

REDUCING SMOKING DISPARITIES FOR HISPANIC ADOLESCENTS: EMPOWERMENT THROUGH MEDIA LITERACY

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Hispanics/Latinos in the United States bear a disproportionate burden of health and economic disparities on many levels. The Hispanic population, however, is not monolithic. As the proportion of Hispanics in the U.S. population increases, advertisers have seized opportunities for niche and/or target marketing for a wide range of products and services. One group and context where such advertising is of keen interest is in marketing cigarettes to younger Hispanics. In this chapter we report results from a media literacy project focused on empowering Hispanic adolescents to resist the effects of smoking advertisements.

Cigarette smoking continues to remain the leading cause of preventable morbidity and mortality in the United States among all ethnic groups (U.S. Department of Health and Human Services (USDHHS), 2004). The Substance Abuse and Mental Health Services Administration (SAMHSA, 2009) reported that more than 80% of smoking initiation occurs before 18 years of age. Recent results from the 2009 National Survey on Drug Use and Health (SAMHSA, 2010) indicated increasing levels of smoking initiation for adolescents. In 2009, 2.5 million people aged 12 or older had experimented with smoking in the past 12 months, significantly higher than previous estimates (2.1 million in 2004). Additionally, most new smokers in 2009 (58.8%) were younger than 18 years when they first smoked cigarettes. Clearly, some smoking initiation occurs before age 18. However, patterns of adolescent cigarette smoking differ substantially among racial and/or ethnic groups, and contribute to health disparities.

In terms of Hispanic adolescents' cigarette smoking rates, current smoking rates for Hispanic youths aged 12 to 17 years were 7.5%, greater than current smoking rates for Black (5.1%) and Asian (2.5%) youth, but lower than the rates for White youth (10.6%) in the same age range (SAMHSA, 2010). This finding sug-

gests that besides targeting White youth, tobacco companies may have substantial interest in targeting Hispanic adolescents (Brown & Houseman, 2000).

Tobacco companies have targeted minority adolescents for some time. Targeted advertising and promotion of specific cigarette brands with names such as "Rio" and "Dorado" to the Hispanic American communities began in the 1990s, and reflect disproportionate targeting of this group by American tobacco companies (USDHHS, 1998). In 2000, the tobacco industry began to more aggressively market to Hispanic youth, as was evident from the launch of a \$40 million advertising campaign targeting predominantly African American and Hispanic markets (Brown & Houseman, 2000). Thus, more effort was needed to focus antismoking efforts specifically at minority populations. But at what age should these minority antismoking efforts be targeted?

Prior research suggests that delaying the initiation of smoking may have significant public-health benefits (Rohde, Lewinsohn, Brown, Gau, & Kahler, 2003), and interventions aimed at interrupting smoking initiation may be significant, timely, and reduce the risk of smoking dependence (see also McNeill, 1991). The National Cancer Institute (NCI, 2010) reported that Hispanics have an earlier onset of cigarette smoking than Asians/Pacific Islanders and Blacks, while they have a higher but similar age of initiation as compared with Whites. These data emphasize the need for targeting minority youth in middle schools with preventive antismoking messages and/or interventions. We present an antismoking media literacy intervention developed and tested primarily with Hispanic middle school students (see Banerjee & Greene, 2006, 2007). Before describing the intervention in detail, we discuss Hispanic adolescent smoking correlates and the use of media literacy as the optimal tool for antismoking intervention efforts with these minority adolescents.

Why Do Hispanic Youth Smoke?

Smoking among Hispanic adolescents is associated with a range of factors. The National Cancer Institute's Tobacco Control Monograph #14 (Baezconde-Garbanati, 2001) reviewed factors related to culture, gender, acculturation, immigration status, socioeconomic status, and the historical and environmental factors that influence Hispanic/Latino adolescent smoking, and summarized,

As Hispanic/Latino children grow and mature, traditional norms from their younger years that protect against smoking are challenged by the broader society. Societal engagement of Hispanic/Latino adolescents implies interactions with multiple ethnic and racial groups, various cultures, and individuals with varying social and cultural norms regarding tobacco use. The mixture of values and norms creates new expectations and challenges at a time when young people are truly beginning to define themselves and are searching for who they are as individuals. (Baezconde-Garbanati, 2001, p. 239)

The very nature of the challenges of normal adolescent development coupled with cultural factors create a particularly toxic combination for Hispanic initiation of smoking (and other risk) behavior. More recently, Lopez et al. (2010) proposed key factors that categorize Hispanic adolescents' reasons for smoking into two broad areas: intrapersonal factors (including personal attitudes and beliefs about smoking) and ecodevelopmental factors (including acculturation, family, school, and peers). Several aspects of family functioning, such as low parent-adolescent communication, low parental involvement, and low parental monitoring of peer activities are associated with smoking in Hispanic adolescents (Elder et al., 2000). Similarly, aspects of peer relationships, such as association with peers who smoke, has a positive relationship with smoking (e.g., Cowdery, Fitzhugh, & Wang, 1997), while friends' disapproval of smoking is associated with reduced likelihood of smoking among Hispanic adolescents (Gritz et al., 1998). Additionally, favorable attitudes and beliefs about smoking are associated with smoking in Hispanic adolescents (Elder et al., 2000).

However, these factors cannot be examined in isolation from the struggles of Hispanic adolescents to accommodate to some aspects of American culture. One culture-specific factor that has been consistently shown to have an effect on substance use among Hispanic adolescents is acculturation. Rogler, Cortes, and Malgady (1991) defined acculturation as a process by which members of one cultural group (e.g., immigrants from a particular country) adopt some beliefs and behaviors of another group (e.g., the host society). For Hispanics, acculturation means adopting beliefs and behaviors that conform to a "mainstream" American way of life (see Horigian, Lage, & Szapocznik, 2006). Acculturation affects adolescent smoking, with more-acculturated Hispanic adolescents engaging in greater substance-use behaviors than less-acculturated Hispanic adolescents (see, for example, Chen, Cruz, Schuster, Unger,

& Johnson, 2002). In particular, the values of individualism and rebelliousness portrayed in cigarette ads may be more receptively perceived by acculturated Hispanic adolescents. Additionally, Baezconde-Garbanati (2001) described how tobacco advertising and the entertainment industry present smokers as living a life of glamour and sexual prowess. These values portrayed in media appeal to a sense of manliness or "machismo" among Hispanic boys, and a sense of freedom and breaking away from traditional cultural and family norms for Hispanic girls. Such values and other pro-tobacco messages in media have been shown to predict smoking among Hispanic youth (Chen et al., 2002). All these findings suggest that tobacco prevention efforts need to be grounded in cultural and social realities of Hispanic adolescent life, including any cultural struggles and adaptation processes.

A Media Literacy Antismoking Intervention: Empowerment for Hispanic Adolescents

In this project, we used media literacy as a strategy to encourage Hispanic adolescents' critique of advertisements, to enable them to resist smoking advertisements and risky influence attempts more generally. Vargas (2006) pointed to the empowerment potential of media literacy for Hispanic adolescents who are not only in a transition from childhood to adulthood, but who are also transforming their cultural and national identities by using media among other cultural resources. Media is heavily used by Hispanic adolescents, and, in part, it helps them understand the societal and cultural nuances of the American life. A culturally oriented media literacy program not only has the potential to make adolescents critically aware of the techniques and motivations underlying media messages, but also to help them examine their own attitudes and beliefs shaped by media messages (see Vargas, 2006). However, before discussing the role of media literacy as an antismoking strategy, we address the question, "what is media literacy?"

Media literacy is an emerging avenue for smoking prevention (see Banerjee & Greene, 2006; Pinkleton, Austin, Cohen, Miller, & Fitzgerald, 2007; Primack, Gold, Land, & Fine, 2006) and other behaviors such as drinking (see Austin & Johnson, 1997; Chen, 2009; Greene et al., 2011) and body image (see Levine, Piran, & Stoddard, 1999; Watson & Vaughn, 2006). Media literacy traditionally incorporates skills of accessing, analyzing, evaluating, and communicat-

ing messages in a number of forms (Hobbs, 1998). Put simply, the purpose of media literacy education is to equip and empower young people to critically analyze media messages to become more aware of persuasive message strategies, structure, and claims. The website of the National Association for Media Literacy Education (NAMLE, 2010) summarizes the functions of media literacy in this way:

Within North America, media literacy is seen to consist of a series of communication competencies, including the ability to access, analyze, evaluate, and communicate information in a variety of forms, including print and non-print messages. Media literacy empowers people to be both critical thinkers and creative producers of an increasingly wide range of messages using image, language, and sound. It is the skillful application of literacy skills to media and technology messages.

National organizations such as the American Academy of Pediatrics, the Centers for Disease Control and Prevention, and the Office of National Drug Control Policy have recommended media literacy specifically as an antismoking prevention strategy. The rationale is based on the engaging, novel approach with small-group interaction in combination with the potential to reinforce previously existing antismoking beliefs (see Pfau, 1995). These smoking prevention strategies rely on reinforcing existing negative beliefs regarding substance use such as smoking (e.g., cigarettes smell, smoking is dangerous). Voicing the same recommendation, Unger, Cruz, Schuster, Flora, and Johnson (2001) have suggested that media literacy programs should be developed to encourage adolescents' resistance to tobacco-marketing strategies.

Media literacy antismoking prevention strategies have typically been delivered in school settings, but clubs and organizations (e.g., YMCA or soccer clubs) are potential settings for future interventions. The term, media literacy intervention, refers to an experimental treatment that introduces specific concepts (in this case, specific concepts about smoking) to study participants (any age group, primarily youth) with the aim of increasing awareness of the meaning contained in media messages, promoting deeper understanding of the impact of media on society, and enhancing critical analytical skills. For example, the intervention could demonstrate:

1. How cigarette ads promote the idea that smoking is: cool, fun, depicts maturity, and asserts independence;
2. How smoking images attract youth; and

3. How smoking ads promote images of fun while underplaying harmful effects of smoking.

The general goal of these media literacy interventions is to provide people with the cognitive skills necessary to analyze and critique media, and eventually lead them to build upon these skills required to process media messages in a more active manner (Potter, 2004). Based on these acquired skills, adolescents should build defenses against the potential negative effects of media (Austin, Pinkleton, Hust, & Cohen, 2005), and be less susceptible to negative effects of advertising through these inoculation processes (see Banerjee & Greene, 2007; Greene, in press).

Media literacy antismoking interventions have demonstrated reduction in (or delayed increase in) smoking related attitudes, intention, and behavior for elementary and middle-school children (e.g., Austin et al., 2005; Gonzales, Glik, Davoudi, & Ang, 2004; Kupersmidt, Scull, & Austin, 2010; Pinkleton et al., 2007). These studies indicate that interventions can help young people understand the role of tobacco advertising in encouraging tobacco use among adolescents, and identify marketing strategies tobacco companies use in their advertisements (Beltramini & Bridge, 2001). Increasing attention to these types of outcomes may further transfer to the development of or change in attitudes that are maximally effective for smoking prevention efforts (see Banerjee & Greene, 2006, 2007). Unfortunately, these prior interventions are labor intensive for schools, and some require eight, 12, even 18 sessions or a semester to deliver. Additionally, this prior work has not focused on minority adolescents. We developed a brief intervention (75 minutes, or two class periods) targeting minority adolescents to focus on empowering them to analyze media and also to resist smoking influences.

The Intervention

The purpose of the media literacy antismoking intervention was to change smoking-related attitudes and intentions, and, using experiential learning, to forewarn participants against future smoking persuasion attempts and empower them to critique advertisers' messages. The intervention manipulated the strategies chosen for delivering the message: analysis of counter cigarette advertisements versus production of counter cigarette advertisements.

The analysis approach includes a more traditional view of media literacy in which students were involved in analyzing and critiquing cigarette advertisements and antismoking advertisements and billboards. The production approach involves students by first having them analyze and critique cigarette advertisements, and then involved them in creating their own antismoking posters. Prior studies on media literacy efficacy have utilized both strategies (i.e., analysis and production) in creation of media literacy curricula without identifying which component(s) contribute(s) to success. We should know which strategy (analysis or production) is most efficacious to focus intervention efforts (see Greene, in press). The National Cancer Institute (NCI) Monograph #19 (NCI, 2008) described the significance of the intervention under discussion here: "Aside from this study, there have been no empirical studies on the impact of this kind of media activism and related informal advertising on individual attitudes and behavior, tobacco industry activity, and media coverage" (p. 445).

Our study involved two approaches to antismoking intervention efforts. We designed our intervention with two assumptions:

1. Media literacy production was a more novel and creative way of teaching in a classroom situation, as compared to media literacy analysis, and
2. Media literacy production empowers students more than media literacy analysis, because in production students are encouraged to plan and create their own media and therefore may benefit from experiential learning.

With these assumptions, we hypothesized that the production approach would be more cognitively involving (as evidenced by greater attention and more positive workshop perceptions), and lead to stronger antismoking attitudes, norms, and intentions as compared to the analysis approach, and both the approaches would be superior to the control group. The design of the intervention is described below (see also Banerjee & Greene, 2006, 2007), followed by description of the workshop sessions.

Time 1 (Week 1), Pretest. All students were involved in a pretest that included questions on prior smoking behavior, attitudes, beliefs, and norms related to smoking, and future smoking inten-

tions. Classrooms were then randomly assigned to analysis, production, or control groups.

Time 2 (Week 2), Analysis I. Students in both analysis and production groups participated in the same introductory media literacy analysis workshop that aimed at helping students understand the persuasion techniques employed by cigarette advertisers and the missing claims in smoking ads. Small groups were utilized for some activities in all workshops. The workshop began with an activity to identify smoking claims or persuasion techniques in cigarette ads found in youth-read magazines. Following the activity, we moved to explore other facts about smoking that are missing from cigarette ads. The workshop concluded with each group presenting their analysis of persuasion techniques in print cigarette ads to the entire class, followed by a class discussion recapitulating workshop themes. The workshop lasted for 40 minutes, including a brief questionnaire at the end with questions related to workshop involvement and evaluation. Students assigned to the control group were not involved in any intervention activities this week.

Time 3 (Week 3), Analysis II or Production. The workshops in week 3 were different for students in the analysis and production groups. The analysis workshop (Analysis II) aimed at helping students counter smoking ads by analyzing antismoking print ads. We started with reviewing smoking persuasion techniques discussed in the previous week, followed by introducing students to antismoking ads and discussing examples of how pro-smoking ads and antismoking ads differ. Students were then involved in a group activity to analyze antismoking print ads and billboards, followed by group presentations of advertisement analyses (each group received several ads and chose one to critique and present to the class). The workshop concluded with a class discussion recapitulating the analysis workshop.

The production workshop (Production) was aimed at helping students counter cigarette ads by planning and creating their own antismoking ads. We began by reviewing smoking persuasion techniques discussed in the previous session, followed by introducing students to antismoking ads, and demonstrating how pro-smoking ads and antismoking ads differ. The students participated in a group activity to create an antismoking poster. In this task,

the students' goal was to plan and create a poster that represents the best way to share an antismoking message with someone their age or younger at their school (each group of students was given poster-size paper, pencils, and markers to complete the project). This workshop concluded with poster presentations, voting on the best poster, and a review of workshop themes.

Both the Analysis II and Production workshops lasted 40 minutes, and all students filled out a questionnaire, responding to questions related to perceived workshop involvement and evaluation. Students assigned to the control group were not involved in any intervention or evaluation activities this week.

Time 4 (Week 5), Posttest. Students in all conditions were involved in a posttest that included smoking behavior in the past 30 days, attitudes, beliefs, and norms related to smoking, and future smoking intentions (the two-week delay captured some potential delayed effects).

Study Participants

The participants in the media literacy antismoking intervention study were two hundred and sixty ($N = 260$)—male ($n = 104$) and female ($n = 156$)—students enrolled in sixth to eighth grades in two northeastern schools (in New Jersey and New York). The students ranged in age from 11 to 16 ($M = 12.49$, $SD = 1.06$). The sample was predominantly Hispanic (74%) and African American (13%) (other groups < 3% each).

Results

Data were analyzed for both between-participant and within-participant differences. Between-participant differences highlighted the difference between analysis, production, and control groups, and within-participant differences highlighted differences over time (the study occurred over five weeks; in order to establish intervention efficacy, results of pretest and posttest were compared for each of the groups).¹ We describe the results in terms of overall significant effects (see Banerjee & Greene 2006, 2007 for detailed results).

Results for behavioral intention to smoke. The between-subject analyses demonstrate that behavioral intention to smoke was sig-

nificantly higher for the control group compared with analysis and production workshops. The within-subject analyses reveal that the Production session was more successful than both Analysis I and Analysis II sessions in reducing intention to smoke. Overall, both analysis and production workshops were better than control alone, but the Production workshop resulted in least intention to smoke. This is a key finding, as we reviewed the prior negative outcomes of smoking previously. This finding indicates that the media literacy production workshop is a promising avenue to reduce health disparities by empowering Hispanic adolescents.

Results for attitude toward smoking. The between-subject analyses were not significant for attitude toward smoking for analysis, production, or the control group. The within-subject analyses revealed that only production workshop was successful in reducing attitude toward smoking from Time 1 to 4. Because smoking attitudes are key predictors in many theories of persuasion, this finding for Production superiority is also crucial, similar to the impact for the findings for intention to smoke.

Results for subjective norm. Overall, the between-subject analyses revealed no differences across groups for subjective norm for analysis, production, or the control group. The within-subject analyses reveal that all workshop types (including control) were successful in reducing favorable smoking norm from Time 1 to Time 4. That is, completing surveys or participating in either workshop was related to more positive (health-protective) perceptions of norms, or believing that others think that smoking is bad.

Results for attention. Participants reported paying more attention to the production workshop (at Time 3), keeping attention to workshop (at Time 2) constant. Because at Time 2 the Analysis I session was common to both the groups (analysis and production), the Production I session elicited more attention from participants than Analysis II session. Thus, the Production workshop was a more engaging activity, with a very "hands on" approach to involving these Hispanic adolescents (from a qualitative perspective, responses to the poster production exercise were enthusiastic; students were excited about and engaged in the planning activity). Paying more attention to the workshop is an indicator of more in-

volvement, one way to establish the mechanism through which the production workshop functioned (see Greene, in press).

Results for overall workshop perceptions. Participants had more positive workshop perceptions (at Time 3) for Production workshop than Analysis workshop. At Time 2, the Analysis I session was common to both groups, thus the Production I session resulted in more positive workshop perceptions than the Analysis II session.

Discussion

We examined changes in behavioral intention to smoke, attitude toward smoking, subjective norm, and cognitive responses in order to understand the efficacy of two media literacy intervention approaches (analysis versus production) targeting primarily Hispanic adolescents. The findings from the study provided greater support in favor of the production approach in bringing about desired changes in intention to smoke and attitude toward smoking. Additionally, as expected, there was an overall support for production workshop, as it elicited more attention and more positive workshop perceptions than analysis workshop. These findings suggest that some cognitive processes (particularly attention and overall workshop perceptions) are important predictors of attitude and intention change, and the results justify the need to continue to unravel these mechanisms of change or specify the cognitive mechanisms involved in media literacy processing (see Greene, in press). If we are to continue to reduce health disparities in minority populations, we must first create effective interventions (such as the present example), and then ensure that we are certain which intervention features are maximally effective in producing change so that we can focus resources in further efforts. Understanding the process through which we reduce health disparities (i.e., how the intervention actually worked) will allow us to target other risk behaviors for these groups using similar strategies.

To address health disparities specifically, communication interventions must, at minimum, use examples that resonate with the target population, including but not limited to matching message sources (and clothing), language (including slang), and settings; and using targeted products and specific channels. For example, media literacy interventions targeting Hispanic adolescents might use for analysis examples ads that are shown on

Spanish-language channels (e.g., Telemundo, Univision, or Television), or ads appearing in magazines such as *Urban Latino* and *Latino Magazine*. In some of these ads, Latinos may be shown smoking Hispanic brand cigarettes (e.g., Fortuna, Faros, or Deliciados). Beyond these message feature considerations, adapted communication interventions must meaningfully engage audience motivations for risk behavior such as smoking. For Hispanic adolescents, this deeper engagement may include challenging perceptions that most Caucasian adolescents smoke, yet also addressing the notion that “macho” and independent men smoke.

Rationale to Justify Findings

One of the findings of the study was greater effectiveness of the production session of intervention workshops in reducing smoking-related intention, as compared to the initial analysis and second analysis sessions. The production strategy also worked better in conferring resistance to smoking messages, and was more effective in changing attitude and reducing intention to smoke over time. The production session may have provided an opportunity for participants to engage in self-persuasion by creating their own anti-smoking messages, rather than simply analyzing antismoking messages designed by others. Because most of the students already had negative attitudes toward smoking (confirmed in pre-test), both the workshops provided them with self-generated rationale confirming their attitude to be the “true” or correct attitude. The production group also publicly described and showed their posters to the class, which could also influence the process of change (an alternate explanation, the public commitment component).

Furthermore, we found that participants paid more attention to the production workshop (compared to the analysis workshop) and had more positive perceptions of the production workshop. Health-based classroom lessons are often taught by the instructor, and the medium of message delivery is usually through lectures, exercises, posters, and leaflets, among others (see Tingle, DeSimone, & Covington, 2003). The idea of creating their own medium (posters) for messages to peers or younger students may have resulted in active searching of other knowledge schemas (see Bordeaux & Lange, 1991) and greater attention paid to the production session. This strategy of creating their own poster can be applied

to other novel activities such as writing a play, making a television or radio script, and designing brochures. The key, underlying feature in these potential interventions would be involving participants in the activities in novel ways, such as planning messages that require perspective taking and counterarguing (see Greene, in press), to provide skills to empower them to make effective decisions when exposed to advertisements.

Overall, greater support for production suggests that students like creating their own messages more than they enjoy analyzing messages designed by others (see Kubey, 2000). Creating their own media not only empowers adolescents, but also provides them with an opportunity to reflect on their learning (Tyner, 1998). According to Tyner (1998), the combination of production creates a spiral of success for the students whereby analysis informs production, which in turn informs future analysis. Adolescents are constantly exposed to a barrage of media messages, thus they need such media-literacy skills to successfully navigate both their media and interpersonal environments. Because the production workshop included both types of activities (analysis and production), it provided students with an expression of their learning, and the best opportunity to apply new knowledge to future media messages targeting them.

Implications

The results of these data reinforce the need for evidence-based media literacy interventions targeting minorities. First, this study is one of the few published works that have attempted to “measure” media literacy efficacy and processes of effects. By using attention and overall workshop perceptions as cognitive processes, this study demonstrates the need for unraveling the process of change in media literacy interventions. Second, this study points to a key factor in intervention and/or campaign design, namely, participant involvement in message creation. Engagement is a crucial feature to effectively connect with populations, especially populations that may be struggling to identify with some parts of U.S. culture. The present study demonstrated that the production workshop worked better than the analysis workshop in changing participants’ attitude toward smoking and behavioral intention to smoke, we posit through involvement (attention measured here). Success of production over analysis media-literacy workshops sug-

gests examining if participant involvement in message generation and/or design can lead to self-persuasion. This project is the first test comparing the two media literacy strategies to develop a brief, yet efficacious, media-literacy approach (see Greene et al., 2011 for a modified application to high school drinking). Third, self-persuasion is another aspect that has not been well researched in regard to health intervention and/or campaign efficacy. The present study provides support for one mode of encouraging self-persuasion (getting students involved in producing their own anti-smoking posters). The complex interrelation of health disparities and power highlights the significance of approaches to persuasion and message involvement that are not perceived by participants as directive or "telling" minority adolescents what to do. It is relatively easy to generate reactance in adolescents, especially in the context of health behaviors, due to extensive focus on long-term health consequences. Thus, we must continue to explore involving approaches to intervention activities for specific subgroups. Intervention and/or campaign efforts promoting self-persuasion clearly merit attention.

Future Research

There is still much work needed in the area of media literacy and its application to large, health-based campaigns and/or intervention for Hispanic adolescents. The present study shows that experiential learning in the form of producing antismoking posters is a successful way of involving Hispanic young adolescents and protecting them against future persuasive smoking messages. Future researchers should consider if media literacy can be used for self-persuasion, leading to an enduring attitude and/or norm change, and further, long-term change in behavior. Considering culture-specific attitudes and beliefs within the framework of media literacy will provide novel ways of addressing antismoking issues with minority populations, and potentially combat specific media targeting of this group. This could include, for example, comparing messages specifically targeting Hispanics with those targeting other groups. Furthermore, the exact mechanism of cognitive processes that explain change in attitude or intention due to participation in media literacy interventions needs exploration.

The sample for this project included predominantly Puerto Rican adolescents in the northeast United States who may not share

the same cultural struggles as other Hispanic subgroups, for example, dealing with immigration or family legal-status issues. Thus, we would not presume that this present intervention success would generalize to other areas of the US (e.g., the southwest) or other Hispanic populations (e.g., Mexicans or Dominicans), because different Hispanic groups have different experiences. This notion could be tested, however, to address this question (and modifications made to the intervention for specific Hispanic subgroups). Using additional culture-specific issues (such as smoking ads exemplifying the image of machismo or acculturation) with male Hispanic adolescents may help make the interventions more target-appropriate for subgroups, and could explore differences in how male and female Hispanic adolescents resist pro-smoking messages. Additionally, the present study utilized English-language advertisements. All study participants read and spoke English fluently, and many were fully bilingual or English-dominant (even if their parents were Spanish-dominant). For some participants English was the primary language, yet others were Spanish-dominant. Future studies could utilize Spanish-language advertisements as well. The increasing availability of Spanish-language channels on cable television may make this an area to explore, although these channels may be less utilized specifically by Hispanic adolescents than by Hispanic adults; alternatively, acculturation might best explain language-channel useage and should be included in future research.

Our emerging research in this area of targeted interventions includes an NIH-funded (NIDA) project using a similar strategy with rural and urban adolescents' alcohol use (see Greene et al., 2011), focusing on different aspects of health disparities. This population is different from that described in the present study, but contributes to understanding ways we can better serve a range of minority populations. This new project includes measures of advertising skepticism and counterarguing, and seeks to unravel the mechanisms of cognitive change that lead to beneficial effects of media literacy interventions.

The Hispanic adolescents in the present study are the exact type of population in need of interventions to increase their resistance to advertising. Marketers increasingly target this group, as companies seek to diversify and expand their product marketing. Only by creating these types of targeted interventions can we ex-

pect to influence long-term health disparities in these communities. Through media literacy, minority adolescents can learn to analyze media messages more carefully, and become better aware of potential influences that can have a tremendous impact on many aspects of their future health. There is every reason to expect that learning to critique advertisements can generalize to other behaviors. For example, the current project utilized examples of cigarette advertisements, but we believe that learning specific advertising critiques, and producing and/or planning posters will allow these adolescents to also critique beer advertisements, fast-food marketing, and a host of other topics and contexts. Although this premise is untested in the present project, it could be a beneficial side effect. Not only did the current media-literacy project provide better outcomes for Hispanic adolescents' smoking, but it also provided tools to enable participants to become better engaged and productive societal members. By encouraging adolescents to be more skeptical of media messages and the intentions of advertisers, we are affecting health disparities in vulnerable populations. Continued research in this area would be beneficial on many fronts.

Notes

1. The procedures used for detecting within-participant and between-participant differences are summarized here. **Between-participant analyses:** Step 1, to show that groups are equal on outcomes at baseline; Step 2, to show that groups are different on outcomes post-intervention; Step 3, to show that outcomes should change the same following the Media literacy introductory workshop; Step 4, to show that the Production and Analysis workshops generated different changes on outcomes. **Within-participant analyses:** Step 1, to show that the control group is equal on outcomes at baseline and post intervention; Step 2, to show the cumulative effects of Introductory and Analysis sessions for analysis workshop; Step 3, to show the cumulative effects of Introductory and Production sessions for production workshop; Step 4, to show the difference in change in outcomes between Times 2 and 3 for analysis and production workshops.

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REDUCING HEALTH DISPARITIES

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PETER LANG

New York • Washington, D.C./Baltimore • Bern
Frankfurt • Berlin • Brussels • Vienna • Oxford

Library of Congress Cataloging-in-Publication Data

Reducing health disparities: communication interventions /
edited by Mohan J. Dutta, Gary L. Kreps.
p. ; cm. — (Health communication; v. 6)

Includes bibliographical references and index.

1. Healthcare Disparities. 2. Communication Barriers.
3. Health Communication—methods. 4. Health Services Accessibility.
5. Quality of Health Care. I. Dutta, Mohan J. II. Kreps, Gary L.

III. Series: Health communication (New York, N.Y.); v. 6.

W 84.1 362.1—dc23 2012036412

ISBN 978-1-4331-1918-7 (hardcover)

ISBN 978-1-4331-1905-7 (paperback)

ISBN 978-1-4539-0935-5 (e-book)

ISSN 2153-1277

Bibliographic information published by **Die Deutsche Nationalbibliothek**.
Die Deutsche Nationalbibliothek lists this publication in the "Deutsche
Nationalbibliografie"; detailed bibliographic data is available
on the Internet at <http://dnb.d-nb.de/>.

The paper in this book meets the guidelines for permanence and durability
of the Committee on Production Guidelines for Book Longevity
of the Council of Library Resources.



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29 Broadway, 18th floor, New York, NY 10006
www.peterlang.com

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Printed in the United States of America