

Testing Legally Feasible Options: Study 1
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Study Protocol

Study objective. The overall objective of this research is to experimentally evaluate legally viable approaches to reducing the impact of the POS retail environment on adolescent risk of using four classes of tobacco products: cigarettes, e-cigarettes, smokeless tobacco, and LCCs. Specifically, we propose to investigate the extent to which eliminating the sale of flavored (sweet) and menthol tobacco products reduces adolescents' risk of future use of tobacco.

Study design. The experimental conditions that we will compare in this study are: menthol and flavored products present (status quo), flavored products banned, and flavored and menthol products banned. The studies will take place in the RAND StoreLab (RSL), a life-sized replica of a convenience store that was developed to experimentally evaluate how altering aspects of tobacco advertising at POS influences tobacco use.

Methods. The study was approved by the RAND Human Subjects Protection Committee. Young people were recruited from the community through standard advertising campaigns. Interested individuals completed a telephone screening to determine eligibility. Eligible individuals completed informed consent (or consent and assent if minors). Participants completed a baseline questionnaire that assessed demographics, tobacco product cognitions, smoking and tobacco use, and convenience store shopping habits. Participants were then randomized to one of the three experimental conditions. They were provided with a \$10 (fake) RSL gift card and asked to shop in the RSL for whatever they wanted, for as long as they wanted. They were asked to purchase at least one item and check-out and pay for the item(s) as they would in any convenience store. A confederate who was not involved in the consent or survey process served as the cashier. This cashier scanned the selected items for a total price, scanned the gift card, and bagged the items. Although no participants attempted to purchase tobacco from the RSL in this study, any such attempts would have been met by the cashier with a request for age identification and the purchase attempt would have been declined (i.e., because no participants were ≥ 21 years old). After exiting the RSL, participants completed the dependent measures. They then: underwent a graduated debriefing; were asked to guess the study's purpose; and were told that they would be unable to retain the items they selected from the RSL. Participants then viewed a short tobacco media literacy video and received printed smoking prevention materials. Finally, they received a \$40 gift card as compensation.

Statistical analysis plan

First, we evaluated whether randomization distributed pre-shopping baseline characteristics evenly across the experimental conditions. These univariable analyses used either t-tests or chi-squared tests to evaluate significance (depending on variable distribution). Next, we used logistic regression to evaluate the relationship between the experimental conditions and post-RSL shopping susceptibility to using cigarettes (unflavored and menthol); ENDS (unflavored, flavored, and menthol); LCCs (unflavored, flavored, and menthol); and smokeless tobacco (unflavored, flavored, and menthol) (0 = not susceptible; 1 = susceptible). Lifetime use of each product under investigation was included in appropriate model as a covariate (0 = no use; 1 = any

lifetime use). Finally, because both age (continuous) and education (0 = still in middle/high school; 1 = high school graduate or more) are related to tobacco use, these variables were also included as covariates. Each experimental/regulatory condition (only tobacco- and menthol-flavors displayed and only tobacco-flavors displayed) was compared to the all tobacco-, menthol-, and sweet-flavors displayed condition (reference) using planned contrasts.