



Formative Development of a Culturally Appropriate Mammography Screening Campaign for Low-Income African-American Women.

Journal of Health Disparities Research and Practice

Volume 5 | Issue 3

Article 4

© Center for Health Disparities Research, School of Public Health, University of Nevada, Las Vegas

2012

Formative Development of a Culturally Appropriate Mammography Screening Campaign for Low-Income African-American Women.

Kimberly D. Leeks , *Centers for Disease Control and Prevention*, kfj1@cdc.gov

Ingrid J. Hall , *Centers for Disease Control and Prevention*, iah9@cdc.gov

C. Ashani Johnson-Turbes , *ICF International*, Ashani.Johnson-Turbes@icfi.com

See next page for additional authors

Follow this and additional works at: <https://digitalscholarship.unlv.edu/jhdrp>



Part of the [Community Health and Preventive Medicine Commons](#), [Immune System Diseases Commons](#), [Obstetrics and Gynecology Commons](#), [Oncology Commons](#), and the [Virus Diseases Commons](#)

Recommended Citation

Leeks, Kimberly D.; Hall, Ingrid J.; Johnson-Turbes, C. Ashani; Kamalu, Ngozi; and Zavahir, Yasmine (2012) "Formative Development of a Culturally Appropriate Mammography Screening Campaign for Low-Income African-American Women.," *Journal of Health Disparities Research and Practice*: Vol. 5: Iss. 3, Article 4. Available at: <https://digitalscholarship.unlv.edu/jhdrp/vol5/iss3/4>

This Article is protected by copyright and/or related rights. It has been brought to you by Digital Scholarship@UNLV with permission from the rights-holder(s). You are free to use this Article in any way that is permitted by the copyright and related rights legislation that applies to your use. For other uses you need to obtain permission from the rights-holder(s) directly, unless additional rights are indicated by a Creative Commons license in the record and/or on the work itself.

This Article has been accepted for inclusion in Journal of Health Disparities Research and Practice by an authorized administrator of Digital Scholarship@UNLV. For more information, please contact digitalscholarship@unlv.edu.

Formative Development of a Culturally Appropriate Mammography Screening Campaign for Low-Income African-American Women.

Abstract

The purpose of this qualitative study was to conduct a formative evaluation of messages and materials to inform the development of a promotional, health campaign designed to increase breast cancer screening awareness and utilization among low-income, uninsured African American women through the National Breast and Cervical Cancer Early Detection Program (NBCCEDP) in Savannah and Macon, Georgia (GA). A priority of CDC is to understand why women eligible for screening through the NBCCEDP do not participate in NBCCEDP screening services as well as to identify effective strategies for increasing enrollment among NBCCEDP-eligible women who have never received breast cancer screening. As such, eight focus groups were conducted with a sample of African American women (n=68) in two cities in GA. The participants in the focus groups were segmented by age (40-49 and 50-64) and mammography screening status. A thematic analysis of field notes was conducted to assess themes and patterns in the participants' perception of the promotional, health campaign's concepts, messages, and materials. The findings revealed common themes and identified several key issues to address in the refinement of campaign messages and materials, including the need to hear about breast cancer and the importance of screening from African American breast cancer survivors as well as to incorporate religious faith and family connectedness messages in materials. The study findings have implications for enhancing breast cancer prevention efforts in the African American community.

Keywords

Advertising – Women's health services; African American women; Breast – Radiography; Breast – Cancer; Campaign; Focus groups; Health education; Health promotion

Cover Page Footnote

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

Authors

Kimberly D. Leeks, Ingrid J. Hall, C. Ashani Johnson-Turbes, Ngozi Kamalu, and Yasmine Zavahir



Journal of Health Disparities Research and Practice
Volume 5, Issue 3, Fall 2012, pp. 42-61
© 2011 Center for Health Disparities Research
School of Community Health Sciences
University of Nevada, Las Vegas

Formative Development of a Culturally Appropriate Mammography Screening Campaign for Low-Income African American Women

Kimberly D. Leeks, PhD, MPH, Division of HIV/AIDS Prevention, CDC
Ingrid J. Hall, PhD, MPH, Division of Cancer Prevention and Control, CDC
C. Ashani Johnson-Turbes, PhD, ICF International
Ngozi Kamalu, MPH, ICF International
Yasmine Zavahir, MHS, Office of Surveillance, Epidemiology and Laboratory Services, CDC

ABSTRACT

The purpose of this qualitative study was to conduct a formative evaluation of messages and materials to inform the development of a promotional, health campaign designed to increase breast cancer screening awareness and utilization among low-income, uninsured African American women through the National Breast and Cervical Cancer Early Detection Program (NBCCEDP) in Savannah and Macon, Georgia (GA). A priority of CDC is to understand why women eligible for screening through the NBCCEDP do not participate in NBCCEDP screening services as well as to identify effective strategies for increasing enrollment among NBCCEDP-eligible women who have never received breast cancer screening. As such, eight focus groups were conducted with a sample of African American women ($n = 68$) in two cities in GA. The participants in the focus groups were segmented by age (40–49 and 50–64 years) and mammography screening status. A thematic analysis of field notes was conducted to assess themes and patterns in the participants' perception of the promotional, health campaign's concepts, messages, and materials. The findings revealed common themes and identified several key issues to address in the refinement of campaign messages and materials, including the need to hear about breast cancer and the importance of screening from African American breast cancer survivors as well as to incorporate religious faith and family connectedness messages in materials. The study findings have implications for enhancing breast cancer prevention efforts in the African American community.

Key words: *African American, breast cancer, mammography, focus groups, campaign*

INTRODUCTION

All women are at risk of developing breast cancer, regardless of their race, ethnic origin, or heritage (Hunter, 2000). However, despite considerable advances that have been made in the area of breast cancer detection and treatment, survival rates are disproportionately lower among minority women (*Cancer Facts and Figures for African Americans 2011-2012*, 2011). Specifically, breast cancer incidence is lower among African American women in comparison to their non-Hispanic Caucasian counterparts; yet mortality is consistently higher among African Americans (*United States Cancer Statistics: 1999–2007 Incidence and Mortality Web-based Report*, 2010). This suggests that in addition to biological differences, race/ethnicity, as well as cultural and environmental factors, including racism and discrimination, impact behavioral risk factors and access to timely screening and treatment in this country and may modulate how the disease is expressed (Hunter, 2000; Tyczynski, Hill, & Berkel, 2006; Gerend & Pai, 2008).

Although it has been shown that breast cancer screening with mammography reduces mortality (Berry et al., 2005; Fletcher & Elmore, 2003; Humphrey, Helfand, Chan, & Woolf, 2002; Mandelblatt et al., 2009; Mandelblatt & Yabroff, 1999; Nystrom et al., 2002), screening rates are low among the poor, uninsured, and underinsured, thereby leading to higher mortality rates among this population subgroup (Eheman et al., 2006; Singh, Miller, Henkey, & Edwards, 2003; Swan, Breen, Coates, Rimer, & Lee, 2003). In an effort to eliminate this disparity in breast cancer mortality among vulnerable populations, the U.S. Congress passed the Breast and Cervical Cancer Mortality Prevention Act (Public Law 101-354) in 1990. This law allowed the Centers for Disease Control and Prevention (CDC) to establish and administer the National Breast and Cervical Cancer Early Detection Program (NBCCEDP). The program provides free or low-cost breast cancer screening and access to treatment through Medicaid waivers in every state to uninsured or underinsured women, aged 40 to 64 years, with an annual income $\leq 250\%$ of the Federal Poverty Level (Ryerson, Benard, & Major, 2005) in an effort to increase access to breast cancer early detection and treatment services. The NBCCEDP has had success in delivering mammography screening tests to women throughout the United States; however, nationally, the program is estimated to only reach approximately 13% of eligible women aged 40 to 64 years with mammograms (Tangka et al., 2006). As a result, a CDC priority is to understand why NBCCEDP-eligible women do not participate in NBCCEDP screening services, as well as to identify effective strategies to increase enrollment among NBCCEDP-eligible women who have never received breast cancer screening.

Previous research indicates that African American women have preconceived barriers (e.g., fear and mistrust), misconceptions regarding the etiology of the disease, and suspicion and mistrust of public health research (Allen, 1994; Phillips, Cohen, & Moses, 1999; Thomas & Quinn, 1991; Williams, Abbott, & Taylor, 1997). Hence there is a need for culturally tailored and appropriate public health messages designed to target African American women's lack of knowledge and awareness of health behaviors for early detection of breast cancer. Messages culturally tailored for a group are often perceived to be more personally relevant, thereby allowing individuals to actively process the information (Kreuter, Strecher, & Glassman, 1999; Petty & Cacioppo, 1981). The tailored approach addresses the unique needs of individuals, which increases and sustains their motivation, enhances skill acquisition, and therefore leads to a greater likelihood of behavior change (Kreuter et al., 1999). Tailoring health education messages to make them culturally appropriate brings individualization, personalization, and increased relevance of the messages to members of the target audience and is potentially a key aspect for

44 Development of a Culturally Appropriate Mammography Screening Campaign -Leeks et al.

reaching minority populations, particularly African Americans (Brug, Oenema, & Campbell, 2003; Rimer & Glassman, 1998; Skinner, Strecher, & Hospers, 1994).

One communication channel that has been shown to effectively reach a broad spectrum of the African American community is “Black radio” (Barber et al., 1998; Beaudoin, Fernandez, Wall, & Farley, 2007; Hall, Johnson-Turbes, & Williams, 2010; Johnson & Birk, 1993; Kennedy et al., 2010; Story et al., 2003). Marketing data has reported that nearly 94% of African American consumers, aged 12 and older, listen to the radio weekly, which is a higher penetration rate than other media outlets (e.g., television, magazines, newspapers, Internet) (“Black radio today”, 2008). Additionally, Black radio is viewed as a trusted source for information on various topics by African Americans (Hall et al., 2010), hence potentially serving as a platform for dissemination of effective health messages. To this end, the purpose of the current study was to conduct a qualitative formative evaluation of mass media messages and materials to inform the development of a promotional, health campaign, including messages to air on Black radio, and to ultimately increase awareness and use of mammography among low-income, NBCCEDP-eligible, African American women. In addition, the study sought to ensure that the campaign messages and channels were culturally appropriate to reach, resonate, and appeal to the target audience of low-income, NBCCEDP-eligible, African American women in Georgia (GA).

Theoretical Framework

The Persuasive Health Message (PHM) framework was used as the theoretical backdrop to guide this formative evaluation. The PHM framework combines elements from three different theories, Theory of Reasoned Action (Fishbein, 1975), Elaboration Likelihood Model (Petty & Cacioppo, 1986), and Protection Motivation Theory (Rogers, 1983), and outlines the steps that one should take to develop the most effective and persuasive campaigns (Witte, 1995). The PHM indicates that two types of factors—constant and transient—should be addressed before the development of messages. The PHM framework consists of three steps: (1) determine information about threat and efficacy; (2) develop an audience profile; and (3) construct a persuasive message (Witte, 1995).

METHODS

In August 2007, eight in-person, structured focus groups were conducted with low-income, African American women to test campaign messages and materials in two cities representing geographically distinct areas in GA. Due to the exploratory and formative nature of this research, focus groups were chosen as the most appropriate method to assess perceptions of print and audio messages. Focus groups are an especially advantageous mode of gathering rich information on a potentially sensitive topic (Krueger, 1988) and are a flexible tool for exploring participants’ awareness, behaviors, concerns, beliefs, experiences, motivation, operating practices, future plans, and other issues related to a particular topic (Krueger & Casey, 2008). Because qualitative research is designed to provide in-depth understanding of a specific group or topic, the results from this study may not be generalizable across other groups (gender, race/ethnicity, or locale), however, findings can be relevant for understanding similar groups in similar settings. Human subjects’ approval was obtained from Institutional Review Boards of CDC, ICF Macro (ICF International Company), and the Georgia Department of Human Resources (GADHR). Data collection was also approved by the Office of Management and Budget.

45 Development of a Culturally Appropriate Mammography Screening Campaign **-Leeks et al.**

Setting and Sample

African American women were recruited for focus groups in Savannah and Macon, GA. The sites were selected on the basis of three selection criteria, including (1) similar African American demographic profiles, (2) comparable radio market share ("Black radio today", 2008), and (3) non-overlapping, geographically distinct radio markets. The focus groups were segmented by age and screening status. Segmentation by age (40–49 years and 50–64 years) was done to encourage discussion and accommodate the different ways younger and older women may view cancer, think about their bodies, and cope with sensitive health topics. The groups were further divided by screening status to include a screened group (mammogram received in the past 24 months) and an unscreened group (no mammogram in the past 3 years).

To be eligible for the focus groups, the participants needed to be female, African American, aged 40 to 64 years, NBCCEDP-eligible, and residing in previously identified zip codes in Macon or Savannah, GA. NBCCEDP-eligible was defined as uninsured or underinsured women with family incomes of $\leq 250\%$ of the Federal Poverty Level ("National Breast and Cervical Cancer Early Detection Program (NBCCEDP): Program Eligibility", 2011). Women with a personal history of any cancer were excluded, as were women who had a relative participating in the groups.

African American, local site recruiters (LSRs) residing in Macon or Savannah were hired to recruit focus group participants in both cities. The LSRs were trained on the goals of the study, how to use the focus group screener, and the process to schedule eligible and interested participants for the focus groups. To ensure participation of 6 to 10 participants per group, the LSRs sought to recruit at least 15 eligible participants to attend each focus group session. Recruitment flyers were strategically posted in various locations where the target population frequented, including local apartment complexes, beauty salons, community centers, grocery stores, and Laundromats. Interested persons were instructed on the flyers to call a toll-free number to learn more about the focus groups and be screened for eligibility. All potential participants were informed that participation would involve participating in a 2-hour focus group, and that they would receive a meal and \$65 as compensation for their time. Eligible and willing participants were scheduled for a focus group session on the basis of their availability.

Focus Group Procedures

In 2007, eight focus groups were conducted with a total of 68 participants. The focus groups were held in private rooms located in public facilities with adequate parking and accommodations to make the participants feel safe and comfortable. The participants were reminded of the purpose of the study and completed an IRB-approved consent form. Additionally, the participants completed a pre-discussion information sheet (PDIS) to gather demographic information and data on the participants' audio, television, and print media usage. Each focus group was conducted by an experienced, African American female moderator who had a working familiarity with sensitive health topics. A trained note taker observed the focus groups and captured detailed notes on the intensity of the comments, facial expressions, and other facets of interpersonal communication among the participants. The groups were approximately 90 minutes in length and were audiotaped to support the analysis.

The concepts and messages were developed based on information obtained from an earlier set of 8 focus groups conducted in 2004. Using the same recruitment and segmentation criteria, the 78 women in these groups conveyed their thoughts on women's knowledge, attitudes, and beliefs about breast cancer, screening, and trusted sources and preferred channels

46 Development of a Culturally Appropriate Mammography Screening Campaign -Leeks et al.

to receive health information (Hall, Rim, Johnson-Turbes, Vanderpool, & Kamalu, 2012). In accordance with the PHM, the moderator guide questions sought to determine salient beliefs and referents (e.g., salient beliefs about threat and response efficacy); obtain information about audience cues (e.g., cultural values, perceived barriers, health-related customs), and preferences for concepts and messages. Table 1 presents a crosswalk of PHM constructs with key focus group questions that were used to inform development of the messages and materials tested in the 2007 focus groups. The groups concluded with a drawing activity where participants were asked to share their thoughts about what an effective message to be delivered to women about breast cancer and screening would look like.

Table 1. Crosswalk of PHM Constructs and Formative Research Questions

PHM Framework Construct	Formative Research Questions Linked to the PHM
Constant	
Threat (Susceptibility, Severity)	<ul style="list-style-type: none"> • What comes to your mind when I say “breast cancer?” • Do you think women like you are at risk for getting breast cancer?
Efficacy (Self, Response)	<ul style="list-style-type: none"> • What can women do protect themselves from getting breast cancer? (Self-efficacy) • Do you think that breast cancer screening increases the chance of finding breast cancer early? (Response efficacy)
Cues (Channel, Source)	<ul style="list-style-type: none"> • Where do you usually get your information about “general health?” • How would you want to receive information about breast cancer screening? • Who would you want to hear the message from? Who would you most believe?
Transient	
Salient beliefs	<ul style="list-style-type: none"> • Do you think that women like you are at risk for getting breast cancer?
Salient referents	<ul style="list-style-type: none"> • [If screened] What influenced (or motivated) you to get screened for breast cancer in the past eighteen months? Did a friend (or friends) encourage you to get screened? • [If unscreened] Has any of your family or friends been screened for breast cancer? Do they encourage you to get screened for breast cancer?
Culture and environment	<ul style="list-style-type: none"> • What do you think should be the main point of health messages to promote breast cancer screening among African-American women? • Are there times or places where you pay better attention to health messages?
* The moderator guide questions presented here do not represent <i>all</i> of the focus group questions asked or represent the only questions that can be linked to the PHM. These questions are presented as some of the key questions asked of focus group participants in order to obtain information on PHM constructs to develop the AAMM campaign concepts, messages, and materials tested for this study.	

The current study’s eight concept and message testing focus groups followed a structured format with a standard guide of open-ended questions to stimulate discussion. Two moderator guides were developed for the screened and unscreened groups to query participants with standardized probes on a consistent set of themes, including general thoughts about the concepts presented in the print materials and audio messages. Additionally, the participants were probed on whether the materials were clear, understandable, personally relevant, and if the materials captured their attention and might motivate them to have a mammogram. Finally, participants were asked to suggest ways to improve upon the messages and materials presented.

Six concept boards were developed and tested with the focus group participants. The first three concept boards were tested with participants aged 50–64 and the other concept boards were

47 Development of a Culturally Appropriate Mammography Screening Campaign

-Leeks et al.

tested with participants aged 40–49. Additionally, three audio messages were tested with the focus group participants, including “Francine/Phase II” (developed for this study) and two ads used by GADHR, “Oh, Harold” and “Maya Angelou”. The “Francine/Phase II” ad conveyed the screening and diagnosis experience of an African American breast cancer survivor and the role of spirituality and nutrition in her treatment and recovery. In “Oh, Harold”, a husband asks his wife if she has had a mammogram, and “Maya” conveyed that every woman deserves a mammogram every year (D. M. Parker, 2004). Each of the audio messages was tested with all focus group participants.

Prior to the start of the focus group discussions, each participant was asked to individually describe her response and reaction to the concept boards and audio messages. Immediately following the group discussion, participants were asked their reactions and impressions to the concept boards and audio messages a second time to determine any changes in their perceptions of breast cancer, early detection, and mammograms.

Data Analysis

A notes-based, thematic analysis of qualitative focus group data was conducted to identify common themes and patterns in the focus groups. The discussions were not transcribed, however all focus groups were audiotaped to support the thematic analysis, and field notes were recorded by members of the study team. Two members of the study team attended all of the focus groups. One member of the team recorded the focus group discussions in field notes. The note taker observed and recorded participant interaction and intensity of discussions in the form of gesticulations, head nodding, and other nonverbal group participation.

Two members of the analysis team identified, labeled, and categorized data from the field notes to identify general themes and primary patterns from the groups. During analysis, the analysis team reviewed audiotapes as necessary if information was missing or unclear from the field notes. The analysis team input themes into structured data tables for analysis, and met regularly during analysis to discuss findings, resolve differences in interpretation, refine thematic categories, and reach agreement on themes and patterns. Several of the themes identified from the analysis of field notes were articulated directly by participants. Additionally, themes that were frequently expressed by participants, as well as those that were more subtle or voiced less often, were also identified and grouped accordingly to identify common themes and patterns, and what participants liked best and least.

Once notes were analyzed, the analysis team compared and contrasted the groups (e.g., screened versus unscreened, younger versus older groups), to discern any group differences and identify common themes across groups. This examination led to higher-level analysis of the group dynamics, influence of individual characteristics, and any group uniqueness in response to concepts, messages, and materials.

PDIS data were analyzed using SPSS version 10.0 (IBM, Chicago, IL). Several of the themes identified from the analysis of field notes were articulated directly by participants. Additionally, themes that were frequently expressed by participants, as well as those that were more subtle or voiced less often, were also identified and grouped accordingly. Ideas or thoughts that were nonverbally supported by group members, even if they were not repeated by others in the groups, were also considered.

48 Development of a Culturally Appropriate Mammography Screening Campaign -Leeks et al.

RESULTS

Participants

Sixty-six of 68 participants provided demographic information (Table 2). Most (69%) had a high school education or less and responded that they worked full time (21% of responses), part time (23%), or were disabled (27%). Working women engaged in a variety of occupations such as babysitter, home health aide, housewife, hairstylist, cashier, cook, janitor, beautician, and salesperson (data not shown). Also, the majority of participants (55%) listened to the radio daily, and 48% (of total responses) tuned in during the hours of 5:00 AM – 12:00 PM.

Table 2. Characteristics of Focus Group Participants

	Macon		Savannah		
Age Group	Screened	Unscreened	Screened	Unscreened	N = 66
40–49	10	9	5	6	30
50–64	10	9	8	9	36
Education					N (%)
Less than HS	5	9	5	6	25 (38)
HS	8	5	1	6	20 (31)
GED	2	0	0	1	3 (5)
Some college	5	4	5	2	16 (25)
College graduate	0	0	1	0	0
Total responses	20	18	12	15	65 (100)
Employment*					
Full time	5	6	2	5	18 (21)
Part time	5	1	7	7	20 (23)
Unemployed					17 (20)
Looking	1	2	3	0	6 (7)
Not looking	4	4	2	1	11 (13)
Student	1	0	2	0	3 (3)
Laid off	2	1	1	0	5 (6)
Disabled	9	8	1	5	23 (27)
Total responses	27	22	18	18	86 (100)
Weekly radio usage listening frequency					
Never or rarely	2	5	1	1	9 (14)
1–2 times	3	1	2	2	8 (12)
3–4 times	3	2	2	4	11 (17)
5–6 times	0	1	0	1	2 (3)
Every day	12	9	8	7	36 (55)
Total responses	20	18	13	15	66 (100)
Time of day*					
5 a.m.–noon	10	10	10	8	38 (48)
Noon–6 p.m.	6	9	2	6	23 (29)
6 p.m.–midnight	6	4	3	5	18 (23)
Total responses	22	23	15	19	79 (100)

*Multiple responses allowed

Campaign Materials Evaluation Results

Concept Board 1. Concept boards 1, 2, and 3 were tested with participants aged 50 to 64. Across all groups, participants said that the *“Think about what you’re not doing”* concept board (Figure 1-1) appealed to them the most. Participants called the phrase a *“true”* statement, and said it offers a powerful message to women. One participant stated that the phrase made her *“think about taking better care of myself.”* Women commonly reported that the message and pictures conveyed the idea that it is not just your own life that you should be concerned about, but instead, the lives of your family members. For example, one participant stated, *“If I don’t take care of myself, I can’t take care of others.”* In Macon, however, most unscreened participants did not like the phrase *“think about what you’re not doing”* to promote mammography. They said that there are several things that they were not doing that they should think about doing, many of which did not include breast cancer screening.

Although many participants across all of the groups liked the phrase, almost all of them said that it did not indicate the need to get a mammogram. Some women said that the message instead made them think about having safe sex. Also, many of the participants noted that they rarely read all of the information in an advertisement, and noted that the *“picture and the heading should prompt us to read the bottom.”* It was suggested to place the words “breast cancer” or the word “mammogram” in the phrase or somewhere noticeable on the board. Suggestions for revisions of the phrase included: *“Breast cancer... think about what you’re not doing”* and *“What you’re not doing about your mammogram...”* In regard to the images, some of the participants reported that the woman on the far right of the picture looked like a man.

Concept Board 2. Most of the participants in nearly all of the groups in Savannah stated that they liked the *“You can’t put a price on life”* board (Figure 1-2), as one participant remarked, it *“makes you think about the chances you’re taking.”* The participants noted that the main message was *“no matter the cost of a mammogram, you should get it done”* and that *“since there is low cost or no cost, women should have no excuse.”* In Macon, when asked about the phrase on the concept board 2, the participants did not offer a response, and instead engaged in a discussion on access to free or low-cost health care services.

Many of the participants across all of the groups, reported being connected to the image, and stated that the image portrayed love, dreams, and beauty. The image also reminded them of their grandchildren; as one stated, *“if you had waited a second longer, you may not be able to hug your grandchild.”* When asked about what they disliked, only one participant noted that she did not like the closed eyes. She recommended having models smiling with open eyes. Additionally, the participants noted that the advertisement should appeal to women of all races. One participant in Macon, however, observed that the older model in the poster looked *“pretty well off”*, suggesting that the ad was for middle to upper class women.

Concept Board 3. Although the participants commented that *“the price of life is free with a mammogram”* phrase was confusing (Figure 1-3), they liked what they perceived to be a clear directive telling them exactly what to do (i.e., get a mammogram). One participant stated that it *“does not cost anything to get it done, so go ahead and do it.”* The participants liked that the phrase stressed early detection and the importance of attending to every aspect of one’s body. However, one participant in the screened groups stated that *“even if you get a mammogram, doesn’t mean it will save your life.”* Also, other participants specified that *“life isn’t free”*, and *“there is no price on life.”* Participants acknowledged that mammograms are not free for all, and the price of life is not free, therefore the phrase is contradictory. They also noted that the phrase was vague as well as misleading, because in the real world you have to pay something if you

50 Development of a Culturally Appropriate Mammography Screening Campaign -Leeks et al.

want good health care. Others (in the unscreened group) assumed that it meant “*if you get a mammogram, they can find the cancer*” or “*if you do not get a mammogram, you would get cancer.*” Interestingly, in the screened groups, the women said the phrase did not appeal to women like them because the concept targeted middle-class women, whereas, in the unscreened groups, the participants commonly reported that the phrase was appealing because they liked seeing the word “*free*”.

Several recommendations were made to revise the phrase, including “*The life of a mammogram is free.*”, “*Life is free with a mammogram.*”, “*A free mammogram can save your life.*”, “*Get a mammogram/live longer.*”, “*Price of a mammogram is free.*”, and “*Protecting life with a mammogram*”. Related to the images on “*the price of life is free with a mammogram*”, most did not like that the picture was in black and white, as it gave it a somber look and feel. Others noted that they did not like that they could not identify the model’s race/ethnicity. One participant remarked, “*It looks like she may have waited too long because of the way she’s hugging the child.*”

Concept Board 4. Concept boards 4, 5, and 6 were tested with participants aged 40 to 49 years. Across the groups, women had a positive impression of the phrase “*Long Live Life*” (Figure 1-4). In particular, some participants said the phrase made them think of early detection. They, however, suggested changing the phrase to “*get your breasts checked and you will live a long life*” or “*if you take care of yourself, you’ll live longer*”. Also, most participants in the unscreened groups said the model in the image looked peaceful, like “*she’s saying thank you Lord.*” One participant said that she “*looks like she had that mammogram and is at peace with herself.*” Others, however, thought that the model’s face was sad and that it looked like she was dead or dying. The participants also suggested adding more pink to the concept board, removing the picture of the breast, and adding the breast cancer ribbon.

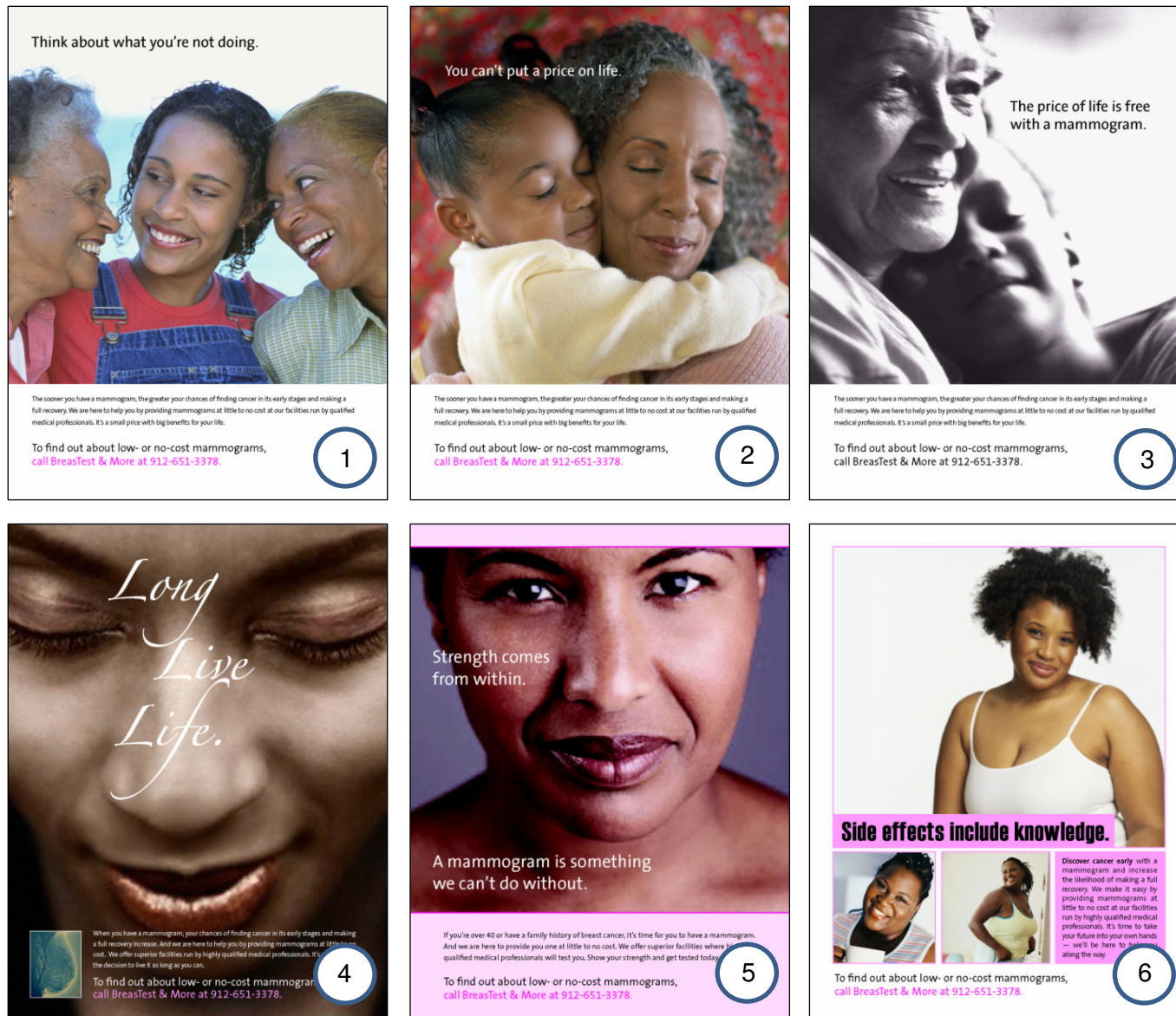
Concept Board 5. Across groups, most women said “*Strength comes from within*” was the most appealing phrase (Figure 1-5). Participants liked seeing the words strength and mammogram together in the concept board, and stated that the phrase made them think of being tested, having courage, and not being afraid. One participant said that the phrase “*makes you think that you need to do something about this... right now.*” Another noted that “*what you don’t know, you need to find out.*” Particularly, in the unscreened groups, participants noted that the phrase meant it is important to get a mammogram. One stated that “*God gives you the strength to get a mammogram because of what the results could be.*” Interestingly, the participants focused on the strength to deal with cancer, rather than the strength to get a mammogram for early detection.

Related to the image, participants liked the colors as well as the woman’s open eyes. Some participants in the unscreened group, however, reported that the model looked sad, as if she had a lot on her mind. The participants also reported that the overall advertisement included too many messages.

Concept Board 6. Participants reported that the message on this particular concept board was the least appealing and they commented that the phrase “*Side effects include knowledge*” was confusing (Figure 1-6). In most groups, the participants reported that they did not understand what was meant by “*side effects*” in this context. They stated that the overall concept was confusing and that they did not understand that knowledge was the side effect in the message. The participants did not think that the concept board provided them with enough information, particularly since it did not explicitly mention breast cancer.

51 Development of a Culturally Appropriate Mammography Screening Campaign -Leeks et al.

Figure 1. Draft Concept Boards



52 Development of a Culturally Appropriate Mammography Screening Campaign -Leeks et al.

Several recommendations were made to revise the phrase, including “*Knowledge is wisdom*”, “*You need to have understanding*”, “*Knowing the knowledge about the side effects*”, and “*Educate yourself about breast cancer*”.

Related to the image, the participants said that the model looked like she received her mammogram results and they were positive. All of the groups liked that the model was Black with a nice smile and big breasts. They also stated that she looked “real”. Many, however, commented that the pictures did not match the message. Others noted that the concept board resembled an advertisement for physical activity, bras for plus-size women, or a hair advertisement.

Audio Message “Oh Harold”. Most participants across all of the focus groups stated that they liked the “Oh Harold” audio message. The participants commonly reported that the message was funny, and that they liked hearing a husband taking an interest in his wife’s health. Across the groups, most participants said that they would stop and listen to this ad if they heard it on the radio because it is dramatic, funny, and engaging. Given, however, the gravity of breast cancer, many participants said that they did not like that the ad was comical. A few participants said the female actress in the ad seemed as if she was “*playing like it was a joke*”, when this issue should be taken seriously. A few participants mentioned that the ad perpetuated stereotypes of Black people as comical. Others stated that the ad lacked information about what is a mammogram or where to get one and also noted that the music was too loud. Suggestions for revisions included making the actors’ voices less stereotypical, using a less comical tone, and share the information about getting an annual mammogram first in the ad. For example, one participant noted “*when the actress in the audio message says ‘do you love me?’, Harold should say ‘yes, I love you, so go get a mammogram.’*”



Audio Message “Maya Angelou”. Most participants in all of the focus groups stated that they would stop and listen to this on radio mostly because they recognized the voice of Maya Angelou, and they liked her “*strong and appealing*” voice. They also noted how the message was direct in telling them to “*get a mammogram once a year.*” In Macon, impressions of the Maya Angelou audio message differed across age groups and screening status. Approximately half of the participants in the 50–64 year age group stated that the Maya Angelou audio message was “*too jazzy.*” They said that when they heard her voice they were “*expecting a poem*”. The older women were so captivated with Angelou’s voice that it appeared hard for them to retain information conveyed in the audio message. In contrast, some of the participants in the younger groups did not recognize Angelou’s voice. Additional feedback was that the audio message was not informative; failed to provide a point of contact; and the loudness of the background music was a distraction. Others said they preferred to hear from someone who was not famous.

Audio Message “Francine/Phase II”. In most of the focus groups, the participants reported liking this particular message best (Table 3). Most of the participants noted that the message provided the most information (e.g., information about breast cancer and a point of contact) (67% of responses). The participants said the ad was “*real...not phony*” as it included the testimony from a 17-year cancer survivor. One participant commented that “*if you changed anything, you would mess it up.*” Across the groups, participants commonly said that they liked the clarity of voices; the conversational tone; the mention of faith, religion, and screening; the music; the length of the audio message; and hearing the toll-free number. In particular, the mention of faith intrigued some of the participants; as one stated, “*it is something you don’t hear much*” on the radio or television. Conversely, in the Savannah unscreened 40- to 49-year-old group, participants reported that the audio message was geared toward middle class white

53 Development of a Culturally Appropriate Mammography Screening Campaign -Leeks et al.

women due to the “*infomercial-like*” music and voices that they said “*sounded white.*” Participants’ responses to all materials are summarized in Figure 2.

Table 3. Focus group participants’ preferences for audio messages

Participant Preferences*			Francine Audio	Total Responses**
	Oh, Harold N (%)	Maya N (%)		
Liked Most	16 (28%)	19 (33%)	23 (40%)	58 (100%)
Most Informative	10 (19%)	8 (15%)	36 (67%)	54 (100%)
Most Motivating	17 (33%)	16 (31%)	19 (37%)	51 (100%)

*Responses from 68 participants

**Percentages may not total 100% due to rounding.

Moreover, many of the participants reported that often African American women do not discuss personal health concerns or needs with each other or medical professionals. In fact, most of the participants reported that personal health, particularly related to the breasts or other private parts of the body, are taboo topics for discussion in their community. It was suggested that because African American women do not talk about their breasts with medical professionals, doctors and nurses often fail to inform them about low- or no-cost services, such as mammograms, for which they may be eligible.




DISCUSSION

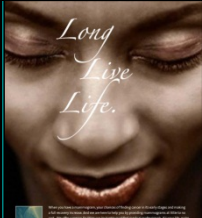


Overall, the participants offered several recommendations for valuable changes to the draft campaign materials. The participants, across all of the groups, commonly reported the preference for dissemination of health promotion messages about breast cancer screening be shared through audio and print materials, as they felt that these modes would have the greatest penetration rate in the target population. Particularly, in response to the print materials, the participants expressed strong religious faith and family connectedness (particularly with their daughters), and wanted those beliefs and images to be reflected in the campaign materials. Moreover, the participants also expressed a sense of acceptance for the pictures of lighter-skinned Black models, and did not respond well to pictures of heavier models or pictures of models with natural hair styles. The participants also recommended placing print materials in churches, community centers, African American businesses, museums, pharmacies, grocery stores, beauty salons, and at bus stops to ensure they are seen by a wide range of community members.

In response to the audio messages, the participants emphasized consistently across all of the focus groups, the need to hear information about breast cancer and mammography screening from African American women, particularly breast cancer survivors, to whom they could relate, rather than cultural icons (e.g., Maya Angelou) or other celebrities. According to participants, hearing from “*women like us*” offers additional motivation to engage in health-protective behaviors.



54 Development of a Culturally Appropriate Mammography Screening Campaign -Leeks et al.

Figure 2. Summary of participants' responses to draft print concepts and images and audio messages

Summary of Responses to Concept Testing (50-64 yrs)			
Concepts	Strengths/Likes	Weaknesses/Dislikes	Recommended Changes
	<ul style="list-style-type: none"> • Presentation of multiple generations of women • Showing family • Women smiling 	<ul style="list-style-type: none"> • The phrase is unclear- It should be more explicit about what women are not doing and what they should be doing. 	<ul style="list-style-type: none"> • Enhancing the phrase by adding the words breast cancer or mammogram
	<ul style="list-style-type: none"> • Participants really liked the phrase • The models are beautiful • The colors are vibrant 	<ul style="list-style-type: none"> • Models' eyes are closed • Models' are smiling, but not showing teeth 	<ul style="list-style-type: none"> • Use models with smiles and open eyes
	<ul style="list-style-type: none"> • Participants really liked the depiction of family closeness 	<ul style="list-style-type: none"> • The model is too old • The phrase is misleading and unclear • The colors are bland 	<ul style="list-style-type: none"> • Change the phrase to read: "The price of a mammogram is free" • Enhance the colors in the poster; make them more vibrant

Summary of Responses to Concept Testing (40-49 yrs)			
Concepts	Strengths/Likes	Weaknesses/Dislikes	Recommended Changes
	<ul style="list-style-type: none"> • The model is beautiful • There is good word placement on the board; it is "captivating" 	<ul style="list-style-type: none"> • The model looks dead or like she's dying • The colors are muted and uninteresting • The phrase is unclear 	<ul style="list-style-type: none"> • Change the phrase to read: "Live a long life" • Enhance the colors; make them more vibrant • Use a model with open eyes and a smile
	<ul style="list-style-type: none"> • The models' eyes are open and she is smiling • Participants liked seeing the words strength and mammogram 	<ul style="list-style-type: none"> • There is too much text on the board 	<ul style="list-style-type: none"> • Shorten the phrase
	<ul style="list-style-type: none"> • The model is full figured and beautiful • The colors are vibrant 	<ul style="list-style-type: none"> • A young model • The main message is unclear in the ad • "Side effects..." is negative and unclear 	<ul style="list-style-type: none"> • Do not use a body shot; participants prefer pictures of women's faces • Change the phrase to read: "Knowledge is a side effect..."

55 Development of a Culturally Appropriate Mammography Screening Campaign -Leeks et al.

Summary of Responses to Audio Testing (40-64 yrs)			
Audio	Strengths/Likes	Weaknesses/Dislikes	Recommended Changes
	<ul style="list-style-type: none"> Male interest in partner health Brevity of the message 	<ul style="list-style-type: none"> Too comical 	<ul style="list-style-type: none"> Make the tone more serious Change actor/actress
	<ul style="list-style-type: none"> Maya's voice Brevity of the message 	<ul style="list-style-type: none"> Maya's iconic voice The music Lack of information 	<ul style="list-style-type: none"> Use an everyday woman Include more information (e.g., a 1-800 number)
Francine Audio	<ul style="list-style-type: none"> Survivor's testimonial Presence of medical personnel Mention of faith Very detailed 	<ul style="list-style-type: none"> Too long The music was not contemporary 	<ul style="list-style-type: none"> Change the music Break the message up into parts

Some of the reactions to the campaign materials were mixed. The inconsistency of the responses might be explained in part by opinions being changed after the group discussions. Whatever the reason for the sometimes inconsistent or contradictory responses, this finding suggests the importance of developing multiple messages in order to reach a diverse community of people with varied ideas about appropriate messages and representative images related to cancer, early detection, and breast cancer screening.

Modifications to Campaign Materials

Based on the formative evaluation results, the campaign materials were revised to reflect the feedback provided (Figure 2). The three conceptual images that were best received by participants were retained (Figure 3). Additionally, the actual images were modified in accordance with the feedback received, such as color images, smiling faces, and lighter skin. The image on concept board one was replaced with a different intergenerational photo (Figure 3-1). The phrase was also amended to reflect a more directive and informative message, now stating *"Haven't had a mammogram? This is what you could be missing."* The phrase and image in concept board 2 remained unchanged (Figure 3-2); however, to ensure consistency across the advertisements, the wording at the bottom of the advertisement was revised, and more color (pink) was added to the overall board. On concept board 3, the phrase was amended to the following: *"My secret to a longer life? Mammograms."* A more vibrant, colorful image replaced the previous black and white image (Figure 3-3). The image in concept board 4 was changed to that used for concept board 2 (Figure 3-4), and the phrase was changed to *"The secret to a longer life can begin with a mammogram."* As suggested by the participants, the message on concept board 5 was truncated to *"It takes the strength of a woman... to realize the power of a mammogram."* The image was replaced with the one previously used for concept board 3 (Figure 3-5). Concept board 6 was completely redesigned (Figure 3-6). The image is that of concept board 1 with the message *"Every woman. Get a mammogram."* All of the boards included a toll-free number as a point of contact to schedule a mammogram.

56 Development of a Culturally Appropriate Mammography Screening Campaign

-Leeks et al.

The primary finding from the testing of audio messages revealed that “real life” testimonials from breast cancer survivors were preferred in comparison to messages from celebrities or other commercial ad. Therefore, a series of 30- and 60-second messages were developed from testimonials of community breast cancer survivors who volunteered their experiences for use in the development of radio ads to promote breast cancer screening. The newly developed audio messages also included a health professional, a disk jockey, and a call to action which included a 1-800 number for women to obtain more information about the NBCCEDP.

Limitations

Focus group methodology is an acceptable and effective method to obtain information from racially and ethnically diverse populations. However, the results of this particular study should be viewed in the context of the methodology and characteristics of the sample. Because qualitative research is designed to provide in-depth understanding of a specific group or topic, the results from this study may not generalize across groups, but rather be transferred to similar groups and settings (Fern, 2001). In addition, the focus group environment may have promoted a tendency to express opinions in agreement with the rest of the group members, which might have limited discussion of unique, but important, alternative experiences. In an attempt to minimize this particular issue, the facilitator attempted to elicit responses from all focus group members. In addition, participants were polled individually for their responses prior to group discussion.

CONCLUSION

Implications for Social Marketing

Testing messages, images, and advertisements to ensure that those selected are communicating the intended messages and have a positive and accepting response from the target audience can prove useful to achieving desired behavior change (Ammerman et al., 2003; Glanz, Rimer, & Lewis, 2002; Parker, Margolis, Eng, & Henriquez-Roldan, 2003). This type of research is especially important when there is racial/ethnic, age, and cultural diversity in the target audience. Hence, this study offers a unique contribution to public health literature about how to develop culturally appropriate materials to better reach and communicate with low-income, African American women about breast cancer, mammography, and other health issues affecting the African American community. Particularly, the results revealed the importance of making interventions culturally appropriate in order to appeal to African American target audiences. Culturally appropriate community interventions are defined as meeting each of the following characteristics: (a) address the cultural values of the group, (b) reflect the subjective culture (attitudes, expectancies, norms) of the group, and (c) reflect the behavioral preferences and expectations of the group's members (Marin, 1993). In addition, culturally appropriate materials use symbols and images familiar and relevant to target audiences to make materials appealing and relevant (Koo, Kwok, White, D'Abrew, & Roydhouse, 2012; Kreuter, Lukwago, Bucholtz, Clark, & Sanders-Thompson, 2003; "Use culturally appropriate format and graphics", 2012).

It is well documented that an individual's culture and upbringing shapes how they may interpret and respond to health risk messages, as some risks may be emphasized or addressed in the messages, whereas others are downplayed or ignored (Atkin & Freimuth, 2001; Flay & Cook, 1989; Mody, 1991; Vaughan & Nordenstam, 1991; Witte, 1995). Therefore, there is a need for well-designed public health campaigns that are informed by formative and outcome

57 Development of a Culturally Appropriate Mammography Screening Campaign
-Leeks et al.

Figure 3. Final Print Materials



evaluation, ensuring cultural appropriateness as well as assessing their ability to reach targeted audiences and measure their expected outcomes to impact health behaviors. Given the paucity of mass media interventions that are effective in changing behaviors specific to breast cancer screening (Baron et al., 2008), the findings of this research have implications for establishing best practices with low-income, African American women, and informing health educators about strategies to improve media-based cancer screening programs.

As research has shown, in-depth evaluation of campaign materials improves the chance of developing effective public health campaigns because one can identify and address the beliefs of the target audience (Witte et al., 1998). The combination of formative research and theory proved to be useful, because it allowed for the creation of culturally appropriate materials and messages, specifically tailored to address the target audience's culture, beliefs, needs, and interests. Future research should conduct formative evaluation of campaign and/or intervention materials to determine if the materials developed are culturally appropriate and have the potential to promote a greater degree of health-protective behaviors among specific target populations than other approaches.

ACKNOWLEDGEMENTS

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

REFERENCES

- Allen, M. (1994). The dilemma for women of color in clinical trials. *J Am Med Womens Assoc*, 49(4), 105-109.
- Ammerman, A., Corbie-Smith, G., St George, D. M., Washington, C., Weathers, B., & Jackson-Christian, B. (2003). Research expectations among African American church leaders in the PRAISE! project: a randomized trial guided by community-based participatory research. *Am J Public Health*, 93(10), 1720-1727.
- Atkin, C. K., & Freimuth, V. (2001). Formative evaluation research in campaign design. In R. E. Rice & C. K. Atkin (Eds.), *Public Communication Campaigns* (Vol. 3rd, pp. 125-145). Thousand Oaks: Sage Publications.
- Barber, K. R., Shaw, R., Folts, M., Taylor, D. K., Ryan, A., Hughes, M., et al. (1998). Differences between African American and Caucasian men participating in a community-based prostate cancer screening program. *J Community Health*, 23(6), 441-451.
- Baron, R. C., Rimer, B. K., Breslow, R. A., Coates, R. J., Kerner, J., Melillo, S., et al. (2008). Client-directed interventions to increase community demand for breast, cervical, and colorectal cancer screening a systematic review. *Am J Prev Med*, 35(1 Suppl), S34-55.
- Beaudoin, C. E., Fernandez, C., Wall, J. L., & Farley, T. A. (2007). Promoting healthy eating and physical activity short-term effects of a mass media campaign. *Am J Prev Med*, 32(3), 217-223.
- Berry, D. A., Cronin, K. A., Plevritis, S. K., Fryback, D. G., Clarke, L., Zelen, M., et al. (2005). Effect of screening and adjuvant therapy on mortality from breast cancer. *N Engl J Med*, 353(17), 1784-1792.
- Black radio today. (2008). Retrieved October 30, 2011, from http://www.arbitron.com/downloads/Black_Radio_Today_08.pdf
- Brug, J., Oenema, A., & Campbell, M. (2003). Past, present, and future of computer-tailored nutrition education. *Am J Clin Nutr*, 77(4 Suppl), 1028S-1034S.

- Cancer Facts and Figures for African Americans 2011-2012*. (2011). Atlanta, GA: American Cancer Society.
- Eheman, C. R., Benard, V. B., Blackman, D., Lawson, H. W., Anderson, C., Helsel, W., et al. (2006). Breast cancer screening among low-income or uninsured women: results from the National Breast and Cervical Cancer Early Detection Program, July 1995 to March 2002 (United States). *Cancer Causes Control*, 17(1), 29-38.
- Fern, E. (2001). *Advanced focus group research*. Thousand Oaks, CA: Sage.
- Fishbein, M. A. I. (1975). *Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research*. Reading, MA: Addison-Wesley.
- Flay, B. R., & Cook, T. D. (1989). Three models of summative evaluation of prevention campaigns with a mass media component. In R. E. Rice & C. K. Atkin (Eds.), *Public Communications Campaigns* (pp. 175-195). Newbury Park, CA: Sage.
- Fletcher, S. W., & Elmore, J. G. (2003). Clinical practice. Mammographic screening for breast cancer. *N Engl J Med*, 348(17), 1672-1680.
- Gerend, M. A., & Pai, M. (2008). Social determinants of Black-White disparities in breast cancer mortality: a review. *Cancer Epidemiol Biomarkers Prev*, 17(11), 2913-2923.
- Glanz, K., Rimer, B. K., & Lewis, F. M. (2002). *Health behavior health education: Theory, research and practice* (3 ed.). San Francisco, CA: Jossey-Bass.
- Hall, I. J., Johnson-Turbes, C. A., & Williams, K. N. (2010). The potential of black radio to disseminate health messages and reduce disparities. *Prev Chronic Dis*, 7(4), A87.
- Hall, I. J., Rim, S. H., Johnson-Turbes, C. A., Vanderpool, R., Kamalu, N. N. (2012). The African American Women and Mass Media (AAMM) Campaign: a CDC Breast Cancer Screening Project. *J Women's Health*, 21(11), 1107-1113.
- Humphrey, L. L., Helfand, M., Chan, B. K., & Woolf, S. H. (2002). Breast cancer screening: a summary of the evidence for the U.S. Preventive Services Task Force. *Ann Intern Med*, 137(5 Part 1), 347-360.
- Hunter, C. P. (2000). Epidemiology, stage at diagnosis, and tumor biology of breast carcinoma in multiracial and multiethnic populations. *Cancer*, 88(5 Suppl), 1193-1202.
- Johnson, P., & Birk, T. A. (1993). The role of African American-owned radio in health promotion: community service projects targeting young African American males. *Urban League Review*, 16(2), 85-94.
- Kennedy, B. M., Kumanyika, S., Ard, J. D., Reams, P., Johnson, C. A., Karanja, N., et al. (2010). Overall and minority-focused recruitment strategies in the PREMIER multicenter trial of lifestyle interventions for blood pressure control. *Contemp Clin Trials*, 31(1), 49-54.
- Koo, F. K., Kwok, C., White, K., D'Abrew, N., & Roydhouse, J. K. (2012). Strategies for piloting a breast health promotion program in the Chinese-Australian population. *Prev Chronic Dis*, 9, E03.
- Kreuter, M. W., Lukwago, S. N., Bucholtz, R. D., Clark, E. M., & Sanders-Thompson, V. (2003). Achieving cultural appropriateness in health promotion programs: targeted and tailored approaches. *Health Educ Behav*, 30(2), 133-146.
- Kreuter, M. W., Strecher, V. J., & Glassman, B. (1999). One size does not fit all: the case for tailoring print materials. *Ann Behav Med*, 21(4), 276-283.
- Krueger, R. A. (1988). *Focus groups: A practical guide for applied research*. Newbury Park, CA: Sage.
- Krueger, R. A., & Casey, M. A. (2008). *Focus groups: A practical guide for applied research* (4 ed.). Thousand Oaks, CA: Sage.

- Mandelblatt, J. S., Cronin, K. A., Bailey, S., Berry, D. A., de Koning, H. J., Draisma, G., et al. (2009). Effects of mammography screening under different screening schedules: model estimates of potential benefits and harms. *Ann Intern Med*, 151(10), 738-747.
- Mandelblatt, J. S., & Yabroff, K. R. (1999). Effectiveness of interventions designed to increase mammography use: a meta-analysis of provider-targeted strategies. *Cancer Epidemiol Biomarkers Prev*, 8(9), 759-767.
- Marin, G. (1993). Defining culturally appropriate community interventions: Hispanics as a case study. *Journal of Community Psychology*, 21(2), 149-161.
- Mody, B. (1991). *Designing messages for development communication: An audience participation-based approach*. Newbury Park, CA: Sage.
- National Breast and Cervical Cancer Early Detection Program (NBCCEDP): Program Eligibility. (2011). Retrieved October 11, 2011, from <http://www.cdc.gov/cancer/nbccedp/about.htm#pe>
- Nystrom, L., Andersson, I., Bjurstam, N., Frisell, J., Nordenskjold, B., & Rutqvist, L. E. (2002). Long-term effects of mammography screening: updated overview of the Swedish randomised trials. *Lancet*, 359(9310), 909-919.
- Parker, D. M. (2004). Georgia's Cancer Awareness and Education Campaign: Combining Public Health Models and Private Sector Communications Strategies. *Public Health Research, Practice, and Policy*, 1(3), 1-6.
- Parker, E., Margolis, L. H., Eng, E., & Henriquez-Roldan, C. (2003). Assessing the capacity of health departments to engage in community-based participatory public health. *Am J Public Health*, 93(3), 472-476.
- Petty, R. E., & Cacioppo, J. T. (1981). *Attitudes and persuasion: Classic and contemporary approaches*. Dubuque, IA: Wm. C. Brown.
- Petty, R. E., & Cacioppo, J. T. (1986). *Communication and persuasion: Central and peripheral routes to attitude change*. New York, NY: Springer.
- Phillips, J. M., Cohen, M. Z., & Moses, G. (1999). Breast cancer screening and African American women: fear, fatalism, and silence. *Oncol Nurs Forum*, 26(3), 561-571.
- Rimer, B. K., & Glassman, B. (1998). Tailoring communications for primary care settings. *Methods Inf Med*, 37(2), 171-177.
- Rogers, R. W. (1983). Cognitive and physiological processes in fear appeals and attitude change: a revised theory of protection motivation. In J. T. Cacioppo & R. E. Petty (Eds.), *Social psychophysiology: A sourcebook* (1 ed., pp. 153-176). New York, NY: Guilford.
- Ryerson, A. B., Benard, V. B., & Major, A. C. (2005). National Breast and Cervical Cancer Early Detection Program: 1991–2002 National Report. Retrieved October 31, 2011, from <http://www.cdc.gov/cancer/nbccedp/Reports/NationalReport/index.htm>
- Screening for breast cancer: recommendations and rationale. (2002). *Ann Intern Med*, 137(5 Part 1), 344-346.
- Singh, G. K., Miller, B. A., Henkey, B. F., & Edwards, B. K. (2003). *Area socioeconomic variations in US cancer incidence, mortality, stage, treatment, and survival, 1975–1999*. Bethesda, MD: National Cancer Institute.
- Skinner, C. S., Strecher, V. J., & Hospers, H. (1994). Physicians' recommendations for mammography: do tailored messages make a difference? *Am J Public Health*, 84(1), 43-49.

- Story, M., Sherwood, N. E., Obarzanek, E., Beech, B. M., Baranowski, J. C., Thompson, N. S., et al. (2003). Recruitment of African-American pre-adolescent girls into an obesity prevention trial: the GEMS pilot studies. *Ethn Dis*, 13(1 Suppl 1), S78-87.
- Swan, J., Breen, N., Coates, R. J., Rimer, B. K., & Lee, N. C. (2003). Progress in cancer screening practices in the United States: results from the 2000 National Health Interview Survey. *Cancer*, 97(6), 1528-1540.
- Tangka, F. K., Dalaker, J., Chattopadhyay, S. K., Gardner, J. G., Royalty, J., Hall, I. J., et al. (2006). Meeting the mammography screening needs of underserved women: the performance of the National Breast and Cervical Cancer Early Detection Program in 2002-2003 (United States). *Cancer Causes Control*, 17(9), 1145-1154.
- Thomas, S. B., & Quinn, S. C. (1991). The Tuskegee Syphilis Study, 1932 to 1972: implications for HIV education and AIDS risk education programs in the black community. *Am J Public Health*, 81(11), 1498-1505.
- [Tyczynski, J. E.](#), [Hill, T. D.](#), & [Berkel, H. J.](#) (2006). Why do postmenopausal African-American women not benefit from overall breast cancer mortality decline? *Ann Epidemiol*, 16(3), 180-90.
- United States Cancer Statistics: 1999–2007 Incidence and Mortality Web-based Report.* (2010). Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention and National Cancer Institute.
- Use culturally appropriate format and graphics. (2012). Retrieved January 26, 2012, from <http://www.nhtsa.gov/people/injury/airbags/TESM/pages/UseCult6.htm>
- Vaughan, E., & Nordenstam, B. (1991). The perception of environmental risks among ethnically diverse groups. *J Cross-Cultural Psychology*, 22(1), 29-60.
- Williams, G. A., Abbott, R. R., & Taylor, D. K. (1997). Using focus group methodology to develop breast cancer screening programs that recruit African American women. *J Community Health*, 22(1), 45-56.
- Witte, K. (1995). Fishing for success: using the Persuasive Health Message Framework to generate effective campaign messages. In E. W. Maibach & R. L. Parrott (Eds.), *Designing Health Messages: Approaches From Communication Theory and Public Health Practice*. Newbury Park, CA: Sage.
- Witte, K., Berkowitz, J. M., Lillie, J. M., Cameron, K. A., Lapinski, M. K., & Liu, W. Y. (1998). Radon awareness and reduction campaigns for African Americans: a theoretically based evaluation. *Health Educ Behav*, 25(3), 284-303.