a JUUL Starter Kit—have the greatest difficulty in completely substituting a JUUL vaporizer for combustible cigarettes within 3 months. Specifically, research should seek to understand the extent to which these smokers' lower likelihood of using a JUUL vaporizer and lower likelihood of completely switching to a JUUL vaporizer could be addressed by innovating the look, feel, taste, nicotine delivery, and satisfaction of existing JUUL products to be increasingly socially acceptable and pharmacologically appealing to heavier, more frequent, and longer-term cigarette smokers, and by increasing marketing of JUUL vapor products toward these smoking sub-groups. It should be acknowledged, however, that, for many smokers, there may be no level of innovation of an e-cigarette that will replicate or compete with the satisfaction of smoking a cigarette. Assisting these individuals to quit smoking sooner may require provision of adjunctive behavioral support, concurrent use of other products and methods that are empirically supported for

smoking cessation, and/or education and practical skills training on how to use JUUL vapor products to maximize their chances of quitting smoking.

A final important finding of this study was that, though the quit rate at 3 months was significantly higher among smokers who purchased their first JUUL Starter Kit to help them to quit smoking cigarettes, the unadjusted quit rate (45.5%) among the 17% of smokers who did not buy their first JUUL Starter Kit to help to quit smoking was also high. This finding suggests that many smokers who had initiated use of a JUUL vaporizer with an intention to dual use cigarettes and the JUUL vaporizer ultimately came to prefer exclusive use of a JUUL vaporizer to dual use of both products. That a high proportion of smokers without an initial intention to quit smoking ultimately did quit smoking is encouraging given that many smokers tend to initiate use of e-cigarettes primarily out of curiosity about the taste and effects of vaping, and with skepticism about the extent to which vaping can replace, let alone compete with, smoking cigarettes. Smokers may perceive a need to use a JUUL vaporizer, or indeed any e-cigarette, for at least several weeks or months to be assured that e-cigarettes can meet their wants and needs that have long been well served by cigarettes, and so increase initially low levels of interest, motivation, and self-efficacy for switching to levels necessary for them to begin to contemplate and then attempt to switch completely away from cigarettes. Future research that identifies the typical duration of use a JUUL vaporizer at which smokers whom had an initial intention to use a JUUL vaporizer in addition to cigarettes come to formalize and pursue a long-term goal of using a JUUL vaporizer in place of cigarettes could provide crucial insights into the early subjective experiences (e.g., sensorial, hedonic, physical, emotional) of using a JUUL vaporizer that prompt smokers to re-evaluate their motivation and perceived need to continue smoking cigarettes.

The conclusions of this study are limited in several ways. First, the sample is not representative of the US adult population of smokers or e-cigarette users, nor was the study designed or intended to estimate the prevalence or frequency of use of JUUL vapor products among the e-cigarette-using population of US adults. The study aimed to elicit data on individual characteristics and patterns of cigarette smoking and use of JUUL vapor products that are prospectively associated with increased and reduced odds of quitting smoking in a large, self-selecting sample of adult established current smokers who had very recently started to use a JUUL vaporizer and who agreed to participate in each survey in exchange for US\$30. The recruitment methods were therefore biased toward outlets where new JUUL users would be found, and so the study conclusions do not

represent the individual user characteristics, patterns of product use, or smoking outcomes associated with any other ENDS product, and may also not represent new JUUL purchasers who declined the invitation to participate in this study.

By including only those who were adult established current smokers at the time of their first purchase of a JUUL Starter Kit, this study additionally does not yield data on the proportion of all new JUUL purchasers who are adults (versus adolescents) or current smokers (versus former smokers and never smokers). In turn, this study yields no data about the rate of smoking initiation and smoking relapse among those who were not actively smoking or had never smoked a cigarette, respectively, when they purchased their first JUUL Starter Kit. Estimating these rates are essential for modeling the impact of using JUUL vapor products on the health of the whole US population, the majority of which are non-users of tobacco products.

We must also stress that the short-term self-reported smoking outcome data reported here should not be taken as evidence that using a JUUL vaporizer can be effective for helping smokers to quit in the long-term. To our knowledge, no data have been published that describe the extent to which use of a JUUL vaporizer is associated with long-term abstinence from cigarette smoking, or the extent to which short-term changes in smoking behavior associated with JUUL use are predictive of longer-term, clinically significant changes in smoking behavior, or smoking-related health outcomes. The extent to which study participants who reported positive short-term smoking behavior change after 3 months of using a JUUL vaporizer ultimately relapse to baseline smoking patterns or sustain early positive changes up to and including 6 months of JUUL use will be examined when the data from the 6-months assessment of this study become available.

Finally, we stress that the data presented here on the rates of quitting smoking associated with different patterns of JUUL use for 3 months do not permit conclusions about the potential impact of JUUL use on the current or future health status of study participants. No data have been presented that would permit the conclusion that adults who switched completely from smoking cigarettes to using a JUUL are likely to have increased or reduced their exposure to harmful and potentially harmful toxicants, or their risk for developing serious health problems. The present study collected no data that could adequately characterize the health impact of switching from smoking cigarettes to using a JUUL vaporizer. Studies that characterize the risk/safety profile of JUUL vapor products relative to combustible cigarettes, other ENDS products, and FDA-approved smoking cessation products and medications, and which characterize the

patterns of use of JUUL vapor products that increase and decrease risks to users' health, are urgently needed.

Conclusions

Between 28.3% and 47.1% of adult new users of the JUUL vaporizer, who were established daily or non-daily smokers when they began using a JUUL vaporizer, had not smoked any cigarettes in the third month of using a JUUL vaporizer. Those who used a JUUL vaporizer every day, purchased their first JUUL Starter Kit in a retail store, primarily used JUULpods flavored to taste like Mint or Mango, and exclusively used JUULpods in characterizing flavors were significantly more likely to have not smoked any cigarettes in the third month of using a JUUL vaporizer. Given this evidence of the importance of JUULpods containing characterizing flavors—and their availability in retail stores—to smokers' likelihood of quitting smoking in the short-term, the impact of a pending suspension of retail sales of flavored JUULpods on adults' likelihood of quitting smoking should be closely assessed. Present data may be used as reference information for assessing the impact of policies that restrict the accessibility of flavored JUUL vapor products on the rate of smoking cessation among adults who attempt to switch completely to JUUL vapor products. As part of a broader collection of data on the human health impact of JUUL vapor products, these data can also assist the FDA Center for Tobacco Products to determine whether issuing a marketing authorization order for JUUL vapor products would be appropriate for the protection of the public health under section 910 of the FD&C Act (21 U.S.C. 387j).

Endnotes

¹This question was only asked to those who reported smoking on "some days." A value of "30" was imputed for those who reported having smoked 'every day' in the past 30 days.

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Funding for this study was provided by JUUL Labs Inc. JUUL Labs Inc. had no input to or control over the study design, contents of the survey instrument, sample recruitment, data analysis, interpretation, or reporting of findings. The authors alone are responsible for the contents, production, and decision to report this study.

Availability of data and materials

The datasets analyzed in the current study are available from the corresponding author on reasonable request.

Authors' contributions

CR and NM conceived of the study. CR developed the survey instrument. CR and FH conducted the data analyses. CR, FH, and NM wrote the manuscript. All authors read and approved the final manuscript.

Ethics approval and consent to participate

Using the Department of Health and Human Services regulations found at 45 CFR 46.101(b)(2), Advarra Institutional Review Board (IRB) determined the component of this study involving collection of data from individuals who purchased a JUUL Starter Kit in a retail store to be exempt from IRB oversight (Exempt Determination received 5 April 2018; Protocol Number 00024906). Data are also reported by 7633 age-verified adults who opted in to JUUL Labs Inc.'s internal market research surveys when purchasing JUUL products online. Informed consent to participate was obtained from all participants. The Informed Consent Form used in the current study is available from the corresponding author on reasonable request.

Consent for publication

Not applicable.

Competing interests

In the past 12 months, the employers of CR and NM, the Centre for Substance Use Research, has received funding from JUUL Labs Inc. to conduct research on the impact of JUUL vapor products on tobacco use behaviors, perceptions, and intentions among adults and adolescents in the United States. In the past 3 years, the Centre for Substance Use Research has also received funding from several other e-cigarette manufacturers, including Fontem Ventures, Nicoventures, and Philip Morris International, to conduct research on tobacco harm reduction, specifically, on factors that encourage and discourage smokers from trialing and completely switching to using e-cigarettes.

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Attachment B

Letters

RESEARCH LETTER

Assessment of Underage Sales Violations in Tobacco Stores and Vape Shops

In 2018, the US Centers for Disease Control and Prevention announced a 78% increase in vaping from 2017 to 2018 among high school students, an epidemic characterized by increased use of flavored tobacco products.¹ With a goal to reverse this trend, the US Food and Drug Administration (FDA) announced its intent to limit sales of flavored (excluding menthol) tobacco products to age-restricted (adult-only) locations, such as tobacco and vape shops.²

However, the 2017 California tobacco purchase survey³ reported that tobacco and vape shops had the highest rate of underage sales compared with other types of tobacco retailers. We investigated whether disparate violations persisted in 2018 and whether the FDA's intention to limit the sale of flavored tobacco products to age-restricted locations is adequate.

Methods | This study used data from the 2018 sample (n = 1746) of the California Tobacco Control Program's Young Adult Tobacco Purchase Survey that was drawn from the statewide tobacco retail license list. The data were collected by the California State University, Sacramento. Their institutional review board did not consider this study to involve human subjects' research.

From March through June 2018, decoys (aged 18-19 years) were randomly assigned to purchase either cigarettes (n = 1123) or vape products (n = 498), such as e-liquids and e-cigarettes. The sample also included stores that were considered noncompletes (n = 98) and stores where decoys asked for other tobacco products (eg, little cigars or cigars) (n = 27). According to the standard protocol, decoys did not carry identification (ID) and told the truth about their age.

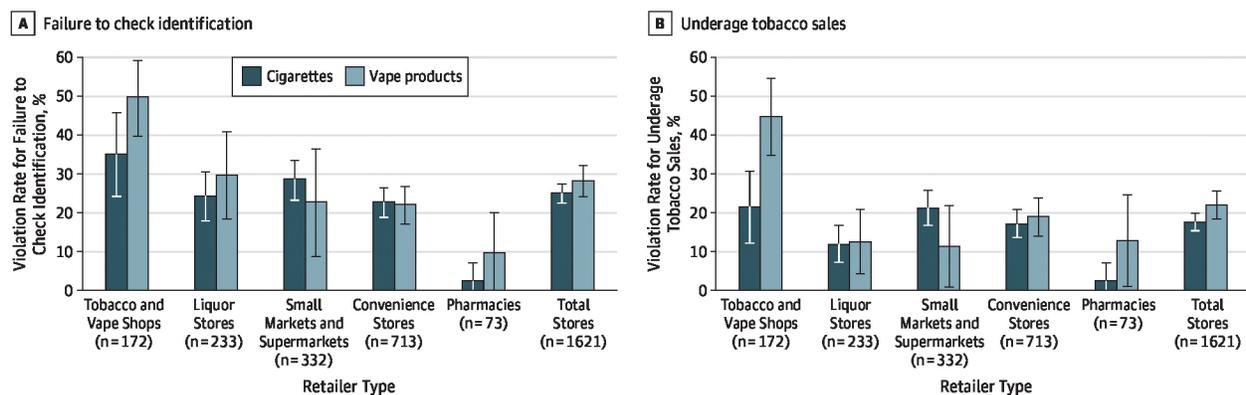
A trained chaperone observed whether ID was requested from the decoy and whether a sale occurred. Tobacco and vape shops were defined as retailers that primarily sell tobacco products. Data were weighted to account for sampling design. Rao-Scott χ^2 tests (2-sided with significance set at $P < .05$) were performed to examine the association between retailer type and outcomes using SAS, version 9.4 (SAS Institute Inc).

Results | Although FDA regulation requires retailers to check ID for all persons under 27 years, 49.8% of tobacco and vape shops failed to check ID for underage decoys when decoys attempted to purchase vape products. The violation rate in tobacco and vape shops was significantly higher than for other types of retailers ($P < .05$) (Figure, A). Furthermore, 44.7% of tobacco and vape shops sold vape products to underage decoys also at a higher rate compared with other tobacco retailers ($P < .05$) (Figure, B). Overall sales violations were higher for vape products compared with cigarettes ($\chi^2 = 4.3938$; $P < .05$) (Figure, B).

Discussion | Tobacco and vape shops had a worse record for checking ID and preventing underage sales, which may undermine the FDA's plan to restrict youth access to flavored tobacco products. This concern is not unique to California. Other states, including North Carolina and Oklahoma, reported underage sales rates of 20% or higher in tobacco and vape shops in federal fiscal year 2019.⁴

The FDA's 2009 ban on the sale of flavored cigarettes was associated with reduced smoking among youth; however, research suggests the association was lessened because of the availability of menthol cigarettes and other flavored tobacco products.⁵ Evidence is needed to show that limiting the sale of these tobacco products to age-restricted locations will prevent

Figure. Violation Rates for Failing to Check Identification and for Underage Tobacco Sales by Retailer Type in California, 2018



Whiskers indicate 95% CI.

sales to minors. Although this study did not record whether retailers posted age-restricted entry signs at their shops, the study results suggest a higher rate of sales violations by retailers whose primary business is the sale of an age-restricted product.

Presumably tobacco and vape shops would be the most compliant with age-of-sale laws, particularly in states where license suspension or revocation would jeopardize the business. However, these results suggest that the FDA's proposal to relegate sales of flavored tobacco products to adult-only facilities are not likely to be effective without significant age-verification requirements and increases in the number and frequency of compliance checks that the FDA conducts.⁶ An effective plan to limit sales of flavored tobacco products to youth may include accountability throughout the tobacco distribution chain (including manufacturers and distributors), retailer education, and enforcement. States can further limit the availability and affordability of flavored tobacco by increasing the minimum legal sales age to 21 years, restricting sales of flavored tobacco (including menthol), prohibiting self-service displays, and pursuing tax and nontax mechanisms to increase price.

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Tam D. Vuong, MPH

Lisa Henriksen, PhD

Xueying Zhang, MD, MPH, MS

Author Affiliations: California Tobacco Control Program, California Department of Public Health, Sacramento (Roeseler, Vuong, Zhang); Institute for Population Health Improvement, University of California Davis Health System, Sacramento (Vuong); Stanford Prevention Research Center, Stanford University School of Medicine, Stanford, California (Henriksen).

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Author Contributions: Ms Roeseler had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

Concept and design: Vuong, Henriksen, Zhang.

Acquisition, analysis, or interpretation of data: Roeseler, Vuong, Henriksen.

Drafting of the manuscript: Roeseler, Vuong, Henriksen.

Critical revision of the manuscript for important intellectual content: All authors.

Statistical analysis: Vuong.

Administrative, technical, or material support: Roeseler, Zhang.

Supervision: Roeseler, Zhang.

Conflict of Interest Disclosures: Dr Henriksen reported receiving grants from the National Cancer Institute during the conduct of the study. No other disclosures were reported.

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Fwd: Addendum to AATCLC Letter-Council Motion File: 18-1104

1 message

Eric (Roderico) Villanueva <eric.villanueva@lacity.org>
 To: Isabel Onate <isabel.onate@lacity.org>

Mon, Aug 5, 2019 at 12:47 PM

fyi...thanks.

Eric Villanueva
 Office of the City Clerk
 200 N. Spring St. Rm. 395
 Los Angeles, CA 90012
 213-978-1075



----- Forwarded message -----

From: **Carol McGruder** <cmcgruder@usa.net>
 Date: Fri, Aug 2, 2019 at 4:47 PM
 Subject: Addendum to AATCLC Letter-Council Motion File: 18-1104
 To: <tep@lacity.org>, <Xochitl.ramirez@lacity.org>
 Cc: <Holly.walcott@lacity.org>, Montgomery Messex <mmessex@ph.lacounty.gov>, Primo J. Castro <primo.castro@cancer.org>, Tonya Gallow <tgallow@ph.lacounty.gov>, Susan Bradshaw <sbradshaw@ph.lacounty.gov>, Elizabeth Jacoby <EJacoby@ph.lacounty.gov>, <eric.villanueva@lacity.org>, Carol McGruder <cmcgruder@usa.net>, Dr. Val <dr.yerger@gmail.com>, Phillip Gardiner <phillip.gardiner@ucop.edu>, Annie Tegen <ategen@tobaccofreekids.org>, Larry Tramutola <larryt@tramutola.com>, Eric Batch <eric.batch@heart.org>, <ed@esadvisorgroup.com>

Please include these additional documents in the record. Of particular import are the Congressional Sub-Committee Hearings on JUUL that took place July 24th and 25th. These hearings were very illuminating into JUUL's behavior. Links and descriptions of the videos are in the attachments and include videos included below.

<https://www.youtube.com/watch?v=AHTzQw-O8xM&feature=youtu.be>



House Oversight Committee Chairman **Rep. Elijah Cummings** questions JUUL co-founder James Monsees about their current efforts to overturn (2) San Francisco ordinances aimed at getting menthol and all flavored tobacco products, and E-Cigarettes (until FDA approved) off the market. These (2) ordinances were sponsored and championed by African American elected officials, San Francisco Former Supervisor **Malia Cohen** (now chair of the state board of Equalization) and Supervisor **Shamann Walton**. JUUL has been making power plays all over the country to **engage top Black leaders and lobbyists** to clear JUUL's path to Black nicotine addicted smokers. But Cummings, Cohen, and Walton are standing strong for public health policy that protects Black folks too!

" target="" title="">Black Lives/Black Lungs



<http://www.blacklivesblacklungs.com/>

A short film investigating the tobacco industry's successful infiltration into the black community.

JUUL nor E-Cigarettes are the savior of the Black Community, rather they are and will only exacerbate Health Disparities.

Attached is a letter from the African American Tobacco Control Leadership Council calling out Juul as the newest tobacco predator in the Black Community. The "JUUL Explosion" is really a Flavors Explosion, with over 15,000 flavors available; JUUL is leading the way with its mint and menthol pods addicting kids throughout LA.

All the more reason to get flavored products off the shelves.

Sincerely,

Phillip Gardiner, Dr. P.H.
Co-Chair African American Tobacco Control Leadership Council

6 attachments

-  **Menthol Juul LA Letter_080219.docx**
255K
-  **Yerger_Racialized_Geography_2007(2).pdf**
189K
-  **Gardiner_AfricanAmericanization Menthol_2004(1).pdf**
1990K
-  **Congressional Sub-Committee Hearing on JUUL.pdf**
242K
-  **Out of the Blu-OpEd.pdf**
76K
-  **AATCLC Video Links.pdf**
101K

Video Links

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<https://www.youtube.com/watch?v=AHTzQw-O8xM&feature=youtu.be>



Subcommittee on Economic and Consumer Policy

They Examined JUUL's Role in the Youth Nicotine Epidemic

The hearings examined JUUL's:

1. Role in the youth nicotine addiction epidemic
2. Appeal to youth
3. Marketing
4. Health claims
5. Relationship to traditional tobacco companies

Part 1

Took Place On
Wednesday **July 24**, 2019
At 9:00 AM EST

[Click Here For Additional Information about Day 1](#)

Click Here to watch the recording of the day 1 hearing:
<https://youtu.be/m3iEMrAd83o?t=2326>



Part 2

Took Place On
Thursday **July 25**, 2019
At 2:00 PM EST

[Click Here For Additional Information About Day 2](#)

Click Here to watch the recording of the day 2 hearing:
<https://youtu.be/xetCY0jEPAs?t=4184>

<http://www.blacklivesblacklungs.com/>



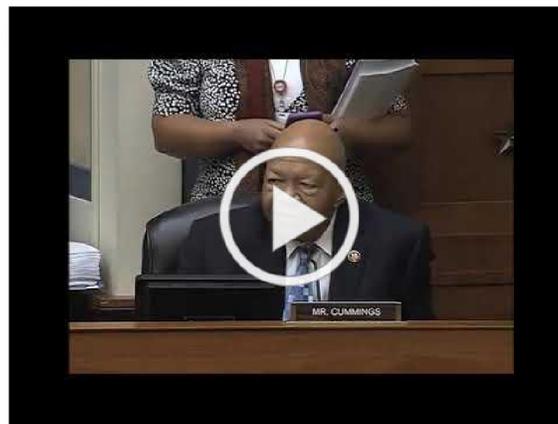
A short film investigating the tobacco industry's successful infiltration into the black community.



The African American Tobacco Control Leadership Council

Take a look at the recordings of the historical congressional subcommittee hearing on the role of JUUL in the youth vaping epidemic. There were many highlights and illuminating moments into the workings and strategies of JUUL. We encourage you to watch the entire hearing but here are some highlights!

House Oversight Committee Chairman **Rep. Elijah Cummings** questions JUUL co-founder James Monsees about their current efforts to overturn (2) San Francisco ordinances aimed at getting menthol and all flavored tobacco products, and E-Cigarettes (until FDA approved) off the market. These (2) ordinances were sponsored and championed by African American elected officials, San Francisco Former Supervisor **Malia Cohen** (now chair of the state board of Equalization) and Supervisor **Shamann Walton**. JUUL has been making power plays all over the country to **engage top Black leaders and lobbyists** to clear JUUL's path to Black nicotine addicted smokers. But Cummings, Cohen, and Walton are standing strong for public health policy that protects Black folks too!



[Learn More About the AATCLC](#)



Carol and Dr. Val representing AATCLC at the 2 part-hearing



Subcommittee on Economic and Consumer Policy

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Part 2

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[Click Here For Additional Information About Day 2](#)

Click Here to watch the recording of the day 2 hearing:

<https://youtu.be/xetCY0jEPAs?t=4184>

Hearing Highlights



Strong Questions From Freshmen Members

Juul's shady use of product release processes exposed directly by US Rep. Ayanna Pressley.



US Rep. Rashida Tlaib takes Juul co-founder James Monsees to task on their "implied" cessation tool claims.

[Click Here To Learn More About the AATCLC](#)

The African Americanization of menthol cigarette use in the United States

Phillip S. Gardiner

[Received 23 December 2002; accepted 30 June 2003]

Today, over 70% of African American smokers prefer menthol cigarettes, compared with 30% of White smokers. This unique social phenomenon was principally occasioned by the tobacco industry's masterful manipulation of the burgeoning Black, urban, segregated, consumer market in the 1960s. Through the use of television and other advertising media, coupled with culturally tailored images and messages, the tobacco industry "African Americanized" menthol cigarettes. The tobacco industry successfully positioned mentholated products, especially Kool, as young, hip, new, and healthy. During the time that menthols were gaining a large market share in the African American community, the tobacco industry donated funds to African American organizations hoping to blunt the attack on their products. Many of the findings in this article are drawn from the tobacco industry documents disclosed following the Master Settlement Agreement in 1998. After a short review of the origins and growth of menthols, this article examines some key social factors that, when considered together, led to disproportionate use of mentholated cigarettes by African Americans compared with other Americans. Unfortunately, the long-term impact of the industry's practice in this community may be partly responsible for the disproportionately high tobacco-related disease and mortality among African Americans generally and African American males particularly.

Introduction

Mentholated cigarettes have been a ubiquitous part of the smoking landscape in the United States for the past 75 years. Since the introduction of Spud cigarettes in 1925, mentholated cigarettes have established a significant foothold in the United States smoking market, where today these brands represent 26% of all cigarettes sold and consumed (Federal Trade Commission [FTC], 2002). This finding is significant on its own, given that only three countries—the Philippines (60%), Cameroon (35%–40%), and Hong Kong (26%)—have higher or equal rates of menthol cigarette use compared with the United States (ERC Group, 2001). However, a unique history in the United States led to the rise and acceptance of

menthol cigarettes and the adoption of these products by over 70% of African American smokers, as compared with 30% of White smokers (U.S. Department of Health and Human Services [USDHHS], 1998).

This article examines key social factors that, when taken together, conspired to create the demand for menthol cigarettes in the African American community. The African Americanization of menthol cigarettes by the tobacco industry included targeted marketing, use of segregated markets, capitalization on the growing "Black ethos" of the Civil Rights movement, and the promotion of the "healthful" qualities of menthol.

Menthol use has become widespread in our culture, residing in everything from chewing gum to liniments. It also is an additive in *all* tobacco products, a fact unknown to many (Hopp, 1993; Table 1). The menthol additive laced in cigarettes today is the chief constituent of peppermint oil and has a minty fresh odor, stimulates cold receptors, has an anesthetic effect, increases salivary flow, dilates the bronchial

Phillip S. Gardiner, Dr.P.H., Tobacco-Related Disease Research Program (TRDRP), University of California Office of the President, Oakland, CA.

Correspondence: Phillip S. Gardiner, Tobacco-Related Disease Research Program, University of California Office of the President, 300 Lakeside Drive, 6th floor, Oakland, CA 94612-3550 USA. Tel: +1 (510) 987-9853; Fax: (510) 835-4740; E-mail: phillip.gardiner@ucop.edu

Table 1. Menthol content of U.S. tobacco products

Product	Menthol (mg)
Regular (nonmenthol) cigarettes	0.003
Menthol cigarettes (weak effect)	0.1–0.2
Menthol cigarettes (strong effect)	0.25–0.45
Pipe tobacco	0.3
Chewing tobacco	0.05–0.1

Source: Hopp (1993, p. 7).

pathways, and increases transbuccal drug absorption (Gardiner, 2000; Hopp, 1993; Kluger, 1996; USDHHS, 1998).

Understanding the African Americanization of menthol cigarettes is no trivial matter, because it is a documented fact that African American men have a disproportionately high mortality rate from cancers of the trachea, bronchus, and lung, among other types of cancer (USDHHS, 1998; Figure 1). Moreover, African Americans smoke fewer cigarettes per day (Clark, Gautam, & Gerson, 1996); take fewer puffs per cigarette (McCarthy et al., 1995); maintain higher blood levels of cotinine, the major metabolite of nicotine (Benowitz et al., 1999; Caraballo et al., 1998; Wagenknecht, et al., 1990); and have higher carbon monoxide concentrations in their blood (Ahijevych, Gillespie, Demirci, & Jagadeesh, 1996; Jarvik, Tashkin, Caskey, McCarthy, & Roseblatt, 1994), compared with other racial and ethnic groups. In fact, lung cancer rates among African Americans have increased significantly compared with those of White Americans over the past 40 years (Centers for Disease Control and Prevention, 2003; Figure 2). The jump in 1990 lung cancer mortality rates among African American males reflects a 20- to 25-year latency period, which corresponds to the increased use of menthol cigarettes by this population.

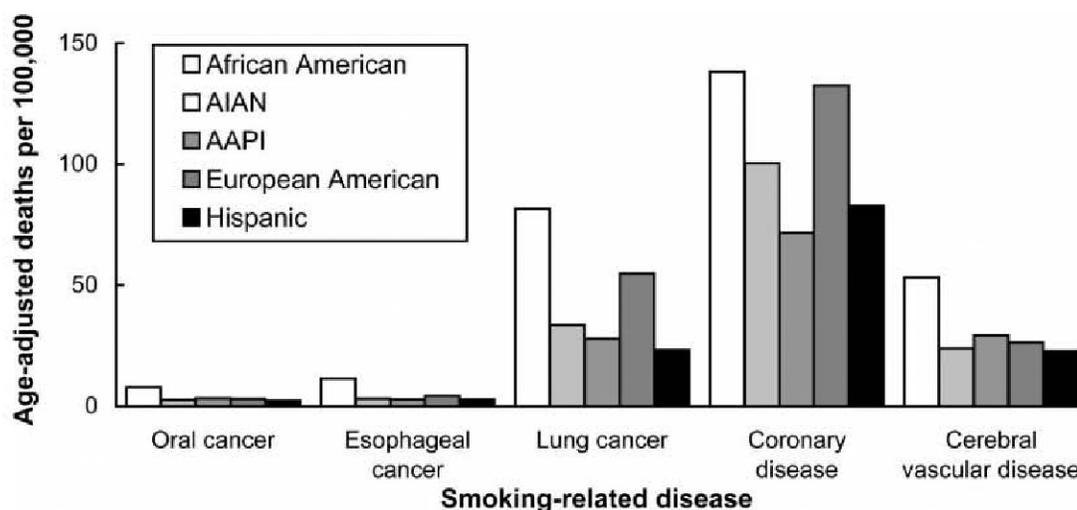


Figure 1. Age-adjusted death rates for males by race and ethnicity, 1992–1994. AIAN—American Indian/Alaska Native; AAPI—Asian American/Pacific Islander. From USDHHS (1998, pp.140–141).

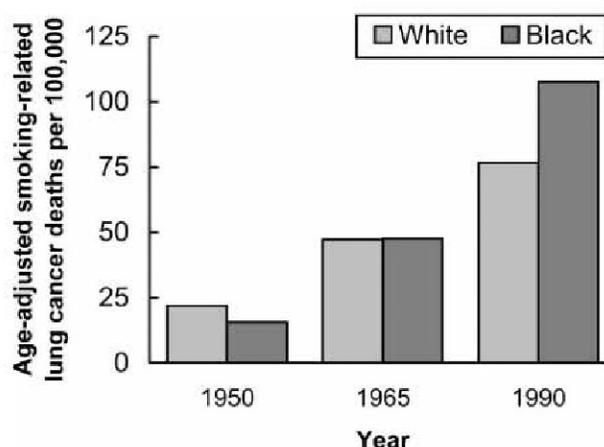


Figure 2. Age-adjusted smoking-related lung cancer deaths rates in the United States among African and White American males. From CDC (2003).

One hypothesis generated from these facts and guiding some research over the past decade is that even though African Americans consume fewer cigarettes on a daily basis, their use of mentholated cigarettes, particularly among males, may be an important causal factor in this population's elevated lung cancer mortality. Although this hypothesis has produced contradictory epidemiological findings (Carpenter, Jarvik, Morgenstern, McCarthy, & London, 1999; Sidney, Tekawa, Friedman, Sadler, & Tashkin, 1995), a historical account of how and when African Americans became predominately menthol smokers is an important and necessary step in gaining a full and accurate picture of menthol use in the United States.

Method

This article traces the historical development of key social factors affecting the African American

population in the 1960s that led to an overwhelming adoption of menthol cigarettes by African American smokers. A brief historical overview of the origins and growth of menthol cigarette use from 1925 to the present is presented, followed by an examination of the tobacco industry's successful marketing of mentholated cigarettes to the African American community in the 1960s.

The major sources for this article are tobacco industry documents. In 1998, literally millions of pages of heretofore undisclosed industry documents were made available after the Master Settlement Agreement between state attorneys general and the major tobacco companies (Hurt & Robertson, 1998). One of the main documents used in this article is "The Growth of Menthols, 1933 to 1977," written by MSA, Inc., for Brown & Williamson (MSA, Inc., 1978). Although a number of industry documents are cited in this article, the Black market analyses by R. J. Reynolds helped provide insight into the industry's goals, understanding, and perspectives of the African American community ("Consumer wants study," 1979; Haller, 1966; Thale, 1977).

The 1998 report of the surgeon general *Tobacco Use Among U.S. Racial/Ethnic Minority Groups*, was relied on to scientifically ground this article (USDHHS, 1998). Additionally, the articles by Garten and Falkner on their Web site, *Menthol and Tobacco Smoking*, were used extensively in the "Origins and Growth of Menthol Cigarettes" section of this article (Garten & Falkner, 2001a, 2001b). Finally, the presenters and participants at The First Conference on Menthol Cigarettes: Setting the Research Agenda, held in Atlanta Georgia, March 2002, were instrumental in identifying and elaborating the thesis of this manuscript.

Origins and growth of mentholated cigarettes

Lloyd F. (Spud) Hughes was the originator of the mentholated cigarette (Reid, 1993). The folklore surrounding this invention is that, in 1925, Spud Hughes placed his tobacco in a baking powder tin along with his daily treatment of menthol crystals, which he took regularly for a persistent cold, and closed it for the night. In the morning, he rolled a cigarette and realized that he was smoking a mentholated cigarette, something that neither he, nor anyone else, had ever smoked before. Hughes applied for and a year later received a patent for spraying tobacco with menthol (Reid, 1993). He went on to produce and market Spud cigarettes, the first mentholated cigarette brand (Reid, 1993). Through many twists and turns, ultimately the Spud Cigarette Corporation was acquired by the Axton-Fisher Company in 1927; they were taken over by the Philip Morris Corporation in 1944 (Garten & Falkner, 2001a; Reid). However, by 1963, Philip Morris stopped

production of Spud cigarettes in the United States due to their unprofitability resulting from competition with other mentholated cigarette brands (Garten & Falkner, 2001a; Reid).

In the late 1920s and early 1930s, numerous mentholated cigarette brands and specially treated cigarettes became available. In 1927, along with Lloyd Hughes' Spuds, the Lambert Pharmaceutical Company introduced Listerine Cigarettes, and the Hed Klee Tobacco Company jumped on the flavored cigarette bandwagon and launched "The Original Eucalyptus Smoke" (Garten & Falkner, 2001a). Corresponding to these developments, other tobacco companies began to manufacture their own versions of mentholated cigarettes in the early 1930s: Snowball was marketed by Paul A. Wener, Cigarette-Time was sold by Philip Morris, Skis were produced by Fleming-Hall Tobacco, and Menthorettes were produced by Rosedor Cigarette Company (Garten & Falkner, 2001a). However, the introduction of Penguin by Brown & Williamson in 1931, later replaced by Kool mentholated cigarettes in 1933, set the standard for the early menthol market. During this time period, mentholated cigarettes represented only 2% of the tobacco market, and Kool was the market leader until the introduction of filter-tipped Salem mentholated cigarettes in 1956 (MSA, Inc., 1978).

From 1933 to 1956, menthol cigarettes generally and Kool particularly were seen as "throat" cigarettes to be used when a cough or a cold prevented the use of one's regular brand (MSA, Inc., 1978). The Kool advertising of the day emphasized the supposed healthful nature of Kool with slogans like "Keep a clear head with Kools. All the signs seem to point to a tough winter: cold, ice, chills and sniffles. Why not play it safe and smoke Kools?" and "Has a stuffed-up head killed your taste for smoking? Light a Kool. The mild menthol gives a cooling, soothing sensation ...leaves your nose and throat feeling clean and clear." Kool was not only for the winter months but also for summer: "There is just enough menthol in Kools to soothe your throat and refresh your mouth no matter how hot the weather gets—no matter how hard and how long you smoke" (Brown & Williamson, 1942).

Even after the FTC filed suit and won a judgment against Brown & Williamson for false advertising (Brown & Williamson, 1942), the industry generally and menthol producers specifically continued to promote the imaginary health benefits of menthol cigarettes. In this regard, the Kool mascot, Willie the Penguin, in 1947 continued to tout the ice-cool nature of Kool (MSA, Inc., 1978).

Salem's introduction in 1956 pushed the menthol market share from 2% to 5% within the first year of its introduction (MSA, Inc., 1978; Table 2). The success of the new filter-tipped offering from R. J. Reynolds signaled the way for other producers to join the field:

Table 2. Menthol U.S. market share, 1920–2000

Year	Market share (%)
1920–1955	2
1955–1957	5
1963	16
1978	28
1990–2001	27–29

Sources. Brown & Williamson (1978), Federal Trade Commission (2002).

BelAir, Oasis, Alpine, Montclair, and Benson & Hedges Menthol were just a few of the new brands hitting the market in the late 1950s and early 1960s (Garten & Falkner, 2001a; MSA, Inc., 1978). The appearance of Newport in 1957 seemed to be one among many new menthol cigarettes introduced in the late 1950s. Newport, today's menthol market leader, was initially eclipsed by both Salem and Kool. This was especially true in the late 1950s and early to mid-1960s when the preeminence of Salem helped to push the entire menthol share from 5% in 1957 to 16% in 1963 (Garten & Falkner, 2001b; MSA, Inc., 1978). Salem sought to position its menthol offering not as a specialty item but rather as a cigarette that should be used year-round, using messages like "perpetual springtime" and "a wonderful world of freshness" (MSA, Inc., 1978).

Yet the almost doubling of menthol's market share, from 16% in 1963 to 28% in 1978, was due in many respects to the rise of Kool menthol cigarettes and this product's embrace by the African American community (MSA, Inc., 1978). Kool's popularity grew to the point during the 1960s and 1970s that it became the menthol market leader in 1972 (MSA, Inc., 1978). Kool didn't maintain its market dominance for long. By 1981, Salem had reemerged as the leader in the menthol field (MSA, Inc., 1978). Kool's decline was fueled in part by the proliferation of menthol extension and the rise of low-tar cigarettes (MSA, Inc., 1978).

Two urban myths also may have played a role in the fall-off of the Kool brand (Mikkleson & Mikkleson, 2001). Rumors spread in the mid and late-1970s that Kool cigarettes contained fiberglass. Another legend suggested that the K in Kool was emblematic of the Ku Klux Klan and that Kool was a plot by racists to addict and kill Blacks.

Today, all other menthol brands have receded in the wake of the Newport explosion. Since 1993, Newport has been the market leader for sales of mentholated cigarettes (Garten & Falkner, 2001b; Sutton, 2001). By 1999, Newport accounted for more than 75% of all of Lorillard's sales, and it claimed a 7.5% share of the approximately \$50 billion cigarette market, up from 6.9% in 1998 (Campbell, 2000). The consumption of mentholated cigarettes has remained relatively constant at about 26% since the mid-1970s (FTC, 2002;

see Table 2). Although the leading brand has shifted from Kool to Salem and now to Newport, the defining feature of these products remains their overwhelming use by the African American community, a unique feature established in the 1960s (Campbell; MSA, Inc., 1978).

The African Americanization of menthol cigarettes

Numerous social factors, when taken together, conspired to coerce the adoption of menthol cigarettes by a majority of African Americans in the 1960s and 1970s. Key among these factors was the targeted marketing by the tobacco industry to the segregated, yet growing, African American urban market. Identification by young urban Blacks with menthols as "fresh and modern" helped establish these brands as an important part of the African American experience. Additionally, African Americans became attached to the notion that menthols were safer to smoke than regular, nonmentholated cigarettes. At the same time that the industry vigorously pushed menthol products on Blacks, they also were giving money to Black community organizations, including civil rights groups. In essence, the tobacco industry successfully created an attachment to menthols that still resonates in the Black community today. Initially targeted to a high-end clientele when they were first broadly advertised in the 1930s, and though consumed primarily by women, menthol brands became the cigarette of choice for African American smokers by the 1970s (Garten & Falkner, 2001a; USDHHS, 1998).

The emergence of the African American urban market

Not until the 1940s did the tobacco industry target African Americans as a distinct consumer market (USDHHS, 1998). The African American market was less than \$1 billion following World War II. However, this market blossomed to \$30 billion by the mid-1960s (Gibson, 1969). Following World War II and continuing into the 1950s and 1960s, a majority of African Americans migrated from rural parts of the United States and settled in urban settings, even within the South (Gibson, 1969). As Table 3 shows, the 1960s was a time when Blacks began to swell America's inner cities. Gibson's 1960s population estimates are included to give the reader an accurate picture of what tobacco industry executives were projecting at the time concerning the Black urban market.

The tobacco industry clearly saw the African American market as a new and growing phenomenon that was increasingly urban and fertile for exploitation (Gibson, 1969). Given the segregation of Black

Table 3. Proportion of African Americans in populations of U.S. cities, 1960–1970

City	Proportion (%)		
	1960	1965 ^a	1970 ^b
Detroit	29	39	47
New Orleans	37	41	45
Baltimore	35	41	47
St. Louis	29	37	46
Newark	34	40	46
Oakland	23	31	39
Gary	39	44	50

Note. ^aestimated, ^bprojected.
Source: Gibson (1969).

communities, coupled with distinct cultural wants and needs of this population, specialty products (e.g., hair oils, make up) were developed by both Black and White manufacturers to service African American needs. Indeed, the African American migration and urban concentration was the ideal setting to promote new products, specially targeted to the new consumer, and the tobacco industry was one of the first manufactures to grasp this fact (Pollay, Lee, & Carter-Whitney, 1992). By the 1950s, tobacco companies were being described as “leaders among advertisers gunning for a bigger share of the Negro market” (Dallaire, 1955).

In the midst of this new urban market upsurge, menthol cigarettes took their place alongside malt liquors, fortified wines, and cheap whiskies as another product marketed predominately to poor and “colored” communities (Alaniz and Wilkes, 1998; Hacker, 1987). Increasingly, these products were advertised, marketed, and sold primarily in these communities (and they still are). In this instance, utilization and promotion of segregated marketing and practices meant different smokes for different folks.

The advent of Kool cigarettes as the menthol market leader through their embrace by the African American community

In 1953, Philip Morris commissioned the Roper organization to conduct a general survey of Americans’ smoking habits. The only menthol cigarette on the survey and the only one of any importance in the early 1950s was Kool. The Roper survey showed that only 2% of White Americans preferred the Kool brand. By contrast, the survey reported that 5% of African Americans preferred Kools (Roper, 1953). This small difference in preference was successfully parlayed by Brown & Williamson executives, and later by the tobacco industry as a whole, into the 70% vs. 30% difference that we see today between Black and White menthol smokers, respectively (USDHHS, 1998). Through targeted marketing and some chance developments,

Kool became the menthol industry leader by the early 1970s (MSA, Inc., 1978). One fortuitous event was the rise and demise of the Tar Derby.

The Tar Derby, a time of more stringent FTC regulations on tar levels, was brought about in 1957 by articles in *Reader’s Digest* that depicted the evils of tar in cigarettes, leading many smokers to seek alternatives from high-tar, nonfiltered cigarettes, which subsequently drove many manufacturers to reduce the tar content of some of their brands (MSA, Inc., 1978). In the late 1950s, Salem provided smokers with the taste and the strength they sought. However, once the FTC relaxed tar reporting standards in 1961, smokers began to look for more flavorful (read: stronger) cigarettes. Kool was one of the main beneficiaries of the ending of the Tar Derby in 1961; people could put down their nonfiltered cigarettes and pick up a filter-tipped Kool to get more taste, flavor, and strength (MSA, Inc., 1978). Many people assumed that menthols had less tar; however, nothing could be further from the truth. Not only were Kools’ tar and nicotine content comparable with the leading nonmenthol brands, but by the mid-1960s, Brown & Williamson’s menthol offering contained more tar and nicotine than either of its main menthol rivals, Salem or Newport (Johnston, 1966; Figures 3 and 4).

With the release of the 1964 report of the surgeon general, which unequivocally linked smoking (in males) with lung cancer, many smokers were led to seek alternative cigarettes, especially those that appeared healthier. With smokers making changes in the early to mid-1960s, Brown & Williamson executives launched a bold new strategy aimed to position Kool, through the medium of television, with persons wanting to switch and with those who were working

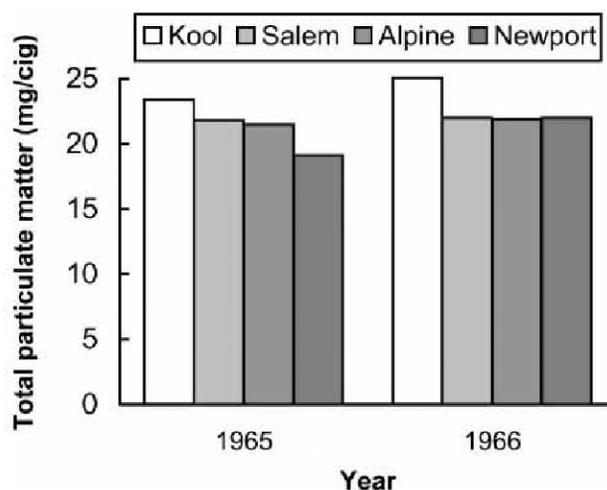


Figure 3. Machine-smoked (Federal Trade Commission method) tar (total particulate matter) levels of popular menthol cigarettes, 1965 and 1966. From Johnston (1966).

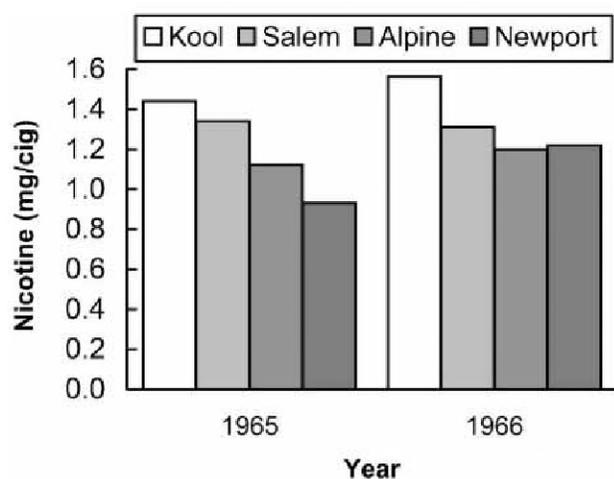


Figure 4. Machine-smoked (Federal Trade Commission method) nicotine levels of popular menthol cigarettes, 1965 and 1966. From Johnston (1966).

and lower middle class (Johnston, 1966). In discussing the demographic targets of Brown & Williamson, one Philip Morris interoffice memo pointed out, “These people read less and spend more time watching television than other groups. B&W spends a larger share (91%) of its advertising budget on television than any other tobacco company (PM is second, with about 85%; Reynolds is third, with about 65%)” (Johnston). Another Philip Morris interoffice memo concluded that the efficient use of advertising had an impact on the Black market: “Studies show that Kool’s shares among Negroes went from 6.8% in 1965 to 9.8% in 1967. This is equivalent to 0.3% industry share, or 1/3 of Kools’ total growth in the 2 years” (Udow, 1968).

The tobacco industry advertising assault on the African American community was not restricted to television. Elston Howard, an African American player for the New York Yankees baseball during the 1950s and 1960s, was a spokesperson for Kool menthol cigarettes. His picture adorned the pages of ethnic magazines like *Ebony*, stating, “No other menthol cigarette gives you real menthol magic. Come all the way up to the menthol magic of Kool” (Print, 1968). Between 1963 and 1965, cigarette advertising more than tripled in the pages of *Ebony*, one of the main African American magazines (Pollay et al., 1992). By 1962, *Ebony* carried twice as many cigarette ads (57) as did *Life* (28) (Pollay et al., 1992). Moreover, tobacco industry executives knew that African Americans were more likely than Whites to trust advertising and promotional campaigns directed at them (USDHHS, 1998). Surveys from 1961, 1968, and 1979 substantiated the fact that African Americans were consistently more trusting of television and newspapers advertisements, compared with Whites (Bauer & Greysen, 1968; Bullock, 1961; Durand, Teel, & Bearden, 1979).

Brown & Williamson’s Black community strategy paid major dividends. The percentage of African Americans smoking Kool menthols skyrocketed from 14% in 1968 to 38% by 1976 (MSA, Inc., 1978; Figure 5). Additionally, “Kools’ share among 16–25 year old smokers (regardless of race) advanced from 3.0% in 1966 to about 4.5% in 1968 to about 16.0% in 1974”; however, among African American male smokers under 35, nearly 60% used Kool menthols by 1976 (MSA, Inc., 1978). Menthol advertising increased the consumption of menthol cigarettes among not only African Americans but also Whites. In 1971, 25.5% of White smokers were menthol users; by 1975, this group’s consumption of these products had increased to nearly 30% (Thale, 1977). In contrast, African American menthol smoking rates were already at 38% in 1971 and rose to over 44% by 1975 (Thale, 1977).

Brown & Williamson’s advertising strategy was so successful that Kool “sales went up faster than advertising so that the advertising cost per thousand cigarettes sold dropped from a high of 57¢ in 1961 to 42¢ [in 1967]” (Udow, 1968).

African Americans, menthol, and health

Another contributing factor in the ascension of menthol cigarettes among African Americans was the continued belief that these cigarettes had a potentially healthful effect. The advertising campaigns of Kool in the 1950s still emphasized the supposed health benefits of this menthol product, which had been the mainstay of the industry in the 1930s and 1940s: “Throat raw? Got a cold? Switch from Hots to Kools.” Although this and other menthol messages were not directed primarily at African Americans, this type of advertisement, like the ones from the 1930s and the 1940s, may have been partly responsible for

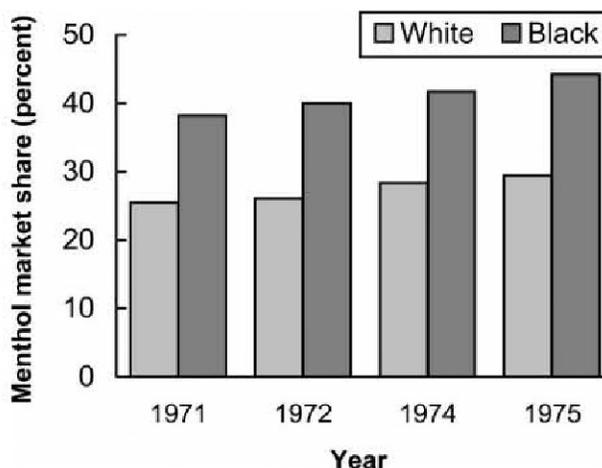


Figure 5. Black vs. White menthol market share. From Thale (1977).

the small but growing differential in menthol use between African Americans and Whites in the 1950s (Roper, 1953). By the 1960s and 1970s, Salem's message focused on "springtime," and Kool's advertising attracted smokers touting "extra coolness," and "come all the way up to the menthol magic of Kool" (MSA Inc., 1978). Although neither of these messages explicitly proclaimed the "healthful nature" of menthol, the horse had been let out of the barn years ago.

Surveys conducted by the tobacco industry during the 1960s attest to the fact that African Americans thought menthols were safer than regular cigarettes. In "A Pilot Look at the Attitudes of Negro Smokers Toward Mentholated Cigarettes," Philip Morris reported that African Americans felt that menthols were the best to smoke with a cold, easier on the throat, and better for one's health (Tibor Koeves Associates, 1968). The report went on to state, "There are indications that menthols tend to be considered as generally 'better for one's health.' That impression refers not only to the health of the respiratory tract, but the whole organism. The majority view is that menthols are 'less strong' than regular cigarettes, and that a cigarette which is 'less strong' is better for a person's health" (Tibor Koeves Associates, 1968). These testimonials reflect the penetration of the healthful advertising messages, which all menthol cigarette manufacturers, especially Kool, pushed from their inception.

This same report noted that women smokers were more likely to prefer and use menthol products, compared with men, and that, in this sample of African Americans, some men mentioned having learned to smoke menthol from their wives. The identification with women "does not 'devalue' them or make it less desirable to smoke by males (many sociologists suggest that much of the Negro society is a matriarchal one)" (Tibor Koeves Associates, 1968). Menthol cigarette producers were aware that women preferred menthols, especially Salem, since it was lighter than Kool (Kluger, 1996). However, during the 1960s, when Kool mentholated cigarette use surged among African Americans, men were the majority users of this product (MSA, Inc., 1978). The tobacco industry suggests that the reason that African American males bucked the feminization of the menthol trend was that Kools were stronger (read: more tar and nicotine, see Figure 3) than the other menthol brands of the time (Johnson, 1966; Kluger, 1996; MSA, Inc., 1978).

Cool (Kool) resonates in the Black community with the Civil Rights movement

One of the most salient aspects of the adoption of Kool cigarettes by the African American community was its resonance with large sectors of youth, many of

whom were part of the growing Civil Rights movement. In some respects, Kool became identified with rebellion, youth, and modern forward thinking and was in many ways in tune with the emerging Black Power movement. It was not so much the direct pandering of the tobacco industry to the Civil Rights movement; rather it was the "new" cigarette of the 1960s that many young Blacks latched on to. Surveys from the 1960s and 1970s showed that Kool cigarette users were identified by their African American peers with attributes of bravery, toughness, ambition, and daring (Thale, 1977). These same qualities were the ethos of the mass African American liberation movement that was sweeping away and dismantling the main props of segregation and demanding fair housing, equal job and education opportunities, and an end to police brutality.

Cigarette manufacturers, determined not to miss the boat, began to use African American male models with darker complexions and more pronounced African American features (the same was not true for African American women) to advertise their cigarettes, including menthols (Pollay et al., 1992). Afro hairstyles were used extensively by Lorillard to promote their menthol brand, Newport, and many advertising messages of the late 1960s and early 1970s drew their content from African American popular culture of the time. James Brown's recording, "Papas got a brand new bag," was morphed by Lorillard into, "Newport is a whole new bag of menthol smoking" (MSA, Inc., 1978). These messages, coupled with culturally tailored images, resonated with large sections of African American youth.

In 1978 the authors of "The Growth of Menthols, 1933–1977" posed the question "What started the shift to Kool in 1963–1965?" Along with the growth of "Black consciousness," the authors noted that "[the] use of marijuana by young people was growing particularly among children of the post war baby boom. The oldest of these were just beginning to enter college in 1963–1965" (MSA, Inc., 1978). The authors speculated that "Kools also became the most popular cigarette among blacks, perhaps partially for the same reason, but perhaps also because the images of the word 'cool' in the black vocabulary" (MSA, Inc., 1978). The tobacco industry was quite aware of the relationship of menthol cigarette smoking and marijuana use among African Americans. Al Udow, from the Philip Morris Consumer Research Department, pointed out, "Although more people talk about 'taste,' it is likely that greater numbers smoke for the narcotic value that comes from the nicotine" (Udow, 1972). Udow went on to state that "information we have from focus group sessions and other sources suggest that Kool is considered to be good for 'after marijuana' to maintain the 'high,' or for mixing with marijuana, or 'instead'" (Udow, 1972). These quotes demonstrate that representatives of the tobacco

industry were well aware of the narcotic effect of their products, especially when used by Kool smokers, a majority of whom were young and Black.

As noted above, the word *cool* itself played no small part in the positioning of Kool cigarettes within the Black community. The advent of the Cool Jazz movement led by Miles Davis and John Coltrane in the 1950s and 1960s already had established cool as the hep (1950s) and hip (1960s) thing to be. Being “cool” in African American lexicon was and is no small matter; using Kool menthol cigarettes was thought by some to reinforce a slick and sophisticated image. The Cool Jazz movement, similar to Kool cigarettes, was seen as modern, current, fresh, avant-garde, and distinctly African American. Even though the tobacco industry did not take full advantage of this understanding at the time, they did not miss the connection. By the 1980s, Brown & Williamson launched the “Kool Jazz Festival,” followed by Parliament’s World Beat concert series, Benson & Hedges’s blues and jazz concerts, and Philip Morris’s Superband Series, all bringing leading Black musical acts to African Americans, while all the time promoting mainly menthol cigarettes (USDHHS, 1998).

Tobacco industry philanthropy

At the same time the tobacco industry was openly and adeptly exploiting the segregated market to promote menthol brands, they also were dispersing money directly to Black community organizations and some civil rights organizations (Gardiner, 2001; Robinson, Pertschuk, & Sutton, 1992; USDHHS, 1998; Yerger & Malone, 2002). Starting with Richard Joshua Reynolds’s support of Winston Salem University in North Carolina in 1891, the tobacco industry has over a 100-year track record of providing financial support for historically and predominantly African American colleges and universities (USDHHS, 1998). Philip Morris, though not historically first, is now by far the largest donor among tobacco companies for all groups and causes, including contributions to the African American community. Starting in 1956, the Philip Morris “family of companies” has been making grants to local, national, and international nonprofit organizations (Philip Morris, 2001). Today, the tobacco industry is estimated to spend conservatively about US\$25 million a year in the Black community (Gardiner, 2001).

In the 1960s and 1970s, the tobacco industry made sure that civil rights organizations, especially the National Association for the Advancement of Colored Peoples (NAACP) and the National Urban League, received generous contributions. And as recent scholarship by Yerger and Malone pointed out, the tobacco industry developed ties with virtually every African American leadership organization for three

specific business reasons: “to increase African American tobacco use, to use African Americans as a frontline force to defend industry policy positions, and to defuse tobacco control efforts” (Yerger & Malone, 2002).

The tobacco industry’s philanthropy in the African American community is cited not to suggest that civil rights organizations were promoting menthol cigarettes to their clientele. On the contrary, the tobacco industry took up supporting education and cultural events in the African American community back in the 1950s and 1960s when most corporations would not touch Black-only issues. Because the industry was based in the South, and the majority of Black people lived and worked in the South, even as many migrated to urban centers, it was to the advantage of the tobacco industry to develop a strategic relationship with the African American community. Moreover, the tobacco industry was one of the first major corporate employers to hire and promote African Americans, not just in the processing of tobacco but also as executives (Gardiner, 2001; Robinson & Sutton, 1994).

Some tobacco industry executives may have felt it was fine to challenge segregation and other forms of racial discrimination; however, these same executives clearly did not want the African American community to attack cigarette manufacturers. The campaign to hook the African American community on menthol cigarettes is one unfortunate indication of the success of the tobacco industry’s marketing acumen skillfully coupled with strategic and substantial largesse.

Discussion

This historical overview shows how social factors during the 1960s and 1970s were manipulated by the tobacco industry to foster the demand for mentholated cigarettes among African Americans. Exploiting the small differences in use in the 1950s, Brown & Williamson launched a “bold” new strategy, centered on television advertising to position their menthol brand, Kool, and seized control of the new, expanding, segregated urban Black cigarette market. The health beliefs associated with menthol cigarettes and the identification of Kool by black youth, many of them participants in the Civil Rights movement, allowed this product to establish its preponderance within the African American community. Although the total number of White Americans who used menthols during the 1960s and 1970s was greater than that of African Americans, the proportion of menthol use among African Americans was very large, reaching over 60% among 16–24 year olds by 1976 (MSA, Inc., 1978). Given the history recounted and the disproportionate use of menthols by Blacks, a strong

case has been made for the African Americanization of menthol cigarette use in the United States by the tobacco industry.

In looking back at the rise of menthol cigarettes among African American smokers, the tobacco industry clearly brought an overwhelming arsenal to bear. One might even argue that menthols were forced on the Black community for the sake of market share. The bottom line is that African Americans prefer menthol cigarettes because the tobacco industry pushed these products on and created the demand among this population. Did the industry do this on purpose? The answer to this question is an unequivocal yes.

The African American community: still the target

The meteoric rise of Kool in the 1960s and 1970s firmly established menthols as the cigarette of choice within the African American community. However, menthol brands continue to be introduced and aimed at the African American community, fortunately not all the time successfully. The inglorious introduction and demise of Uptown cigarettes in 1990 and "X" in 1995 are cases in point.

The pilot marketing of Uptown cigarettes, the new, slick, and Black offering from R. J. Reynolds, crashed and burned in the city of Philadelphia when a coalition of tobacco control activists accused manufacturers of targeting the Black community with a deadly product (Robinson, & Sutton, 1994; Sutton, 2001). Similarly, in 1995, an independent firm based in Boston attempted to market "X" brand cigarettes, capitalizing on the then-popular motion picture and reemerging social recognition of Malcolm X in the Black community. "X" brand was packaged in the African American liberation colors of red, black, and green, but this initiative also faced stiff community resistance and was ultimately abandoned (Tobacco.org, 2001).

In a surprisingly candid assessment of the Uptown failure, an R. J. Reynolds analyst asserted, "Had Blacks across various strata been asked to respond to this issue (a cigarette targeted specifically at Blacks), undoubtedly, researchers would have discovered or been reminded of the fact that an underlying distrust exists among blacks for institutions, governments, industries and companies controlled by whites. A white-owned tobacco company, targeting a cigarette to Blacks, a product widely accepted as harmful to one's health, would undoubtedly surface that inherent distrust inevitably described as 'institutional genocide.'" (The Wellington Group, 1990).

These failed attempts by the industry were just two of the latest in a long history of pushing menthol tobacco products on the African American community. Given the industry's historical and ongoing targeting of menthols to African Americans, coupled

with Blacks' disproportionate cancer mortality rates, continued research and scholarship in this area is a must.

Some outstanding questions

No matter how convincing the evidence presented in this article has been concerning the African Americanization of menthols, one among many of the central questions in the menthol drama remains unanswered: Did the tobacco industry consciously push menthol products on the African American population because they knew these products were more addicting and deadly? The tobacco industry will tell you unequivocally that menthol has no carcinogenic properties (Hopp, 1993). However, scientists knew early on that menthol possesses unique attributes that increase the insult to the airways and mucus. In 1944, Givaudan-Selawanna, Inc., working at the behest of Brown & Williamson, pointed out, "When the naturally occurring l-menthol is applied to the nasal mucous membrane for 9 months in a dilution of 5%, it causes definite destructive changes in all layers of the nasal membrane. Even with dilutions as low as 1%, some degenerative changes may occur" (Givaudan-Selawanna, Inc., 1944).

Moreover, a literature review conducted in 1967 by Richard Thomson of R. J. Reynolds' Scientific Information Division noted, "Haggard and Greenberg (1941) have reported on the systematic effects of mentholated cigarettes but no carcinogenic studies were conducted. It should be pointed out, however, that the year was 1941 and that experimental protocols have unequivocally improved since that time" (Thomson, 1967). The industry almost comes out and says that if the studies had used up-to-date scientific protocols, then an association between menthol in cigarettes and cancer might have been detected. Additionally, the National Institutes of Health found no carcinogenic effects of menthol. However, the latter study didn't look at the burning of menthol in cigarettes, and the industry studies mentioned above are at best self-serving, given the poor track record of the tobacco industry on admitting and disclosing the dangers associated with their products. The study of menthol's contribution to the myriad toxins and carcinogens inhaled from a burning cigarette remains to be done. Once we know the actual biochemical properties of burned and inhaled menthol, we can begin to unravel the relationship of African Americans' disproportionate menthol use with African Americans' disproportionate cancer rates.

Another question that begs for more research is the affinity of African Americans for menthol. Even with the bombardment of menthol advertising on the African American community, the question still remains as to why this message resonated so broadly

within this community. Rates of menthol cigarette use among Whites also increased during the 1960s and 1970s but not in the same magnitude as the rates of menthol use among African Americans (Thale, 1977). An examination of African American folk medicine remedies dating from slavery and the early days of Jim Crow could shed some light on prior menthol use in this community. This type of research might illuminate the use of menthol and mint leaves in herbal preparations used by Blacks who have been historically excluded from mainstream healthcare.

Limitations

This article did not trace the entire history of the development of menthol cigarettes, with the attendant numerous brand extensions and the ongoing competition between tobacco companies for the lucrative menthol franchise. Even though some mention was made of developments in the 1990s, this article focused on the events in the history of menthol cigarettes before 1980 and, therefore, did not trace the continued rise of menthols among African Americans after this period. The question of why menthol use stabilized at around 25% in the mid-1970s is not answered. It certainly was not the lack of promotion by the tobacco industry of these products as “lights” and 100s. Another limitation is the cursory mention of the role of women in the rise of menthols. It seems appropriate that another article focusing specifically on this issue is in order. Point-of-sale advertising, billboards, and vending machines were not reviewed here, and these mechanisms probably played a role in pushing menthol cigarettes on the Black community.

Finally, it would be myopic to try subsuming all of the health disparities faced by African Americans into the caldron of menthol. Many, if not most, health differentials faced by this population emanate from racial discrimination in health care, housing, and employment; “the race- and class-biased performance of the health care system is widely accepted. Indeed, it has been part of the status quo for over 380 years...” (Byrd & Clayton, 2000). However, even factoring in all the discrimination faced by African Americans, it will remain important to tease out the role of menthol cigarettes, if any, in this population’s disproportionately high tobacco-related disease, mortality, and cancer rates.

Conclusion

From its meager origins with Lloyd Spud Hughes, menthol cigarette use became synonymous with African Americans within 50 years. However, the sociology of menthol use is not a static thing; rather, it is a growing and changing phenomenon. Today, along with African Americans, many young Hispanics,

Asians, and Whites have, in part, adopted the use of mentholated cigarettes (Garten & Falkner, 2001b; Sutton, 2001).

Still, menthol targeting has changed little since the 1960s: African Americans continue to be bombarded with menthol slogans and advertisements. Now, along with mentholated cigarettes, mentholated cigar brands like Swisher Sweets are being pushed by the tobacco industry on the African American community (National Association of African Americans for Positive Imagery, 2001). Even though the tobacco industry has added new demographic groups and products to its menthol “hit” parade, the industry remains acutely aware that African Americans are its core menthol constituency.

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JUUL nor E-Cigarettes will Save the Black Community, rather they are and will exasperate existing Health Disparities

We are members of the African American Tobacco Control Leadership Council (AATCLC) - Carol McGruder (Co-Chair), Dr. Phillip Gardiner (Co-Chair), and Dr. Valerie Yerger (Co-Founder). The AATCLC was formed in 2008 and is composed of a cadre of dedicated community activists, academics, public health advocates, and researchers. Though based in California, we have partnered with community stakeholders, elected officials, and public health agencies across the country and around the world. Our mission is to save our 45,000 Black family members living with us today in this country who will die next year from tobacco-caused diseases.¹ Our advocacy and educational activities focus on stopping the decades-long predatory targeting of the Black community being conducted by the nicotine addicting tobacco industry. We work at the intersection of public health policy and social justice advocacy.

Our work has shaped the national discussion and direction of tobacco control policy, practices, and priorities, especially as they affect the lives of Black Americans, African immigrant populations and ultimately all smokers. The AATCLC has been at the forefront in elevating the regulation of mentholated and other flavored tobacco products on national and local tobacco control agendas. Since 2009 we have provided public testimonies and submitted FDA-commissioned research papers for the initial FDA Tobacco Products Scientific Advisory Committee (TPSAC) hearings, imploring the agency to exercise its authority and remove mentholated tobacco products from the marketplace, just as it did for other flavored cigarettes. Furthermore, the AATCLC was instrumental in creating the momentum that led to the first local policy to restrict the sale of menthol cigarettes and other flavored tobacco products, including flavored e-cigarette nicotine juices and JUUL pods. Since then we have been involved in just about every local menthol and/or flavor ban across our nation, including the first jurisdiction-wide flavor ban in San Francisco, CA.

Ever since Altria has taken a 35% stake in JUUL,² we have witnessed JUUL adopt the tobacco industry behavior we have been following and documenting for almost twenty years.³ JUUL's marketing has pivoted from a youth/millennial focus to full-page ads in the Black press, where Black smokers are now being targeted by JUUL. E-cigarettes are unregulated and non-FDA approved products; yet, JUUL is being positioned in the Black press as a suggested cessation product. Furthermore, African Americans with ties to the tobacco industry are also writing Op-Ed pieces that appear in the same media outlets. With Altria having a well-established past of ingratiating itself within the Black community, JUUL has joined traditional big tobacco by utilizing the same tactics to block public health policies that effectively reach marginalized communities. Moreover, JUUL is obfuscating legitimate concerns/grievances of the Black community and coopting well known Black public figures. In fact, JUUL can easily be said to be a "front group" for Altria.

We are very much aware that the addiction-fueled "JUUL Explosion" has been the major driver of the massive uptake of e-cigarettes among youth and that the aerosol inhaled by e-cigarette users is not simply water vapor as was claimed by vaping proponents.

Here are the facts:

¹ U.S. Department of Health and Human Services (HHS). Tobacco use among U.S. racial/ethnic minority groups—African Americans, American Indians and Alaska Natives, Asian Americans and Pacific Islanders, and Hispanics: A report of the Surgeon General. Atlanta, GA: HHS, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 1998.

² LaVito, A (2018, December 20). Tobacco giant Altria takes 35% stake in JUUL, valuing e-cigarette company at \$38 billion. Retrieved from <https://www.cnbc.com/2018/12/20/altria-takes-stake-in-juul-a-pivotal-moment-for-the-e-cigarette-maker.html>.

³ Yerger VB & Malone RE (2002). African American leadership groups: Smoking with the enemy. *Tobacco Control*, 11(4), 336-345.

1. E-cigarettes are tobacco products that deliver nicotine, an addictive substance that especially in youth can compromise the brains executive functioning.⁴
2. The propylene glycol and vegetable glycerin that constitute a large portion of the e-juice and the resulting vapor **are not FDA approved for inhalation.**
3. Previous generation tobacco products were engineered to be more addictive, and there are signs that the nicotine content of e-cigarettes is more potent than the 200 puffs the industry has claimed.
4. The 15,000+ flavors available on the market may be Generally Recognized as Safe (GRAS) for **ingestion**, but they are not GRAS for **inhalation.**
5. There are as many, if not more, metals in the vapor of e-cigarettes than found in cigarette smoke.⁵
6. Many of the same toxins and carcinogens found in regular cigarettes, like benzene, formaldehyde, and tobacco specific nitrosamines, can be found in e-cigarette vapor.⁶ And yes, these toxins and carcinogens are at lower levels than in a regular cigarette; while these lower levels may be safer, this does not mean that e-cigarettes are **safe!**
7. The vapor from e-cigarettes activates platelet formation just like regular cigarettes; such platelet activity leads to arterial blockages.⁷
8. E-cigarette aerosol consists of ultrafine particles at levels comparable to or higher than cigarettes. These particles can cause cardiovascular and pulmonary disease. In addition, the particle size in e-cigarettes is often smaller, and thus more dangerous, than those generated by cigarettes.⁸
9. Kids who start with e-cigarettes are more likely to become regular cigarette users and unfortunately, in many cases, dual users.⁹

One of the results of JUUL's quick popularity was that the use of e-cigarettes rose to epidemic levels among United States youth. Within two years of JUUL's entry into the e-cigarette marketplace, more than 3.6 million middle and high school students were using e-cigarettes.¹⁰ In addition to other fun sounding, fruity, and candy-like flavors that are popularly used, the current use of menthol or mint flavored e-cigarettes among high school e-cigarette users increased from 42.3 percent in 2017 to 51.2 percent in 2018.¹¹ Tobacco companies, most notably Altria and Reynolds American Inc., have historically targeted children in order to addict the next generation of smokers (while also denying that they are doing so).¹² Research of tobacco industry documents disclose tobacco companies relied upon menthol to mask the harshness of their products to make them more appealing to youth. Such masking makes it easier for new users to experiment with tobacco products and ultimately become addicted. JUUL is clearly utilizing flavor additives to accomplish the same goal.

JUUL quickly responded to the public criticism and expressed outrage that erupted from parents, the media, and top national public health officials such as those from the Centers for Disease Control and Prevention and the U.S. Food and Drug Administration. JUUL altered its marketing strategies, deleted most of its social media presence and ended its youth targeted social media influencer recruitment program¹³ by late 2018.^{14,15} By then, the damage had already

⁴ U.S. Department of Health and Human Services (HHS). The health consequences of smoking – 50 years of progress: A report of the Surgeon General. Atlanta, GA: HHS, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2014.

⁵ Williams M, Villarreal A, Bozhilov K, Lin S, & Talbot P (2013). Metal and silicate particles including nanoparticles are present in electronic cigarette cartomizer fluid and aerosol. *PLoS ONE* 8(3).

⁶ Goniewicz ML, Knysak J, Gawron M, Kosmider L, Sobczak A, Kurek J, Prokopowicz A, Jablonska-Czapla M, Rosik-Dulewska C, Havel C, Jacob P III, & Benowitz N (2014). Levels of selected carcinogens and toxicants in vapour from electronic cigarettes. *Tobacco Control*, 23(2):133-9.

⁷ Hom S, Chen L, Wang T, Ghebrehwet B, Yin W, & Rubenstein DA (2016). Platelet activation, adhesion, inflammation, and aggregation potential are altered in the presence of electronic cigarette extracts of variable nicotine concentrations. *Platelets*, 27(7):694-702.

⁸ Fuoco FC, Buonanno G, Stabile L, & Vigo P (2014). Influential parameters on particle concentration and size distribution in the mainstream of e-cigarettes. *Environmental Pollution*, 184:523-9.

⁹ Piper ME, Baker TB, Benowitz NL, & Jorenby DE (2019). Changes in use patterns over one year among smokers and dual users of combustible and electronic cigarettes. *Nicotine Tobacco Research*. pii: ntr065. doi: 10.1093/ntr/ntz065. [Epub ahead of print]

¹⁰ Use of Electronic Cigarettes and Any Tobacco Product Among Middle and High School Students—United States, 2011–2018, *MMWR*, 67(45): 1276–1277. https://www.cdc.gov/mmwr/volumes/67/wr/mm6745a5.htm?s_cid=mm6745a5_w. Current use defined as any use in the past month.

¹¹ Gologowski N & Gologowski N (2019, July 15). JUUL CEO apologizes to parents of teens who use his e-cigarettes. Retrieved from https://www.huffpost.com/entry/juul-ceo-sorrys-to-parents-of-kid-vapers_n_5d2c6a00e4b02a5a5d5e382c.

¹² Klausner K (2011). Menthol cigarettes and smoking initiation: A tobacco industry perspective. *Tobacco Control*, 20:ii12-ii19.

¹³ Nedelman M (2018). #JUUL: How social media hyped nicotine for a new generation. Retrieved from <https://www.enn.com/2018/12/17/health/juul-social-media-influencers/index.html>.

¹⁴ JUUL Labs, JUUL Labs implements new social media policy for Instagram, Facebook and Twitter in ongoing effort to combat underage use and drive awareness of mission to help adult smokers, June 14, 2018, <https://support.juul.com/learn/read/juul-labs-implements-new-social-media-policy>.

¹⁵ JUUL Labs, "JUUL Labs Action Plan," November 13, 2018, <https://newsroom.juul.com/2018/11/13/juul-labs-action-plan/>.



The African American Tobacco Control Leadership Council

been done. JUUL representatives have attempted to convince the public that they are not like the tobacco industry. However, it has been well established that JUUL is in fact following a “sophisticated playbook perfected by the tobacco industry.”¹⁶ Coinciding with the alarming disclosure of just how many U.S. youth are using e-cigarettes, such as JUUL, and the associated flavor explosion is a growing movement to expose the tobacco industry’s well established predatory marketing practices to addict specific populations like African Americans, women and children to menthol cigarettes. Such industry activities include lobbying to defuse tobacco control efforts and co-opting prominent African American leaders as a frontline force to defend industry policy positions.¹⁷ The tobacco industry has a long history of donating to African American organizations to win their political support; likewise, JUUL is also aggressively pursuing individuals with strong influential ties to the African American community. For example, one such individual is Ben Jealous, the former President and CEO of our country’s oldest civil rights organization the National Association for the Advancement of Colored People (NAACP) and 2018 Democratic candidate for Governor of Maryland. Under Jealous’ tenure the NAACP adopted a national resolution urging and authorizing local branches to support and work towards local efforts to restrict the sale of menthol and flavored tobacco products. Now JUUL, through Jealous, is seeking to build relationships with African American leadership organizations. Relationships that will certainly be leveraged to blunt public health policy efforts.¹⁸

As Africans American smokers and their families continue to languish from cancer, heart attacks, strokes, high rates of asthma and sudden infant death syndrome, the tobacco control needs of our community continue to take a back seat. Our communities are beseeched by the more immediate problems of police violence, racism, and unemployment, so our attention and resources are spent. But we recognize how critical for the health of our community that we must also protect our children from an industry that is constantly strategizing and working to seduce another generation of our young people. Though many feel our children and communities are expendable political bargaining chips, we do not!

There is a growing movement to educate our community. In 2013, through the diligent work of Dr. Valerie Yerger, Delta Sigma Theta Sorority, Inc. adopted a national resolution calling for an FDA ban on the use of menthol as an additive in cigarettes. Then in 2017, again through Dr. Yerger’s effort, the sorority passed yet another resolution, which called for chapters to support local actions to ban the sale of menthol cigarettes and all other flavored tobacco products. In 2016, as a result of a long decade of work and led by Carol McGruder, the National Association for the Advancement of Colored People passed its national resolution calling for local branches to help in the fight in their areas to restrict the sale of menthol and all flavored tobacco products; the resolution was quickly ratified by its Board of Directors.

The AATCLC posits that the effects of the tobacco industry’s predatory marketing practices, which historically included the distribution of free mentholated cigarettes to children as young as nine years old, systematic cultivation and exploitation of Black leadership organizations, elected officials, and the media, have caused irreparable harm. We find these offenses so egregious that African Americans merit protected class status from the nicotine addiction industry.^{19,20} The issue of JUUL is perceived as one of middle and upper class white children. We know that Black children have been following suit, but equally important is JUUL’s pivot to be the savior of adult Black smokers. We know that “switching isn’t quitting.” No one knows the long-term effects of vaping and using JUUL products. We don’t want our people to be experimented on to find out. These products should be taken off the market until they pass scientific rigor and have been proven to help people stop smoking, and with minimal risks.

¹⁶ Bach L & Campaign for Tobacco Free Kids (2019). “Don’t be fooled: JUUL is acting just like the tobacco industry;” <https://www.tobaccofreekids.org/what-we-o/industry-watch/e-cigarettes>.

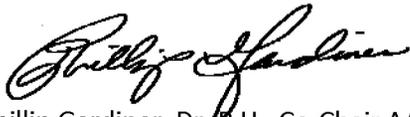
¹⁷ Yerger VB & Malone RE (2002). African American leadership groups: Smoking with the enemy. *Tobacco Control*, 11(4), 336-345.

¹⁸ Markay L, “JUUL’s latest play to survive Washington, D.C.: Win over black lawmakers,” Daily Beast, June 10, 2019, <https://www.thedailybeast.com/juuls-latest-play-to-survive-washington-dc-win-over-black-lawmakers>.

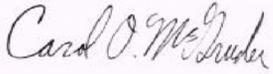
¹⁹ African American Tobacco Control Leadership Council (2019). International Press Briefing: What’s menthol got to do with it? Everything! (Still!) Retrieved from <https://www.youtube.com/watch?v=NDhGj6ElkYM>

²⁰ Bach L & Campaign for Tobacco Free Kids (2018). “Tobacco company marketing to African Americans;” <https://www.tobaccofreekids.org/what-we-o/industry-watch/e-cigarettes>.

Sincerely,



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Carol McGruder, Co-Chair AATCLC



Valerie Yerger, N.D., Co-Chair AATCLC

Out of the Blu!

Op-Ed by Carol O. McGruder

I read David J. Johns San Francisco Examiner Op-Ed (6/30/19) on how San Francisco's new law to ban the SALE (not use or possession) of E-cigarettes, pending FDA approval, will hurt Black folks with an equal mix of disdain and amusement. Disdain because I know that 99% of the time whenever Black folks mysteriously pop up, out of the Blu, to defend the interests of the nicotine addiction industry (pick your poison cigarettes or vape) a little money has usually exchanged hands. No matter what Black person or organization's name appears on



Blu E-Cig Ad

This company obviously wants to help Black people stop smoking.

the Op-Ed, key E-Cig and tobacco industry phrases and rhetoric are used. Phrases such as.... *“we should focus on regulation, responsible marketing and accountability for companies that violate policies”*... A little late on that one. Now that the multi-billion dollar E-cigarette industry has shamefully addicted a whole new generation of children-customers, the E-Cigarette industry has been pulling out all the stops to reposition themselves and derail sound public health policy. San Francisco got their attention. Though possession and use of these products are legal, the E-Cigarette companies claim they are concerned that the police will use these laws to target and victimize Blacks and about the burgeoning black market that is sure to follow. Good Lord, who knows what will happen if the ‘pathologically criminal’ Black community cannot get their crack, I mean nicotine.

While Mr. Johns does acknowledge Blacks have been perniciously targeted by the tobacco industry for decades, he posits that E-Cigs might offer a safer, healthier alternative to the millions of addicted Black smokers (victims). The problem when comparing the “safety” of E-cigs to smoking is that the bar is so incredibly low that almost anything is “safer.” While sixty years of cigarette research has revealed all the intricacies of the death and destruction combustible cigarettes cause, we do not know with the same precision what E-Cigs will do.

While we may not have the decades of research on E-Cigs, it does not take a genius to know that we should not inhale carcinogenic liquid substances delivered by hyper-addictive nicotine salts into our lungs. A recently released Stanford Study found that, **“E-cigarette flavorings damage human blood vessel cells grown in the lab even in the absence of nicotine. Cinnamon and menthol flavors were particularly harmful.”** But for those who need further proof, okay, San Francisco is saying it won't participate in this nonsense... prove your product is safe/safer! Prove it helps people stop smoking. Get FDA approval of these products and then we will talk.

Usually the industry loves study and research, they know it is a slow arduous process and that it delays action. Their anecdotal stories of how “Old Uncle Joe was able to quit smoking with E-cigs” is a lot cheaper and easier to manipulate than the rigors of hard cold scientific facts. But San Francisco put a monkey wrench in the “wait for the science” strategy; and the new game plan is not in their favor... STOP selling the products first and then take all the time you need for research. Think of all the millions of children who would not have been exposed and addicted to nicotine if only the FDA had done this. E-Cigs are totally banned in Japan, a country with a very high smoking prevalence, why aren't the Japanese trying to save their people with these great E-cig products. And with their homogenous population, they don't even have all of the pesky racial and social injustice issues that conflate and interfere with good U.S. public health policy.

Though JUUL has become synonymous with teen nicotine addiction and has the lion's share of the market, they are not the only game in town. The sexy Blu ad featured above certainly got my attention. I hope all of the Black consultants, organizational leaders and lobbyists engaged across the country know that this industry is ‘all about the Benjamins.’ If they truly want to help our addicted Black adult smokers and if they truly want to prevent another generation of our children from getting hooked, they should get out of bed with the industry that uses us as for cannon fodder. Fight for programs that are comprehensive and address the underlying issues facing our

community. Instead of using their extra time to help multi-billion dollar JUUL's interest, they should use it on creating real health and wellness for our community. Work to create real job opportunities so people can support their families with meaningful and productive work.

These industries do not care about our health or "adult choice". The nicotine addiction industry, be it Phillip Morris, RJ Reynolds, Blu, or Juul, they are NOT friends of the Black community. It is a cynical joke to think that this industry would ever care about police targeting of Black folks especially since they have worked so hard to target us from childhood and make us lifelong customers. Now E-Cigs want to save Black people from the tobacco industry and the police? It is cruelly ironic because at the same time that they want to freely sell their unapproved/unregulated products they are simultaneously pushing legislation across the country that would criminalize the youth who have succumbed to their pernicious social marketing and advertising campaigns. Now that they have gotten our children viciously hooked they think they can pivot on a dime and say "oh my bad" our products are really about "adult choice and cessation." Just more nicotine addiction industry smoke/emissions and mirrors.

In some cities ordinances are being considered that would penalizes the children who were gullible enough to experiment with these products then get addicted. Some laws will even fine parents who won't/can't control their addicted children. What penalty is there for the industry that addicted these children? Their weak apologies do not suffice.

Consumers should know that vaping is not quitting. It just means they have substituted an untested and unapproved product whose long-term effects are unknown. The adult choice narrative is a false one. Addiction and choice are two words that do not go together.

Racialized Geography, Corporate Activity, and Health Disparities: Tobacco Industry Targeting of Inner Cities

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Abstract: Industry has played a complex role in the rise of tobacco-related diseases in the United States. The tobacco industry's activities, including targeted marketing, are arguably among the most powerful corporate influences on health and health policy. We analyzed over 400 internal tobacco industry documents to explore how, during the past several decades, the industry targeted inner cities populated predominantly by low-income African American residents with highly concentrated menthol cigarette marketing. We study how major tobacco companies competed against one another in *menthol wars* fought within these urban cores. Little previous work has analyzed the way in which the inner city's complex geography of race, class, and place shaped the avenues used by tobacco corporations to increase tobacco use in low-income, predominantly African American urban cores in the 1970s–1990s. Our analysis shows how the industry's activities contributed to the racialized geography of today's tobacco-related health disparities.

Key words: Smoking, tobacco industry, African Americans, racial disparities, inner city geography.

Despite significant reductions in overall smoking rates in the United States, smoking among poor, less educated, and underserved populations remains higher than among the general population.^{1–5} For example, prevalence rates for low-income African Americans have been reported to range from 33% to 59%,^{6–11} compared with 21% for the general population.¹² Tobacco company advertising and promotion are associated with increased cigarette consumption; their presence and pervasiveness serve as external cues to smoking.¹³ Tobacco companies have strategically targeted marginalized communities,^{14–25} who may have limited information about specific and relative health risks of smoking and few social supports and resources such as tailored cessation programs.^{26–29} Tobacco-related diseases have hurt lower-income urban communities,

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where lack of educational opportunity is compounded by lack of access to health care, few employment opportunities, and environmental injustice.^{7,30}

Tobacco use is a major contributor to health disparities in the United States.^{5,31} Age-adjusted mortality rates for tobacco-related cancers,³²⁻³⁷ cardiovascular disease and stroke are higher among African Americans than among White Americans.³⁸ Tobacco-related health disparities are defined as “differences in the patterns, prevention, and treatment of tobacco use; the risk, incidence, morbidity, mortality, and burden of tobacco-related illness that exist among specific population groups in the United States; and related differences in capacity and infrastructure, access to resources, and environmental tobacco smoke exposure.”^{30, p. 211} Individual level risk factors account for only part of persistent health disparities. In this paper, we suggest that it is not only tobacco use behavior that shapes disparities, but the disparate distribution of conditions that promote tobacco use. For example, African Americans who report experiencing racial discrimination as subjectively stressful are more likely to smoke.³⁹ Macro-level factors identified as fundamental causes of disease also influence multiple disease outcomes and affect both individual and social contexts.⁴⁰

The expanding literature on social and environmental injustices recognizes the interplay between individual, social, and geographic factors, including racism and segregation, and their contribution to persistent racial disparities in health.⁴¹⁻⁴⁴ This interplay creates what have been called *riskscapes*,⁴⁵⁻⁴⁶ within which poverty, racial discrimination, segregation, the environment, and other factors work together to shape health disparities. Work from critical geography, public health, and history has drawn attention to localized power relationships, emphasizing that space is neither neutral nor passive.⁴⁷⁻⁵¹ Rather, geographic location and social position intertwine and form a loop; places shape one’s social station and the social station of a place’s residents shapes societal views of that place.⁵² *Racialized geography*, as described by Sundstrom, is a complex interplay between race, class, and place, occurring at the nexus of political, economic, and social systems.⁵²

One factor shaping the riskscapes of inner cities is corporate activity, which has been identified as a fundamental structural cause of disease through producing and promoting products harmful to health.⁵³ The tobacco industry’s disease-promoting activities⁵⁴ are among the most powerful corporate influences on inner city health. Such activities have included targeted marketing, thwarting and undermining tobacco control efforts, deceptive scientific practices, and influencing policymakers and community leadership groups.⁵⁵⁻⁵⁹

For this paper, we analyzed previously secret internal documents to explore how, during the past several decades, inner cities populated predominantly by poor African American residents were targeted with highly concentrated menthol cigarette marketing from the entire industry. Today, at least 70% of African American smokers consume menthol cigarettes, compared with 30% of White smokers.⁵ Menthol cigarettes, which contain higher amounts of tar and nicotine than non-mentholated brands,⁶⁰⁻⁶⁴ are associated with nicotine dependence and lower cessation rates,⁶⁵⁻⁶⁹ and may play a role in increasing systemic exposure to tobacco toxins and carcinogens;⁷⁰⁻⁷⁶ thus, it is reasonable to consider how activities that promoted tobacco use and mentholated

cigarette use specifically have contributed to today's tobacco-related health disparities disfavoring African Americans.

This study shows how the major tobacco companies between the late 1970s–1990s aggressively competed against one another in the *menthol wars* fought within inner city urban cores. The most popular menthol brands were Kool (manufactured by Brown & Williamson, which merged with RJ Reynolds in 2003 to become Reynolds American Tobacco Company), Salem (Reynolds American), Newport (Lorillard), and Philip Morris's Benson & Hedges Menthol. During the time of this marketing blitz, smoking among African Americans increased,⁷⁷ the use of menthol cigarettes among African Americans increased,⁷⁸ and the overall menthol share of the tobacco market exploded. During the same time period, smoking prevalence among African Americans exceeded that among Whites, and African Americans (especially the poor and less educated) were among those least likely to quit smoking.^{79–80} While previous research has described disproportionate levels of menthol cigarette advertising in poor inner city neighborhoods compared with predominantly White neighborhoods,^{16,31,81} little work has demonstrated the specific ways in which the inner city's complex geography of race, class, and place shaped the avenues used by tobacco corporations to increase tobacco use in low-income, predominantly African American urban cores during the 1970s–1990s.

Methods

We used archival approaches⁸² to conduct this study, using data from previously undisclosed tobacco industry documents made public under *State of Minnesota versus Philip Morris, Inc.*⁸³ and electronically available following the 1998 Master Settlement Agreement between 46 state attorneys general and 7 tobacco industry defendants.⁸⁴ Between May 2005–August 2006, we collected and analyzed more than 400 documents related to tobacco industry targeting of low-income, inner-city communities. Documents were retrieved in paper form from the Minnesota Depository and electronically from the University of California, San Francisco Legacy Tobacco Documents Library (<http://legacy.library.ucsf.edu>) and from industry document websites.⁸⁵

We searched using an iterative snowball approach,⁸⁶ beginning with combinations of search terms such as *African American*, *Black*, *ethnic*, *ghetto*, *inner city*, *menthol*, *Negro*, and *urban*. Retrieved documents were used to identify additional search terms. We focused primarily on Brown & Williamson, Lorillard, Philip Morris, and RJ Reynolds, as their menthol brands were the most heavily marketed in African American communities.

To begin interpreting the data, the first and second authors reviewed all documents and selected key documents for review by the third author. Drawing on findings from the retrieved tobacco documents and other relevant textual data sources, we developed an account of tobacco industry marketing activities focused on inner cities. Table 1 shows a geographic account, and Figure 1 shows temporal concentration of selected major tobacco marketing initiatives. We organized material by company and by strategy. The results are presented as follows: we first review background information about menthol cigarettes and industry interest in inner city areas, derived predominantly from

Table 1.

TOBACCO ACTIVITIES AND CENSUS DATA, 1980, IN SELECT CITIES^a

City (census year)	Total population	Race				Tobacco company inner city activities			
		White		Black		Brown & Williamson	Lorillard	Philip Morris, USA	
		Number	Percent	Number	Percent			RJ Reynolds	
Atlanta, GA	425,022	137,879	32.4	282,911	66.6		X	X	X
Baltimore, MD	786,775	345,113	43.9	431,151	54.8	X	X	X	X
Boston, MA	562,994	393,937	70.0	126,229	22.4		X	X	
Chicago, IL	3,005,072	1,490,216	49.6	1,197,000	39.8	X	X	X	X
Cincinnati, OH	385,457	251,144	65.2	130,467	33.8	X	X		
Cleveland, OH	573,822	307,264	53.5	251,347	43.8		X	X	X
Columbus, OH	564,871	430,678	76.2	124,880	22.1		X	X	
Dallas, TX	904,078	555,270	61.4	265,594	29.4		X	X	
Detroit, MI	1,203,339	413,730	34.4	758,939	63.1	X	X	X	X
Durham, NC	100,831	52,317	51.9	47,474	47.1			X	
Ft. Lauderdale, FL	153,279	118,983	77.6	32,225	21.0		X		
Hartford, CT	136,392	68,603	50.3	46,186	33.9		X		
Houston, TX	1,595,138	978,353	61.3	440,346	27.6	X	X	X	
Indianapolis, IN	700,807	540,294	77.1	152,626	21.8			X	
Jackson, MS	202,895	106,285	52.4	95,357	47.0			X	
Jacksonville, FL	540,920	394,756	73.0	137,324	25.4		X	X	
Los Angeles, CA	2,966,850	1,816,761	61.2	505,210	17.0	X	X	X	X
Louisville, KY	298,451	212,102	71.1	84,080	28.2		X		
Memphis, TN	646,356	333,789	51.6	307,702	47.6	X	X	X	X

(Continued on p. 14)

Table 1 (continued).

City (census year)	Total population	Race				Tobacco company inner city activities			
		White		Black		Brown & Williamson	Lorillard	Philip Morris, USA	
		Number	Percent	Number	Percent			Morris, USA	RJ Reynolds
Miami, FL	346,865	231,008	66.6	87,110	25.1		X	X	
Milwaukee, WI	636,212	466,620	73.3	146,940	23.1		X		
New Haven, CT	126,109	78,326	62.1	40,235	31.9		X		
New Orleans, LA	557,515	236,987	42.5	308,149	55.3	X	X	X	
New York, NY	7,071,639	4,294,075	60.7	1,784,337	25.2	X	X	X	X
Norfolk, VA	266,979	162,300	60.8	93,987	35.2				X
Oakland, CA	339,337	129,692	38.2	159,281	46.9		X		
Paterson, NJ	137,970	70,203	50.9	47,091	34.1		X		
Philadelphia, PA	1,688,210	983,084	58.2	638,878	37.8		X	X	
Pittsburgh, PA	423,938	316,694	74.7	101,813	24.0		X		X
Richmond, VA	219,214	104,743	47.8	112,357	51.3		X	X	
St. Louis, MO	453,085	242,576	53.5	206,386	45.6		X	X	
San Francisco, CA	678,974	395,081	58.2	86,414	12.7		X	X	
Washington, D.C.	638,333	171,768	26.9	448,906	70.3	X	X	X	X

^aU.S. Census Bureau selected historical census data, 1980.

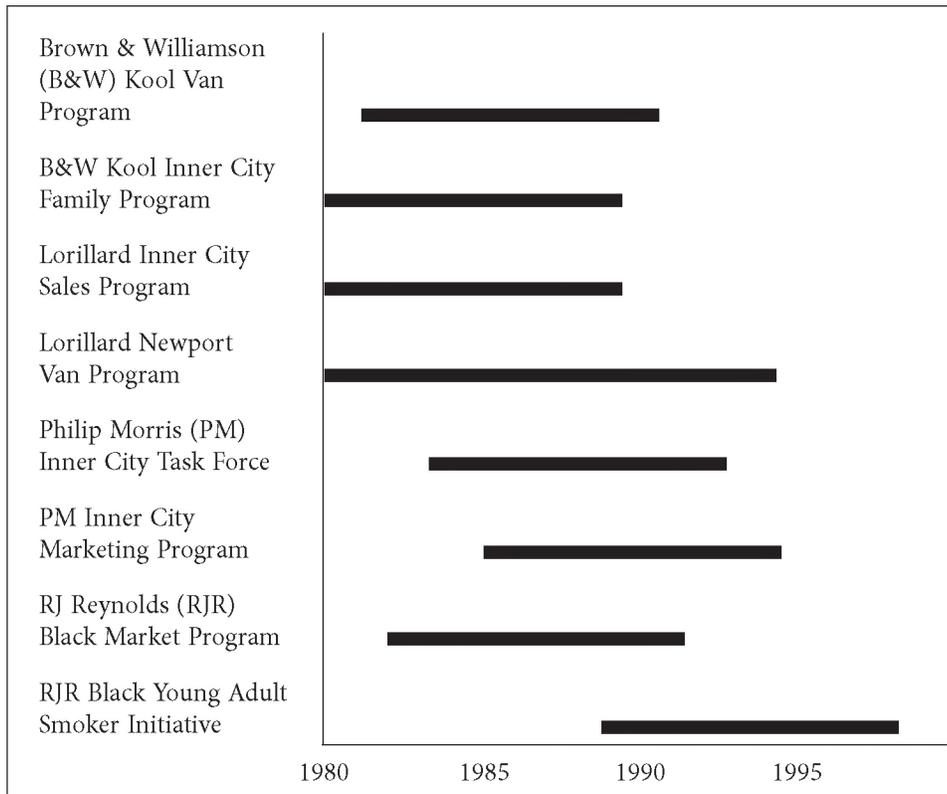


Figure 1. Temporal concentration of selected major tobacco marketing initiatives in U.S. inner cities.

industry documents and secondary sources. We then discuss specific tobacco industry strategies, including studying African American consumers using psychographic and other data; giving out free samples of cigarettes and the use of mobile vans to drive into neighborhoods; specialized inner city retailer programs; and community engagement. We conclude by discussing how today's tobacco-related health disparities were shaped by geographically-specific, intentional and aggressive corporate activity.

Results

Background: The tobacco industry and the African American inner city consumer.

Menthol cigarettes have been marketed since the 1920s.⁸⁷ Between 1957 and 1963, the menthol share of the total cigarette market grew from 5% to 16%.⁸⁸⁻⁸⁹ (See Table 2.) By 1964, there were 9 menthol brands, and 23 by 1971.⁹⁰ During the 15-year period 1956–1971, the menthol market grew by 48%.⁹⁰ By 1982, menthol sales had grown 6 times as fast as sales in the general cigarette market.⁹¹ Salem had dominated the menthol market from its inception in 1956 to 1972, but Kool now led menthol sales. Kool's rise was due in part to its embrace by the African American community.⁹²

Table 2.**MENTHOL U.S. MARKET SHARE, 1920–2001**

Year	Market share (%)
1920–1955	2
1955–1957	5
1963	16
1978	28
1990–2001	27–29

Source: Gardiner PS. The African Americanization of menthol cigarette use in the United States. *Nicotine Tob Res* 2004;6 Suppl 1:S55–65. (Used with written permission from Nicotine and Tobacco Research.)

As competitive tobacco companies began noticing Kool's increased popularity, especially among African Americans, they began aggressively marketing their menthol products in inner city African American communities.^{78,93–97} (Tobacco companies used the term *inner city* to refer to “the usually older and more densely populated central section of a city with large ethnic populations.”^{98, p. 5851}) Data collected by or on behalf of tobacco companies revealed that “smoking characteristics of blacks differ significantly from those of whites,” requiring “a different marketing strategy . . . for black consumers.”^{99, p. 9184} For decades, tobacco industry research suggested that African Americans were heavy menthol smokers who presented an opportunity for tobacco companies to increase their menthol market share.^{100–101} The tobacco companies used multiple avenues designed specifically for the “difficult to reach”^{102, p. 5434} group of inner city Black smokers, including analysis of residents' psychographic profiles, mobile van programs through which free cigarettes were distributed, specialized marketing programs, and tailored retail programs. (See Table 3.) According to a 1982 Philip Morris marketing plan, two segments in the African American market were “becoming increasing polarized—half more affluent than ever, and the other significantly lagging the general market in Education and Income.”^{103, p. 5627} Tobacco companies were interested in the latter African American consumers, the “younger, less educated, lower in income, urban, [and smoking full-flavor and menthol cigarettes].”^{103, p. 5628} Tobacco companies often relied on ethnic marketing firms to provide them with psychographic profiles of African American consumers.^{104–110} At least one ethnic marketing firm had multiple tobacco companies as clients.^{111–115}

Ethnic marketing firms did more than provide insights into the personalities, behaviors, attitudes, and lifestyles of urban African American consumers. For example, in 1982, SMSi (Special Market Services, Inc.), a Chicago firm that specialized in sampling (giving out for free) cigarettes in minority communities, produced for Philip Morris a report focused on strategies for promoting Benson & Hedges among African American and Hispanic consumers, suggesting specific cities where cigarettes could be sampled.¹⁰⁸ The firm recommended that Philip Morris maintain a “first-class approach” to target

Table 3.**SAMPLING OF TOBACCO INDUSTRY ACTIVITIES IN U.S. INNER CITY NEIGHBORHOODS DURING THE 1970s TO 1990s**

Marketing activity	Dates	Locations
<i>Brown & Williamson</i>		
Marketing Plans Sales Force	01/73-12/73	
Kool Inner City Music Program	1982	Baltimore, MD; Chicago, IL; Cincinnati, OH; Detroit, MI; Houston, TX; Los Angeles, CA; Memphis, TN; New Orleans, LA; New York City, NY; Washington, DC
Kool Music on Tour Program	03/83	
Kool Van Sampling Program	01/84-12/91	All regions across the U.S.
<i>Lorillard</i>		
Media Mix	09/71-12/71	
Criterion (3 Sheet) Program	08/74-07/75	Chicago; New York City
Newport's 3 and 8 Sheet Showings	09/74-06/75	New Jersey; New York City
Lorillard Marketing Research Study		
Pre-test	09/13/78-09/14/78	Chicago; Detroit
Pilot Study	09/28/78-09/29/78	Atlanta, GA; Boston, MA; Chicago; Detroit
Main Study	01/02/79-01/06/79	Atlanta; Boston; Chicago; Detroit; Jacksonville, FL; Los Angeles; Memphis; New York City
Vantastic Newport Sampler Van	09/01/83-09/30/83	Bronx and Queens, New York City; Dallas, Houston, and San Antonio, TX; Hartford, CT; Los Angeles, Oakland, Sacramento, and San Francisco, CA; Paterson, NJ; Philadelphia, PA; Providence, RI
Play Ball with Newport	01/85-12/85	New York
Krush Groove Concert Van Sampling	12/27/85	Madison Square Garden, New York

(Continued on p. 18)

Table 3 (continued).

Marketing activity	Dates	Locations
Newport Van Program (10 Vans)	1988–1991	All regions across the U.S. (including Alabama; Baltimore/Washington, DC; Cincinnati, Cleveland and Columbus, OH; Chicago; Connecticut; Detroit and Flint, MI; Florida; Knoxville and Louisville, KY; Massachusetts; Memphis; Milwaukee, WI; Mississippi; New Orleans; Philadelphia and Pittsburgh, PA; Rhode Island; St. Louis, MO; Texas)
Newport Inner City Lighter Promotion	01/89–03/89	Baltimore; Boston; Chicago; Detroit; Milwaukee; New York City; Providence; Richmond, VA; Springfield, MA
Pleasure on Wheels (P.O.W.)	11/93–3/31/94	Detroit; Ft. Lauderdale and Miami, FL; Philadelphia
Newport Promotion Plan	01/94–12/94	Baltimore/Washington, DC; Albany, Bronx, Brooklyn, Buffalo, Rochester and Syracuse New York; Bridgeport, Hartford, New Haven and Stamford, CT; Chicago; Cleveland; Detroit; Ft. Lauderdale; Philadelphia; Pittsburgh; Miami; New Jersey
Newport Special Events Program	01/94–12/94	Daytona Beach and Panama City, FL; Jersey Shore, NJ; Virginia Beach, VA
<i>Philip Morris, USA</i>		
Benson & Hedges (B&H) Inner City Sampling Program	06/03/85–08/23/85	
B & H Inner City Program	06/87–08/87	Baltimore; Cleveland/Akron and Columbus/Augusta; Chicago; Dallas/Ft. Worth; Houston; Jackson, MS; Jacksonville; Los Angeles; Memphis; Miami; New Orleans and Shreveport, LA; Philadelphia; Raleigh/Durham, NC; Richmond, VA; St. Louis; San Francisco
Marlboro Inner City Bar Nights	07/88	
Soul Food Picnic	06/18/88–06/19/88	Indianapolis, IN
Indiana Black Expo Celebration	07/07/88–07/10/88	Indianapolis

(Continued on p. 19)

Table 3 (continued).

Marketing activity	Dates	Locations
Jazz under the Stars	07/10/88	Indiana
Golden Memories under the Stars	07/88–12/88	
Region 4 Urban Task Force Cleveland, Chicago, Detroit	06/94–07/94	Chicago; Cleveland; Detroit
Menthol Urban Program	06/95–08/95	Atlanta; Baltimore/Washington, DC; Chicago; Detroit; Houston; Los Angeles; Miami; New York City; Philadelphia
Marlboro/B & H Urban Visibility Program Wave 1	12/96–01/97	Baltimore/Washington, DC; Boston; Chicago; Detroit; Miami; New York City; Philadelphia
Wave 2		Atlanta; Houston; Los Angeles; New Orleans
Club B & H Club/Bar Program	07/96–11/96	Atlanta; Chicago; Dallas/Fort Worth; Houston; Los Angeles; New Orleans
<i>RJ Reynolds</i>		
Bright/Salem Free Pack Coupon In Ebony/Essence Magazines	04/81–08/82	
Bright Black Smoker Trail Sampling	03/83–07/83	
Sterling Sampling Plan	12/83	Chicago
Salem Black Market Promotion Plan	01/84–11/84	Atlanta; Baltimore/Washington, DC; Chicago; Detroit; Harlem, New York City; Los Angeles; Memphis; Norfolk, VA; Pittsburgh; Other regions in the North and South Atlantic, North and Mid-Central
Black Initiative Program	04/89–12/89	Chicago; Cleveland; Memphis
Innovative Sales/Marketing Program	04/89–06/89	
Black YAS Initiative Van Program	04/89–04/90	Chicago; Cleveland; Memphis
Black Initiative Program Expansion	07/90	

upscale women in beauty salons and boutiques, suggesting that the company present customers in these establishments with the product sample and a single live long stem flower.¹⁰⁸ Philip Morris chose not to implement SMSi's recommendation, perhaps because it had begun to recognize that Benson & Hedges was gaining "acceptance among the important younger Black smoker group,"^{91, p. 8889} ages 18–24, a segment of the population that positioned "the brand very well for the future."^{91, p. 8889}

Sampling and mobile vans. However it could be accomplished, tobacco companies sought to distribute cigarettes for free. They engaged in street sampling, where sales staff on foot handed out free cigarettes. Sampling included both street corner distribution and *quality sampling*.¹¹⁶ (Quality sampling indicated an interaction wherein the sampler would spend more time with an individual consumer, as opposed to passing out mass quantities within a small window of time.) At times, samplers were expected to pass out as many as 90 packs per hour, approximately 1.5 packs every minute.¹¹⁶

A 1985 sampling manual emphasized, "It is important that sampling be confined to the inner city area to maximize the benefits of Benson & Hedges sampling on the target market,"^{116, p. 8013} suggesting that the National Urban League would be a "good recruiting source." Sampling programs sometimes lasted only a few weeks, as tobacco companies implemented intensified, short term targeted menthol marketing programs confined to inner cities to generate interest, trial, and brand-switching among residents.¹¹⁶ For example, during an 8-week promotional period in 1986, Philip Morris carried out sampling in the top 20 African American markets, passing out free 6-cigarette packs and an attached "Buy 1 Get 1 Free" (B1G1F) coupon.¹¹⁷ The African American population in each of the markets was used to determine the number of samplers allocated to the market. During a 2-month period in 1991, Philip Morris launched a nationwide Benson & Hedges Menthol B1G1F offer in urban markets that hit some 17,000 outlets, expecting to reach almost 350,000 smokers.¹¹⁸

However, street sampling in inner city communities presented challenges. Lorillard, for example, was not only concerned about the lack of high traffic locations in these neighborhoods, but also considered these "minority areas" as "high risk" with the threat of product theft and equipment loss or damage.¹⁰² Therefore, after a dalliance with street sampling, Lorillard introduced an innovation, the Newport Pleasure Van, in 1979.¹⁰² Lorillard's van program started with a single van in the New York metropolitan area and then expanded to 10 vans circulating across the U.S.^{119–125}

Vans allowed sample distributors to be protected from "unruly crowds"^{122,126} while handing out free cigarettes. Vans not only offered a sense of safety to tobacco company workers as they penetrated what they perceived to be dangerous territory, but provided a way to distribute cigarettes "with a unique attention getting sampling device specifically targeted to difficult to reach minority groups."^{102, p. 5434} Vans were reported to have stopped at street corners, perhaps for only 10 minutes, while playing loud music and distributing free cigarettes.^{127–128}

Newport van drivers were provided with a daily schedule, detailing a list of cross-street starting points and street corners of interest in the neighborhoods, where free packs of 10 cigarettes were distributed. Vans were parked near selected stores based on their geographic locations and "to reinforce Newport's image as the 'peer brand' among young adult smokers."^{129, p. 2731} In a 1981 memo to all division managers in the

Cincinnati, Dayton, and Columbus, Ohio regions, an assistant Newport brand manager wrote that “The Newport Van is proving to be a uniquely effective vehicle for reaching this target market in their own environment [*sic*],” as “Newport’s target group of young adults/blacks is difficult to reach via coupons and standard street corner crew sampling.”^{120, p. 6117} The van program catch phrase, shown as a signature on Lorillard van-related documents, was: “When your target group is hard to reach / With a standard marketing plan, / Get out and sample them on their streets / With the ‘Vantastic’ Newport Sampler Van.”^{120, p. 6117}

In March 1983, Brown & Williamson instituted its Kool van program for inner cities, determining that vans had “proven to be an intrusive non-traditional media venue as well as an effective, cost-efficient sampling device.”^{130, p. 0535} The Kool van program, also known as Kool Music on Tour,¹³¹ was created to access “Kool’s hard-to-reach, low readership starter market and target audience,”^{130,132} specifically targeting “inner city, young adult competitive smokers.”^{133, p. 1291} (The phrase *starter market* is usually interpreted as referring to youth, since the great majority of smokers take up tobacco before the age of 18.¹³⁴) Kool vans were staffed with a professional DJ and a tobacco company employee who handed out free cigarettes.

By 1985, vans were the primary sampling medium for distributing Kool cigarettes, entering neighborhoods in more than 50 cities where Newport, Salem, and Benson & Hedges Menthol sales were strong.¹³³ Brown & Williamson evaluated demographic information from the Chambers of Commerce, regional festival directors and groups, state fairs, trade shows and exhibitions to identify sampling opportunities.¹³⁰ The Kool Music on Tour program continued until at least 1991 with 3 vans, concentrated in the Northeast and Midwest.¹³⁵

RJ Reynolds had determined that Lorillard’s van program was instrumental to Newport’s growth among African American young adult smokers.¹²⁷ Inspired by Lorillard, Reynolds also established a van sampling program, aimed to increase Salem’s visibility in Chicago. Brightly-painted video vans were fitted with state-of-the-art electronic equipment and displayed music videos.¹³⁶ Sent to Chicago nightclubs, the vans caught potential Salem customers entering and leaving the clubs. The vans also displayed live video coverage of the inside club action, thereby entertaining the younger crowd hanging around outside the club.¹³⁶

During the day, the three video vans called on retailers and Salem sales teams in the Chicago area.¹³⁶ The vans also traveled to parks, construction sites, bingo halls, street corners, parking lots, and local sports events.^{128,137} They made appearances at urban street malls, public aid offices, currency exchanges, housing projects, public transit stops, and other venues.¹³⁸ Vans were also used to increase Salem’s visibility at street festivals and other neighborhood events. A Reynolds marketing representative proposed that the video vans display community service messages focusing on drug awareness, staying in school, and African American History.¹³⁹ Each van took part in as many as 60 events per week. A field marketing manager reported that the vans “work the streets and stores all day and the clubs at night. It can be 20 hours a day, seven days a week.”^{136, p. 8941}

Although other companies used vans to distribute cigarettes in inner cities, Lorillard’s van program was the most far-reaching. In 1993, Lorillard decided to change

“the strategic thrust of the Newport Van Program from a sampling vehicle to a more aggressive approach,”^{140, p. 4259} whereby retail store sales were tracked and smokers were offered inducements to generate impulsive purchases of Newports.^{140–141} Participant “name capture” cards were used to collect contact information from Newport and competitive brand smokers in exchange for a promotional item.^{142–143} Lorillard ran this POW (Pleasure On Wheels) van program from February through November 1994. The program drew business away from competitors (especially Kool)¹⁴⁴ in the inner city neighborhoods of New York, Miami/Fort Lauderdale, Philadelphia, St. Louis, and Detroit.^{145–147} After Newport came to dominate the urban menthol market, Lorillard reduced the number of vans it operated and then shifted its van program to the general market, though the company continued to focus on lower socioeconomic groups.¹⁴⁸ According to a March 1992 memo to regional sales managers, Lorillard’s plan was to “move out of the inner City Core to the general market . . . van sampling will be targeted to blue collar smokers.”^{149, p. 7856}

In some cities, such as Atlanta, public restrictions prevented van sampling. There, sampling specialists were used to gain access to privately owned areas including bars, small events, and other allowable venues.¹²⁵ Philip Morris relied on local samplers to use their area-specific knowledge to identify the best locations. Samplers were to work at inner city high traffic locations or events, such as sporting events, concerts, factory shift changes, bowling alleys, and outside movie theaters, and “where a relaxed, personalized message can be delivered.”^{116, p. 8014} Other locations included nightclubs, beauty salons, barbershops, fashion boutiques, and restaurants. Samplers were instructed not to get involved in conversations about smoking and health. Rather, they were urged to respond to such inquiries with, “I respect your opinion, and I’m sorry that you feel that way. Thank you” or “I’m afraid I am not sufficiently qualified to comment on that question. Thank you.”^{116, p. 8025}

Specialized marketing programs. All the companies developed special inner city sales programs for menthol brands. For example, during the early to mid-1970s, Kool did well in the inner city market; in 1976, 38% of African American smokers used Kools,⁹² a jump of 24 percentage points in 8 years. Among African American male smokers under age 35, nearly 60% smoked Kool. Increased competition for these African American menthol smokers led to a marketing blitz.¹⁵⁰ A summary provided by Brown & Williamson’s advertising and brand management team noted, “Competitors have been increasing their efforts to counter Kool’s success, and means to combat this activity will be a continuing effort.”^{151, p. 9109} For the next 10 years, Brown & Williamson focused on maintaining Kool’s visibility in inner cities.

To compete with Kool, Lorillard increased Newport’s marketing efforts in geographical areas with large concentrations of African Americans.⁹⁶ Lorillard aggressively targeted Kool smokers, developing inner city sales programs to support markets where Newport sales were already strong and seeking to narrow the sales ratio in those markets where Newport was trailing Kool.¹⁵² Lorillard initially decided to target both African American and Hispanic young adults with a high school education or less who resided “in tough inner city neighborhoods;”^{153–154} however, the company soon found that “Newport, along with other menthol brands, have [sic] been unable to crack this [Hispanic] market.”^{96, p. 7635} Field sales reps reported that Newport was succeeding “predominantly

among males, in the Black inner city.”^{155, p. 4936} Therefore, the company reallocated funds to the African American inner city market’s “more promising opportunities.”⁹⁶ By 1988, Lorillard had implemented inner city sales programs in the urban markets of Detroit and Flint, Michigan.¹⁵² Within 2 years, these efforts reached over 30 “ethnic niches” in the Northeast and Midwest, including Chicago, Baltimore, Detroit, Boston, and Cleveland; and nightclubs in New Orleans, Atlanta, St. Louis, Los Angeles, San Francisco, and Indianapolis.^{156–157}

Lorillard’s strategies included maintaining a highly visible Newport brand presence, focusing on trial and conversion from smokers of competitive brands, distribution drives, increased numbers of point-of-sales materials, sampling, special event coverage, increased levels of advertising support, and rewarding retailers for promoting Newport.¹⁵⁸ Promotional items such as key chains, sports bags, sunglasses, lighters, and B1G1F offers were used as tools to encourage smokers of other menthol brands, but particularly Kool smokers, to switch to Newport.^{96,153,159}

Recognizing minority markets as “virgin territories,”¹⁰³ Philip Morris implemented African American ethnic and urban programs beginning in 1982 and continuing through the early 1990s. In its 1982 minority marketing plan, Philip Morris proposed to improve the performance of Benson & Hedges among African American smokers.¹⁰³ The plan contains pages of demographic profiling of African Americans and Hispanics and charts showing advertising expenditures of competitive brands in African American print media. Philip Morris’s action plan recommended company sponsorship of community and national events and included a list of African American organizations.

In 1984, Philip Morris’s Black Marketing Task Force met in Washington D.C. to discuss “the very important Black smoker segment.”^{160, p. 0074} The task force concluded that Benson & Hedges Menthol and Virginia Slims were the only Philip Morris brands “that can be really ‘worked’ [in the] inner city.”^{161, p. 1444} Strategies presented by the task force included promotional plans, incentives, advertising, sampling programs, materials, communication, and the assignment of African Americans samplers to the inner city. As with Lorillard, a heavy emphasis was placed on B1G1F deals, incentives for inner city retailers, and promotional items that would appeal to African American consumers, such as playing cards, blank cassette tapes, cigarette cases, and lighters.¹⁶²

With its share of the menthol market declining from 22.4% in 1981 to 15.8% in 1987, Reynolds began to focus heavily on Black young adult smokers (BYAS), who were considered critical to the success of all menthol styles.¹²⁷ Inner city African American young adults were also important because they were seen as trendsetters. As a marketing research report presented to RJ Reynolds suggested, “The daring, flamboyant aspect of YA [young adult] Black smokers’ personalities are evident in **the many trends they start**. And the fact that these trends often spread to the general population speaks to the **unrecognized power and influence** this subgroup yields on society. . . . Trends are often started by lower income Black males who are looking for a way to be important or interesting, to create their own identity . . . [emphases in original].”^{163, p. 7657}

Reynolds concluded that Newport was doing so well in the menthol market because Lorillard concentrated its efforts with one brand targeted to one population. Deciding to do the same, Reynolds focused all “BYAS [black young adult smoker] marketing resources” on Salem “since it is an acceptable choice among BYAS and accounts for

two-thirds of RJR's BYAS share."^{127, p. 0163} From April 1989 to April 1990, Reynolds implemented its BYAS Initiative, targeting high density lower-income African American neighborhoods of Chicago, Cleveland, and Memphis.¹²⁷⁻¹²⁸ To determine specific boundaries of target neighborhoods within these markets, Reynolds conducted interviews in ZIP code areas pre-defined as inner city, at least 50% African American, and with yearly household incomes under \$20,000.¹⁶⁴

The BYAS Initiative sought to reverse Salem's declining trend among younger adult African American smokers and increase sales by getting African Americans to try Salem. Special advertising, promotions, and "a variety of other carefully coordinated sales and marketing programs"^{136, p. 8939} began appearing in these markets. When radio stations featured known performers, Salem would be there, too.¹³⁶ Reynolds marketers emphasized that "Salem should be seen as a friend."¹⁶³ "The best way to reach minority consumers," they argued, was "through their local communities, . . . [which] tend to support brands that they see are doing something for them. [But these efforts] must be seen as authentic and as being backed by other Blacks—not as a big White company's tactic to sell to Blacks."^{163, p. 7655}

Inner city retailer programs. Retail outlets located in inner cities presented challenges, including limitations on product availability and visibility, space constraints, retail clutter, high crime rates, and cash flow restrictions.^{126,155,160} Additionally, inner city retail outlets were often secured with bullet-proof shields, which not only limited the space available for advertisements and merchandise but also eliminated self-service product selection. Tobacco companies' field representatives and/or ethnic marketing firms developed special efforts aimed at smaller, crowded neighborhood retail outlets in inner cities.^{115,136}

Philip Morris acquired "Black accounts," primarily smaller liquor, grocery, and convenience stores in inner cities. These accounts were intended to replace others lost due to the larger supermarkets moving out of inner cities.¹⁶² Philip Morris sought to remove impediments that prevented these small retailers from maintaining and selling cigarettes at acceptable levels. To save space, suction cups were used to hang signs from bullet-proof shielding; pricing signs incorporated personalized messages concerning such matters as the availability of check cashing services.¹⁶² Product displays, existing versions of which were too large and required a major retailer investment, were specially re-designed for inner city retail outlets.¹⁶¹ To ensure that cigarette displays were visible and well-stocked, inner city retailers were also offered incentives to display promotional items.¹⁵⁶ For example, Philip Morris paid retailers \$20 to \$40 to expand inventories and maintain visually prominent displays.¹⁶⁵ Additionally, Philip Morris increased the number of promotions offered monthly. This program, described as "the living laboratory," was initially tested in Detroit.¹⁶⁵ The program then expanded nationwide, including only menthol brand extensions of Benson & Hedges, Marlboro, Virginia Slims, and Alpine.¹⁶⁶

Using ZIP codes to identify inner city neighborhood boundaries, Brown & Williamson implemented its Kool Inner City Point of Purchase (POP) Program in 1978 "to reach the core of Kool's franchise (young, black, relatively low income and education)"^{98, p. 5852} and tackle the issues of poor product display and out-of-stock conditions. Later named the Kool Inner City Family Program, it targeted the top 20 African

American markets in the U.S., concentrating in the Northeast, Central, Southeast, and Southwest. Promotions included free gifts for retailers with monthly payments, a free carton of cigarettes for every 10 cartons purchased by distributors, and a multitude of consumer offers.¹⁶⁷

Ethnic POP materials were employed, including marketing items with African American models that were poised to be “down to earth and not resemble the Harvard Black”^{167, p. 0342} Special community events were also an important part of inner city targeting. In 1974, for example, Reynolds sponsored the Winston/Salem Cadillac sweepstakes in Chicago, in which Cadillacs were the prizes for both smokers and the local retailers of cigarettes. This promotion was intended to “generate excitement” and “strengthen Winston and Salem position [*sic*] in the young urban adult Black community.”^{168, p. 0004}

In the 1980s, because event sponsorship was a key element of its “Special Market” activities, Reynolds developed Salem Summer Street Scenes.^{169,170} These 2-day festivals were held in the early 1980s “inside neighborhoods that [were] predominantly Black” to position Salem as a member of the community while distributing cigarettes. Reynolds reported that Salem Street Scenes reached at least 50% of the African American population in Memphis, Detroit, Chicago, New York, and Washington D.C.¹⁷⁰ The company also sponsored neighborhood events to “create an association between the brand and culturally relevant activities for the inner city Black smoker.”^{171, p. 7889}

Brown & Williamson also determined that involvement in community events was “critical to the success of its inner city program.”^{172, p. 3353} It operated the Kool Jazz festivals¹⁷³ and Summer Fest inner city music program¹⁷⁴ for years; it also considered funding inner city music festivals that were free to the public as a direct extension of Kool advertising.¹⁷⁵

Philip Morris, similarly, was urged to “become more intimately involved in community affairs” to increase visibility in inner cities.¹⁶⁰ Philip Morris began sponsoring Black Expos around the country, beginning with the 1988 Indiana Black Expo.¹⁷⁶ Sponsoring national expos gave Philip Morris the opportunity both to advertise its product and to distribute free Benson & Hedges cigarettes to crowds of over 325,000. At the Indiana Black Expo, for example, Philip Morris’s promotion included stage signage, a \$25,000 check presentation, and remarks made on stage during the concert, and distribution of 10,000 samples, primarily Benson & Hedges cigarettes.¹⁷⁷

Between 1995 and 1998, Philip Morris activities included “Club Benson & Hedges” promotional bar nights, which targeted 21–45 year-old “urban/ethnic markets.”¹⁷⁸ “The brightest up and coming stars in urban music” were showcased in front of an estimated 100,000 consumers, who were “rewarded” with VIP treatment and preferential purchase opportunities. “Passport to 100 Urban Night Clubs,” a promotional item billed as “America’s only national entertainment guide which features establishments located within the inner city, frequented by African-Americans,” was distributed to those attending any Club Benson & Hedges event.¹⁷⁹ It provided information about nightclubs, restaurants, attractions, annual events, and other social happenings in African American communities. After 13 years of using music to promote its Benson & Hedges brand while seeking a “diverse consumer base,” Philip Morris suspended the brand’s promotional activities in 1999.¹⁸⁰

The “menthol wars”: **Summary.** For 3 decades, the major tobacco companies competed aggressively to attract inner city African American smokers. In 1976, Kool had a 32.1% share of the African American market, and Salem followed with 13.5%. Benson & Hedges and Newport trailed behind with 3.1% and 2% shares, respectively. By 1978, Kool was still in the lead, but with only a 4% increase from 1976, compared with Benson & Hedges’s 39% increase.¹⁸¹ As other brands increased market share, Brown & Williamson grew concerned. Kool’s share of the market was leveling off, possibly due to competitive advertising leading to brand switching.¹⁸² Newport, which had consistently received the largest budget of all Lorillard brands, doubled its share of the menthol market from 22.4% in 1981 to 47.8% in 1987, while its competitors all lost half their market share.¹²⁷ As a result, Salem, Kool, and Benson & Hedges Menthol sales faltered during the 1980s.

Discussion

Our study has limitations. The Legacy Tobacco Documents Library contains more than 7 million internal tobacco industry documents (over 40 million pages). Because our search terms retrieved only those documents where our particular search terms were associated with indexed fields (e.g., title, author, date), we were not able to search the full text within the document pages; thus, we may not have retrieved every document relevant to our research topic, and this may have caused us to understate the true extent of tobacco industry activities in inner city neighborhoods during the late 1970s–1990s. Since we completed data collection for this study, a full-text site containing the documents has been developed (<http://ltdlftd.library.ucsf.edu/queryform.jsp>) which might be used to identify additional documents; however, the sheer quantity of material available forces researchers to make decisions about which search terms retrieve the most relevant material. In any historical or archival study, the possibility always exists that material that later becomes available will shed additional light on the phenomena of interest. However, we believe that the documentary evidence abundantly supports our primary findings, highlighting the consistency of geographical patterns of activities across companies.

Though the targeting of African Americans and poor people has been previously documented,^{16,17,78,81} this study shows specifically how temporal intersections between race, class, geography, and corporate marketing shaped and perpetuated “inner cities” as marginalized places and, in turn, how the racialized geography of those places spurred development of innovative technologies for the industrial promotion of menthol cigarettes. Race and class fundamentally shaped the inner city menthol wars described here. While African Americans were not the largest group of menthol smokers, African American smokers overwhelmingly chose menthol, and African Americans were quitting at lower rates than Whites. Thus, geographic areas such as inner cities, with their large concentrations of African American residents, represented efficient sites for promotion and growth opportunities for every menthol brand.

As “White flight” left inner city cores of poverty and racial segregation during the late 20th century,^{41–42,183–186} it left behind neighborhoods that were challenging for marketers. Lack of employment opportunities contributed to rising poverty and crime.

These sociogeographic circumstances led tobacco companies to develop the innovation of the mobile van for distributing free samples of cigarettes throughout neighborhoods in which employees felt unsafe on foot. The insulated mobility of vans, accompanied by music and other attractions, enabled tobacco companies to safely counter the threat of crime while covering larger territories.

Other technological innovations were also developed specifically to deal with the geographic particularities of the inner city. As major retailers moved out of urban cores, the multiple small retail outlets that spread throughout these neighborhoods became the only places through which companies could sell goods. As this study shows, the smaller scale of these stores prompted tobacco companies to develop scaled down, specialized display units that served other purposes for retailers, kept products always attractive, visible, and easily accessible, and ensured that retailers did not run out of stock.

The menthol wars were also aided by the refinement during this period of demographic and psychographic profiling that allowed marketers to appeal more effectively to different groups. Even with these tools, however, companies made many missteps in trying to connect with inner city African Americans.¹⁸⁷⁻¹⁸⁹ Companies addressed these missteps by engaging African American marketers who specialized in reaching poor, less educated, and predominantly African American populations.

It would be wrong to suggest that inner city residents were simply passive victims of tobacco marketers. Many within these communities built their capacity and infrastructure to actively resist the targeting of their communities via marketing for deadly products, and in some cases did so with remarkable effectiveness.^{16,190-192} One cannot ignore, however, the enormous power differentials that exist between corporations and inner city neighborhood groups, and the ways in which the innovations of tobacco companies allowed them to overcome the disadvantages that inner cities posed for their marketing activities. Those activities, which contributed to increased cigarette smoking, had negative health and economic consequences for inner city residents, reinforcing their marginalized social position and increasing the likelihood that they would be unable to extricate themselves from poverty.¹⁹³

Lung cancer is perhaps the disease most associated with cigarette smoking. Prior to the early 1960s, the mortality rate for lung cancer for White men was higher than for African American men.¹⁹⁴ During the 1960s, African American men and White men were dying of lung cancer at similar rates. However, beginning in the 1970s, the overall age-adjusted death rate for lung cancer for African American men surpassed that of White men. Similarly, beginning in the 1970s, the overall age-adjusted death rate for oral cancer among African American men surpassed that of White men and by the 1980s the death rate was twice as high for African American men than for White men.¹⁹⁴ The overall age-adjusted death rate for cancer of the larynx remained stable for Whites; however, between the 1950s and 1990s the rates had increased by 260% for African American men and approximately 233% for African American women.¹⁹⁴

This study suggests that the tobacco-related health disparities that disfavor residents of many lower-income urban cores today were not solely determined by factors such as unhealthy habits and unequal access to health services. Tobacco-related health disparities were shaped as well by geographically specific and (when compared with White neighborhoods) intentionally disproportionate levels and *types* of aggressive

cigarette marketing and promotion,^{16,31,81} carried out over multiple decades. They were in a fundamental way *industrially created*. Ending health disparities, therefore, cannot focus merely on identifying individual health behaviors or risk factors: it also means naming, resisting, and politically organizing resourceful defenses against corporate vectors of disease and attending to the social injustices that shape inner cities as targets. Recent efforts to emphasize community participatory research^{195–198} could represent opportunities to organize efforts to counter industry influence and re-shape the racialized geography of health in inner cities.

Notes

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