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Effects of an entertaining, culturally targeted narrative and an appealing expert interview on the colorectal screening intentions of African American women

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Abstract

Universal screening for colorectal cancer (CRC) is recommended for individuals 50–75 years of age, but screening uptake is suboptimal and African Americans have suffered persistent racial disparities in CRC incidence and deaths. We compared a culturally tailored fictional narrative and an engaging expert interview on the ability to increase intentions to be screened for CRC among African American women. In a post-only experiment, women (N = 442) in face-to-face listening groups in African American churches heard audio recordings of either a narrative or an expert interview. Questionnaires were completed immediately afterward and 30 days later. Women who heard narratives reported stronger intentions to be screened with a home stool blood test than women who heard the interview; the effect lasted at least 30 days. Culturally tailored, fictional narratives appear to be an effective persuasive strategy for reducing racial disparities in CRC outcomes.

1 INTRODUCTION

1.1 Colorectal cancer background

Colorectal cancer (CRC) incidence and death rates have been decreasing for decades, but CRC remains the third leading cause of cancer deaths (Jemal et al., 2017). Several CRC screening tests are available, and some of them provide the opportunity to remove precancerous lesions known as polyps, thus preventing the development of CRC (“Cancer Facts & Figures 2017,” 2017). If CRC has developed but is detected at an early stage, treatment is frequently successful (“Colorectal Cancer Facts & Figures, 2017–2019,” 2017). Consequently, CRC screening is recommended for all individuals aged 50–75 years who are at normal CRC risk (US Preventive Service Task Force [USPSTF], 2016; “Colorectal Cancer Facts & Figures, 2017–2019,” 2017).

CRC screening rates have leveled off at only two thirds of those aged 50–75 years (Gamble et al., 2017). African Americans and other minorities have markedly lower screening rates (Kashini & Bush, 2016) and often are diagnosed at later stages of the disease when it is less amenable to treatment (“Colorectal Cancer Facts & Figures, 2017–2019,” 2017). The

resulting racial and ethnic disparities in the incidence and outcomes of CRC constitute a serious social justice concern (Javanparast et al., 2010).

Of the recommended CRC screening modalities (USPSTF, 2016; “Colorectal Cancer Facts & Figures, 2017–2019,” 2017), two are most common in the United States: (a) colonoscopy, an invasive procedure preceded by bowel preparation with heavy laxatives and involving anesthesia, and (b) home stool tests for blood and/or other disease markers (Klabunde, Djenaba, King, White, & Plescia, 2012). Home stool tests are more convenient, less expensive, and less risky than colonoscopy, but they must be repeated every year (vs. every 10 years for colonoscopy), stool-handling can elicit squeamishness, and positive stool tests must be followed up by confirmatory colonoscopy (“Colorectal Cancer Screening Tests,” 2017). It has been argued that the best screening test is the one that gets done (Allison, 2010).

In addition to barriers to specific screening modalities (e.g., colonoscopy-associated fear and feelings of vulnerability; McLachlan, Clements, & Austoker, 2012), several barriers to CRC screening of any sort have been identified: (a) being unaware of the need for screening; (b) lacking a physician’s recommendation; (c) being uninsured for health care or concerned about the cost of the test; (d) not having CRC symptoms, a family history of CRC, or a screened network member; (e) fear of what the procedure might find (Jones, Devers, Kuzel, & Wolf, 2010); (f) confusion about screening options (Jones, Vernon & Wolf, 2010); and (g) fatalism—the sense that health and disease are preordained (e.g., Crosby & Collins, 2017). Fortunately, interventions to overcome CRC screening barriers have had some success; the most effective addressed barriers at levels of community member demand *and* test access or provider behavior (Martini, Morris, & Preen, 2016; “Cancer Screening: Multicomponent Interventions—Colorectal Cancer,” 2016).

1.2 Narrative versus didactic CRC message contexts

Refining single-level intervention strategies could lay the groundwork for stronger multimodal interventions in the future. We focused on increasing demand for CRC screening at the community member level, and explored the relative effectiveness of narrative and didactic/expository persuasion strategies. Didactic persuasion is based in argument and fact and is the predominant form of health communication to the public (Zebregs, van den Putte, de Graaf, Lammers, & Neijens, 2015). Narrative persuasion involves a story about characters that experience events arrayed in time; storytelling has been a form of sensemaking throughout human history (Bruner, 2002; Schank & Berman, 2002). Narrative approaches have been increasingly prevalent in health promotion (e.g., Kim, Shin, Larkey, & Roe, 2017), but meta-analyses of contrasts between narrative and didactic forms of health education have not shown that narrative is superior (Hoeken, 2001; Perrier & Ginis, 2016, 2017; Zebregs, van den Putte, Neijens, & de Graaf, 2015).

Indeed, some studies have found that didactic health messages were perceived as more credible or informative than narrative dramatizations (Greene & Brinn, 2003; Slater, Buller, Waters, Archibeque, & LeBlanc, 2003). Materials offering only factual information are also easier and less costly to produce than narrative materials (Zebregs et al., 2015). By contrast, narratives have a coherent beginning-middle-end structure that may help a person retain

information, and they can model good decision-making in complex situations. Especially for frightening topics like cancer, narratives may create enough emotional distance to overcome avoidance of the issue while engendering strong attitudes toward health behavior that are grounded in emotion as well as cognition (Green, 2006). Narratives are also able to carry cultural codes that signify shared meanings, interaction rules, and community membership (Larkey & Hecht, 2010). Finally, narrative may be an especially effective way to communicate with audiences that have strong storytelling traditions (Hinyard & Kreuter, 2007). To sum up, it appears that empirical methods are still needed to determine which persuasion strategy works best for a particular target audience and message (Nan, Futerfas, & Ma, 2016).

1.3 The potential contribution of entertainment education

Entertainment education (EE) was originally conceived as a narrative approach that used entertainment media to influence the knowledge, attitudes, and behavior of audience members with regard to a health or other prosocial issue (Singhal & Rogers, 1999). The first EE programs were multi-episode fictional melodramas broadcast on television or radio (Sabido, 2004). More recently, EE storylines have been incorporated into existing commercial broadcasts, both comedies and dramas (Beck, 2004), or have been disseminated through print and digital media (Hernandez & Organista, 2015; Wang & Singhal, 2016). Compared with other narrative formats (e.g., personal testimonies, journalistic reports), EE may be relatively useful when a recommended behavior is preventive and lacks gripping, first-person survivor tales or a sensational news hook. And, particularly when broadcast, EE offerings may make the interpersonal and sociopolitical environments more supportive of positive change at the individual level (Kennedy et al., 2011; Singhal & Rogers, 2004).

There is mounting evidence that EE can increase screening or its theoretical determinants for health conditions such as HIV and other sexually transmitted infections (Kennedy, O'Leary, Beck, Pollard, & Simpson, 2004; Whittier, Kennedy, Seeley, St. Lawrence, & Beck, 2005); depression (Hernandez & Organista, 2013); and cancers of the breast (Wilkin et al., 2007), cervix (Moran, Frank, Chatterjee, Murphy, & Baezconde-Garbanati, 2016), and prostate (Volk et al., 2008). However, there is scant evidence that narrative formats such as EE have more influence on topics like CRC screening than a well-constructed didactic stimulus would have (Ellis et al., 2017; Hwang et al., 2013; Jensen et al., 2014; Larkey et al., 2015).

1.4 Theoretical mechanisms of EE

Originally, the EE approach was based largely on social learning theory (SLT; Bandura, 1977). Role model characters faced barriers to performing a recommended behavior, struggled to overcome the barriers, succeeded, and were rewarded by good health and prosperity or social success (Sabido, 2004). As SLT would predict, EE exposure has increased vicarious learning, self-efficacy regarding the ability to perform a recommended behavior, the expectation that a behavior will lead to positive outcomes, behavioral intentions, and health-relevant behavior itself (e.g., Borrayo, Rosales, & Gonzales, 2017; Murphy et al., 2015; Hether, Huang, Beck, Murphy, & Valente, 2008; Vaughan, Rogers, Singhal, & Swalehe, 2000). As social cognitive theory (SCT), the successor to SLT, would predict (Bandura, 1997), EE exposure also has been associated with aspects of collective

efficacy in a community (e.g., Khalil & Rintamaki, 2014; Marcus, Huang, Beck, & Miller, 2010; Papa et al., 2000).

Newer theories such as the extended elaboration likelihood model (Slater & Rouner, 2002), the transportation imagery model (Green & Brock, 2000, 2002), and a model of culture-centric narratives in health promotion (Larkey & Hecht, 2010) have attempted to explain how a narrative attracts attention and interest, setting the stage for modeling and other SCT processes. Interest is thought to be enhanced by such narrative attributes as depiction of characters who are appealing or similar to the audience, coverage of topics with which audience members have prior personal involvement, or elicitation of the sense of being carried away to a narrative world. Research has provided uneven support for these explanations (e.g., Green & Brock, 2000; Kreuter et al., 2010; Larkey & Gonzalez, 2007; Slater, 2002; Slater et al., 2003; Hernandez & Organista, 2010; Murphy, Frank, Chatterjee, & Baez-Conde Garbonati, 2013; Larkey et al., 2015).

Studies also have shown that EE effects vary by factors such as medium (e.g., print vs. audio/video), health topic (Shen, Sheer, & Li, 2015), audience characteristics (de Wit, Das, & Vet, 2008; Moyer-Gusé & Nabi, 2011; Murphy et al., 2015), and narrative genre (Moyer-Gusé, Mahood, & Brookes, 2015). Given such complex mediation, EE narratives should be grounded in qualitative formative research with the intended audience (Baezconde-Garbanati et al., 2014). Then, to ensure adequate entertainment value and sound linguistic and cultural tailoring, the EE stimulus should be (a) developed in collaboration with creative professionals whose work has appealed to the audience in question, (b) pretested with audience members, and (c) revised on the basis of their feedback (Galavotti, Kuhlmann, Kraft, Harford, & Petraglia, 2008).

1.5 EE narrative genre and character centrality

Whether a CRC narrative should be comedic or dramatic in genre is an open question. It has been suggested that humor may be especially effective in dealing with frightening health topics such as cancer (Green, 2006). Women with breast cancer and their nurses have used humor effectively as a coping mechanism (Penson et al., 2005; Wanzer, Booth-Butterfield, & Booth-Butterfield, 2005), and humorous ad copy has promoted cancer prevention behaviors successfully (Conway & Dube, 2002). Conversely, humor can be offensive, it can serve as a discounting cue, indicating that a health issue is not serious, and its effects can vary by population, topic, type of humor, and placement within a narrative (Lammers, 1993; Moyer-Gusé, Mahood, & Brookes, 2011; Weinberger & Gulas, 1992).

Another narrative element that may affect EE impact is the centrality of the character that confronts a health issue. Information about minor characters may be less interpretable and memorable than information about main characters (Anderson, Garrod, & Sanford, 1983). However, unlike tragic events befalling beloved main characters, the frightening experiences of minor characters may provoke enough emotion to be attention grabbing, but not enough to overwhelm or provoke defensive reactions in audience members (Valente et al., 2007). To date, there have been few studies of the effects of character centrality in EE, and their findings have been mixed (Valente et al., 2007; Storey, Boulay, Karki, Heckert, & Karmacharyat, 1999).

1.6 Study questions

A fair test of the relative utility of EE versus a didactic format for CRC screening messages would include engaging stimuli of both kinds. We asked whether a narrative or an expert interview would have greater effects on fecal occult blood test (FOBT) intentions and other CRC screening outcomes if both types of stimuli contained the same actors, and the same screening messages in the same dosages, and we used the same techniques to ensure audience appeal. Within the narrative condition, we asked secondary questions about the relative effectiveness of comedic versus dramatic genres, and main character role models versus minor character role models.

2 METHOD

2.1 Participants

An eligible participant was female, African American, aged 50 years or older, and neither a medical professional nor a cancer survivor. Being behind schedule for either CRC or breast cancer screening was also required because being up-to-date for breast and CRC screening may be correlated (Rao, Graubard, Breen, & Gastworth, 2004). Recruitment was conducted over an 18-month period by part-time African American female staff from the community and guided by GIS maps. Outreach included presentations at church services and community group meetings, ads and interviews in major and Black local newspapers, and flyers posted in community venues (Kennedy, Bishop, Anderson & Hayward, 2017).

2.2 Design and procedure

2.2.1 Design and analysis plan—The study was a double-blinded, post-only, block-randomized experiment with immediate post and 30-day follow-up (post-30) data collection (Campbell & Stanley, 1963). It was powered to detect a modest change in the primary dependent variable, intention to be screened for CRC, which applies to both currently screened and unscreened individuals and maximizes the pool of prospective participants. It followed intention-to-treat recommendations for randomized controlled trials (Friedman, Furberg, & DeMets, 2011). SAS (version 9.4) statistical software and two-tailed tests were used. Each listening group session was treated as a block. For the full sample, condition (narrative vs. interview) was the main effect tested. Within the narrative subsample, main effects of genre (comedy vs. drama) and character centrality (main vs. minor) were tested. Outcomes measured only at post were analyzed with t-tests, regression was used for post-30 behavior analyses, and outcomes measured at both post and post-30 were analyzed with mixed model methods, which included tests of 2-way (time x condition) interactions. In the narrative subset analyses, there were no interactions between genre and character centrality; main effects of each factor controlling for the other factor are reported.

2.2.2 Stimuli development—After institutional review board approval, eight focus groups were conducted with older African American women. Transcripts of the focus groups were given to culturally competent professional script writers. The writers also played *The Game* (Petraglia, Galavotti, Harford, Pappas-delucca, & Mooki, 2007), an EE tool, with members of the research group. In the course of play, the writers received standard EE plot arcs and a list of facilitators and barriers to CRC screening drawn from the scientific

literature. The writers used this information to draft narrative scripts which were audio-taped using volunteer actors. Along with a draft expert interview tape, the draft narrative recordings were copy-tested for message clarity and appeal with small groups of audience members, revised accordingly, and re-taped using professional actors.

2.2.3 Data collection—Immediate post data were collected in 17 listening group sessions held at 10 African American churches. Upon arrival at a session, participants were randomized to one of the five study conditions (see section 2.2.1), given questionnaire packets, and directed to a listening group room. Research staff were blind to study condition; study instructions and stimuli were taped. Sessions lasted about 2 hours.

2.2.4 Incentives—Listening group participants received \$50 and flyers about cancer and local health services. Those who returned a questionnaire mailed 30 days later received \$25 more.

2.3 Materials

2.3.1 Narratives—The narrative was called *Mama on Board*. Each of its four versions (drama/main character; drama/minor character; comedy/main character; comedy/minor character) comprised 12 two-minute episodes and featured the same African American actors. In all versions, Loretta—a 60-year-old laid-off librarian—was taken on a cruise by her son and his wife. In the ship’s dining room, a conflict arose between the two women over Loretta’s tattered church hat. Loretta stormed off to the only open seat, at the table of a former nurse. After some confusion over whether the nurse’s minister husband was or was not on the boat (his ashes were), Loretta learned that he had died of colon cancer. The nurse lamented that he had been too busy taking care of others after Hurricane Katrina to use the FOBT kit his doctor had given him, and urged Loretta to get screened for CRC. Loretta countered with reasons to avoid screening until she learned that her daughter-in-law was pregnant. She vowed to get tested to protect her future status as doting grandmother and later reported that she had been screened herself and had urged her church “sisters” to get screened.

2.3.2 Expert interview—This 22-minute audio recording took the form of a lively talk show. A female physician played by the same actress that played the nurse in the narratives was interviewed about women’s health by a female host who had played two minor roles in the narratives. To echo the episodic structure of the narrative, the interview was broken up by periodic public service announcements that were unrelated to cancer screening (See Table 1).

2.4 Measures

The self-administered paper questionnaire was written at a sixth-grade reading level and included items that could apply to both a narrative and an expert interview. Draft questionnaires were tested with audience members for item clarity and offensiveness, and revised accordingly.

2.4.1 Participant characteristics—Five types of participant characteristics were measured.

Demographics: National survey (“Health Information National Trends Survey,” 2007; “Behavioral Risk Factor Surveillance System,” 2009) item wording was used.

Health literacy: The Short Test of Functional Health Literacy in Adults (S-TOFHLA; Nurss, Parker, & Baker, 1995) assesses health literacy. Possible scores range from 0 to 36. Cronbach’s alpha was calculated using immediate postdata for this scale and those described below; the alpha for S-TOFHLA was .94.

Social desirability: This five-item scale (Hays, Hayaski, & Stewart, 1989) assesses social desirability (e.g., I am always courteous, even to people who are disagreeable). Participants rated their responses using a 5-point scale ranging from 1 (*definitely true*) to 5 (*definitely false*). Higher scores indicated greater social desirability; alpha was .63.

CRC screening status: At post and post-30, participants responded to NCI-commissioned items assessing screening status (Vernon et al., 2004). Screening was considered current if there had been receipt of FOBT in the last year, a colonoscopy in the last 10 years, or a flexible sigmoidoscopy in the last 5 years.

Family history of cancer: At post, participants were asked whether or not a first-degree relative (i.e., mother, father, brother, sister, or child) had ever had colon, breast, or another type of cancer; responses were coded 0 (no history) or 1 (at least one cancer case).

2.4.2 Manipulation check—At post, participants indicated whether the recording they heard was a “game show,” “interview,” “comedy” or “drama” by checking a box by one of the alternatives.

2.4.3 Theoretical constructs—Constructs that predicted CRC screening or EE outcomes in the past were tapped.

FOBT screening intentions: At post and post-30, participants were asked to indicate their FOBT screening intentions: “When it is time for my next home stool test, I…” Response options were as follows: “Plan to do one,” “Do not plan to do one,” “Will wait until the doctor recommends the test,” and “Am undecided.” “Plan to do one” response was coded 1; all other responses were coded 0.

CRC screening intentions: At post, participants were asked to indicate the degree to which they “intend to have colorectal cancer screening” (adapted from Vernon, Myers, & Tilley, 1997). Participants rated their responses using a 5-point scale ranging from 1 (*strongly agree*) to 5 (*strongly disagree*).

Intention to talk about CRC screening: At post and post-30, participants responded to four items with the stem “I plan to.” Subsequent wording was as follows: “Call a toll-free line for information about colon cancer screening,” “Tell someone I know to call,” “Ask my

doctor about the home stool blood test (FOBT) if s/he doesn't bring it up," or "Tell someone I know to do a FOBT." Participants rated responses using a 5-point scale ranging from 1 (*strongly agree*) to 5 (*strongly disagree*); alpha was 0.79.

Screening knowledge: At post and post-30, participants responded to 10 items assessing screening knowledge (adapted from the CRC Knowledge Scale; Schroy et al., 2008). Participants rated their responses using a 5-point scale ranging from 1 (*strongly agree*) to 5 (*strongly disagree*), with possible total scores ranging from 10 to 50; alpha was 0.84.

CRC screening barriers: At post and post-30, participants responded to a 19-item scale assessing CRC screening barriers (Jones, Magnusson, Dumenci, & Vernon, 2011; e.g., "I do not want to handle my stool"). Participants rated their responses using a 5-point scale ranging from 1 (*strongly agree*) to 5 (*strongly disagree*); alpha was 0.94.

Perceived benefits of FOBT: At post and post-30, participants responded to five items assessing their perceived benefits of FOBT (e.g., finding cancer early, helping you not worry as much about colon cancer; Rawl et al., 2001). They indicated their level of agreement using a 5-point scale ranging from 1 (*strongly agree*) to 5 (*strongly disagree*). Cronbach's alpha was 0.82.

FOBT self-efficacy: At post and post-30, participants responded to a three-item scale (adapted from Champion et al., 2008–66) assessing FOBT self-efficacy (e.g., I can perform the FOBT correctly). Participants rated their responses using a 5-point scale ranging from 1 (*strongly agree*) to 5 (*strongly disagree*). Total scores ranged from 3 to 15, with lower scores indicating greater self-efficacy; alpha was 0.87.

Subjective and descriptive norms: At post, subjective (or injunctive) norms (Ajzen & Fishbein, 1980) were calculated by multiplying perceived normative pressure by a respondent's motivation to comply; total scores = 1 to 25. Descriptive norms (Cialdini, Kallgren, & Reno, 1991) were tapped by agreeing with "Most people whose opinions I value do regular stool blood tests," and response options ranged from 1 (*strongly agree*) to 5 (*strongly disagree*).

Like/admire healthcare provider character: At post, participants were asked how much they liked and how much they admired the healthcare provider character. Each of these two items used a 10-point response scale; anchors were "I don't like/I like a lot" and "I don't admire/I admire a lot," respectively. Cronbach's alpha was 0.81; responses were summed.

Emotional engagement/identification: At post, participants completed seven items from the Transportation Imagery Scale (Green & Brock, 2000). A scale comprising three items emerged: "The story/recording affected me emotionally," "The events in the story/recording relate to my everyday life," and "I could picture myself facing things discussed in the story/recording." Participants rated their responses using a 5-point scale ranging from 1 (*strongly agree*) to 5 (*strongly disagree*) and were summed; alpha was .65.

2.4.4 Behavioral variables—Three kinds of CRC screening-relevant behaviors were measured.

Talked about CRC screening: At post-30, participants were asked to respond “yes” or “no” to four items substituting “I have” for “I plan to” in the talking intentions items above.

Sought information: At post-30, participants were asked if she had looked for information about CRC screening, or if someone who was not a health care provider had looked for her. Response options were “yes” or “no.”

Took CRC screening action: At post-30, participants were asked five questions about screening-relevant behavior since coming to the listening group. They were asked whether they had: used an FOBT kit and sent it in (response options were yes/no/used but not mailed); tried to get a home stool blood test kit, got a kit, and got a colonoscopy (response options were yes or no); and made an appointment for colon cancer screening (response options were yes/no/not due for colon cancer screening). Two variables were constructed from these items: (a) any FOBT behavior (yes to any of the first three items) and (b) any CRC screening behavior (yes to any of the five items).

3 RESULTS

3.1 Manipulation check

Of those in the EI condition, 94% selected “interview.” Of those in the narrative condition, 91% chose a narrative format (comedy or drama). Within the narrative condition, genre was less clear: 87% exposed to a drama selected “drama,” but only 27% exposed to a comedy chose “comedy.”

3.2 Participant characteristics and randomization

Participant characteristics are summarized in Table 2. Of the participants, 11 were older than 75 years of age. There were no significant differences between study conditions on any participant characteristic. The response rate at post-30 was 89%, with no differential attrition between the narrative and EI groups, $\chi^2(1, 442) = .1591, p = .69$.

3.3 Full sample contrasts

3.3.1 Intentions—FOBT intentions at post were significantly stronger in the narrative condition than in the EI condition, and this difference held through post-30, $F(1, 440) = 9.82, p = .0018$ (see Table 3). However, there was no post difference in overall CRC screening intentions, $t(222) = .70, p = .4852$.

Intentions to talk to other people about FOBT differed by time of measurement, $F(1, 359) = 5.21, p = .0231$. At post, narrative group participants were more likely to intend to talk about FOBT with other people than were participants in the EI condition, $t(359) = 2.99, p = .0030$. That difference was no longer significant one month later, $t(359) = .44, p = .6612$.

3.3.2 Other screening determinants—Those in the EI condition liked/admired the healthcare provider character more, $t(220) = 6.86, p < .0001$, but those in the narrative

condition reported more emotional engagement/identification, $t(169) = 4.16, p < .0001$. Descriptive norms, measured only at immediate post, were marginally stronger in the narrative group.

3.3.3 Talking about screening and other screening behaviors—There were no significant differences between the narrative and EI conditions on these two variables.

3.4 Narrative subset contrasts

Main character groups liked/admired the nurse (a non-main character in the narrative) more than minor character groups did, $F(1, 329) = 9.40, p = .0024$. Participants who heard a drama reported more searching for CRC screening information than those who heard a comedy, $\chi^2(1, 312) = 4.20, p = .0404$; 52.6% versus 41.03%; odds ratio = 1.60; 95% confidence interval [1.02, 2.50].

3.5 Association between FOBT intentions and behavior

Of the participants who completed the post-30 questionnaire, 65% reported some CRC screening talk or other CRC screening behavior. At post-30, FOBT intentions were associated with both any FOBT behavior, reported by 20.3% of FOBT intenders versus 9.5% of FOBT nonintenders, $\chi^2(1, 386) = 8.64, p = .0033$, and any CRC screening behavior, reported by 44% of FOBT intenders versus 22.4% of FOBT nonintenders, $\chi^2(1, 386) = 20.00, p < .0001$.

4 DISCUSSION

FOBT screening intentions among older African American women were stronger if women were exposed to fictional narratives containing CRC screening messages than if they heard the same messages in an engaging expert interview. This difference persisted for at least 30 days. At immediate posttest, the narrative group also had stronger intentions to tell others about FOBT. Intentions were the only potential predictor of screening behavior that proved to be significantly associated with reports of taking some screening action. This finding is consistent with a meta-analysis (Snyder et al., 2004) that showed that intention has been a more reliable predictor of behavior than the other SCT determinants have been.

In contrast to FOBT intentions, intentions to be screened for CRC using any test modality did not differ across our study groups. Our formative focus group participants had reported being aware of colonoscopy but not FOBT, and health communication often is more effective when it conveys novel information than when it delivers familiar messages (Snyder et al., 2004).

The narrative elicited stronger emotional involvement and marginally stronger descriptive norms than the interview; both of these findings were consistent with theoretically based predictions and some previous research. Overall, however, there were few clear effects on theoretical mediators. Causal effect pathways for this audience and message warrant further study.

4.1 EE collaboration

Working collaboratively with industry professionals and audience members to write and produce EE narratives is beneficial in at least three major ways. First, the collaboration process fosters the development of culturally resonant media offerings that meet audience expectations regarding production values. Second, it recognizes communal narratives as resources (Rappaport, 1995) that can help to compensate for gaps and inconsistencies in the current scientific knowledge base, and avoid stale, formulaic narrative treatments based on formative research findings. Third, it can establish linkages with the storytelling network of an ethnic community, helping to ensure that key health information reaches at-risk audiences on an ongoing basis (Hernandez & Organista, 2013; Kim, Moran, Wilkin, & Ball-Rokeach, 2011).

On the other side of the ledger, collaboration can entail compromise in study rigor. For example, our nationally known writer was convinced that “ya’ gotta’ make ‘em laugh, and ya’ gotta’ make ‘em cry” to secure audience engagement. Consequently, it could be argued that both the drama and comedy versions of our narrative were actually somewhat hybrid in genre. The overlap might explain why many women failed to label the comedy as such, and the two genres performed equally well for the most part. This was true even if the character making a screening decision had a relatively minor supporting role.

Similarly, women who heard draft tapes strongly advised us to make the health expert a doctor in the interview but a nurse in the narrative. We made this concession at a design cost: character professional status and stimulus type were confounded in the findings that the health expert in the interview was admired more and the narrative was more emotionally engaging.

4.2 Limitations

The randomized post-only design is common in educational research. Compared to a pre-post experiment, post-only provides better control of instrumentation confounds such as “cueing” (Brock et al., 2011), and there is substantial risk of socially desirable responding when screening recommendations are universal. Still, the lack of a pre-exposure questionnaire precluded testing theoretically important predictors like initial resistance to screening (Slater & Rouner, 1996), and estimating the amount of change in intentions and other outcomes.

Other limitations included self-selection of participants; low-literacy women may have opted out because the questionnaires were written. In addition, some participants knew each other and could have interacted between post and post-30, but the bias introduced likely would have been in the direction of null findings.

4.3 Conclusion

Culturally tailored, fictional audio narratives that convey CRC screening messages can help to reduce health disparities between African American women and other women. Even when they are comedic in tone, health promotion narratives are acceptable to African American women and Black church gatekeepers. Holding narrative listening groups in community

settings such as churches provides the opportunity to reinforce prevention messages through face-to-face discussion of the topics, and this may promote community cohesion and collective efficacy (Rappaport, 1995). In the future, CRC screening narratives should be considered as a component of multimodal interventions that address service demand, access, and quality.

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REFERENCES

- Ajzen I, & Fishbein M (1980). Understanding attitudes and predicting social behavior. Englewood Cliffs, NJ: Prentice-Hall.
- Allison JE (2010). The best screening test for colorectal cancer is the one that gets done. *Gastrointestinal Endoscopy*, 71, 342–345. 10.1016/j.gie.2009.10.032
- Anderson A, Garrod SC, & Sanford AJ (1983). The accessibility of pronominal antecedents as a function of episode shifts in narrative text. *Quarterly Journal of Experimental Psychology*, 35, 427–440. <https://doi.org/10-1080/14640748308402480>
- Baezconde-Garbanati LA, Chatterjee JS, Frank LB, Murphy ST, Moran MB, Werth LN, ... O'Brien D (2014). Tamale lesson: A case study of a narrative health communication intervention. *Journal of Communication in Healthcare*, 7(2)82–92. 10.1179/1753807614Y.0000000055
- Bandura A (1977). Social learning theory. Englewood Cliffs, NJ: Prentice-Hall.
- Bandura A (1997). Self-efficacy: The exercise of control. New York: Freeman.
- Beck V (2004). Working with daytime and prime-time shows in the United States to promote health In Singhal A, Cody MJ, Rogers EM, & Sabido M (Eds.), *EE and social change: History, research & practice* (pp. 207–224). Mahwah, NJ: Erlbaum.
- Behavioral risk factor surveillance system. (2009). Retrieved from <https://www.cdc.gov/brfss/>
- Borrayo EA, Rosales M, & Gonzalez P (2017). Entertainment-education narrative versus non-narrative interventions to educate and motivate Latinas to engage in mammography screening. *Health Education & Behavior*, 44, 394–402. 10.1177/1090198116665624 [PubMed: 27553361]
- Brock DM, Mauksch LB, Witteborn S, Hummel J, Nagasawa P, & Robins LS (2011). Effectiveness of intensive physician training in upfront agenda setting. *Journal of General Internal Medicine*, 26, 1317–1323. 10.1007/s11606-011-1773-y [PubMed: 21735348]
- Bruner J (2002). *Acts of meaning*. Cambridge, MA: Harvard University Press.
- Campbell DT, & Stanley JC (1963). *Experimental and quasi-experimental designs for research*. Chicago: Rand McNally.
- Cancer facts & figures 2017. (2017). Retrieved from <https://www.cancer.org/research/cancer-facts-statistics/all-cancer-facts-figures/cancer-facts-figures-2017.html>
- Cancer screening: Multicomponent interventions–colorectal cancer. (2016). Retrieved from <https://www.thecommunityguide.org/findings/cancer-screening-multicomponent-interventions-colorectal-cancer>

- Cialdini RB, Kallgren CA, & Reno RR (1991). A focus theory of normative conduct: A theoretical refinement and reevaluation of the role of norms in human behavior In Zanna MP (Ed.), *Advances in experimental social psychology* (pp. 201–234). San Diego: Academic Press.
- Colorectal cancer facts & figures, 2017–2019. (2017). Retrieved from <https://www.cancer.org/content/dam/cancer-org/research/cancer-facts-and-statistics/colorectal-cancer-facts-and-figures/colorectal-cancer-facts-and-figures-2017-2019.pdf>
- Colorectal cancer screening tests. (2017). Retrieved from <https://www.cancer.org/cancer/colon-rectal-cancer/detection-diagnosis-staging/screening-tests-used.html>
- Conway M, & Dube L (2002). Humor in persuasion on threatening topics: Effectiveness is a function of audience sex role orientation. *Personality & Social Psychology Bulletin*, 28, 863–873. 10.1177/014616720202800701
- Crosby RA, & Collins T (2017). Correlates of community-based colorectal cancer screening in a rural population: The role of fatalism. *Journal of Rural Health*, 33, 402–405. 10.1111/jrh.12257 [PubMed: 28685889]
- de Wit JB, Das E, & Vet R (2008). What works best: Objective statistics or a personal testimonial? An assessment of different types of message evidence on risk perception. *Health Psychology*, 27, 110–115. 10.1037/0278-6133.27.1.110 [PubMed: 18230021]
- Ellis EM, Erwin DO, Jandorf L, Saad-Harfouche F, Sriphanlop P, Clark N, ... Kiviniemi MT (2017). Designing a randomized controlled trial to evaluate a community-based narrative intervention for improving colorectal cancer screening for African Americans. *Contemporary Clinical Trials*, 65, 8–18. 10.1016/j.cct.2017.11.019 [PubMed: 29198730]
- Friedman LM, Furberg CD, & DeMets DL (2011). *Fundamentals of clinical trials* (4th ed.). New York: Springer-Verlag.
- Galavotti C, Kuhlmann AK, Kraft JM, Harford N, & Petraglia J (2008). *American Journal of Community Psychology*, 41, 314–326. 10.1007/s10464-008-9172-1 [PubMed: 18297390]
- Gamble S, Mawokomatanda T, Xu F, Chowdhury PP, Pierannunzi C, Flegel D, ... Town M (2017). Surveillance for certain health behaviors and conditions among states and selected local areas—Behavioral risk factor surveillance system, US, 2013 and 2014. *MMWR Surveillance Summary*, 66(SS-16), 1–144. 10.15585/mmwr.ss6616a1
- Green MC (2006). Narratives and cancer communication. *Journal of Communication*, 56, S163–S183. 10.1111/j.1460-2466.2006.00288.x
- Greene K, & Brinn LS (2003). Messages influencing college women's tanning bed use: Statistical versus narrative evidence format and a self-assessment to increase perceived susceptibility. *Journal of Health Communication*, 8, 443–461. 10.1080/713852118 [PubMed: 14530147]
- Green MC, & Brock TC (2000). The role of transportation in the persuasiveness of public narratives. *Journal of Personality & Social Psychology*, 79, 701–721. 10.1177/014616720202800701 [PubMed: 11079236]
- Green MC, & Brock TC (2002). In the mind's eye: Transportation-imagery model of narrative persuasion In Green MC, Strange JJ, & Brock TC (Eds.), *Narrative impact: Social and cognitive foundations* (pp. 315–341). Mahwah, NJ: Erlbaum.
- Hays RD, Hayashi T, & Stewart AL (1989). A 5-item measure of socially desirable response set. *Educational & Psychological Measurement*, 49, 629–636. 10.1177/001316448904900315
- Health information national trends survey. (2007). Retrieved from <https://hints.cancer.gov/questions.aspx>
- Hernandez MY, & Organista KC (2013). Entertainment-education? A fotonovela? A new strategy to improve depression literacy and help-seeking behaviors in at-risk Latinas. *American Journal of Community Psychology*, 52, 224–235. 10.1007/s10464-013-9587-1 [PubMed: 23907442]
- Hether HJ, Huang G, Beck V, Murphy ST, & Valente TW (2008). Entertainment-education in a media-saturated environment: Examining the impact of single and multiple exposures to breast cancer storylines on two popular medical dramas. *Journal of Health Communication*, 13, 808–823. 10.1080/10810730802487471 [PubMed: 19051115]
- Hinyard LJ, & Kreuter MW (2007). Using narrative communication as a tool for health behavior change: A conceptual, theoretical and empirical overview. *Health Education & Behavior*, 34, 777–792. 10.1177/1090198106291963 [PubMed: 17200094]

- Hoeken H (2001). Anecdotal, statistical, and causal evidence: Their perceived and actual persuasiveness. *Argumentation*, 15(4), 425–437. 10.1023/A:1012075630523
- Hwang KO, Ottenbacher AJ, Graham AL, Thomas EJ, Street RL, & Vernon SW (2013). Online narratives and peer support for colorectal cancer screening: A pilot randomized trial. *American Journal of Preventive Medicine*, 45, 98–107. 10.1016/j.amepre.2013.02.024 [PubMed: 23790994]
- Javanparast S, Ward P, Young G, Wilson C, Carter S, Misan G, ... Matt MA (2010). How equitable are colorectal cancer screening programs which include FOBTs? A review of qualitative and quantitative studies. *Preventive Medicine*, 50, 165–172. 10.1016/j.ypmed.2010.02.003 [PubMed: 20153359]
- Jensen JD, King AJ, Carcioppolo N, Krakow M, Samadder NJ, & Morgan S (2014). Comparing tailored worksite interventions at increasing colonoscopy adherence in adults 50–75: A randomized controlled trial. *Social Science in Medicine*, 104, 31–40. 10.1016/j.socscimed.2013.12.003
- Jemal A, Ward EM, Johnson CJ, Cronin KA, Ma J, Ryerson AB, ... Weir HK (2017). Annual report to the nation on the status of cancer, 1975–2014, featuring survival. *Journal of the National Cancer Institute*, 109, 10.1093/jnci/djx030
- Jones RM, Devers KJ, Kuzel AK, & Wolf SH (2010). Patient-reported barriers to colorectal cancer screening: A mixed methods approach. *American Journal of Preventive Medicine*, 38, 508–516. 10.1016/j.amepre.2010.01.021 [PubMed: 20409499]
- Jones RM, Magnusson BM, Dumenci L, & Vernon SW (2011). Psychometric properties of a fecal occult blood test barrier scale. *American Journal of Epidemiology*, 173, S170–S170. 10.1093/aje/kwr181
- Jones RM, Vernon SW, & Wolf SH (2010). Is discussion of colorectal cancer screening options associated with heightened patient confusion? *Cancer Epidemiology Biomarkers & Prevention*, 19, 2821–2825. 10.1158/1055-9965.EPI-1-0695
- Kennedy MG, Bishop DL, Anderson S, & Hayward M (2017). Recruiting older African American women for a cancer screening message trial: Theory, GIS maps, and church entree. *Medical Research Archives*, 5, 10.18103/mra.v5i11.1599
- Kennedy MG, Turf EE, Wilson-Genderson M, Wells K, Huang GC, & Beck V (2011). Effects of a television drama about environmental exposure to toxic substances. *Public Health Reports*, 126 Supplement, 1, 150–159. 10.1177/00333549111260S119 [PubMed: 21563723]
- Kennedy MG, O'Leary A, Beck V, Pollard K, & Simpson P (2004). Increases in calls to the CDC National STD and AIDS Hotline following AIDS-related episodes in a soap opera. *Journal of Communication*, 54, 287–301. 10.1111/j.1460-466.2004.tb02629
- Khalil GE, & Rintamaki LS (2014). A televised entertainment-education drama to promote positive discussion about organ donation. *Health Education Research*, 29, 284–296. 10.1093/her/cyt106 [PubMed: 24399264]
- Kim YC, Moran MB, Wilkin HA, & Ball-Rokeach SJ (2011). Integrated connection to neighborhood storytelling network, education, and chronic disease knowledge among African Americans and Latinos in Los Angeles. *Journal of Health Communication*, 16, 393–415. 10.1080/10810730.2010.546483. [PubMed: 21302173]
- Kim W, Shin CN, Larkey LK, & Roe DJ (2017). Development and validation of the narrative quality assessment tool. *Journal of Nursing Measurement*, 25, 171–183. 10.1891/1061-3749.25.1.171 [PubMed: 28395707]
- Klabunde CN, Djenaba AJ, King JB, White A, & Plescia M (2013). Vital signs: Colorectal cancer screening test use: United States–2012. *MMWR*, 66, 881–888.
- Kreuter MW, Holmes K, Alcarez K, Kalesan B, Rath S, Richert M, & Clark EM (2010). Comparing narrative and informational videos to increase mammography in low-income African American women. *Patient Education & Counseling*, 81, S6–S14. 10.1016/j.pec.2010.09.008 [PubMed: 21071167]
- Lammers HB (1993). Humor and cognitive responses to advertising stimuli: A trace consolidation approach. *Journal of Business Research*, 11, 173–185. 10.1016/0148-2963(83)90026-7

- Larkey LK, & Gonzalez J (2007). Storytelling for promoting colorectal cancer prevention and early detection among Latinos. *Patient Education and Counseling*, 67, 272–278. 10.1016/j.pec.2007.04.003 [PubMed: 17524595]
- Larkey LK, & Hecht M (2010). A model of effects of narrative as culture-centric health promotion. *Journal of Health Communication*, 15, 114–135. 10.1080/10810730903528017 [PubMed: 20390982]
- Larkey LK, McClain D, Roe DJ, Hector RD, Lopez AM, Sillanpaa B, & Gonzalez J (2015). Randomized controlled trial of storytelling compared to a personal risk tool intervention on colorectal cancer screening in low-income patients. *American Journal of Health Promotion*, 30, e59–70. 10.4278/ajhp.131111-QUAN-572. [PubMed: 25615708]
- Marcus PM, Huang GC, Beck V, & Miller MJ (2010). The impact of a prime time cancer storyline: From individual knowledge and behavioral intentions to policy-level changes. *Journal of Cancer Education*, 25, 484–489. 10.1007/s13187-010-0093-y [PubMed: 20300910]
- Martini A, Morris JN, & Preen D (2016). Impact of non-clinical community-based promotional campaigns on bowel cancer screening engagement: An integrative literature review. *Patient Education & Counseling*, 99, 1549–1557. 10.1016/j.pec.2016.05.012 [PubMed: 27270183]
- McLachlan SA, Clements A, & Austoker J (2012). Patients' experiences and reported barriers to colonoscopy in the screening context—A systematic review of the literature. *Patient Education & Counseling*, 86, 137–146. 10.1016/j.pec.2011.04.010 [PubMed: 21640543]
- Moran MB, Frank LB, Chatterjee JS, Murphy ST, & Baezconde-Garbanati L (2016). A pilot test of the acceptability and efficacy of narrative and non-narrative health education materials in a low health literacy population. *Journal of Communication in Healthcare*, 9, 41–48. 10.1080/17538068.2015.1126995
- Moyer-Gusé E, Mahood C, & Brookes S (2011). EE in the context of humor: Effects on safer-sex intentions and risk perceptions. *Health Communication*, 26, 765–774. 10.1080/10410236.2011.566832 [PubMed: 21707390]
- Moyer-Gusé E, & Nabi RL (2011). Comparing the effects of entertainment education television programming on risky sexual behavior. *Health Communication*, 26, 416–426. 10.1080/10410236.2011.552481 [PubMed: 21416421]
- Murphy ST, Frank LB, Chatterjee JS, & Baezconde-Garbanati L (2013). Narrative versus non-narrative: The role of identification, transportation and emotion in reducing health disparities. *Journal of Communication*, 63, 116–137. 10.1111/jcom.12007
- Murphy ST, Frank LB, Chatterjee JS, Moran MB, Zhao N, Amezola de Herrera P, & Baezconde-Garbanati LA (2015). Comparing the relative efficacy of narrative vs nonnarrative health messages in reducing health disparities using a randomized trial. *American Journal of Public Health*, 105, 2117–2123. 10.2105/AJPH.2014.302332 [PubMed: 25905845]
- Nan X, Futerfas M, & Ma Z (2016). Role of narrative perspective and modality in the persuasiveness of public service advertisements promoting HPV vaccination. *Health Communication*, 25, 1–9. 10.1080/10410236.2016.1138379
- Nurss JR, Parker RM, & Baker DW (1995). TOFHLA: Test of functional health literacy in adults. Snow Camp, NC: Peppercorn Books.
- Papa MJ, Singhal A, Law S, Pant S, Rogers EM, & Shefner-Rogers CL (2000). Entertainment-education and social change: An analysis of parasocial interaction, social learning, collective efficacy, and paradoxical communication. *Journal of Communication*, 50, 31–55. 10.1111/j.1460-2466.2000.tb02862x
- Penson RT, Partridge RA, Rudd P, Seiden MV, Nelson JE, Chabner BA, & Lyncy TJ, Jr (2005). Laughter: The best medicine? *Oncologist*, 10, 651–660. 10.1634/theoncologist.10-8-651 [PubMed: 16177290]
- Perrier MJ, & Martin Ginis KA (2016). Changing health-promoting behaviors through narrative interventions: A systematic review. *Journal of Health Psychology*, 10.1177/1359105316656243
- Perrier MJ, & Martin Ginis KA (2017). Narrative interventions for health screening behaviors: A systematic review. *Journal of Health Psychology*, 22, 375–393. 10.1177/1359105315603463 [PubMed: 26359288]

- Petraglia J, Galavotti C, Harford N, Pappas-delucca KA, & Mooki M (2007). Applying behavioral science to behavior change communication: The pathways to change tools. *Health Promotion & Practice*, 8, 384–393. 10.1177/1524839907301402
- Rao RS, Graubard BI, Breen N, & Gastwirth JL (2004). Understanding the factors underlying disparities in cancer screening rates using the Peters-Belson approach: Results from the 1998 National Health Interview Survey. *Medical Care*, 8, 789–800.
- Rappaport J (1995). Empowerment meets narrative: Listening to stories and creating settings. *American Journal of Community Psychology*, 23, 795–807. 10.1007/BF02506992
- Rawl S, Champion V, Menon U, Loehrer PJ, Vance GH, & Skinner CS (2001). Validation of scales to measure benefits of and barriers to colorectal cancer screening. *Journal of Psychosocial Oncology*, 19, 47–63. 10.1046/j.1523-5394.2000.81006.x
- Sabido M (2004). The origins of Entertainment-Education In Singhal A, Cody MJ, Rogers EM, & Sabido M (Eds.), *EE and social change: History, research & practice* (pp. 61–74). Mahwah, NJ: Erlbaum.
- Schank RC, & Berman T (2002). The pervasive role of stories in knowledge and action In Green MC, Strange JJ, & Brock TC (Eds.), *Narrative impact: Social and cognitive foundations* (pp. 287–313). Mahwah, NJ: Erlbaum.
- Schroy PC, Glick JT, Robinson PA, Lydotes MA, Evans SR, & Emmons KM (2008). Has the surge in media attention increased public awareness about colorectal cancer and screening? *Journal of Community Health*, 33, 1–9. 10.1007/s10900-007-9065-5 [PubMed: 18080203]
- Shen F, Sheer VC, & Li R (2015). Impact of narratives on persuasion in health communication: A meta-analysis. *Journal of Advertising*, 44, 105–113. <https://doi.org/10.1080/00913367.2015.1018467>
- Singhal A, & Rogers EM (1999). *A communication strategy for social change*. Mahwah and London: Lawrence Erlbaum.
- Singhal A, & Rogers EM (2004). *Entertainment-education: History, research, & practice*. Mahwah NJ: Sage.
- Slater MD (2002). Entertainment Education and the persuasive impact of narratives In Green MC, Strange JJ, & Brock TC (Eds.), *Narrative impact: Social and cognitive foundations* (pp. 157–181). Mahwah, NJ: Erlbaum.
- Slater MD, Buller DB, Waters E, Archibeque M, & LeBlanc M (2003). A test of conversational and testimonial messages versus didactic presentations of nutrition information. *Journal of Nutrition Education & Behavior*, 35, 255–259. 10.1371/journal.pone.0077800 [PubMed: 14521825]
- Slater MD, & Rouner D (1996). Value-affirmative and value-protective processing of alcohol education messages that include statistical evidence or anecdotes. *Communication Research*, 23, 210–235. 10.1177/009365096023002003
- Slater MD, & Rouner D (2002). EE and elaboration likelihood: Understanding the processing of narrative persuasion. *Communication Theory*, 12, 173–191. 10.1111/j.1468-2885.2002.tb00265.x
- Snyder LB, Hamilton MA, Mitchell EW, Kiwanuka-Tondo J, Fleming-Milici F, & Proctor D (2004). A meta-analysis of the effect of mediated health communication campaigns on behavior change in the United States. *Journal of Health Communication*, 9(Sup1), 71–96. 10.1080/10810730490271548 [PubMed: 14960405]
- Storey D, Boulay M, Karki Y, Heckert K, & Karmacharya DM (1999). Impact of the integrated radio communication project in Nepal, 1994–1997. *Journal of Health Communication*, 4, 271–294. 10.1080/108107399126823 [PubMed: 10790785]
- U.S. Preventive Services Task Force. (2016). Screening for colorectal cancer: USPSTF recommendation statement. *Journal of the American Medical Association*, 315, 2564–2575. 10.1001/jama.2016.5989 [PubMed: 27304597]
- Valente TW, Murphy S, Huang G, Gusek J, Greene J, & Beck V (2007). Evaluating a minor storyline on ER about teen obesity, hypertension, and 5 a day. *Journal of Health Communication*, 12, 551–566. 10.1080/10810730701508385 [PubMed: 17763052]
- Vaughan PW, Rogers EM, Singhal A, & Swalehe RM (2000). Entertainment-education and HIV/AIDS prevention: A field experiment in Tanzania. *Journal of Health Communication*, 5, 81–100. 10.1080/10810730050019573 [PubMed: 11010359]

- Vernon SW, Meissner H, & Klabunde C, Rimer BK, Ahnen DJ, Bastani R, ... Zapka J (2004). Measures for ascertaining use of colorectal cancer screening in behavioral, health services, and epidemiologic research. *Cancer Epidemiology, Biomarkers & Prevention*, 13, 898–905.
- Vernon SW, Myers RE, & Tilley BC (1997). Development and validation of an instrument to measure factors related to colorectal cancer screening adherence. *Cancer Epidemiology, Biomarkers & Prevention*, 6, 825–832.
- Volk RJ, Jibaja-Weiss ML, Kneuper S, Spann SJ, Miles BJ, & Hyman DJ (2007). Entertainment education for prostate cancer screening: A randomized trial among primary care patients with low health literacy. *Patient Education and Counseling*, 73, 482–489. 10.1016/j.pec.2008.07.033
- Wang H, & Singhal A (2016). East Los High: Transmedia edutainment to promote the sexual and reproductive health of young Latina/o Americans. *American Journal of Public Health*, 106, 1002–1010. 10.2105/AJPH.2016.303072 [PubMed: 27077336]
- Wanzer M, Booth-Butterfield M, & Booth-Butterfield S (2005). “If we didn’t use humor, we’d cry”: Humorous coping communication in health care settings. *Journal of Health Communication*, 10, 105–125. 10.1080/10810730590915092
- Weinberger MG, & Gulas CS (1992). The impact of humor in advertising: A review. *Journal of Advertising*, 21, 35–59. 10.1080/00913367.1992.10673384
- Whittier DK, Kennedy MG, Lawrence JS, St., Seeley S, & Beck V (2005). Embedding health messages into entertainment television: Effect on gay men’s response to a syphilis outbreak. *Journal of Health Communication*, 10, 251–259. 10.1080/10810730590934271 [PubMed: 16036732]
- Wilkin HA, Valente TW, Murphy ST, Cody MJ, Huang GC, & Beck V (2007). Does entertainment-education work with Latinos in the United States? Identification and the effects of a telenovela breast cancer storyline. *Journal of Health Communication*, 12, 455–469. 10.1080/10810730701438690 [PubMed: 17710596]
- Zebregs S, van den Putte B, de Graaf A, Lammers J, & Neijens P (2015). The effects of narrative versus non-narrative information in school health education about alcohol drinking for low educated adolescents. *BMC Public Health*, 15, 1085 10.1186/s12889-015-2425-7 [PubMed: 26499061]
- Zebregs S, van den Putte B, Neijens P, & de Graaf A (2015). The differential impact of statistical and narrative evidence on beliefs, attitude, and intention: A meta-analysis. *Health Communication*, 30, 282–289. 10.1080/10410236.2013.842528 [PubMed: 24836931]

TABLE 1

Characteristics of the five audio stimuli

Variable	Fictional narratives				Expert interview
	Main character		Main character		
	Comedy	Drama	Comedy	Drama	
No. of characters					
Main or minor	4	4	4	4	2
Walk on	4	4	4	4	0
In PSAs	0	0	0	0	6
Music	Yes	Yes	Yes	Yes	Yes
Thematic emphasis	Mama's experiences		Daughter-in-law's interactions with her husband		Women's health
Lines written to be humorous and followed by recorded laughter	>25	<5	>25	<5	1
Humorous slang	Yes	No	Yes	No	No

Note. PSA = public service announcement.

TABLE 2

Study participant characteristics by condition (narrative vs. expert interview)

<i>Variable</i>	Expert interview (<i>n</i> = 86)		Narrative (<i>n</i> = 356)		<i>t</i> test <i>p</i>
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	
Age	56.5	6.8	57.6	6.9	.1671
Social desirability	20.9	2.9	20.7	3.0	.6852
	<i>Frequency</i>	<i>Column %</i>	<i>Frequency</i>	<i>Column %</i>	χ^2 test <i>p</i>
Education					.6003
< High School	13	15.3	68	19.1	
High School	18	21.2	56	15.8	
Some College	31	36.5	138	38.9	
College	23	27.1	93	26.2	
Income					.5581
< \$25,000	40	50.0	176	55.5	
25–50	27	33.7	102	32.2	
> 50	13	16.3	39	12.3	
Currently married					.5222
Yes	21	25.3	78	22.0	
No	62	74.7	276	78.0	
Insurance					.8523
Yes	64	76.2	270	77.1	
No	20	23.8	80	22.9	
Employed full-time					.4229
Yes	30	35.3	109	30.8	
No	55	64.7	245	69.2	
S-TOFHLA level					.6597
Inadequate	4	4.7	10	2.8	
Marginal	5	5.9	20	5.6	
Adequate	76	89.4	327	91.6	
CRC screening current					.7258
Yes	31	36.5	123	34.5	
No	54	63.5	234	65.5	
Family cancer history					.6485
Yes	48	56.6	203	56.9	
No	37	43.5	154	43.1	

Note. SD = standard deviation; S-TOFHLA = Short Test of Functional Health Literacy in Adults; CRC = colorectal cancer.

TABLE 3

Significant effects of condition (expert interview vs. narrative) on theoretical CRC determinants

	Expert Interview				Narrative				
Variable	Post (n = 86)		Post-30 (n = 74)		Post (n = 356)		Post-30 (n = 312)		
	Pr ^a	SE ^b	Pr	SE	Pr	SE	Pr	SE	p
FOBT screening intentions	0.41	0.05	0.33	0.06	0.56	0.03	0.45	0.03	.0018
	LSQM ^c	SE	LSQM	SE	LSQM	SE	LSQM	SE	
Talking intentions	9.29	0.38			8.03	0.18			.0030
			9.85	0.39			9.66	0.19	.6612 ^d
Like/admire doc/nurse	17.52	0.27			15.05	0.24			<.0001
Engagement/personal relevance	7.20	0.21			8.30	0.15			<.0001
Descriptive norms	3.01	0.12			2.76	0.05			.0520

Note. SE = standard error; S-FOBT = fecal occult blood test; CRC = colorectal cancer; LSQM = Higher scores mean greater FOBT screening intentions, liking, and engagement. Lower scores mean stronger talking intentions and norms.

^aProportion of respondents with stronger screening intentions.

^bStandard error.

^cLeast squared mean.

^dTested with mixed-model regression. Results differed at post and post-30, $F = 5.21$, $p = .0231$, for the Time $\times$ Condition interaction.