

Recall of Tobacco Corrective-statements advertisements and Effects on Health Information-seeking Behavior

Shaikha Aldukhail (✉ shaikha.aldukhail@gmail.com)

Harvard University <https://orcid.org/0000-0001-9373-545X>

Israel Agaku

Harvard School of Dental Medicine

Research article

Keywords: tobacco use, corrective statements, industry, mass media campaigns, anti-tobacco interventions

Posted Date: January 16th, 2020

DOI: <https://doi.org/10.21203/rs.2.21038/v1>

License:  This work is licensed under a Creative Commons Attribution 4.0 International License.

[Read Full License](#)

Key words: tobacco use; corrective statements; industry; mass media campaigns; anti-tobacco interventions

Recall of Tobacco Corrective-statements advertisements and Effects on Health Information-seeking Behavior

Authors; Shaikha AlDukhail¹, Israel T Agaku²

Affiliations

1 DMSc candidate in the Department of Oral Health Policy and Epidemiology, Harvard School of dental medicine

2 Lecturer on Department of Oral Health Policy and Epidemiology, Harvard School of dental medicine

Corresponding Author: Dr. Shaikha AlDukhail, BDS, DMSc candidate 2020

Telephone: +160958222549

Address: 285 Third street, Cambridge, Ma

Work: Oral Health Policy and Epidemiology

Harvard School of Dental Medicine

188 Longwood Avenue

Boston, MA 02115-5819

Metadata

Abstract word count: 300/350

Main text word count: 3621 /4,000

Number of tables: 3

Number of figures: 1

Number of supplemental materials: 1

Abstract

Background:

In the 2006, landmark ruling, US District Judge Gladys Kessler instructed tobacco companies to disseminate corrective-statements (CSs) against their products through media advertisements.

This study objectives were to (1) examine the proportion of adults who were exposed to each of the five CS messages ; and to (2) describe the association between exposure to CSs and health-information seeking behavior among the US adult population.

Methods: Data, settings, participants, outcomes, and statistical approach.

We analyzed the most recent nationally representative data from the population-based cross-sectional survey of US adults, the Health Information National Trends Survey (HINTS5-Cycle2,2018). Data collection began in January 2018 and concluded in May 2018, and analysis took place from May 2019 to October 2019. Statistical significance was defined as a P-value less than 0.05, and all tests were 2-tailed. All data were weighted to be nationally representative.

Results: Key findings.

Exposure to CS was not independently associated with health-information seeking behavior.

Among exposed, those with less than high school education sought out health information significantly less (70.2%, 95%CI=53.8-86.5) compared to college graduates (93.3%, 95%CI=90.8 - 95.7) ($p<0.0002$); exposed females reported higher prevalence of seeking health

information 88.4% (95%CI= 85.9– 90.96) compared to males at 75.4% (95%CI =67.3– 83.6)

($p < 0.0001$). Assessing the impact of CS language and advertisement framing on message recall, we found that majority reported exposure to (Message 1) “health effects of smoking.” estimated at 85.8% (95%CI= 82.9 – 88.6). Followed by 65.8% (95%CI= 61.1 – 70.5) recalling (Message 2) “health effects of secondhand smoke”.

Our logistic regression analysis revealed that the odds of health information seeking were two times higher in females (Adjusted Odds Ratio [AOR], 2.07; 95%CI=1.59- 2.69); while odds were 2.55 folds higher among those who had at least college education (95% CI= 1.26 - 5.21), compared with less than high school. Compared to white adults, odds of seeking health information were lower among Blacks (AOR=0.46; 95%CI=0.29 - 0.74) and Hispanics (AOR=0.51; 95%CI= 0.33 - 0.79).

Conclusions: Key message and implications.

This study found that the court ordered national antismoking advertising campaign had different exposure and recall patterns in subgroups depending on the message category. While some messages were easier to recall others, perhaps more technical ones, were less likely to make an impact on participants’ memory and prompt change to health behavior.

INTRODUCTION

Over the past few decades the world has evolved in dramatic ways with regard to Mass Media Communication (MMCs) even as it continues to be a powerful tool among public health practitioners to project health advocacy messages and advance public health.¹ Especially when it comes to anti-tobacco educational campaigns; MMCs are a key component of comprehensive tobacco control programs;^{1,2} they are also an evidence-based intervention for promoting cigarette cessation.³ Tobacco control MMCs are composed of paid and earned media disseminated through television, radio, out-of-home placements (eg, billboards, bus shelters), magazines, newspapers, and digital platforms. A recent review of MMCs showed that their effects on tobacco use are more numerous than for any other health-related issue.⁴ That could be attributed to the fact that exposure to advertisements (ads) occurs during routine media use, rather than being explicitly sought out, there is high potential for widespread and repeated population exposure.⁵ Previous studies of mass media anti-tobacco campaigns have revealed that when implemented with sufficient reach, intensity, and duration, they can effectively promote quitting and reduce smoking prevalence.^{3,6} In addition, the National Cancer Institute Corrective Statements study highlighted how media exposure was associated with modifications in health attitudes, knowledge, and behavior; with accurate information being a crucial element for effective health promotion.⁷ Moreover, contemporary healthcare systems can help improve health literacy outcomes by motivating people to educate themselves and seek health information which could be the first step they take in order to break bad habits and meet behavioral goals. Targeted approaches are particularly important given that the risks associated with tobacco consumption are not evenly distributed among the population, nor is the awareness of the risks of tobacco use.⁸ In particular, individuals with low socioeconomic status are significantly more likely to believe

myths about smoking and hold inaccurate beliefs about the risks of smoking.⁷ Another concern is that public health messages are usually developed by subject matter experts by using models and theories available from behavior change research, using technical language.⁹ Developing messages sometime cannot accurately describe that consider the intended recipients' characteristics that may affect respondent's can enhance message comprehension, recall, or predict barriers to and encourage behavior change.

In the United States, for over 50 years, public health has battled against smoking.¹⁰ The release of the first U.S. Surgeon General's Report on smoking and health prompted Congress to act and within a year they passed the 'Federal Cigarette Labeling and Advertising Act of 1965'.^{11,12} This first Surgeon General's report and the 31 that followed it persuasively documented the adverse health effects of smoking, and subsequently influenced public health policy—breaking the silence around this insidious killer and fundamentally changing the way Americans view tobacco use.¹³ Since the 1965 'Federal Cigarette Labeling and Advertising Act', several regulatory policies and other public health interventions have been enacted over the succeeding decades leading to ultimate reduction of smoking rates.^{14,15,16} Effective public health messaging against tobacco product use is however complicated by the fact that the tobacco industry far outspends public health in advertising; in 2016 alone, the leading cigarette companies spent \$8.7 billion dollars on advertising and promoting cigarettes within the United states.¹⁷ Thus, despite exponential growth in the scientific evidence regarding the health consequences of smoking, nearly 38 million American adults smoked cigarettes ("every day" or "some days") in 2016, according to the Centers for Disease Control and Prevention (CDC).⁸ Tobacco use is a leading cause for preventable morbidity and mortality in the United States, killing more than 480,000 American adults annually⁸. Furthermore, disparities in smoking persist across sub-populations.¹⁸

Among the most recent public health wins was the 2006 court ordered Corrective Statements Remedies (CSs) in the United States v. Philip Morris USA, Inc. (D.O.J. Lawsuit). The tobacco industry was ordered to publish and disseminate five court-approved corrective statements to address tobacco-related common misperceptions among the public. The court found that ordering the tobacco industry to make such corrective statements was “appropriate and necessary to prevent and restrain them from making fraudulent public statements on smoking and health matters in the future”.⁷ The corrective statements wording was not finalized until November 2012. In the first half of 2013, corrective statements were set to appear through cigarette package inserts, tobacco company websites, retail points of sale for tobacco, and TV and newspaper ads.¹⁹ However, due to prolonged legal battles, it was not until November 2017 that tobacco companies finally disseminated these corrective statement through advertisements in newspapers and during primetime on the major television networks. The newspaper advertisements ended in March 2018 and the TV advertisements ended November 2018.²⁰

Since the implementation of this campaign, no study has evaluated the salience of these messages and whether exposure to the corrective statements is significantly associated with positive behaviors among U.S. adults. Court ordered CSs aimed to provide new health information, and correct the publics’ misperceptions about the tobacco industry's deceptive practices. Seeing these advertisements could motivate people to educate themselves by seeking accurate health information. By measuring the motivation to seek health information, it could serve as a proxy for positive behavior change i.e. the transition from is precontemplation to contemplation stage of the Transtheoretical Model (Change theory).²¹ To address this knowledge gap, the objectives of this study were to (1) examine the

proportion of adults who were exposed to each of the five CS messages ; and to (2) describe the association between exposure to CSs and health-information seeking behavior among the US adult population.

METHODS

Study population, Design, Setting

We analyzed the most recent nationally representative data from the Health Information National Trends Survey of US adults 18 years or older administered by the National Cancer Institute (HINTS5-Cycle2, 2018). Data collection for Cycle 2 of HINTS 5 began in January 2018 and concluded in May 2018.

The sampling frame of addresses, provided by Marketing Systems Group (MSG), was grouped into three strata: 1) addresses in areas with high concentrations of minority populations; 2) addresses in areas with low concentrations of minority populations; and 3) addresses located in counties comprising Central Appalachia, regardless of minority population. The second stage was equal probability sampling, consisted of selecting one adult within each sampled household using the next-birthday method. The overall household response rate using the next-birthday method was 32.39% calculated using the American Association for Public Opinion Research response rate 2 (RR2) formula.²² A detailed description of survey methodology has been published.²³ Sample size for this study was (n=3,504).

CSs were ran from November 2017 to May 2018. Television advertisements ran from November 2017 to November 2018, and newspaper advertisements ran from November 2017 to May 2018. The HINTS 5, Cycle 2 data were collected from January 26, 2018, to May 2, 2018.

Measures

Health Information Seeking Behavior

The primary outcome in the study was self-reported health information seeking behavior among US adults. This was defined as an affirmative response to the question “Have you ever looked for information about health or medical topics from any source?”

Exposure to corrective statements in the past 6 months

The main exposure was a report from the participant that they had seen the corrective statements. Within the survey, this was defined as an affirmative response to the question, “In the past 6 months, have you seen messages in newspapers or on television that say that a Federal Court has ordered tobacco companies to make statements about the dangers of smoking cigarettes?”

Respondents who reported exposure to court-ordered corrective statements messages were asked a follow-up question: “Which of the following messages about the dangers of smoking cigarettes have you seen?” Responses could be: (Message 1) “federal court–ordered tobacco messages about: health effects of smoking”; (Message 2) “federal court–ordered tobacco messages about: health effects of secondhand smoke”; (Message 3) “federal court–ordered tobacco messages about: addictiveness of smoking and nicotine.”; (Message 4) “federal court–ordered tobacco messages about: how cigarettes are designed to enhance the delivery of nicotine.”; (Message 5) “federal court–ordered tobacco message about: low tar and light cigarettes being just as harmful as regular cigarettes.

Participant Characteristics

Socio-demographic characteristics included level of education, age, sex, race/ethnicity, rural-urban residence, household annual income, and smoking status. Level of education was divided into 4 categories: less than high-school, 12 years of education or high school graduate, post-high school or some college, and college graduate or more (post-graduate). Age was grouped into 4 categories as follows: 18 to 34 years, 35 to 49 years, 50 to 64 years, and 65 years or older. Race/ethnicity was categorized as non-Hispanic white, non-Hispanic black, Hispanic, Non-Hispanic Asian and Non-Hispanic Other. Residence was defined using the US Department of Agriculture's 2013 Rural-Urban Continuum Codes. Codes 1 to 3 were designated as urban, while codes 4 to 9 were categorized as rural. Household annual income was categorized into 4 categories: less than \$35 000, \$35 000 to \$49 999, \$50 000 to \$74 999, and \$75 000 or more. To derive respondents' smoking status, respondents were asked the question, "Have you smoked at least 100 cigarettes in your entire life?" Those who answered no were categorized never smokers. Among those who answered yes, a follow-up question was asked: "Do you now smoke cigarettes every day, some days, or not at all?" Those who answered not at all were categorized former smokers, while others were considered current smokers.

Statistical Analyses

Data was cleaned prior to the analysis, and about 13% (n=480) of the population had missing information in the variables of interest. A comparison of these 480 excluded individuals from the 3024 analyzed individuals found no statistically significant differences between the two groups by key demographic variables such as age, sex, education, race, income, residence,

and smoking status. They were found to be missing at random and therefore deleted from the analysis.

Prevalence of healthy behavior among US adults exposed and non-exposed to CSs messages was calculated for the overall sample as well as by sociodemographic characteristics such as; age, sex, race/ethnicity, level of education, rural-urban residence, household annual income, and tobacco use status. The proportion of participants who were exposed to each type of antismoking message was calculated for the general population and by sociodemographic characteristics. Group differences were assessed using chi-square. Associations between exposure to CSs and health information seeking behavior was assessed by logistic regression. Regression models were fitted, after comparing the independent association of each variable to the outcome (health information seeking behavior) using bivariate analysis at P value less than 0.1 level, followed by assessment of the dependent variables collinearity. Then we advanced with backwards stepwise regression with non-overlapping variables. The final model was adjusted for 4 demographic confounding variables (Sex, education, Income and race).

Because category of smoking-related advertisements seen could affect the health information seeking behavior, we examined prevalence of information seeking behavior by message category (Message 1-5) reported by the participants that they were exposed to. The proportion of participants who were exposed to each message category was evaluated among overall and by sociodemographic characteristics to assess message salience. Statistical significance was defined as a P value less than 0.05, and all tests were 2-tailed. All data were weighted to be nationally representative and analyzed with STATA version 14.

RESULTS

The estimated exposure among US adults to court-ordered CSs antismoking advertisements was 41.4% (95%CI = 39.8-43.1). Among those exposed to CSs advertisements the prevalence of seeking health information was 81.57% (95%CI= 77.36 - 85.78) compared to 79.37% (95%CI= 75.6- 83.2) in unexposed ($p = 0.4$). However, exposure to CS was not found to be independently associated with health-information seeking behavior. Table 1 further describes the prevalence of health information seeking behavior among US adults exposed and non-exposed to Federal Court–Ordered Antismoking Advertisements by different sociodemographic characteristics. Group differences in educational attainment was found to be statistically significant; those with less than high school education sought out health information significantly less (70.2%, 95%CI=53.8-86.5) when compared to people who were college graduates or more (93.3%, 95%CI=90.8 - 95.7) among those who were exposed to CSs ($p<0.0002$). In addition, there was a significant difference between sexes, with females reporting higher prevalence at 88.4% (95%CI= 85.9– 90.96) compared to males at 75.4% (95%CI =67.3– 83.6) among those who were exposed ($p<0.0001$) (Table 1).

While assessing the impact of all five corrective statement messages language and advertisement framing on participants' message recall, we found that majority reported exposure to (Message 1) “health effects of smoking.” estimated at 85.8% (95%CI= 82.9 – 88.6). Followed by 65.8% (95%CI= 61.1 – 70.5) recalling (Message 2) “health effects of secondhand smoke”; (Message 3) “addictiveness of smoking and nicotine.” At 54.8% (95%CI= 50 – 59.6), then (Message 5) “low tar and light cigarettes being just as harmful as regular cigarettes” at 36.3% (95%CI= 33– 39.6). While the lowest proportions were reported

for (Message 4) “How cigarettes are designed to enhance the delivery of nicotine.” at 28%; (95%CI= 22.7 – 33.3).

Furthermore, Figure 1 shows that the vast majority (72.62%) of US Adults who reported exposure to CSs advertisements reported exposure to more than one federal Court–Ordered Messages. Among those exposed, 28.8% (95%CI= 27.3 – 30.3) reported seeing two CSs messages, compared to 17.9% (95%CI= 16.6 – 19.2) reported three CSs messages; While only 10.7% (95%CI= 9.7 – 11.8) reported exposure to (four or all five) CSs messages (data not shown in Figure).

Moreover, among exposed adults who reported seeing multiple messages (72.62%), the most common combination of message was Message 1 and Message 2 at 23.1% (95%CI = 20 – 26.2); followed by 19.2% (95%CI= 16.8 – 21.5) reporting exposure to Message 1 and Message 3, and 17.1% (95%CI= 14.8 – 19.5) reporting exposure to Message 2 and Message 3. The least common combination was Message 4 and 5 at 8% (95%CI= 6.8 – 9.2).

In Table 2, we explored the prevalence of health information seeking behavior among US adults exposed to CSs antismoking advertisements stratified by category of message reported. Among the overall sample, no significant difference in health seeking behavior was observed by type of CSs. Significant variation was seen by education; people with high-school education were the least subgroup to report seeking health information behavior; with prevalence as low as 63.5% (95%CI= 40.1- 86.9) with exposure to Message 4 “Nicotine Delivery” compared to 76.9% (95%CI= 59.6 -94.1) with exposure to Message 5 “Smoking Light ”. Meanwhile participants with a college degree or more were more likely to engage in health information seeking regardless of category of ad recalled seeing. There were also

statistically significant differences in healthy behavior between males and females, with generally lower estimates seen for males, ranging as low as 66.3% (95%CI= 82.3 - 95.2) with exposure to Message 4; compared to 88.8% (95%CI= 42.3- 90.4) in females (all $p < 0.01$).

Our logistic regression analysis revealed that the association between exposure to CSs advertisements and information seeking behavior was not statistically significant. Odds of health information seeking were two times higher in females (adjusted odds ratio [AOR], 2.07; 95%CI=1.59- 2.69), Odds were 2.55 folds higher among those who had a level of education of college or more (95% CI= 1.26 - 5.21), compared with those who had less than high school education. Compared to white adults, odds of seeking health information were lower among Blacks (AOR=0.46; 95%CI=0.29 - 0.74) and Hispanics (AOR=0.51; 95%CI= 0.33 - 0.79). Furthermore, adults with income \$75,000 or more, had 2.53 higher odds of seeking health information (95%CI= 1.58 - 4.03) compared to adults with annual income \$35,000 or less.

DISCUSSION

This study, to our knowledge, is the first to explore the association between the federal court-ordered antismoking corrective statements advertising campaign and health information seeking behavior within the US Adult population. Our results suggested that even though a large proportion of US adults reported exposure to CSs messages, this was not significantly associated with health information seeking behavior. This is an important finding since it underscores the need for a multi-pronged approach since any single intervention may have limited impact on its own. Besides educating the public on the dangers of tobacco use, other evidence-based measures that could be implemented as part of a comprehensive tobacco prevention and control strategy include raising taxes on tobacco products, implementing

comprehensive smoke-free policies, stronger regulations on tobacco product design, manufacture, and marketing, particularly the use of flavors and other design characteristics that enhance chemosensory aspects of smoking and increase ease of smoking.

Despite the success of several large-scale public health campaigns, there is also evidence that some public health campaigns, including those with mass media components, have had ambiguous or no effects.⁷ Possible explanations to why we did not see a significant association between CSs exposure and seeking information were that we could not specifically assess tobacco-related information seeking behaviors as such information was not available in the survey. Exposed individuals who smoked were possibly at the contemplation or preparation stages (transtheoretical model), but these did not lead to health info seeking behaviors.²¹ Future research could explore temporality of positive behavior after established exposure to health advertisements. In this study, we saw that women had stronger responses to CSs compared to men; consistent with prior research, where women were found to be more likely to report that CSs messages were serious and that it motivated them to quit.²⁴ On the other hand, our finding regarding how US adults with lower educational attainment (high school or less) experienced weaker responses to CSs, contradicted what was reported in previous studies, where people with a high school education or less were found to be more responsive to anti-smoking warning labels.²⁵

Our report explores the reach of the five topics which the tobacco industry was obligated to issue CSs about. We saw variations in proportions that reported exposure to CSs by message topic. While the majority of adults 85.8% (95%CI= 82.9 – 88.6) reported exposure to *Message 1* “health effects of smoking”, far less adults 28%; (95%CI= 22.7 – 33.3) reported exposure to *Message 4* “How cigarettes are designed to enhance the delivery of nicotine”.

Given that each of the five messages equally appeared on major TV programs and newspapers during the campaign²⁶; this variation might reflect differences in message salience: simpler messages such as *Message 1* may be easier to recall, compared to messages with more technical terms such as *Message 4*. One previous study reported that CSs message novelty was associated with higher reported information relevance, anger at the industry, and motivation to quit among exposed.²⁴

Our findings were consistent with (Chido-Amajuoyi 2019) report, comparing the exposure prevalence of CSs with previous federal and state sponsored antismoking campaigns, reporting that the impact of CSs advertisements on health behaviors was suboptimal.²⁷ This could be due to the fact that for decades, misinformation about tobacco products was being circulated in the public communication environments as part of the marketing strategies of tobacco manufacturers.⁷ On the other hand, corrective statements ads ran only for a few months; it also originated from the tobacco industry, which could produce suspicion among consumers.²⁴ Health advertisement relative salience is crucial, because people were more likely to respond positively to its' message and perceive it as more important. Because CSs were tobacco industry sponsored, their message content could put publics' intuition in conflict; In most cases, it is important to ensure that one domain is being upheld in the public health message, this could be fulfilled by either highlighting the consequences of engaging in unhealthy behavioral choices or by simply showing how the first domain is inherently superior. At this stage, people deliberately and consciously weigh the importance of competing intuitions and thoughts, which leads them to have a more positive attitude to the message.²⁸

This landmark federal-court ruling represented a pivotal point in anti-tobacco battle from a historical and legal perspective. However, findings from our analysis and other reports suggest that the real-world recall rates, and association with promoting healthy behavior may be limited; especially among high risk groups such as males and those with low educational attainment. Mass media campaigns normally compete with several factors while being broadcasted, these may include previous product marketing, well-established social norms, and consumption driven by addiction or habit.³ Thus we propose that future campaigns to simplify anti-tobacco health message language, improve the advertisement design, target males and ethnic minority media channels, and invest in longer duration campaigns to achieve adequate population exposure to media health messages and improved behavioral outcomes.

Strengths and Limitations

This report is the first to assess the proportion of adults who were exposed to CSs by CS message type. Our finding suggests that some CSs messages might be more salient than others and the majority of the exposed population were able to recall more than one CSs messages.

There are a number of limitations inherently in cross-sectional studies. First, as information on the source of CS exposure (television or newspaper) were not available in the survey, this prevented us from more nuanced analyses of the reach of CSs by different media type. In addition, though HINTS data are nationally representative it is still cross sectional, and causal inferences cannot be determined. Finally, HINTS was self-reported which is subjected to recall and social desirability bias.

CONCLUSION

This study found that the court ordered national-level antismoking advertising campaign had different exposure and recall patterns in subgroups depending on the message category.

While some messages were easier to recall others, perhaps more technical ones, were less likely to make an impact on participants' memory and prompt change to health behavior.

This study highlights the important role of well-designed mass media campaigns in helping counter tobacco companies deceptive marketing strategies, increase awareness of smoking harmful effects, secondhand smoke exposure, and change environmental conditions that encourage people to smoke. District Judge Kessler's might have set a precedent with her ruling for similar practices in other areas relevant to public health where industry deceptive marketing practices take place.

List of abbreviations

- (CSs) Corrective-statements
- (MMCs) Mass Media Communication
- (AOR) Adjusted Odds ratio
- (CI) Confidence interval

Declarations

- Ethics approval and consent to participate 'Not applicable'
- Consent for publication 'Not applicable'
- Availability of data and materials: The data that support the findings of this study are publicly available from The National Cancer Institute's Health Information National Trends Survey 5 (HINTS 5-cycle 2)
- Competing interests: The authors declare that they have no competing interests.
- Funding 'Not applicable'
- Authors' contributions: SA designed the analytic strategy, conducted the statistical analysis and wrote the manuscript. IA conceived the study, supervised the writing of the manuscript. The Manuscript has been read and approved by all authors.
- Acknowledgements: Authors sincerely acknowledge Ms.Satomi Odani for for her valuable comments on the draft of the manuscript.

REFERENCES

- 1) National Cancer Institute (U.S.). The role of the media in promoting and reducing tobacco use. Bethesda, Md.: National Cancer Institute, U.S. Dept. of Health and Human Services, National Institutes of Health,; 2008. Available from: <http://purl.access.gpo.gov/GPO/LPS113790>.
- 2) Force CPST. Reducing Tobacco Use and Secondhand Smoke Exposure: MassReach Health Communication Interventions. CDC; 2013
- 3) Wakefield MA, Loken B, Hornik RC. Use of mass media campaigns to change health behaviour. *Lancet*. 2010;376(9748):1261-71.
- 4) B.G. Southwell & Marco C. Yzer (2007) The Roles of Interpersonal Communication in Mass Media Campaigns, *Annals of the International Communication Association*, 31:1, 420-462, DOI: 10.1080/23808985.2007.11679072
- 5) Hornik, R. C. (Ed.). (2002). *Public health communication: Evidence for behavior change*. Lawrence Erlbaum Associates Publishers.
- 6) Durkin S, Brennan E, Wakefield M. Mass media campaigns to promote smoking cessation among adults: an integrative review. *Tob Control*. 2012;21(2):127-38.
- 7) U.S. v. Philip Morris: 1,683 Page Final Opinion; 449 F.Supp.2d 1; Public Health Law Center. (D.D.C. 2006) <https://www.publichealthlawcenter.org/sites/default/files/resources/doj-final-opinion.pdf>
- 8) Smoking is down, but almost 38 million American adults still smoke [press release]. 2018.
- 9) Morrison FP, Kukafka R, Johnson SB. Analyzing the structure and content of public health messages. *AMIA Annu Symp Proc*. 2005:540-4.
- 10) The Health Consequences of Smoking-50 Years of Progress: A Report of the Surgeon General. Reports of the Surgeon General. Atlanta (GA)2014.

- 11) Wellmann KF. [Smoking and Health. On the Report of the Advisory Committee to the Surgeon General of the Public Health Service]. *Dtsch Med Wochenschr.* 1964;89:1085-6.
- 12) Cohn J. Winning the War on Tobacco-and Public Cynicism, Too. *Milbank Q.* 2016;94(4):704-7.
- 13) Cole HM, Fiore MC. The war against tobacco: 50 years and counting. *JAMA.* 2014;311(2):131-2.
- 14) Centers for Disease C. 1986 Surgeon General's report: the health consequences of involuntary smoking. *MMWR Morb Mortal Wkly Rep.* 1986;35(50):769-70.
- 15) U.S. Department of Health and Human Services, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health. *The health consequences of smoking: Nicotine addiction.* 1988.
- 16) AM B. *The cigarette century*2007.
- 17) Federal Trade Commission *Cigarette Report for 2016* Washington: Federal Trade Commission, 2018
- 18) Drope J, Liber AC, Cahn Z, Stoklosa M, Kennedy R, Douglas CE, et al. Who's still smoking? Disparities in adult cigarette smoking prevalence in the United States. *CA Cancer J Clin.* 2018;68(2):106-15.
- 19) Schoenberg T. *Altria to appeal court order on cigarette ads, packing.* Bloomberg. 2013.
<https://www.bloomberg.com/news/articles/2013-01-25/altria-to-appeal-court-order-on-cigarette-ads-packaging>
- 20) *Tobacco Companies Ordered to Place Statements about Products' Dangers on Websites and Cigarette Packs* [press release]. 2018.
- 21) Prochaska JO, Velicer WF. The transtheoretical model of health behavior change. *Am J Health Promot.* 1997;12(1):38-48.
- 22) The American Association for Public Opinion Research. 2016. *Standard Definitions: Final Dispositions of Case Codes and Outcome Rates for Surveys.* 9th edition. AAPOR.
- 23) (U.S.) NCI. *Health Information National Trends Survey 5 (HINTS 5) Cycle 2 methodology report.*
<https://hints.cancer.gov/2018>.
- 24) Kollath-Cattano CL, Abad-Vivero EN, Thrasher JF, Bansal-Travers M, O'Connor RJ, Krugman DM, et al. Adult smokers' responses to "corrective statements" regarding tobacco industry deception. *Am J Prev Med.* 2014;47(1):26-36.
- 25) Cantrell J., Vallone D.M., Thrasher J.F., Nagler R.H., Feirman S.P., Muenz L.R., He D.Y., Viswanath K. Impact of tobacco-related health warning labels across socioeconomic, race and ethnic groups: Results from a randomized web-based experiment. *PLoS ONE.* 2013;8:e52206. doi: 10.1371/journal.pone.0052206
- 26) *Court-Ordered Corrective Statements Remedy: Implementation Details United States v. Philip Morris USA Inc., (2017).*
- 27) Chido-Amajuoyi OG, Yu RK, Agaku I, Shete S. Exposure to Court-Ordered Tobacco Industry Antismoking Advertisements Among US Adults. *JAMA Netw Open.* 2019;2(7):e196935.
- 28) *Media and the Moral Mind: Routledge; 2013.*

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- [HINTsTablesconverted.pdf](#)