

ORIGINAL INVESTIGATION

Efficacy of a DVD-Based Smoking Cessation Intervention for African Americans

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ABSTRACT

Introduction: Previous research suggests that African American smokers may have improved outcomes if interventions are culturally specific. However, few interventions sufficiently address the unique needs of this population in a format with large reach potential. The purpose of this study was to test the efficacy of a newly developed digital video disc (DVD)-based cessation intervention targeting African Americans.

Methods: In a 2-arm randomized trial, smokers ($N = 140$) were randomly assigned to view either the new *Pathways to Freedom* (PTF) DVD or a standard control DVD. Participants were assessed at baseline, immediately postviewing the DVD, and at a 1-month follow-up. The primary outcomes were feasibility and process variables, including intervention evaluations, readiness to quit, and risk perceptions; and smoking-related behavior changes were examined as secondary outcomes.

Results: Findings demonstrated the hypothesized positive effects of the PTF DVD compared with the control DVD on content evaluations, risk perceptions, and readiness to quit at follow-up.

Conclusions: We found initial evidence for the efficacy of the PTF DVD as a stand-alone intervention. Future research will test the efficacy of the DVD for smoking cessation in a larger randomized trial. The ultimate goal of this research is to validate a new intervention for an underserved community of smokers that can be used in multiple settings, such as community health clinics, primary care, quitlines, cessation clinics, and seminars/workshops.

INTRODUCTION

Racial/ethnic disparities in smoking-related diseases are pervasive. For instance, African Americans have higher overall cancer incidence and mortality rates compared with all other racial/ethnic groups (U.S. Cancer Statistics Working Group, 2013). Although smoking cessation interventions benefit African Americans (Webb, 2008a), access to treatment and referral to services remain concerns (Arthur et al., 2007; Sheffer, Brackman, Cottoms, & Olsen, 2011). When treatment is available, African American smokers are less likely to quit compared with Whites (Murray, Connett, Buist, Gerald, & Eichenhorn, 2001).

There is a need for innovative cessation interventions that capture the elements of effective clinic-based protocols while reducing barriers to help-seeking (e.g., literacy, cost, transportation, child care, and stigma). The impact of such an approach could be strengthened by delivery through wide-reaching channels (e.g., booklets, videos, quitlines, the internet, etc.; Glasgow, Vogt, & Boles, 1999). Moreover, low-intensity interventions demonstrate long-term success rates that are similar to clinic treatments (Curry, 1993; Fiore et al., 2008).

Technology and media-based health interventions have the potential to increase reach into communities. Video interventions, in particular, might reduce barriers to participation and increase access to information. Digital video disc (DVD)-based interventions in other domains of health research have improved lung-specific health-related quality of life (Stellefson, Chaney, & Chaney, 2009) and medication adherence (Ingersoll et al., 2011). Videos utilizing a personal narratives “storytelling” approach have also shown promise for enhancing engagement (Houston et al., 2011b) and improving blood pressure (Houston et al., 2011a). The efficacy of video-based interventions for smoking cessation has been less clear. Resnicow et al. (1997) included a culturally specific video as a component of a large community-based cessation intervention targeting low-socioeconomic status African Americans. Because the video was a component of a larger intervention, any effects of the video per se cannot be determined. Houston et al. (2011b) developed a video designed to increase smoking cessation motivation among African Americans using a personal narratives approach. However, the efficacy of the intervention has yet to be established.

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Two key theoretical models may enhance the potential for culturally specific, population-level interventions to reduce tobacco-associated health disparities. The community competence model considers history, culture, context, and geography as foundational intervention constructs (Robinson, 2005). For African Americans, this includes slavery, racism/discrimination, and health care inadequacy. As secondary constructs, language, literacy, positive imagery, salient imagery, and multigenerational diversity are also important factors. Resnicow, Baranowski, Ahluwalia, and Braithwaite (1999) conceptualized two primary components of culturally specific interventions, surface structure and deep structure. Surface structure ensures that the intervention “looks like” it was designed for the target group (e.g., African American images) and is intended to enhance receptivity through face validity. Deep structure incorporates meaningful sociocultural, historical, environmental, and psychological factors into the intervention and is intended to enhance efficacy.

Overall, culturally specific smoking cessation interventions targeting African Americans have demonstrated promise. Compared to standard interventions, culturally specific self-help materials are preferred (Webb, 2008b, 2009), increase risk perceptions, motivation to quit (Webb, Rodriguez-Esquivel, & Baker, 2010a) and quit attempts (Nollen et al., 2007; Orleans et al., 1998). Evidence also indicates that culturally specific interventions increase the odds of short-term smoking cessation (Webb, 2008a).

The Current Study

The current study examines the efficacy of a state-of-the-science DVD-based smoking cessation intervention targeting African Americans. Smokers were randomly assigned to receive a culturally specific DVD or a standard cessation DVD. Assessments occurred at baseline, postviewing, and at a 1-month follow-up. The primary outcomes were key precursors to behavior change, including attitudes, readiness to quit smoking, risk perceptions, and intervention acceptability (content evaluations, credibility, recall, utilization). Smoking-related behavior changes (limiting smoking, setting a quit date, quit attempts, and cessation) were explored as secondary outcomes. We hypothesized that the culturally specific DVD would produce superior outcomes for all primary variables compared with the standard control condition. We also expected that the culturally specific condition would lead to greater behavior change, although observed differences would not necessarily reach statistical significance.

METHODS

Participants

Smokers were recruited through flyers posted throughout the community and word of mouth. Eligibility criteria included (a) self-identification as African American; (b) currently smoked ≥ 5 cigarettes per day; (c) aged 18–65; (d) read 5th-grade English; and (e) permanent contact information. Respondents were excluded if they were (a) currently receiving any type of cessation intervention or (b) did not have a method of viewing a DVD (6%). Inclusion criteria were met by 180 smokers who inquired about the study and were invited to participate.

Figure 1 illustrates the flow of participants through the study. The randomized sample included 140 smokers who attended the DVD viewing session and completed the baseline assessment (Pathways to Freedom [PTF] DVD, $n = 70$; standard DVD, $n = 70$).

Measures

Demographics and Smoking History (Baseline)

This included sex, age, marital status, race/ethnicity, household income, and education. Smoking history included years smoking, cigarettes/day, and the Fagerström Test for Nicotine Dependence (Heatherton, Kozlowski, Frecker, & Fagerström, 1991).

Fidelity Check (Post-DVD Viewing)

Three items assessed whether participants perceived the DVD to be culturally specific for African Americans. Items were rated on a 7-point scale, and included “I think this information was developed specifically for the African American community.” The total score (range = 0–21) was used in the analysis ($\alpha = .78$).

DVD Evaluation Questionnaires (Post-DVD Viewing)

Participants evaluated the videos using measures adapted from Webb et al. (2010a). Participants rated the content (13 items, $\alpha = .86$), appeal (4 items; PTF DVD condition, $\alpha = .71$; standard DVD, $\alpha = .60$), credibility (3 items; PTF DVD condition, $\alpha = .70$; standard DVD, $\alpha = .58$), and potential to share the intervention with others (2 items; PTF DVD condition, $\alpha = .72$; standard DVD, $\alpha = .54$) using 8-point Likert scales. They also rated their level of attitude change (4 items, $\alpha = .71$) as a result of the DVD. Example items were “How much did you learn about how you can quit smoking?” (Content evaluation); “The video I watched caught my attention?” (Appeal); “I believe that I can trust the experts in the video.” (Credibility); “If a friend were thinking of trying to quit smoking, how sure are you that you would recommend the video you watched to him/her?” (Sharing); and “The video I watched made me think about changing my life.” (Attitude change). Single items assessed the overall quality of the DVD, likelihood of re-watching, and recall of the contents. At the 1-month follow-up, participants reported utilization (one item), recall (one item), sharing (one item), and attitude change (two items, $\alpha = .70$).

Readiness to Quit (Baseline, Post-DVD Viewing, and 1-Month Follow-up)

Participants completed the Contemplation Ladder (Biener & Abrams, 1991) by indicating, on a 0–10 scale, the number reflecting their level of motivation for smoking cessation. This measure has been found to be a valid predictor of cessation (Biener & Abrams, 1991) and has been used among African Americans (Webb, 2009).

Risk Perceptions (Baseline, Post-DVD Viewing, and 1-Month Follow-up)

Previous research has assessed risk perceptions using various measures (Vernon, 1999; Weinstein, 1999). *General smoking risk perceptions* assessed perceived health consequences on a 4-point scale with high scores representing greater risk (seven

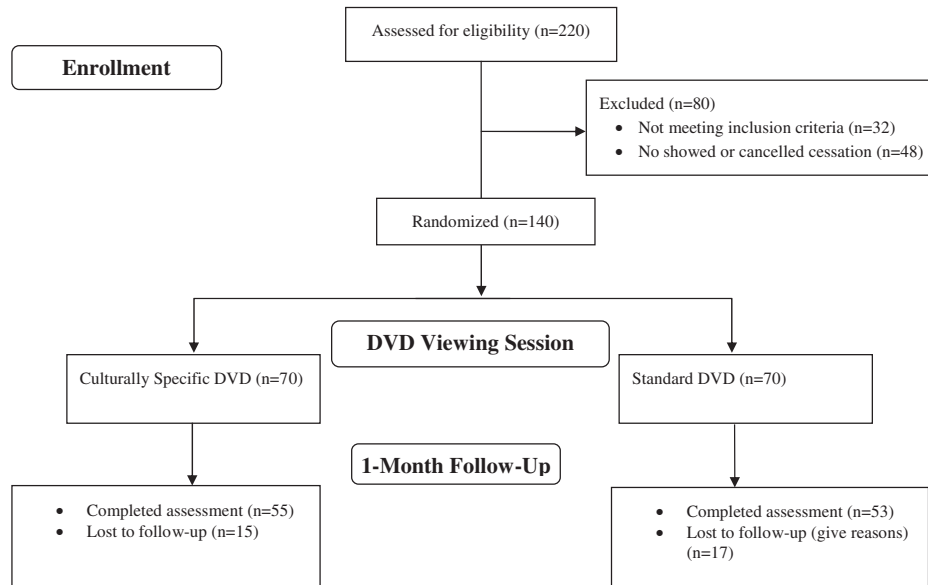


Figure 1. Participant flow.

items, Ma, Fang, Knauer, Tan, & Shive, 2006; Murphy-Hoefer, Alder, & Higbee, 2004; $\alpha = .71$, baseline; $\alpha = .74$, postviewing; $\alpha = .81$, 1-month follow-up). For example, “Smoking greatly increases the chance for developing cancer.” *Personal risk perceptions* assessed comparative behavior and risks from smoking using three items (10-point scale) adapted from Johnson, McCaul, and Klein (2002). For example, “Compared to non-smokers your age and sex, what are your chances of getting lung cancer someday?” Higher scores indicated greater risk perceptions ($\alpha = .64$, baseline; $\alpha = .80$, postviewing; $\alpha = .79$, 1-month follow-up). *Culturally specific risk perceptions* (i.e., perceived risks for African Americans per se) were measured using four comparative behavior and outcome questions (10-point scale), with White Americans as the reference group (adapted from Johnson et al., 2002; present study: $\alpha = .85$, baseline; $\alpha = .87$, postviewing; $\alpha = .93$, 1-month follow-up). For example, “Compared to White Americans who smoke, what are your chances of getting lung cancer someday?” Higher scores indicated greater risk perceptions.

Smoking-Related Behavior Changes (1-Month Follow-up)

Participants reported 24-hr quit attempts, limiting smoking to certain places/situations, setting a quit date, or quitting smoking completely (yes or no).

Interventions

Participants viewed one of two 60-min smoking cessation DVDs.

PTF Smoking Cessation DVD

The framework for the culturally specific DVD, *Pathways to Freedom: Leading the Way to a Smoke Free Community*®, was guided by the Robinson (2005) and Resnicow et al. (1999) models for targeted interventions. The PTF DVD combines knowledge regarding the history of smoking among African Americans, smoking cessation, and relapse prevention, with an

ethnocultural context. The culturally specific adaptations (e.g., focus on menthol, focus on religion/spirituality, Black images, and music) are infused throughout the DVD. Topics include deep structure (e.g., African American smoking statistics, physiological findings, smoking norms, pharmacotherapy concerns, religion/spirituality, family/collectivism, unique stressors, comorbid addiction, environmental influences, targeted marketing, menthol cigarettes, weight concerns, and working against the tobacco industry) and surface structure (e.g., race-matched experts; and images/graphics of African Americans). The DVD represented a substantial enhancement (e.g., focus on theoretical models of behavior change and pharmacologic therapies; testimonials from African American smokers, former smokers, and cancer survivors; recent FDA legislation; and new research findings) of the written PTF guide (Robinson, Sutton, James, & Orleans, 2003).

The smoking cessation and relapse prevention content was based on a cognitive behavioral therapy protocol with demonstrated efficacy among Black smokers (Webb, Rodriguez-Esquivel, Baker, Reis, & Carey, 2010b) and parallels the education, advice, and cessation/relapse prevention strategies delivered in both clinic and telephone contexts. As shown in Table 1, the PTF DVD contains seven sections: How to Use this DVD, Introduction, The High Cost We Pay, Gaining Freedom from Smoking: Your Guide to Quitting, Never Quit Quitting: Relapse Prevention, Community Initiatives for Tobacco-Free Neighborhoods, and Frequently Asked Questions.

Standard Smoking Cessation DVD (Control)

This condition received a standard DVD, *How to Quit* (American Medical Association, 1994), which is designed for the general population of smokers. This high-quality video is presented as a “prescription” by physicians and a nutritionist. Topics include the reasons for quitting, health benefits of quitting, nicotine addiction and withdrawal, cessation and relapse prevention, nicotine replacement therapy, smoking triggers, coping skills, stress management, social support, physical

Table 1. Sections of the Pathways to Freedom DVD

How to use this DVD	Introduction	The high cost we pay	Gaining freedom from smoking: your guide to quitting	Never quit quitting: relapse prevention	Community initiatives for tobacco-free neighborhoods	Frequently asked questions
<ul style="list-style-type: none"> • Describes use of DVD (i.e., play all or selected sections) • Briefly describes the content of each section 	<ul style="list-style-type: none"> • Overview of the sections/topics, which can be selected to meet individual needs (e.g., stage of readiness to quit) • Testimonials from Black smokers on smoking initiation • Motivating cessation 	<ul style="list-style-type: none"> • Historical role of tobacco among Blacks (e.g., slavery, manufacturing jobs) • Role of tobacco industry • Race differences in smoking pattern • Racial health disparities • Consequences (i.e., health conditions, addiction, economic) • Smoking during pregnancy • Environmental tobacco smoke • Black cultural values and smoking • Black community use of tobacco • Family Smoking Prevention and Tobacco Control Act • Menthol • Cigars, blunts, and cigarillos • Cigarette toxins • Reasons cessation is difficult • Testimonials from former smokers • Weight control • Benefits of quitting • Empowerment themes 	<ul style="list-style-type: none"> • Stages of change model • Intensive counseling protocol with efficacy in Black smokers • Cognitive behavioral strategies • Nature of addiction • Nicotine withdrawal • “High risk” situations • Coping responses • 8 Steps for quitting • Unique barriers for Black smokers (e.g., neighborhood influences, attitudes toward nicotine replacement therapy stigma) • Cultural assets 	<ul style="list-style-type: none"> • Maintenance of abstinence, guided by evidence-based models of relapse prevention • Cues to relapse • Solutions to cues • Never give up • Returning to quitting • Slip vs. lapse • Testimonials • Supportive family members • Religion/spirituality 	<ul style="list-style-type: none"> • Targeted marketing • Policy options • Excise taxes • Environmental tobacco smoke • Marketing regulations • Resource allocation • Setting a public health agenda • FDA tobacco legislation • Empowerment and well-being • Becoming advocates • Expert commentary • Available resources • Specific Bible scriptures • Behavioral modification strategies • Examples of coping strategies • How people feel after quitting 	<ul style="list-style-type: none"> • Answer frequently asked questions • History of tobacco companies and Blacks • Health • Cessation • Medication • Tobacco industry targeting/documents • Use of other drugs • Handling quit day and beyond • Stress and smoking

activity, and nutrition. It also includes testimonials from ex-smokers and dialogue among smokers in a group counseling setting.

Procedures

The study was approved by the University's Institutional Review Board. Participants were screened over the telephone and scheduled for a DVD-viewing session. Those who attended provided written informed consent and were randomly assigned to a condition using a 1:1 ratio. Breath carbon monoxide testing verified participants' smoking status (>5 ppm was the criteria for current smoking). Participants (a) completed the baseline measures, (b) viewed the DVD, (c) completed the postviewing assessment (\$10), (d) were given a copy of the DVD, which they were asked to re-watch, and (e) completed a 1-month follow-up (\$20). To prevent social desirability bias, we explained to participants that we were seeking the feedback of smokers to assist us with understanding the best type of smoking cessation information using a DVD. We underscored that their frank reactions and impressions would inform future studies; thus, they should carefully watch the DVD program. Blank paper was provided to encourage note taking and to facilitate attention (not used in analyses). Participants were offered a break after 30 min (after viewing half of the DVD) to prevent fatigue. Two weeks after the viewing session, we proactively called participants in both conditions to encourage DVD utilization.

Assessments were conducted at baseline, immediately post-DVD viewing, and at a 1-month follow-up. The baseline assessment included demographics and smoking history measures, and measures of readiness to quit and risk perceptions. Postviewing measures included readiness to quit, risk perceptions, intervention ratings, and behavior changes (follow-up only).

Statistical Analyses

Analyses were conducted using SPSS 19.0. Preliminary analyses compared study conditions on baseline characteristics using *t*-tests and chi-square tests. Attrition bias was examined by comparing participants who completed the study to those lost to follow-up. A fidelity check for cultural specificity was conducted using a *t*-test. *T*-tests and analyses of covariances (ANCOVAs) tested for group differences in intervention evaluations; ANCOVAs tested for differences in readiness to quit and risk perceptions by condition. The homogeneity of variances and slopes assumptions were met for all ANCOVAs. Logistic

regressions tested behavior changes at the 1-month follow-up. Effect sizes were determined by Cohen's *d* (0.2 = small; 0.5 = medium; 0.8 = large; Cohen, 1992).

RESULTS

Table 2 contains the baseline sample characteristics by condition. Participants were mostly middle aged, single, at least high school educated, and low income. Participants smoked an average of 19.38 daily cigarettes for 23.29 years and reported low nicotine dependence. The 1-month follow-up was completed by 108 (74%) participants, with no difference by condition ($p > .05$). The baseline characteristics of those who completed the study versus those lost to follow-up indicated no significant differences (all $ps < .05$).

Fidelity Check

There was a significant main effect of condition on the fidelity check items, confirming the internal validity of the intervention. Perceptions of cultural specificity were greater among participants in the PTF DVD condition compared with the standard control condition (Table 3).

DVD Evaluations

We tested whether the conditions differed on ratings of the interventions at the postviewing assessment (Table 3). There was a significant main effect of condition on content evaluations. The content of the PTF DVD was preferred over the standard DVD. There was a significant main effect of condition on sharing such that PTF DVD participants reported a greater propensity to share/recommend the DVD compared with the standard DVD. We also found a main effect of intervention appeal, with the culturally specific DVD rated as more appealing than the standard DVD. In addition, there was a significant main effect of condition on attitude change, indicating greater attitude changes as a result of the PTF DVD compared with standard control participants. Finally, the PTF DVD was perceived as more credible compared with the standard DVD, although the difference did not reach statistical significance.

At follow-up, we examined the effects of the interventions on utilization, recall, sharing, and attitude changes. We found a main effect of condition on recall, $t(138) = -2.73$, $p < .01$, $d = 0.53$. Specifically, participants in the PTF DVD condition

Table 2. Demographics, Smoking History, and Psychosocial Characteristics at Baseline ($N = 140$)

	PTF DVD ($n = 70$)	Standard DVD ($n = 70$)	<i>p</i> value
Demographics			
Sex (% female)	51.40	50.00	.87
Age (years; <i>M</i> , <i>SD</i>)	48.61 (8.57)	45.37 (11.56)	.06
% Single	82.90	75.70	.77
% ≥ High school	70.00	74.30	.85
% < \$10k/year	69.70	67.60	.30
Smoking history			
Cigarettes/day (<i>M</i> , <i>SD</i>)	21.77 (16.65)	16.98 (9.34)	.10
Years smoking (<i>M</i> , <i>SD</i>)	25.39 (11.75)	21.39 (13.35)	.07
FTND (<i>M</i> , <i>SD</i>)	2.63 (1.21)	2.84 (1.10)	.27

Note. FTND = Fagerström Test for Nicotine Dependence (Heatherton et al., 1991); PTF = Pathways to Freedom.

Table 3. Differences in DVD Evaluations, Readiness to Quit, and Risk Perceptions (Postviewing, N = 140; 1-Month Follow-up, N = 108)

	Postviewing				1-Month follow-up				
	PTF DVD	Standard DVD	Test statistic	p value	d	PTF DVD	Standard DVD	Test statistic	p value
Content evaluation (range = 0–91)	83.17 (8.32)	79.76 (10.32)	<i>t</i> (138) = -2.16	.03	0.36				
Sharing (range = 0–14)	13.03 (1.47)	12.43 (1.98)	<i>t</i> (138) = -2.03	.04	0.35				
Appeal (range = 0–28)	24.47 (3.76)	21.07 (4.88)	<i>t</i> (138) = -4.62	<.001	0.78				
Fidelity check (range = 0–21)	19.40 (2.88)	14.44 (5.35)	<i>t</i> (138) = -6.82	<.001	1.15				
Attitude change (range = 0–28)	23.30 (4.22)	21.33 (5.46)	<i>t</i> (138) = -2.39	.02	0.52				
Credibility (range = 0–21)	18.87 (3.02)	17.81 (3.35)	<i>t</i> (138) = -1.96	.05	0.33				
Readiness to quit (range = 0–10)	8.97 (1.56)	8.00 (2.77)	<i>F</i> (1, 135) = 5.66	.02	0.43	8.53 (1.78)	7.38 (2.91)	<i>F</i> (1, 103) = 5.88	.02
Risks of smoking (range = 0–28)	19.14 (2.53)	18.19 (2.73)	<i>F</i> (1, 135) = 10.42	.002	0.36	18.98 (3.33)	18.05 (2.93)	<i>F</i> (1, 104) = 3.88	.05
Personal risks of smoking (range = 3–30)	23.26 (4.80)	23.24 (5.15)	<i>F</i> (1, 135) = 10.42	.41	0.00	22.56 (5.26)	21.20 (5.72)	<i>F</i> (1, 101) = 5.52	.02
Culturally specific risks (range = 4–40)	29.37 (6.36)	25.21 (5.27)	<i>F</i> (1, 136) = 20.52	<.001	0.71	30.15 (7.08)	22.81 (7.02)	<i>F</i> (1, 105) = 30.63	<.001

Note. PTF = Pathways to Freedom; Values = *M* (*SD*); analysis of covariances controlling for baseline scores. *p* < .05 = statistically significant.

reported greater recall of the intervention contents ($M = 5.89$, $SD = 1.14$) compared with the standard condition ($M = 5.15$, $SD = 1.63$). There were no significant differences in utilization, sharing, or attitude changes (all $ps > .05$).

Readiness to Quit Smoking

We examined readiness to quit after viewing the DVDs and at the 1-month follow-up. Controlling for baseline, there was a significant main effect of condition at the postviewing assessment. Participants in the PTF DVD condition reported greater readiness to quit compared with those in the standard condition (Table 3). At the 1-month follow-up, the main effect of condition on readiness to quit was also found such that readiness was greater in the PTF DVD condition versus the standard control.

Risk Perceptions

Controlling for baseline scores, there was a significant main effect of condition on perceived general risks of smoking at the postviewing assessment (Table 3). Participants in the PTF DVD condition perceived greater risks from smoking compared with the standard control. There was also a significant main effect of condition on culturally specific risk perceptions. Compared with the standard DVD, participants who viewed the PTF DVD perceived that African American smokers were disproportionately at risk of morbidity relative to White smokers. The main effects of condition on perceived personal risks of smoking or disease risk were not significant.

Controlling for baseline, we found significant effects on risk perceptions at the 1-month follow-up (Table 3). There was a main effect of condition on the perceived personal risks of smoking. Participants in the PTF DVD condition reported greater personal smoking risks compared with the standard control. There was also a main effect of condition on culturally specific risk perceptions. Compared with the standard DVD, participants who viewed the PTF DVD reported greater perceived health disparities between African American and White smokers. Finally, there was a trend toward greater perceptions of general smoking risks in the PTF DVD condition, yet the difference did not reach statistical significance.

Behavior Change

With regard to behavioral changes, there were no statistically significant main effects. Twenty-four hour quit attempts were greater in the PTF DVD (82%) versus the standard DVD [74.1%; $\chi^2(1, N = 108) = .86, p = .36$], and the PTF DVD participants reported a greater likelihood of limiting smoking to certain places/situations (89% vs. 78%) [$\chi^2(1, N = 108) = 2.40, p = .12$], setting a quit date (46% vs. 37%) [$\chi^2(1, N = 108) = .95, p = .33$], and complete cessation during the past 4 weeks (11% vs. 4%) [$\chi^2(1, N = 108) = 2.16, p = .14$].

DISCUSSION

We developed and tested a theoretically based smoking cessation DVD specifically targeting the African American community. Overall, results demonstrated causal relationships supporting the efficacy of the PTF DVD. We first confirmed that the PTF DVD was recognized as specifically targeting

African Americans, which provides validity to the Resnicow et al. (1999) model of cultural sensitivity. Ratings of the culturally specific intervention immediately postviewing were superior with regard to content, propensity to share with others, appeal, and positive attitude changes. The PTF DVD also positively impacted important antecedents to behavior change, leading to greater readiness to quit smoking compared with the control group, and greater perceived risks of smoking, personal risks, and disproportionate risks for African Americans. Finally, there were several positive trends in behavior change, all favoring the PTF DVD condition—although the differences were not statistically significant. Overall, the current findings also supported the community competence model, which purports that interventions that are responsive to the underlying complexity of a target population and/or community have the potential for greater success in achieving behavior change (Robinson, 2005).

Previous research highlights the challenges associated with developing effective culturally specific interventions. Nollen et al. (2007) found no difference in preference between culturally specific and standard material. Other research suggests that interventions targeting African Americans may be perceived as lower quality (Johnson, Saha, Arbelaez, Beach, & Cooper, 2004; Webb, Francis, Hines, & Quarles, 2007) or less credible (Webb, 2009). In contrast, the high ratings of quality indicators and the credibility of the PTF DVD are consistent with previous evaluations of the written PTF guide (Webb, 2009) and supports the acceptability of a DVD-based culturally specific tobacco intervention.

Participants' ratings of the DVD indicated stronger preferences for the PTF DVD compared with the standard DVD. Higher ratings were found for multiple aspects of the PTF DVD, including the content and appeal of the presentation. The content was framed within a culturally specific context and designed to provide deep structure. In addition to preference for the content, participants in the PTF DVD condition also reported a greater propensity to recommend the video to others. This is in line with the collectivism traditionally associated with African American culture and also substantiates the higher content and appeal ratings.

This study also provided evidence that a culturally specific DVD can impact key precursors to behavior change. The most influential models of behavior change include attitudes (Ajzen & Fishbein, 1980; Eagly & Chaiken, 1993), readiness to change (Prochaska & DiClemente, 1983), and risk perceptions (Rosenstock, 1974) as direct antecedents; thus, our findings have implications for smoking cessation. In comparison with the standard DVD, viewers of the PTF DVD reported greater positive attitude changes and intentions to quit. Readiness to quit smoking was greater in the PTF DVD condition compared with the control group at both postviewing and at the 1-month follow-up. Webb (2008b) also found greater readiness to quit among recipients of culturally specific self-help materials, particularly in participants with a traditional African American cultural orientation.

Perhaps the greatest effects of the PTF DVD in the present study were with regard to smoking-related risk perceptions. The PTF DVD led to greater perceived risks of smoking, personal risks, and disproportionate risks for African Americans in comparison with the standard DVD. This is consistent with Webb et al. (2010a), who found that written culturally specific messages were causally related to perceptions of disease risk

for African Americans per se. Perceptions of risk are important because they are posited to affect behavior change (Janz & Becker, 1984; Rogers & Mewborn, 1976; Rosenstock, 1974). African American smokers may have lower risk perceptions compared with other racial/ethnic groups (Vander Martin, Cummings, & Coates, 1990), which may reduce efforts to quit smoking. Given the pervasive smoking-related disparities that exist between African Americans and Whites, interventions that increase risk perceptions in this population are essential.

As this was the first study to test the efficacy of the PTF DVD, group differences in smoking behavior were explored as secondary outcomes. However, the proportion of participants who reported making changes to their smoking patterns and/or quit attempts was greater (although not statistically) in the PTF DVD condition. Indeed, the likelihood of smoking cessation was almost three times greater than the standard DVD condition. Because the smokers in the present sample were not necessarily interested in quitting, these behavioral findings are all the more promising. We hypothesize that significant differences would emerge in a larger sample of motivated smokers. Future research is needed to examine the effects of the PTF DVD for smoking cessation.

The translation and implementation potential of the PTF DVD is another strength of the present study. Future research should test the efficacy of the intervention delivered through various channels. The video is formatted such that it can be delivered via DVDs, television, mail, medical providers, as an adjunct to counseling, and the Internet. Another potential point of delivering the DVD is state quitlines, which future studies should also consider.

This study is not without limitations. The sample consisted of mostly low-income smokers, which limits our understanding of intervention response to the full range of African American smokers. However, given that smokers tend to be of lower socioeconomic status, it is important to examine intervention effects in this demographic. Smokers in the sample were not necessarily interested in smoking cessation; thus, the potential impact among help-seeking smokers is unknown. Yet, given the positive findings in the present study, the PTF DVD is likely to have an even greater impact on smokers who are motivated to quit. Additionally, the sample consisted of African Americans in South Florida, who may differ from those in other geographic locations. The overall reliability estimates of some of the appeal, credibility, and sharing subscales were relatively low, which may be attributable to the small number of items on these scales. However, analysis by study condition revealed that these constructs were not as meaningful within the standard DVD condition. This initial study was not powered to detect smoking cessation. This, of course, is the goal of the PTF DVD, which needs testing in future research. Finally, the findings are based on self-reports, which have known limitations.

In conclusion, the newly developed PTF DVD can increase the reach of cessation services into the African American community by bringing behavioral counseling into the homes of smokers. The effect sizes found in this study indicate that the between-group differences are also clinically meaningful. This portable intervention enhances our ability to reach African American smokers and engage organizations in their capacity to provide tobacco-related programs in community settings. Taken together, the PTF DVD has the potential to have a public health impact while being responsive to existing infrastructure parameters in community.

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DECLARATION OF INTERESTS

None declared.

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