



Influence of point-of-sale tobacco displays and plain black and white cigarette packaging and advertisements on adults: Evidence from a virtual store experimental study



James Nonnemaker *, Annice Kim, Paul Shafer, Brett Loomis, Edward Hill, John Holloway, Matthew Farrelly

RTI International, 3040 E. Cornwallis Road, Research Triangle Park, NC 27709, USA

HIGHLIGHTS

- Smokers in the display ban conditions were less likely to attempt to purchase cigarettes.
- Smokers exposed to plain packs and ads were less likely to attempt to purchase cigarettes.
- Recent quitters in the display ban conditions reported lower urge to smoke.
- Enclosing the display had no significant influence on smokers' urge to smoke.
- Making the packs and ads plain had no significant influence on recent quitters' urge to smoke.

ARTICLE INFO

Article history:

Received 17 March 2015

Received in revised form 3 January 2016

Accepted 6 January 2016

Available online 7 January 2016

Keywords:

Point-of-sale tobacco product displays

Plain cigarette packaging

Virtual convenience store

ABSTRACT

Introduction: We examined the potential impact of banning tobacco displays and mandating plain packaging and cigarette advertisements at the point of sale (POS) on adult outcomes.

Methods: A virtual convenience store was created with scenarios in which the tobacco product display was either fully visible (status quo) or enclosed behind a cabinet (display ban), and cigarette packs and advertisements were either in full color (status quo) or black and white, text only (plain). A national convenience sample of 1313 adult current smokers and recent quitters was randomized to 1 of 4 conditions and given a shopping task to complete in the virtual store. Main outcomes were participants' self-reported urge to smoke and tobacco purchase attempts in the virtual store.

Results: Compared with recent quitters in the status quo conditions, recent quitters in the display ban condition had lower urges to smoke ($\beta = -4.82$, 95% CI = -8.16 – -1.49 , $p < 0.01$). Compared with current smokers in the status quo conditions, smokers in the display ban conditions were less likely to attempt to purchase cigarettes in the virtual store (OR = 0.05, 95% CI = 0.03–0.08, $P < 0.01$). Smokers exposed to plain packs and ads were significantly less likely to attempt to purchase cigarettes (OR = 0.31, 95% CI = 0.20–0.47, $P < 0.01$) than those exposed to color packs and ads.

Conclusions: Policies that ban the display of tobacco products or require plain packaging and advertising at the POS may help reduce adult smoking.

© 2016 Elsevier Ltd. All rights reserved.

1. Introduction

The tobacco industry aggressively markets its products to consumers, spending nearly 90% of its \$8 billion marketing expenditure on programs to reduce the price of cigarettes to consumers, promotional allowances to retailers, and advertising and promotions at the point of sale (POS), making retail stores the most important advertising channel for the industry (Federal Trade Commission, 2013). Tobacco companies

use advertising primarily to increase brand awareness and loyalty (Donovan, Jancey, & Jones, 2002; Gallopel-Morvan et al., 2012; Hammond, 2010; Hammond, Doxey, Daniel, & Bansal-Travers, 2011; Slade, 1997; Wakefield, Germain, & Henriksen, 2008; Wakefield, Morley, Horan, & Cummings, 2002). Features of ads, such as color and imagery, help to create certain associations with a particular brand. For example, green colors might suggest that a product is fresh, cool, more natural, and less harmful (Bansal-Travers, Hammond, Smith, & Cummings, 2011; Bansal-Travers, O'Connor, Fix, & Cummings, 2011). Color might also be used to target a particular demographic group (e.g., pink to target women) (Doxey & Hammond, 2011; Hammond, Daniel, & White, 2013; Hammond et al., 2011). A substantial literature discusses

Abbreviations: POS, point of sale; VR, virtual reality.

* Corresponding author.

E-mail address: jnonnemaker@rti.org (J. Nonnemaker).

advertising at the POS and the cigarette pack as advertisement. Studies show that tobacco ads and displays may act as cues to smoke (Hoek, Gifford, Pirikahu, Thomson, & Edwards, 2010; Paynter & Edwards, 2009; Pollay, 2007), stimulate purchases among those not intending to buy cigarettes (Carter, Mills, & Donovan, 2009; Clattenburg, Elf, & Apfelberg, 2013; Scheffels & Lavik, 2013; Wakefield et al., 2008), and potentially influence relapse among adult recent quitters by stimulating cravings for cigarettes (Germain, McCarthy, & Wakefield, 2010). Making tobacco product packs black and white text only—also called “plain packaging”—has been proposed as a policy strategy to reduce the appeal of tobacco products. Given that packaging serves as a means to advertise, we hypothesize that making all advertisements plain would have a similar influence on purchasing behavior as plain packaging.

The plain packaging literature suggests that plain packaging might influence (reduce) tobacco purchases by (1) reducing the appeal of tobacco products by eliminating the imagery, (2) standardizing color (so color cannot be used to suggest different risks and increase brand distinctions), and (3) increasing the salience of health warnings (Stead et al., 2013). To date, Australia is the only country to implement plain packaging. Wakefield, Hayes, Durkin, and Borland (2013) surveyed a nationally representative sample of Australian adults to examine the impact of plain packaging that was introduced in Australia in 2012. Adults exposed to plain packaging were more likely to perceive that cigarettes were of lower quality and were less satisfying and more likely to report that quitting was a priority and that they had thought about quitting in the past week. Smokers of plain packaged cigarettes were also more supportive of the plain packaging policy than smokers of branded packs. A sample of French smokers and nonsmokers rated plain packs as less attractive, less attention grabbing, less likely to promote initiation, and more likely to promote cessation (especially among smokers intending to quit) compared with regular packs (Gallopel-Morvan et al., 2012). Similarly, a sample of female young adults in the United Kingdom rated plain packages as less appealing than regular cigarette packaging (Hammond et al., 2013). Stead et al. (2013) reviewed the literature on plain packaging and concluded that plain packaging would reduce the appeal of packaging and smoking in general. Recent evidence also suggests that plain packaging may reduce cravings compared with regular packaging (Brose, Chong, Aspinall, Michie, & McEwen, 2014). Other recent evidence suggests that plain packaging may increase visual attention to health warnings on cigarette packs among nonsmokers and experimental smokers but not regular smokers (Maynard, Munafò, & Leonards, 2013; Munafò, Roberts, Bauld, & Leonards, 2011). Regular smokers appear to avoid health warnings on packs regardless of pack type (Maynard et al., 2013; Munafò et al., 2011).

The Federal Family Smoking Prevention and Tobacco Control Act of 2009 gives state and local governments legal authority to regulate the time, place, and manner of tobacco advertising. Plain packaging and plain black and white ads are one way to regulate advertising at the POS, although this strategy has not been tried yet in the United States. Other potential options include banning tobacco product displays or requiring antismoking advertisements at the POS. To date, state and local governments have attempted to ban POS tobacco product displays and mandate graphic antismoking signs with cessation messages at the POS; however, these efforts have been subject to legal challenges (Matsuda, 2012). Tobacco product displays have been banned in Ireland, Canada, and Australia, but not in the United States (Henriksen, 2012).

In several prior studies, we have examined the effect of a ban on tobacco product displays using a virtual store (Kim et al., 2013, 2014). We found that eliminating the tobacco display in the virtual store reduced attempts to purchase tobacco in the virtual store among youth and adults. Among adults, the display ban also reduced urges to smoke. The control group in these studies consisted of participants viewing a virtual store with a full tobacco display.

In addition to our prior studies, a number of other studies have used virtual reality environments to study behavioral responses to environmental cues that may be difficult to assess in a real-life setting

(Baumann & Sayette, 2006; Hubal et al., 2008; Hubal et al., 2011; Shute, Ventura, Bauer, & Zapata-Rivera, 2009; Traylor, Parrish, Copp, & Bordnick, 2011; Waterlander, Scarpa, Lentz, & Steenhuis, 2011). VR studies examining cravings in smokers suggest that VR techniques may be more effective and have stronger ecological validity than traditional methods (e.g., photos) for triggering and assessing craving (Baumann & Sayette, 2006; Bordnick, Graap, Copp, Brooks, & Ferrer, 2005; Garcia-Rodriguez, Pericot-Valverde, Gutierrez-Maldonado, Ferrer-Garcia, & Secades-Villa, 2012; Lee et al., 2003; Paris et al., 2011).

The literature on plain packaging suggests that it makes tobacco products less appealing and might reduce cravings, although little research assesses the direct effect on purchasing behavior. In a real-world setting, this effect is hard to measure in a rigorous controlled manner. The virtual store allows us to test the potential impact of a policy mandating plain (black and white) cigarette packs and advertisements, comparing this policy to both a control group viewing a virtual store with a full tobacco display and a group viewing the virtual store with the tobacco display eliminated. Building on our prior work, we created scenarios in our virtual store in which tobacco displays were banned, and plain (black and white) cigarette packs and advertisements were mandated at the POS.

In this study, we randomized adult smokers and recent quitters to different versions of a virtual store and had them conduct a shopping task to assess whether exposure to an enclosed tobacco product display and plain packaging and advertising was associated with lower urges to smoke and fewer tobacco purchase attempts.

2. Methods

2.1. Study design

We designed a 2×2 experimental study with two variations of the POS tobacco product displays (open and enclosed) and two variations of tobacco products and ads in store (full color packs and ads or plain packs and ads) for a total of four conditions (illustrated in Fig. 1).

In the color conditions, all tobacco products and advertisements in the virtual store were in full color with text and graphics (status quo). In the plain pack and ads conditions, all tobacco product packaging on the tobacco display behind the checkout counter, all shelving units ads on the display, and all tobacco advertisements throughout the virtual store (at checkout counter, hanging ads in store aisles) were black and white with text only.

An off-the-shelf model of the convenience store was purchased and extensively customized for this study using Unity 3D interactive gaming software. Similar methods were employed in related studies with youth and adults (Hubal et al., 2011).

2.2. Participants

A national convenience sample of adult current smokers and recent quitters aged 18 or older was recruited from ResearchNow's e-Rewards online adult panel. Current smokers were defined as those who currently smoke every day or on some days. Recent quitters were defined as those who do not currently smoke but have smoked within the past year. Panelists already had or were willing to download the Unity 3D plug-in to run the virtual store application.

E-mail invitations were sent, and 4412 panelists consented to participate and met the eligibility criteria (Fig. 2). Those who chose to participate were given a brief description of the study, including their rights as study participants. Informed consent was obtained, and the study was approved by RTI International's institutional review board.

Participants initiated the study by clicking on a link that randomized them to 1 of 4 conditions. If participants already had the Unity 3D player installed on their computer, the virtual store application loaded and they began the virtual shopping task. If participants did not have the

Download English Version:

<https://daneshyari.com/en/article/898601>

Download Persian Version:

<https://daneshyari.com/article/898601>

[Daneshyari.com](https://daneshyari.com)