Use of focus group data to develop recommendations for demographically segmented colorectal cancer educational strategies

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Abstract

Screening is available and effective in colorectal cancer (CRC) control, but underutilized. The purpose of this study was to use focus group data to develop recommendations for the development of educational interventions to increase CRC screening, using an audience segmentation strategy. Demographic segments were based on urban–rural residence, race (African-American, White) and sex. One hundred and sixty-five participants age 50+, with no history of CRC participated in 17 focus groups in Alabama urban and rural communities. Transcripts were examined by independent coders. Knowledge among participants was limited regarding age to begin screening, insurance coverage and risk factors for CRC. Perceived barriers to screening included lack of physician recommendation, cost/lack of insurance coverage, pain/discomfort and embarrassment. African-American men reported postponement in seeing their physicians. White women were proactive at initiating discussion of CRC screening with their providers while African-American women felt that providers should drive the process. No urban–rural differences were identified. This study identified cultural and gender characteristics and perceptions that can be used in the development of demographically segmented health communication interventions to increase CRC awareness and screening.

Introduction

Colorectal cancer (CRC) is third highest in cancer-related incidence and mortality in men and women in the United States [1]. The American Cancer Society estimated that 148 810 new cases of CRC and 49 960 CRC deaths are expected in 2008 in the United States [2]. Screening for CRC by fecal occult blood testing (FOBT) or endoscopy (flexible sigmoidoscopy or colonoscopy) has been shown to reduce mortality from CRC [3, 4]. Based on these data, national organizations such as the American Cancer Society [5], the American College of Gastroenterology [6] and the American Gastroenterological Association [7] have included annual FOBT, Flexible sigmoidoscopy every 5 years, both annual FOBT and Flexible Sigmoidoscopy every 5 years or colonoscopy every 10 years among their...
recommendations for CRC screening strategies for average-risk, asymptomatic individuals >50 years of age. Nonetheless, national data reveal that the use of screening for this cancer remains low and that less than half of the eligible US population undergoes CRC tests within the recommended time intervals [8]. Moreover, screening rates are shown to vary by race–ethnicity, gender, age and socioeconomic status [9, 10]. Disparities in mortality due to CRC are also evident among minority and underserved population groups. It is documented that African-Americans present at a more advanced stage of the disease (24 versus 19% of diagnoses are at advanced disease) and have increased mortality (for men 33.6 versus 23.7 per 100000, for women 23.7 versus 16.4) relative to Whites [11].

Significant barriers still exist for patients to get screened, and those more frequently recognized are lack of knowledge about the disease, lack of insurance coverage and not having a regular primary care provider [8, 12]. Several qualitative studies have been conducted to understand the public’s screening behaviors (or lack thereof). These studies suggest that perceived barriers to screening include lack of health care provider recommendation [13, 14], low perceived risk of CRC or absence of bowel symptoms [15], perceptions of pain or anxiety about test results [16], lack of insurance coverage [17] and confusion, inconvenience or embarrassment [18] around the FOBT. Lack of trust in physicians, lack of symptoms and cancer fatalism were also cited as perceived barriers to screening [14]. Lack of knowledge about CRC was discussed in another study [19]. Perceived benefits of screening included the ability to find CRC early and reduction of risk of dying from CRC [13]. Vernon [20] summarized reasons for not receiving FOBT as lack of time, inconvenience, cost, lack of symptoms, embarrassment and not wanting to know the results. For sigmoidoscopy, reasons for non-participation included these as well as concern about pain and discomfort or possible injury from the examination itself. Findings from previous research have stressed the need to increase public awareness about CRC and the importance of education as a way to impact screening behavior among eligible adults. However, qualitative studies examining the public’s beliefs about how to optimally develop awareness campaigns are lacking.

Audience segmentation has been proposed as a promising strategy to reach people with health education [21–23]. Audience segmentation involves the identification of population subgroups that share a particular characteristic or group of characteristics that are related to the communication outcome, such that a message can be targeted toward that particular subgroup [21]. For example, demographic segmentation may focus on those of a particular race, gender and educational level, who may respond to a message focusing on a particular set of themes. This approach appears to be one of the more commonly used in audience segmentation. Other approaches involve segmentation based on psychosocial or behavioral variables [22]. Previous research has suggested that those living in urban areas are more likely to be up to date on CRC screening than those living in rural areas [24]. However, incidence rates may be lower in rural areas than in urban [25], and urban dwellers may present at a more advanced stage of CRC than rural dwellers [26]. Thus, it is possible that segmentation based on urban–rural residence may be important. One study suggested that combining approaches involving psychosocial (e.g. intrinsic motivation), health status (e.g. self-rated health) and demographics (e.g. race) may perform better for promoting physical activity than any one of these approaches alone [23].

Qualitative research can be used to identify the relevant segments, those with variability in the population and that are associated with the outcome of interest. Due to the recent interest in demographic segmentation [21, 23], a reasonable approach would be to begin here and then to branch out to more complex methods involving psychosocial variables. Audience segmentation of any sort has not been utilized for the behavior of CRC screening, although targeted and tailored strategies have been applied for this outcome [27–33]. Targeted communication is often used interchangeably to refer to audience segmentation. While targeted communication involves
a communication strategy also developed for a particular demographic subgroup (e.g. African-American women), it is not necessarily based on audience segmentation techniques, the latter of which tend to be more systematic in nature. Tailored communication is that which is individualized for one recipient, based on an assessment [34]. Also recognized is the social marketing approach, which involves the application of marketing principles (e.g. product, price, place and promotion), with a focus on the consumer and how the attitude or behavior will be of benefit to them [35]. Social marketing uses many of the techniques involved in the development of a demographically segmented communication, including working closely with the priority population (e.g. demographic segments) and use of a bottom-up approach.

The present study aimed to identify recommendations for the development of educational interventions to increase CRC screening, using an audience segmentation strategy. Focus groups were conducted to explore these areas among both men and women, African-Americans and Whites and those of rural and urban residence. This study adds in a unique manner to the literature because of the demographically segmented study population, and specific recommendations for the development of educational interventions, based on the study findings.

Material and methods

Focus group recruitment and data collection

Seventeen focus groups were conducted in community settings in both rural North Alabama (Madison County) and urban Central Alabama (Jefferson County) contexts. The selected communities were counties for which high incidence rates of invasive CRC cases had been projected [36]. To recruit participants, fliers and posters with local and long-distance telephone numbers (1–800) were distributed at public facilities (e.g. churches, libraries, senior centers, parks, extension centers, social and civic senior groups) and at community events (e.g. fairs and senior expo) to advertise the project and offer to residents an opportunity to participate. Interested volunteers initiated telephone contact. All procedures involving human participants were approved by The University of Alabama at Birmingham Institutional Review Board.

During the initial telephone call, the study co-ordinator administered a brief eligibility screener (~2 min). Eligible participants were White and African-American men and women age ≥50, without previous history of CRC or gastrointestinal problems and residing in Jefferson and Madison Counties. CRC screening status was not an eligibility criteria because we wanted to hear from individuals who had been screened (e.g. may identify facilitators to screening) as well as those who had not (e.g. may identify perceived barriers to screening). Eligible callers were invited to attend a focus group session, and a letter was later mailed to confirm the date and location of their focus group and to provide directions.

Focus groups were segmented by race, gender and county (urban–rural). This resulted in two groups each of rural African-American men, rural African-American women, rural White men, rural White women and urban African-American men, urban African-American women, urban White men and urban White women, for 16 segmented groups. One additional group of rural African-American women was held due to high interest in the project in this group, resulting in 17 rather than 16-segmented groups. Focus groups were conducted at locations convenient to most participants within the targeted communities. On the day of each focus group, attendees signed a consent form in accordance with Institutional Review Board specifications. The groups lasted 60–90 min and were audio recorded. Refreshments were served at the conclusion of the discussion and each participant received $25.00.

Facilitators and co-facilitators of focus groups were staff members of the University’s Recruitment and Retention Shared Facility who had received extensive focus group training. This consisted of a multiple-week intensive training as well as mock sessions with feedback, led by a psychologist experienced in qualitative research. Efforts were
made to match both gender and race of facilitators to that of participants. A standard focus group discussion guide was used by all facilitators to structure the discussions. This guide was generated by the investigative team based on a thorough literature review of perceived barriers to and benefits of colorectal screening and was developed according to the principles outlined by Krueger et al. [37, 38]. These included use of open-ended questions, avoiding the use of yes/no questions or asking ‘why’, leading in with an icebreaker and moving into transition and then key questions, involving all participants and moving from general to specific. The guide was revised and finalized in collaboration with the previously mentioned colleague who has expertise in focus group development and analysis. This guide had several sections with open-ended questions and probes about (i) general knowledge about CRC, (ii) knowledge about CRC screening, (iii) perceived barriers and facilitators to screening and (iv) questions about outreach strategies that could best help increase CRC screening in their communities.

Analysis

The audiotapes were professionally transcribed and analyzed using close-textual analysis. Four independent coders carefully read field notes and repeatedly ‘immersed’ themselves in the transcripts [39]. This process of close-textual analysis allowed the identification of themes and categories emerging directly from the data and the separation from those that helped to generate the discussion guide [40].

Coders began by developing general themes and then refining them. A final coder used Miles and Huberman’s [41] process of organizing categories under the major themes and identifying linkages between patterns and categories within and across groups [42]. At the end of each step of the coding process, data were presented to members of the oversight committee for comment before moving to subsequent analysis. It was determined that saturation had been reached [43], and so no additional focus groups were conducted. Patterns of differences and similarities between the demographic subgroups were identified through the qualitative data analysis process where judgments are based not on quantifications but on immersion and iterative review, building familiarity with and impressions of the data. Descriptive statistics and chi-square tests were used to describe and compare focus group participants and their characteristics (age, gender, race, employment and education), based on their demographic segment.

Results

Participant demographics

Demographic characteristics of the 165 participants are shown in Table I. Participants had an average age of 63 years. As indicated in the table, there were several significant differences between the demographic segments; however, there were no significant differences by county of origin (urban versus rural). There were on average 10 participants per focus group.

Though there was no a priori framework imposed on the data at the time of analysis, the major themes that emerged were consistent with the Health Belief Model (HBM) [44] and primarily focused on perceived barriers to screening. Interestingly, no notable urban–rural differences were found in terms of recommended communication strategies nor the other themes that emerged.

Perceived barriers to CRC screening

All groups

Among all groups, there was limited knowledge and apparent misconceptions about CRC in general, risk factors, screening recommendations, as well as treatment and potential outcomes. According to participants, CRC has not had as much press as the other cancers (e.g. breast and prostate) and they tend to be less aware of it. As one woman indicated: ‘Breast cancer … we learn a lot about it, and they encourage you to get a mammogram every year. It’s the one kind of cancer that you are tested for, every year specifically … but you don’t hear so much about colon and rectum cancer’. Most participants claimed to know little about CRC. Although most
were aware that screening and the removal of polyps can prevent the development of CRC, they wondered what could cause the polyps. Because of this, several participants were not sure it could be prevented: ‘Well, without knowing how you get it you don’t really know how to prevent it’. There was, however, agreement about the association of age and the development of cancer.

Few participants knew that screening should begin at the age of 50 years for persons at average risk and as early as puberty in persons who are at increased risk because of an inherited predisposition to CRC such as in patients with familial polyposis syndrome. Paradoxically, participants seemed aware of most symptoms associated with CRC and cited blood in the stools, change in bowel habits and abdominal pain. Many participants were aware that family history of cancer increased their personal risk for developing cancer. For example, one respondent stated: ‘My mother passed [of cancer]. My dad died of cancer. My wife’s mother died of cancer’.

Several participants even felt that cancer is an inevitable experience, stating: ‘I would say I may be at risk for cancer, not necessarily colorectal cancer’. Another said: ‘I think you’re at risk to developing any cancer. The older you get, the more chances are that you’re going to have cancer some time …’. Other responses included: ‘I suspect we all have cancers in us that our immune systems are suppressing’. ‘I [think] it’s age related.’ ‘The older you get, the more your immune system breaks down.’ Other focus group members agreed. Additionally, participants across groups expressed concern that CRC screening tests can be painful, uncomfortable and embarrassing. Participants mentioned fear as one of the greatest deterrents to screening.

<table>
<thead>
<tr>
<th>Table I. Demographic characteristics of focus group participants</th>
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<tbody>
<tr>
<td>Total sample (N = 165)</td>
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<td>------------------------</td>
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<tr>
<td><strong>Age mean (SD)</strong>*</td>
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<tr>
<td><strong>Relationship status n (%)</strong></td>
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<tr>
<td>Married</td>
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<td>Divorced</td>
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<td>Widowed</td>
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<tr>
<td><em><em>Cancer diagnosis</em> n (%)</em>*</td>
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<tr>
<td>No</td>
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<td>Yes</td>
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<tr>
<td><strong>Education n (%)</strong></td>
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<tr>
<td><strong>Work status n (%)</strong></td>
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<tr>
<td>Part time</td>
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<tr>
<td>Unemployed</td>
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<td>Homemaker</td>
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<td>Retired</td>
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<td>Disabled</td>
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</tbody>
</table>

HS = high school; HS/GED = high school or general equivalency diploma; some coll = some college; coll deg = college degree. Numbers may not sum to 100% due to rounding.

*Any cancer diagnosis other than CRC. ***P < 0.001, **P < 0.01, *P < 0.05.
Participants had strong opinions regarding one’s ability to live normal lives following cancer diagnosis and treatment. Several participants talked about people they knew who had a colostomy bag and how it could affect many aspects of an individual’s life and significantly reduce personal independence. ‘It’s a big change wearing a bag and you cannot go to the bathroom!’ Another participant stated... ‘Every man who I have ever known, macho people, they think they are going to end up with a colostomy and they don’t want to end up with a colostomy. Women do not either, I don’t believe. But I think that men are probably the worst about this’.

Nonetheless, although comments reflected an acceptance that cancer was a painful, usually deadly disease, themes emerged suggesting participants’ belief that quality of life and survivorship are largely determined by one’s spiritual and mental capacity to be resilient. Some comments suggested a certain degree of fatalism: ‘It’s not something that you sit and worry about. Whatever will be will be, you know, and if you’ve got a religious foundation, then you don’t worry about that’. ‘You know, a lot of it I think is probably the person’s mental attitude, as to whether they have, you know, during and after treatment what would be considered a normal life or a happy life. If they’ve got the attitude that this is just an illness, I’m getting cured, and I’m going to live until I die, then they can have a fine life.’

Participants from all groups recognized that the lack of recommendation from a provider was a significant perceived barrier stressing that because of insurance-related factors, often physicians do not offer the screening unless patients present with symptoms including bloody stools, rectal bleeding, diarrhea or constipation. Many participants, especially women, were also very frustrated over the lack of preventive coverage provided by insurance companies. One participant stated ‘If the doctor will recommend it, they will pay for my colonoscopy. But he won’t recommend it, so I had to have the sigmoid. You know unless you have a family trait ... then he won’t recommend it and the insurance company won’t pay. Other than that, I can’t just walk in and say I want a colonoscopy’. According to many participants, physicians will not offer screening unless one presents with symptoms. As a White woman reports: ‘...the first time I asked for one [colonoscopy], the doctor said ‘you don’t have any indication that you need anything like that’. But I was under the impression that it was a silent cancer’. Both White and African-American participants expressed suspicions about the influence exercised by the insurance companies on the providers: ‘I think insurance companies and HMOs have something to do with it. That’s why some of them [providers] don’t mention it. They are under pressure not to do any more than they need—let the patient bring it up’.

African-Americans
Lack of medical coverage and out-of-pocket costs were among the common perceived barriers to screening. African-Americans were likely to mention out-of-pocket costs. The following comments exemplify remarks in this area: ‘...and the two or three dollars an hour job and they are just surviving and so they don’t have the economic means unless there’s an emergency’. ‘Do you know how many Black men have a job with medical coverage? There are not that many. So I think what society has to do is to come up with better accessibility for the majority of the people because the majority don’t have access to adequate health care’.

African-American men
Participants frequently associated CRC with men in general (they called it ‘a man’s disease’) and African-American men felt they were at risk. As one African-American man stated: ‘I think it’s more common in the men ... Black men. One reason I said Black men, because they don’t like to go to the doctor and they fail to have exams and x-rays and whatever, so I feel like it’s more prevalent among Black men’.

African-American men expressed a strong aversion to any screening method that involves rectal probing (‘The myth about that type of procedure—they always relate it to a sexual encounter. You do not want nobody to fool around your butt because they might think they are bisexual.’). In fact, some African-American men associated CRC screening
with homosexuality. Generally, African-American men reported that they tend to avoid seeing their physicians because they fear a potential cancer diagnosis (‘African American men, we tend to wait to the last moment.’). When deciding to see their physicians, these men are usually encouraged by the combined efforts of family, community organizations (primarily churches) or the physician.

**African-American women**

African-American women described their fear of cancer and their perception of cancer screening as inconvenient, painful, embarrassing and costly. They view CRC as a problem of primary concern to men, but view themselves as gatekeepers to health care for the men in their families who, they agree, are reluctant to seek medical care. They believe that physicians should drive the screening process but note that community-based programs mainly through the churches can be very helpful. African-American women expressed the view that physicians drive the screening process, and if the physician does not act, they are unlikely to ask (‘My doctor never said anything to me about it. If he wanted me to have it, wouldn’t he say something?’).

**White women**

White women particularly recognized that cancer risk increases with age, stressing the importance for screening and early detection. Unlike African-American women, White women expressed an independence in their description of their involvement in the health care system. They also viewed themselves as gatekeepers but were more likely to proactively seek health information, sharing of times when they urged their physicians to provide exams the physicians did not offer voluntarily.

Some White women attributed delays in screening to fear that one’s attempts to live healthy lives and take care of one’s self may not produce positive outcomes. For example, one participant stated that ‘nobody whispers about a stroke like they do cancer … nobody wants to talk about it because nobody wants to have it. And everybody is afraid of it’. Another participant expressed that ‘Cancer can kill you. I think the greatest fear that we probably all have is that we’re trying to take care of ourselves, but it’s not detected until it’s too late …’.

White women were familiar with newscaster Katie Couric’s efforts to increase CRC screening. They were not likely to view a diagnosis of cancer as a death sentence but were likely to initiate a screening conversation with their physician. Several White women participants felt that homosexuals are at increased risk for CRC because of their way of life. The latter is an example of medically inaccurate information that was identified in the discussions.

**White men**

White men expressed less fear than the other groups, but elaborated that when prompted by their physicians (‘Well I guess mostly rely on the doctor.’), they get screened despite their perceptions that the exams are inconvenient and can be costly if not covered by insurance (‘… knowing that you’re trying to prevent cancer, why, why does the insurance companies, some of them like he was saying, wait until you’ve already got it before they’ll pay for curing it?’). They were likely to mention newscaster Katie Couric’s championing of colonoscopy.

**Potential educational strategies**

**All groups**

There were a wide variety of methods suggested for communicating the importance of early detection of CRC. Participants consistently pointed out that print communication may not be the most appropriate method for disseminating factual information and recommendations for reducing the burden of CRC throughout the population. To create more effective communication strategies, participants recommended senior centers and churches as important venues for targeting this population.

All groups agreed that the use of a variety of communication channels, including television, radio, the Internet and word-of-mouth campaigns, may be useful in overcoming barriers to health information usage across populations. One person indicated ‘Television I think is the best way to do it.
because people—more people watch that than read the newspaper.’ Participants also felt that education and prevention strategies about more than one cancer (e.g. breast, lung and colon) would be more appealing to most people than focusing on one cancer exclusively. Participants across groups stressed the importance of physician education and referrals.

**All men**

Men, in general, reported expecting the physician to suggest screening. Some stated the following about requesting CRC screening ‘Not unless my doctor tells me to’, ‘Yeah if my doctor tells me to do something, I do it.’ ‘My doctor told me to have the screening.’

**African-American men**

African-American men particularly expressed their unresponsiveness to print material and their preference of methods such as radio and television while women were likely to report reading magazines and other material at their physicians’ offices. African-American men who had received screening acknowledged that it was due to a combination of pressure from family, community and their physician. African-American men expressed a preference for messages that conveyed hope and provided information about progress being made either in detecting or treating the disease (‘You want to know about individuals that has contracted [colorectal cancer] and it’s been cured and has good success rates of therapy or whatever. You want to hear it as a morale [booster]. And I went through this brother, what happened to me. I had it fixed, this is what happened. I’m doing fine now. This is 10, 15 years ago.’). They felt that it was important to present information about technological advances related to the treatment of the CRC and discuss the disease in positive terms. In contrast to White men, African-American men indicated that they would be more likely to respond to positive messages than to fear-based tactics.

**African-American women**

African-American women also felt that physicians should drive the process but they believed that community-based programs would be useful. Several African-American women felt that information on how one could prevent CRC by controlling one’s diet would also be very helpful and interesting. Others recommended testimonials by CRC survivors as a way to present the message. One African-American woman discussed the relevance of a cancer message given as a testimony in a church setting, stating ‘I think it would be effective going to the local Black churches … the reason I say that, you’ve got a captive audience there … and use somebody that has effectively been there, they can identify with that person, you know. ‘Hey, you know, I passed the test.’

**White women**

White women also preferred a variety of communication channels as well as involvement of the doctor. They were the most comfortable of any group in initiating screening conversations with their doctor (‘You should, before you go to the doctor, write you a list of what it is that you are concerned.’; ‘I think that I have the personal responsibility to go in there and say don’t you think I ought to have this. And if a doctor does not listen to what I say, then I’m going to change doctors.’).

**White men**

White men were likely to respond primarily to pressure from the physician to get screening. Another theme that emerged mostly from White men was the suggestion that scare tactics may be useful in encouraging individuals to screen: ‘Well it, it’s a scare tactic but they say that, colon/rectal cancer is the third largest killer in the United States, something, a statement like that … And I say well that’s pretty, pretty steep odds, comparatively … Its enough to make me go to the doctor’.

**Discussion**

The goal of this research was to use focus groups to gather data that would inform demographically segmented educational strategies to increase CRC screening. Results from these focus groups suggest...
a degree of awareness about CRC among both African-American and White participants but with some gaps in knowledge. There were differences in the demographic subgroups in the extent to which certain themes emerged, for example African-Americans being more likely than Whites to mention out-of-pocket costs as a perceived barrier to screening. However, because the African-Americans in the sample on average were younger than the Whites and had thus fewer had not yet reached Medicare eligibility, this may be a factor driving this finding, particularly for those aged 50–65. Women were more likely than men to mention fear of a cancer diagnosis as a perceived barrier. These findings have implications for development of segmented interventions. Participants from urban and rural counties did not appear to differ noticeably in the observed themes.

**Perceived barriers to screening are salient**

The pervasive perceived barriers to CRC screening identified in these discussions—lack of knowledge, anxiety about a cancer diagnosis and how this finding could affect their life, pain with screening, embarrassment, lack of providers’ recommendation, lack of insurance coverage and inability to pay—were concordant with previously identified perceived barriers in other qualitative and quantitative studies of CRC screening [45–48]. Similar to other studies [17, 52], the lack of insurance or the uncertainty of participants about coverage for screening and possible difficulties in meeting out-of-pocket expenses occasioned by the tests were major considerations for participants. These are issues that cut across all racial–ethnic and sex groups that should be addressed in intervention strategies.

**Recommendations for development of demographically segmented messages**

Overall, there was much overlap in the focus group findings between the demographic segments, as shown in Table II. However, there were some patterns that emerged suggesting different targeted messages or areas of emphasis for the different groups.

African-American men may benefit from messages that encourage regular/preventive physician visits, as opposed to waiting until they have a significant health problem. They may be encouraged by a member of their family, particularly a female, to visit their physician or obtain screening. They might prefer a message reflecting hope, medical technological progress and positive tone and may need a sensitive approach to the rectal probing/homosexuality issue. This information might best be delivered in a media channel other than in print.

African-American women may benefit from messages that emphasize their perceived role as the gatekeeper of family health, that dispel the myth that CRC is a ‘man’s disease’, and may be particularly interested in programs delivered in community-based settings such as churches. Both African-American men and women may benefit from assistance in dealing with concerns about out-of-pocket costs of screening.

White men may benefit from an emphasis on patient-provider communication due to the important perceived role of physician recommendation...
for this group and they may be motivated by a loss-framed message or a fear-based message.

White women may benefit from messages that encourage them to initiate the screening conversation with their physician, in that they appear to be most comfortable in doing this. For all women, because of the frustration surrounding insurance coverage (or lack thereof) of preventive care, education on how to navigate this system may be beneficial.

Broader issues in targeted intervention development

It must be emphasized that these targeted strategies do not tell the whole story that they are only part of an intervention development strategy. That strategy must also involve core content (e.g. CRC screening definitions and guidelines), be based on theory, take into consideration findings such as those from the present analysis and also to reflect the importance of local context, as well as the considerable within-group variation that exists in any demographic group. As discussed by Betancourt and Fuentes [54], there may be as much within group variation in health beliefs and behaviors as there is between group variation. This concept becomes particularly relevant in the development of interventions targeted toward racial groups, who may vary significantly in ethnicity, income and education. These factors may impact knowledge, access to health care and other things that impact intervention development and effectiveness. This highlights the importance of working closely with the priority population in the development of interventions. Another example was illustrated by Powe [55], in a sample of mainly older African-American women, even when controlling for age, education and income; it was cancer fatalism that was the significant predictor of participation in FOBT. Thus, while research indicates that demographic factors may be important predictors of screening, this study suggests that they do not tell the entire story. Finally, care must be taken in the development of targeted interventions to avoid the perpetuation of group-based stereotypes. This gets back to the avoidance of making assumptions and to working closely with the priority population in the development of health promotion interventions, as is done in community-based participatory research [56].

Table II. Summary of focus group findings by demographic subgroup

<table>
<thead>
<tr>
<th>Themes</th>
<th>African-American men</th>
<th>African-American women</th>
<th>White men</th>
<th>White women</th>
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<tbody>
<tr>
<td>Perceived barriers to screening</td>
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<tr>
<td>Lack of knowledge</td>
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<tr>
<td>Pain of screening</td>
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<tr>
<td>Embarrassment</td>
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<tr>
<td>Fear of cancer diagnosis</td>
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<tr>
<td>Avoid the doctor</td>
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<tr>
<td>System barriers to screening</td>
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<tr>
<td>Lack of insurance</td>
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<td>Out-of-pocket costs</td>
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<tr>
<td>Lack doctor recommendation</td>
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<td>X</td>
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<tr>
<td>Potential educational strategies</td>
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<tr>
<td>Not print materials</td>
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<td>Variety of communication channels</td>
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<td>Pressure from doctor</td>
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<td>Pressure the doctor</td>
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<td>Community-based approaches</td>
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<td>Fear tactics</td>
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<td>Hope/positive message</td>
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<td>Information on new technology</td>
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It would appear that most people would benefit from messages that address fear and increased awareness that age 50 is the age for a normal-risk individual to begin CRC screening. Finally, intervention development should be based on a behavior change theory. Based on the current findings, the HBM [44] may be particularly appropriate given the salience of perceived barriers to CRC screening and the cost-benefit analysis that participants appear to go through when making a screening decision (e.g. cost in terms of money, time and preparation; benefit of early detection and/or removal of precancerous polyps). However, other theories such as the Theory of Planned Behavior, Theory of Reasoned Action or Stages of Change theory (Transtheoretical Model) may also be applicable.

Limitations

This study employed a convenience sample of individuals recruited through word of mouth and fliers from churches and other public places. Potential participants who met the study criteria and were willing to spend some time discussing ‘health issues in their communities’ were recruited. It may be that those individuals were naturally curious about health issues and may have been better informed about CRC than individuals in the community at large. Further, with regard to generalizability, findings and recommendations from this study may not be applicable to all areas of the country. However, the findings were in fact comparable to previous qualitative inquiries in this area. In addition, the lack of urban–rural differences may be largely due to the nature of the counties selected rather than due to a true lack of urban–rural variation. The current findings should not be used as a basis for excluding urban–rural residence from further consideration as an audience segmentation variable in future studies. Again because differences were not prominent in the current analysis does not mean that they may not be relevant for other areas or for other variables of interest.

Another limitation is that the facilitators’ race was not always concordant with that of the participants. In a few focus groups (4/17), trained African-American moderators were used to facilitate the discussion among White men and women. This could have influenced the quality or content of the groups’ interactions or bias the results. However, based on the facilitators’ perceptions of the dynamics during these focus groups, there were no meaningful differences in exchanges between participants of the different groups they moderated. Because of the high volume of data from the 17 focus groups, data analysis involved examination for themes and patterns rather than each participant’s response being coded for presence or absence of each particular theme that arose. Because of this, it is difficult to derive a numerical comparison of themes that emerged between the demographic subgroups. Related to the demographic segmentation, no effort was made to segment based on factors such as health insurance or socioeconomic status. It is possible that this would be another important demographic segmentation variable; however, logistics did not allow for another segmentation layer. Finally, though focus groups were used to capitalize on the group interaction and draw potentially more information than with individual interviews [37], it is possible that with the sensitive nature of some of the topics under discussion, the group format may have actually hindered the amount and type of information gained. However, the moderators reported that they felt the groups had shared quite freely, even unexpectedly so, about their experiences with CRC and screening.

Conclusions

These findings provide a foundation for the development of demographically segmented interventions aimed at raising knowledge of CRC and screening. Although there were several common elements between racial–ethnic and gender groups, the present findings identified some characteristics and preferences that could improve the effectiveness of future health promotion interventions to increase awareness of CRC. The use of innovative, multiple-channel and easy to understand material combined with targeted outreach strategies (e.g. peer educators and patient navigators) both in the community (e.g. churches and community centers,
places where people congregate) and in places of care (e.g. physician offices, hospitals) could prove effective at increasing awareness and improving utilization of these tests. Future initiatives should involve specific discussions around the particular CRC screening methods, such as fecal occult blood test and colonoscopy. This is because the experience of these tests and their strengths and barriers to screening vary significantly and having this information would inform interventions to increase their utilization.

Regarding audience segmentation specifically, additional attention should be given to the examination of factors such as income, socioeconomic status, geographical location and other factors as demographic segments for exploration and potential intervention development. As previously reported [23], psychosocial or behavioral factors such as HBM constructs including salient perceived barriers to screening may be relevant in the segmentation approach as well.

There are also some additional practical implications of the present findings. For example, in addition to information about the potentially deadly impact of CRC in awareness campaigns, positive information about the effective treatment available and possible cure when CRC is diagnosed at an early stage should be highlighted, particularly when targeting African-Americans. In this context, the role of volunteer cancer survivors can be very influential because they talk about their own experience and are able to directly address questions about quality of life after cancer treatment. In addition, open discussions using audiovisual material about CRC screening, particularly endoscopy, can be used to reduce feelings of embarrassment and anxiety. Efforts should be intensified to reach out to individuals at risk for CRC, particularly African-American communities, through churches and other community venues. Effective and acceptable methods (e.g. academic detailing and seminars) should be identified to provide continuing education to providers about CRC screening guidelines, increase providers’ self-efficacy for communicating about CRC screening and avoiding assumptions about patients’ unwillingness to be screened or inability to afford screening. Each of these approaches will be important in increasing screening rates, reducing mortality and closing the racial–ethnic disparities in CRC.

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Conflict of interest statement

None declared.

References

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