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Targeting anti-smoking messages: Does audience race matter?

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Abstract

This study examined whether an adolescent's self-identified race moderates the perceived effectiveness of anti-smoking messages. A sample of 94 never smoking adolescents (59% African-American; 41% European-American) participated in this two-part study. First, they rated the persuasive strength of a series of five decontextualized anti-smoking messages (i.e., messages delivered in text format). Second, they were exposed to five sets of anti-smoking public service announcements (PSAs; viewed as TV advertisements) that had embedded in them the five anti-smoking messages used in the first part of the study and rated their smoking refusal self-efficacy after each one. Although race moderated participants' ratings of the decontextualized messages, there were no significant moderating effects of race when those messages were embedded in PSAs. The results of this study support the notion that anti-smoking PSAs should not be targeted to adolescent racial background, but suggests that decontextualized anti-smoking messages may be more effective if targeted to adolescent race.

Keywords

adolescent; tobacco; race; anti-smoking; public service announcements; anti-smoking messages

1.0 Introduction

Individuals of different racial and ethnic backgrounds have been explicitly targeted by the tobacco industry (e.g., Fernandez, Hickman, Klonoff, Landrine, Kashima, Parekh, Brouillard, Zolezzi, Jensen, & Weslowski, 2005; Mayberry and Price, 1993; see also National Cancer Institute, 2008). This targeting was done purportedly to maximize the impact of the advertising and subsequently to increase sales of tobacco products among particular racial groups (Pollay, Lee, & Carter-Whitney, 1992). Indeed, this strategy seems to have been successful as evidenced by higher purchase rates of cigarette brands (e.g., menthol cigarettes), which were advertised prominently in urban and minority neighborhoods (National Cancer Institute, 2008; Alpert, Koh & Connolly, 2008; HHS,

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1989a; 1989b). While studies of the mechanism behind the relationship between mentholated cigarette use and tobacco related diseases among African Americans is not conclusive (e.g., Siahpush et al. 2010), studies suggest increased use of such cigarettes contributes to increased rates of tobacco-related disease among African Americans in particular (Gallooly, 2007; Jarvik, Tashkin, Caskey, McCarthy, & Rosenblatt, 1994).

Given that targeted cigarette advertising appears to have been so effective at increasing smoking in minority populations, it is surprising that so little work has been completed that examines targeting anti-smoking messages to different racial and ethnic groups in order to enhance their effectiveness in those populations. The few studies that have examined whether or not anti-smoking messages are differentially efficacious based on the viewers' racial background have yielded mixed results. Some studies have found that anti-smoking advertisements were less effective at decreasing smoking behavior, reducing intentions to smoke, or increasing intentions to quit in whites compared to nonwhites (Farrelly, Nonnemaker, Davis, & Hussin, 2009; Smith & Stutts, 2006). In contrast, other studies have found that anti-smoking media campaigns affect attitudes toward tobacco and smoking behavior similarly, regardless of race or ethnicity (Farrelly, Niederdeppe, Davis, & Haviland, 2003; Wakefield, Durrant, Terry-McElrath, Ruel, Balch, Anderson, Szczypka, Emery, & Flay, 2003; Terry-McElrath et al., 2007). These mixed findings strongly suggest that more research is needed to evaluate how anti-smoking media campaigns, for example anti-smoking public service announcements, may differently affect adolescents of diverse racial and ethnic backgrounds.

The purpose of this study was to examine whether race (self-identified as “white” or European-American vs. “black” or African-American) moderates responses to decontextualized anti-smoking messages (i.e., messages presented without some context like being embedded in an anti-smoking PSA) and to anti-smoking PSAs that use those messages (i.e., messages embedded in the context of a PSA) among adolescents. Studies suggest that strong negative messages about health consequences are more effective in affecting audience members' recall of the advertisement and in their discussions of the message compared with other forms of advertising, such as humorous or neutral advertisements (see National Cancer Institute, 2008). Therefore, our hypothesis is that the race of the viewer is not the most important variable in regards to the effectiveness of the message or PSA. However, the field of tobacco control has not fully examined these issues leaving question as to the relationship between race and PSA effectiveness. At the same time, this study is unique in that it considers both the strength of the anti-smoking messages that were decontextualized and messages themselves as they are embedded in PSAs. It is important to understand how context of a PSA (with its implicit and explicit presentation of anti-smoking messages, presence of actors, editing characteristics, etc.) affects the perceived efficacy of anti-smoking messages. For example, it may be that PSA context is not important to enhancing or diminishing the perceived efficacy of anti-smoking messages (i.e., that anti-smoking messages are perceived as similarly effective within racial group regardless of whether embedded in a PSA or not). Alternatively, it may be that messages presented in PSAs are seen as more effective because they provide other visual and auditory cues that help to convey the anti-smoking message (e.g., anti-smoking message being conveyed by a grieving husband of a spouse who died of a smoking-related disease).

2.0 Method

Procedures

The data for this study were drawn from a larger laboratory-based study that had the goal of understanding how anti-smoking PSAs exert their effects on adolescents (for methodological details see Shadel, Fryer, & Tharp-Taylor, 2009). All participants attended

three 90-minute group sessions, with about one week between each session. Session 1 tasks included the informed consent process, completion of baseline questionnaires, and participants rating the perceived persuasive strength of five decontextualized anti-smoking messages. Session 2 tasks consisted of participants rating images of actors drawn from each of the PSAs (not discussed in this study). Session 3 tasks included participants viewing sets of PSAs that used the same five anti-smoking messages and rating their smoking resistance self-efficacy after exposure to each one (the PSAs were shown to participants in random orders). At the end of Session 3, participants were debriefed, compensated with up to \$60 worth of gift certificates, and provided with written smoking prevention materials (National Institute on Drug Abuse, 2000). Data for the current study were drawn from Session 1 (message ratings) and Session 3 (smoking resistance self-efficacy following PSA exposure).

Participants

This study was approved by the Human Subjects Protection Committee at the RAND Corporation. Adolescents were recruited using print media advertising and from a local community center in Pittsburgh, Pennsylvania. The sample in the main study ($n = 110$; Shadel et al., 2009) was 38% European-American, 53% African-American, and 9% multi-ethnic/other ethnicity. The sample in this study was the subsample of European-American ($n = 46$) and African-American ($n = 64$) adolescents. The sample had a mean age of 14.1 ($SD = 1.8$) and was 53% female; 19% reported that they had smoked at least a puff of a cigarette in the past. There were no significant differences found between European-American and African-American youth using these variables.

Anti-smoking Messages

During session 1, participants were presented with the following decontextualized anti-smoking messages (in random orders to different groups of participants):

1. *Secondhand smoke*. "Cigarette smoke from other people – second hand smoke – is dangerous for people who don't smoke";
2. *Addiction*. "Nicotine is addicting and will hook you on smoking";
3. *Short-term effects*. "Cigarette smoking can ruin the fun times in your life";
4. *Long-term effects*. "Cigarette smoking will kill you" and "Smoking cigarettes takes years off your life"; and
5. *Industry manipulation*. "The tobacco industry targets teenagers and tries to trick them into smoking".

Participants rated each message on the following two items using a 10-point scale: "How strong of an argument is this for not smoking?" (1 = Very Weak; 10 = Very Strong) and "How convincing is this argument that you should not smoke?" (1 = Not at All Convincing; 10 = Very Convincing). The correlation between each of these items was very high within each of the anti-smoking messages (all r values $> .722$, p values $< .0001$). Thus, responses to each item were summed within each anti-smoking message to produce a *message strength* score for each message; alpha levels for the six anti-smoking messages all exceeded .836. High scores on this two item scale reflect greater levels of perceived anti-smoking message strength.

Public Service Announcements

The PSAs were drawn from the catalogue maintained by the Center for Disease Control's Media Campaign Resource Center. The PSAs used actors who were diverse in terms of age, gender, and racial background. The majority (75%) of PSAs included both genders; most included either teens or both teens and non-teens (91%); and a majority included actors of

all racial backgrounds (58%).¹ A total of 28 PSAs, that fell into the following anti-smoking message theme categories, were examined in this study (see Goldman and Glantz, 1998): secondhand smoke (three PSAs); addiction (four PSAs); short-term effects (four PSAs), long-term effects (six PSAs), and industry manipulation (11 PSAs). The PSAs used actors who were diverse in terms of age, gender, and racial background. All of the PSAs had a negatively valenced emotional tone and/or contained disturbing imagery. All participants viewed each of the 28 PSAs in random orders and rated their smoking resistance self-efficacy with the following item, "This PSA gives me the confidence to resist smoking if a friend offers me a cigarette" (1 = *Definitely No*; 10 = *Definitely Yes*). This item was taken from questions used by Ellickson and colleagues (Ellickson & Hays, 1992). Responses for each PSA were averaged within each anti-smoking message theme category to produce a total smoking resistance self-efficacy score for each. Higher scores reflected stronger smoking resistance self-efficacy.

3.0 Results

Analysis of Anti-smoking Messages

A 2 (*self-described racial group*: European-American, African-American) X 5 (*anti-smoking message*: secondhand smoke, addiction, short-term effects, long-term effects, industry manipulation) repeated measures ANOVA was used to analyze message strength. Racial group was the between subjects factor and anti-smoking message was the within subjects factor. Figure 1 graphically presents mean message strength values as a function of racial group and anti-smoking message. A significant interaction between racial group and anti-smoking message was found ($F(4, 360.22) = 3.285, p = .016$). Further examination of this interaction effect revealed no differences between European-American and African-American adolescents in their assessment of the strength of the following anti-smoking messages: secondhand smoke ($p = .28$), nicotine is addicting ($p = .77$), short-term smoking effects ($p = .28$), and tobacco industry manipulation ($p = .32$). However, compared to African-American youth, European-American youth reported that messages that emphasized long-term smoking effects were significantly more persuasive ($p = .008$). Analyses within racial group revealed very little preference for message type among African-American adolescents, with two exceptions. African-American adolescents rated tobacco industry manipulation messages as significantly less persuasive compared to secondhand smoking messages and long-term health effects messages; long-term health effects messages were significantly more persuasive than nicotine is addicting messages. There was much more variability in the responses of European-American youth. Messages that focused on long-term health effects were perceived as significantly more persuasive compared to all other message types (all p values $< .004$). Next, secondhand smoking messages were perceived as significantly more persuasive compared to every other message type (all p values $< .02$) but less persuasive than messages emphasizing the long-term health effects (which were perceived as most persuasive). The remaining messages – nicotine is addicting, short-term smoking effects, and tobacco industry manipulation – all were seen as persuasively similar to one another (all p values $> .18$).

Analysis of Anti-Smoking Public Service Announcements

A 2 (*self-described racial group*: European-American, African-American) X 5 (*anti-smoking PSA type*: secondhand smoke, addiction, short-term effects, long-term effects, industry manipulation) repeated measures ANOVA was used to analyze smoking resistance self-efficacy ratings following exposure. As in previous analyses, racial group was a between

¹There were not enough PSAs that included only African-American actors to conduct an analysis that segmented the PSAs by racial background.

subjects factor and anti-smoking PSA type was a within subjects factor. Figure 2 graphically presents mean smoking resistance self-efficacy as a function of racial group and anti-smoking message. The interaction between racial group and anti-smoking PSA type was not significant ($p = .083$). The main effect of racial group on smoking resistance self-efficacy ratings also was not significant ($p = .148$). However, there was a significant main effect of anti-smoking PSA type ($F(4, 404) = 21.942, p < .0001$). PSAs that emphasized the long-term health effects of smoking were associated with significantly higher smoking resistance self-efficacy ratings compared to all of the other anti-smoking PSA types (all p values $< .0001$). In contrast, tobacco industry manipulation PSAs were associated with the lowest smoking resistance self-efficacy ratings (all p values $< .0001$). PSAs that emphasized secondhand smoke, nicotine is addictive, and short-term smoking effects messages were all associated with similar levels of smoking resistance self-efficacy.

4.0 Discussion

Mixed findings from the few studies addressing the question of whether or not adolescents' racial background moderates perceptions of the strength of particular anti-smoking messages and smoking resistance self-efficacy following exposure to anti-smoking PSAs that use those messages motivated the current study. Although adolescents' race moderated their assessment of the persuasive strength of decontextualized anti-smoking messages, once those messages are embedded in PSAs all adolescents responded similarly to the PSAs. These findings suggest that although segmenting different decontextualized anti-smoking messages to different racial groups may be important, it does not appear to make sense to develop PSAs that target particular racial groups. Any differences found in the persuasive strength of anti-smoking messages were likely overwhelmed by features of the PSAs, for example, editing and pacing of PSAs can affect their potency (Niederdeppe, Davis, Farrelly, & Yarsevich, 2007). More research is needed to examine how race moderates the efficacy of anti-smoking media campaigns and how youth of different racial and ethnic groups respond to specific anti-smoking messages and features of anti-smoking PSAs.

Limitations to this study should be noted. First, strong causal inferences cannot be drawn in this study due to the essentially correlational design, nor can the source of the moderation by race be determined, due to the limited availability of data exploring potential individual level characteristics such as attitudes and experiences that may contribute to this linkage. Second, actual adolescent smoking behavior was not an outcome in this study. Third, the sample was comprised of a low-risk group of adolescents with minimal smoking experiences. Therefore, our findings may not generalize to adolescents in the population at large, to those who have had more extensive exposure to cigarettes or to smoking, or to adolescents who are more regular smokers.

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Dr. Tharp-Taylor provided summaries of previous research studies, contributed to the protocol, collected data, and wrote the first draft of the manuscript. Dr. Fryer contributed to the protocol and collected data. Dr. Shadel designed the study, wrote the protocol and conducted the statistical analysis. All authors contributed to and have approved the final manuscript.

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Highlights

We studied whether adolescents' race moderates perceived effectiveness of antismoking messages.>Youth rated persuasive strength of five decontextualized antismoking messages.>Youth watched PSA's with embedded messages, rating smoking refusal self-efficacy.>Participant race moderated ratings of the decontextualized message strength.>Race showed no significant moderating effects when messages were embedded in PSAs.

Figure 1.
Anti-smoking message strength ratings by racial group.

Figure 2.
Smoking refusal self-efficacy by racial group.