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Cultural tailoring for mammography and fruit and vegetable intake among low-income African-American women in urban public health centers

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Abstract

Background. It is widely accepted that disease prevention efforts should consider cultural factors when addressing the needs of diverse populations, yet there is surprisingly little evidence that doing so enhances effectiveness. The Institute of Medicine has called for randomized studies directly comparing approaches that do and do not consider culture.

Methods. In a randomized trial, 1227 lower-income African-American women from 10 urban public health centers were assigned to either a usual care control group, or to receive a series of six women's health magazines with content tailored to each individual. By random assignment, these magazines were generated from either behavioral construct tailoring (BCT), culturally relevant tailoring (CRT) or both (BCT + CRT). The CRT magazines were based on four cultural constructs: religiosity, collectivism, racial pride, and time orientation. All tailored magazines sent to women ages 40–65 promoted use of mammography; magazines sent to women ages 18–39 promoted fruit and vegetable (FV) intake. Analyses examined changes from baseline to 18-month follow-up in use of mammography and servings of FV consumed daily.

Results. Women receiving BCT + CRT magazines were more likely than those in the BCT, CRT, and control groups to report getting a mammogram (76% vs. 65% vs. 64% vs. 55%, respectively), and had greater increases in FV servings consumed daily (+0.96 vs. + 0.43 vs. + 0.25 vs. + 0.59).

Conclusions. Systematically integrating culture into tailored cancer prevention and control interventions may enhance their effectiveness in diverse populations.

Keywords: Cancer prevention; Health communication; Health education; Health disparities; Culture; Minority health

Introduction

It is a truism of health promotion that efforts to address the needs of diverse populations will be more effective when they thoughtfully consider and reflect cultural norms, values, and beliefs. However, evidence to support this notion is surprisingly limited. In its 2002 report, *Assessing Health Communication Strategies for Diverse Populations*, The Institute of Medicine concluded "there is little evidence available as to whether diversity strategies contribute to success" (p. 8–7), and identified an "urgent" need for comparative effectiveness studies and field tests of different

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strategies to address diversity [1]. Our study responds to this need by evaluating the effects of three approaches to tailoring cancer prevention and screening information to individuals in a sample of lower-income African-American women from urban public health centers.

A growing body of evidence suggests that health information tailored to the unique characteristics of specific individuals is more effective in promoting changes in health-related behaviors than information ignoring differences between individuals [2–8]. To date, nearly all tailored interventions have used an approach we term "behavioral construct tailoring"[9] in which health messages are tailored to different individuals based on their responses to measures of key constructs from theories and models of health behavior change (e.g., stage of readiness to change [10], perceived barriers and benefits [11], self-efficacy[12]). Behavioral construct tailoring (BCT) first assesses which such constructs are most relevant to each individual for changing a given behavior, then selects from a large library of information only those messages that address the person's unique combination of characteristics.

Although BCT goes a long way toward individualizing health information, its sole focus on behavioral constructs has come at the exclusion of contextual influences, including culture, that may influence the way individuals understand and process health information, as well as their ability and motivation to act on behavioral changes that are recommended in tailored messages. This could lead to the incongruous outcome of tailored messages that address the right issues but in an ineffective way. For example, for individuals who indicate they do not like the taste of vegetables (i.e., a perceived barrier to meeting 5-a-day guidelines) BCT might generate a message that illustrates different ways vegetables could be prepared to enhance their taste. But some individuals who receive the message might not be able to find or afford the ingredients at their local grocery store, some might have cultural or religious beliefs violated by the recommended method of preparation, and still others who do not cook at all would find the new recipe irrelevant. This failure to consider contextual variables in BCT might explain, in part, recent findings that BCT print interventions are less effective for facilitating behavior change among African-Americans than among Whites [13]. It is not clear whether addressing contextual variables like culture is more important for minority than majority groups, or just that contextual variables are better understood and thus more routinely addressed for the latter. Either way, if integrating contextual factors such as culture can enhance the effectiveness of tailored health messages, interventions designed to eliminate health disparities could be improved and our understanding of the role of culture in health promotion expanded.

We therefore compared the effectiveness of BCT-based cancer prevention magazines to similar magazines that were based on culturally relevant tailoring (CRT), and a combination of BCT + CRT in promoting use of mammography and fruit and vegetable intake in a sample of African-American women patients from urban public health centers in St. Louis, MO. The culturally relevant tailoring used in the study is based upon four constructs—religiosity, collectivism, racial pride, and time orientation—known to be prevalent among African-American women and associated with health-related beliefs and behaviors [14]. Culturally relevant tailoring is a new approach, and its unique contribution to changing cancer prevention behaviors is untested prior to this large randomized trial. Our paper reports study outcomes at 18 months post-baseline.

Methods

The Saint Louis University Institutional Review Board approved this study.

Participants

We recruited 1241 African-American women ages 18–65 from the waiting rooms of 10 public health centers in St. Louis, MO. To be eligible, women had to demonstrate reading ability and reading comprehension by completing a 6-item self-administered questionnaire written at a fifth-grade reading level that included one open-ended question requiring an appropriate written response. They also had to have daily access to a working telephone (for follow-up interviews), and could not have been previously diagnosed with breast cancer. Fourteen women were removed from the sample because they did not provide personal identification information (n = 2), were found to be age-ineligible (n = 2), or enrolled twice (n = 10). The final sample size was 1227.

Procedure

Eligible women provided informed consent, completed a self-administered baseline questionnaire while in the waiting room, and received $20 for their participation. Questionnaire data were entered into a database that randomly assigned women to one of the four study groups: behavioral construct tailoring (BCT), culturally relevant tailoring (CRT), a combination of both (BCT + CRT), or delayed intervention/usual care (CONTROL). Randomization created equal size groups: BCT = 311 (25.3%), CRT = 309 (25.2%), BCT + CRT = 288 (23.5%), and CONTROL = 319 (26.0%). At 1, 6, and 18 months post-baseline, participants were contacted by telephone to complete a follow-up interview, and received $20 for each interview completed. For women in the BCT, CRT, and BCT + CRT groups, the first tailored magazine was mailed to their home address after baseline but before 1-month follow-up; the second and third magazines were mailed at approximately 2-month intervals after 1-month follow-up but before 6-month