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ORIGINAL RESEARCH

"It's up to you and God": understanding health behavior change in older African American survivors of colorectal cancer

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ABSTRACT

This study investigated the beliefs and attitudes of older African American colorectal cancer (CRC) survivors that may influence health behavior changes after treatment. Drawing from existing theories of health behavior change and cultural beliefs about health, a semi-structured interview guide was developed to elicit survivors' perspectives. Qualitative focus groups and interviews were conducted with 17 survivors identified through the Detroit Surveillance Epidemiology and End Results registry. Using verbatim transcripts from the sessions and NVivo software, thematic analysis was conducted to analyze patterns of responses. Transcripts were coded for seven categories (health behaviors, who/what motivates change, self-efficacy, fatalism, religion/spirituality, beliefs about cancer, race/ethnicity). Five themes emerged from the data (personal responsibility, resilience, desire for information, intentions to change, beliefs in divine control). Findings support the relevance of existing theories of health behavior change to older African American CRC survivors. Cultural considerations are suggested to improve interventions seeking to maximize changes in diet and exercise among this group of survivors.

KEYWORDS

African Americans, Health behaviors, Colorectal cancer, Cancer survivorship, Qualitative methods

Portions of this research were presented at the 6th Biennial Cancer Survivorship Research Conference, Washington, DC.

Implications

Practice: Practitioners should seek to create an open dialogue with older African American colorectal cancer survivors about recommended health behavior changes and tailor those recommendations to their individual abilities, resources, and beliefs.

Policy: Considering the increased rates of comorbidities among cancer survivors, policy makers should focus on how to establish more effective and standardized practice guidelines for health practitioners to promote positive health behavior changes among older African American survivors of colorectal cancer.

Research: Researchers should investigate strategies to more effectively bridge the gap between recommended health behavior changes (e.g., from the American Cancer Society), standards of practice among health practitioners, and the adoption of positive health behaviors among older African American colorectal cancer survivors.

INTRODUCTION

The success story of cancer is that earlier diagnosis and better treatments have increased 5-year survival rates in the USA in the last 35 years, yielding greater numbers of cancer survivors [1]. Colorectal cancer (CRC) is the fourth most common cancer, and with a 64 % survival rate, the majority of those diagnosed with CRC will live past their diagnosis [2, 3]. Despite this positive trend, there are racial/ethnic disparities in CRC outcomes. African Americans have a higher incidence of CRC, are more likely to be diagnosed at a later stage [2, 3], and have poorer survival rates than whites. Disparities in survival may be in part due to demographics such as lower socioeconomic status (SES) and older age at diagnosis [2–5], both of which disproportionally occur in African Americans.

Health behaviors, such as diet, exercise, and smoking, may also lead to disparities in survival rates and health outcomes in older African American CRC survivors. Health behaviors can impact treatment outcomes and rates of recurrence [6–8], thereby affecting survival rates. Health behaviors can also play an important role in the health of survivors. Compared to those without cancer, survivors of CRC and other cancers are at increased risk for comorbid conditions [9–11], many of which are associated with negative health behaviors such as lack of exercise and poor diet. For CRC survivors, a substantial proportion of deaths are due to congestive heart failure, diabetes, and lung disease, all of which can be prevented or managed through changes in health behaviors [12–15]. Based on the idea of a "teachable moment" (i.e., enhanced potential for change) [16], researchers have attempted to improve health behaviors in cancer survivors [13, 17].

Theories of health behavior change have been tested in survivors of CRC and other cancers (cf [13] for a review). However, research applying these models to cancer survivors has been based largely on white samples [18, 19]. There is limited knowledge about the health behaviors of African American and older CRC survivors and little, if any, previous study on the relevance of existing models of health behavior change to this demographic. Previous research suggests that beliefs about spirituality [20–22], fatalism [23–25], and medical mistrust [26–28] among African Americans may influence health outcomes by creating barriers to seeking or receiving adequate healthcare. Thus, African Americans may have health-related attitudes and beliefs that differentially influence their patterns of health behaviors (e.g., diet, exercise) relative to whites and, accordingly, influence survival rates and health outcomes in survivors. Given the disproportionate cancer burden on African Americans and older adults [2, 3] in the USA, it is imperative to identify modifiable factors such as health behaviors, which can potentially reduce racial/ethnic health disparities in survival rates after CRC diagnosis for this demographic.

The goal of this study was to explore the relevance of existing models of behavior change (cf [29–31]) and culturally relevant beliefs in explaining potential influences on health behaviors and, therefore, survival rates and long-term health outcomes of older African Americans CRC survivors. To understand culturally relevant influences on health behavior and health behavior change in older African American CRC survivors, we used the following models to inform our research.

Influences on health behaviors

There is extensive support for the *Theory of Planned Behavior* (TPB) [32, 33] in explaining the adoption and maintenance of health behaviors in the population at large [32–36]. This theory, which links beliefs and behaviors, was used as a starting point to understand determinants of health behaviors in older African American CRC survivors. Following the three constructs of TPB, we sought to understand (a) the attitudes of African Americans about making positive health behavior changes, (b) the beliefs of others in their social network about making changes (subjective norms), and (c) their perceptions about whether they could make positive health behavior changes (perceived behavioral control).

According to Bandura [37], *self-efficacy* is the confidence that one can cope with certain outcomes or succeed at specific tasks. Self-efficacy has been a strong predictor of emotional outcomes (e.g., quality of life, mood) and health behaviors (e.g., exercise, smoking cessation) [37–39] in (largely white) survivors. There is evidence of a positive effect of self-efficacy on prostate cancer screening, breast self-examination, and shared decision-making in African Americans [40–42]. We sought to understand how self-efficacy might influence patterns of health behaviors (e.g., diet and exercise) in older African American CRC survivors.

Culturally relevant beliefs

Research has shown many African Americans may have shared cultural beliefs about their health, their own role in health outcomes, and the causes of disease (i.e., cancer [43, 44]). This research reinforces the importance of considering cultural beliefs as influences on the health-related attitudes and behaviors of older African American CRC survivors [45, 46]. Based on previous research about influences on health outcomes in African Americans, we focused on the role of *spirituality* (beliefs, practices, and/or expressions of faith as related to God or a spiritual being), *fatalism* (beliefs about the role of destiny and/or divine control), and *medical mistrust* (suspicion, negative attitudes, and concern about motives) in the health-related attitudes and behaviors of this population of survivors [26, 28, 45–49].

METHODS

Participants

African American survivors were identified from the Metropolitan Detroit Cancer Surveillance System, an NCI-funded population-based Surveillance Epidemiology and End Results (SEER) registry. The population of older African Americans in metropolitan Detroit is characterized by high rates of functional illiteracy, unemployment, and incomes below poverty level [50]. Eligibility criteria for this study were: (a) diagnosis of local or regional CRC, (b) diagnosis 2–10 years prior to recruitment, (c) surgical treatment, and (d) ≥65 years old. We sought to achieve equal numbers of cases by sex and time since diagnosis (2–5 vs. 5–10 years post-diagnosis). We planned to stratify focus groups by time since diagnosis to gain a range of perspectives since the time of initial diagnosis and by sex to maximize the comfort of the participants in discussing the effects of treatment on their personal health (e.g., bowel habits or sexual intimacy).

Letters were mailed to survivors (*N*=400) identified in the SEER registry. Of those, 61 were ineligible (e.g., moved, deceased, incarcerated). Of the remaining 339, 46 agreed to participate, 4 agreed but were unavailable during the study. One hundred eight did not respond to the introductory letter, 100 refused participation, and 81 could not be contacted. Of the 46 interested survivors, we recruited nine participants for focus groups (four in a male group; five in a female group). We originally planned to hold four focus groups; however, limited mobility, transportation, childcare needs, and/or medical problems precluded attendance at focus groups. Therefore, we offered telephone interviews to interested survivors unable to attend a focus group. Eight telephone interviews were conducted. Based on an ongoing analysis of content, investigators determined that data saturation had been reached (i.e., no new themes or concepts were evident) [51] after these focus groups and interviews, and thus, recruitment was stopped. We used these multiple sources of data to provide convergence and increase validity of the study results [52–54].

Data collection and analysis

Focus group and interview procedures

Investigators developed an interview guide using (a) existing theories of health behavior change tested in cancer survivors (i.e., *TPB*, self-efficacy [32–39]) and (b) beliefs about health relevant to African American culture (i.e., spirituality, fatalism, and medical mistrust [26, 28, 45–49]). Semi-structured, open-ended questions and probes were used to guide discussion. Interviewers were trained to elicit a broad range of perspectives, while also encouraging participants to focus on the role of cultural beliefs and attitudes in patterns of health behaviors. A team of three women (two whites, one African American) with experience moderating focus groups and/or conducting community-based participatory research on racial health disparities in the African American community conducted the focus groups and interviews. Two members of this team (one African American, one white) co-facilitated the two focus groups; the telephone interviews were conducted by one of two team members (either the African American interviewer or the second white interviewer). One author (S.E.), who has extensive experience conducting focus groups and qualitative interviews, trained the interviewers. Training consisted of study of the discussion guide, didactic instruction in conducting semi-structured interviews and focus groups, facilitation of mock focus groups and interviews, and approval of proficiency by project investigators.

Qualitative data analysis

Focus groups and interviews were audio-recorded, transcribed verbatim, and imported into NVivo 9 [55] for analysis. Duration of the focus groups was 146 min (women) and 76 min (men); telephone interviews ranged from 19 to 84 min (median=24 min). An iterative process was used to code for key categories and identify emergent themes [56]. First, investigators independently coded transcripts for key categories derived from existing research (health behaviors, who/what motivates change, self-efficacy, fatalism, religion/spirituality, beliefs about cancer, race/ethnicity). Average inter-rater agreement was 97.58 % (range=60.25–100 %). Next, "pile sorting" (i.e., sorting data into piles with similar content) was used to refine existing coding categories and to identify emerging themes (personal responsibility, resilience, desire for health information, intentions to change, beliefs in divine control) from the data (Table 1) [57–59]. Finally, coding results and themes were summarized and discussed among the research team [57]. To clarify, coding categories reflect "explicit topics or categories" [59] in the data; whereas, themes refer to abstract concepts [60, 61] and global "beliefs, attitudes, values, or sentiments" [61, p. 195]. Themes are therefore considered an outcome of other analytic techniques (i.e., coding and pile sorting) [59]. This multistep approach to analysis was used to thoroughly explore the data and to identify and review the appropriateness of the coding process.

Table 1 | Distribution of coding categories by gender and source (*N*=10 sources)

Categories (number of references)	Focus groups (*n*=2 sources)		Interviews (*n*=8 sources)	
	FG #1 women (*n*=5)	FG #2 men (*n*=4)	Women (*n*=3)	Men (*n*=5)
Health behaviors (984)	(402)	(170)	(158)	(254)
Who/what motivates change (169)	(29)	(3)	(56)	(81)
Self-efficacy (207)	(60)	(16)	(61)	(70)
Fatalism (110)	(30)	(6)	(37)	(37)
Religion/spirituality (167)	(57)	(43)	(31)	(36)
Beliefs about cancer (51)	(25)	(13)	(2)	(11)
Race/ethnicity (118)	(28)	(5)	(9)	(76)

RESULTS

The final sample was 17 African American CRC survivors (53 % male) with an average age of 74.05 (SD=5.87; range=66–83). Average age at diagnosis was 68.65 (SD=6.02; range=58–79). Most (59 %) had completed some college, and all but one survivor were retired. The majority of survivors (n=11) were divorced; the remainder were married (n=4) or widowed (n=2).

Coding categories

Health behaviors

"Health behaviors" included *attitudes*, *ideas*, and *changes related to health behaviors made by CRC survivors after their cancer diagnosis.* The majority of survivors reported not smoking and moderate, if any, alcohol use because of concerns about their health. They acknowledged the importance of diet and exercise for improving general health but did not directly refer to these behaviors as strategies to reduce CRC recurrence or risk for comorbid conditions. Some survivors discussed struggling to "eat better" and engage in regular physical activity and were often cognizant of making choices contrary to their goals (e.g., eating junk food, not doing any exercise, over eating). In some instances, survivors reported misperceptions about what constitutes a healthy diet (e.g., sweet lemonade, soda, no raw vegetables) and/or what foods should be avoided (e.g., corn, green beans). Survivors also described difficulties in adopting a healthier diet (i.e., increasing fruits and vegetables) without exacerbating CRC-related bowel problems (e.g., increased diarrhea) or other health problems (e.g., diabetes management).

Who/what motivates change

"Who or what motivates change" referred to *thoughts*, attitudes, or *beliefs that influenced survivors' motivation to change (or not change) health behaviors after cancer.* Participants referenced God and their religious/spiritual beliefs as one motivator of change. Consistent with TPB, the beliefs of doctors, family, and the community (i.e., subjective norms), attitudes about adopting new behaviors, and perceived control of the behavior were also associated with motivation to change. For example, survivors reported that behavior changes with direct and noticeable impact (e.g., minimizing or preventing bowel problems, managing diabetes) were easier to make than changes with less immediate or specific outcomes (e.g., eating better and exercising for overall health). Behavioral intentions were discussed and ranged from no need to change (e.g., I can't give up my favorite foods), thinking about making changes (e.g., changing what I eat is hard), and intention to change (e.g., I am trying to get more exercise) to actual change (e.g., I exercise regularly).

Self-efficacy

"Self-efficacy" referred to *thoughts and beliefs about survivors' confidence to make changes in specific health behaviors after cancer diagnosis.* Some survivors reported a general loss of confidence to make any changes due to concerns about cancer recurrence and feeling more vulnerable to illness. One survivor described losing confidence to increase her exercise because of limited mobility and an inability "to do what I used to do." In contrast, the majority of survivors reported little change in their self-efficacy to make specific behavior changes because of their diagnosis. Explanations included (1) not feeling sick with cancer, (2) being generally confident before cancer, (3) believing outcomes were up to fate and destiny, (4) increased desire to live and not wanting to "give in" to illness, and/or (5) making an active choice to be confident after being diagnosed with cancer. Many statements also reflected beliefs that performing specific behaviors increases self-efficacy (e.g., I feel better about myself when I exercise) and that faith and/or belief in God was an important facet of self-efficacy (e.g., I can do anything with God on my side).

Beliefs in divine control

The coding categories fatalism and religion/spirituality were combined under the umbrella of "beliefs in divine control." We coded first for beliefs about the role of fatalism and "divine control" [20] and second for religious/spiritual beliefs and/or practices as related to cancer outcomes. Although these categories are often conceptually related, we coded each category independently to better assess the extent to which each made independent contributions to the health-related attitudes and behaviors of older African American CRC survivors [23].

Fatalism—Often called destiny or fate, the category "fatalism" referred to survivors' *beliefs about whether cancer outcomes can be changed, and in particular, changed by an individual's behaviors.* Beliefs ranged from highly fatalistic (e.g., everybody's destiny is mapped out) to non-fatalistic (e.g., I believe you can choose the way you come out). Fatalistic beliefs were often described as reasons for not making health behavior changes (e.g., you're going to get whatever you get). As found in previous research [20, 62], discussions of fatalism emerged as a set of complex beliefs with often overlapping and/or opposing ideas about the role of faith, science, and self-choice. For example, beliefs about cancer being predestined coexisted with beliefs that the environment (e.g., toxins in food and the air) is responsible for cancer. Similarly, beliefs about God as "the decider" were integrated with ideas about personal choice (e.g., you can change the outcome) and self-determination. As suggested by Umezawa et al. [20], the idea of being able to share responsibility with God may promote more active, rather than passive, coping as often presumed about fatalistic beliefs [24].

Religion/spirituality—The category "religion/spirituality" included *terms, beliefs, and/or practices related to religion or spirituality* (e.g., God, Lord, He/Him, faith, church, prayer, Bible, and Scripture) and reflected participants' relationship with God and the extent of their religious orientation, motivation, and support [49]. Religious/spiritual beliefs were frequent topics of discussion, ranging from highly religious/spiritual (e.g., active church attendance, daily prayer) to spiritual but not religious (e.g., belief in God but no attendance of church services or participation in organized religious activities) to one survivor who reported having "too many questions" about God to have "faith." Survivors emphasized the importance of religion/spirituality in coping with cancer (i.e., my faith in God brought me through) and the challenges of making health behavior changes. Having cancer was also seen as an opportunity to be "closer to the Lord" and strengthen religious/spiritual beliefs. For many survivors, their religious/spiritual beliefs lessened their fear and increased their acceptance of their prognosis (e.g., my faith in God is strong; whatever His will, it's going to be done). Survivors in the all-female focus group also emphasized the importance of "testifying" and sharing their personal cancer experience to benefit the well-being and health of their community (e.g., increase CRC awareness and screening). As one survivor noted, "you have to be obedient to God, and God wants you to give your testimony." Another survivor reported telling no one about the cancer and was censured by the other focus group participants for failing to do "your Godly duty."

Beliefs about cancer

The category "beliefs about cancer" included *survivors' beliefs about their control and self-efficacy for changing health behaviors.* Survivors discussed two major perspectives about the ability to change cancer outcomes: (1) outcomes can be changed (e.g., through diet and exercise), and (2) outcomes are set (e.g., if something is going to happen to your health, it's going to happen). Beliefs about cancer outcomes appeared largely based on information from peers and other survivors rather than from healthcare providers (HCPs). Many survivors reported a lack of information or having conflicting information, especially about appropriate guidelines for making diet and exercise changes, and expressed a desire for more education. Some survivors were unaware when their beliefs were inaccurate, such as about causes of cancer and the role of genetic risk (i.e., believing that cancer "skips" generations in families).

Race/ethnicity

The category of "race/ethnicity" included *any reference or mention of race, ethnicity, racism, African American identity, or medical mistrust.* Contrary to expectations, this category did not appear often, despite interview questions about race/ethnicity, the relationship of race/ethnicity in medical care, and medical mistrust. References to race/ethnicity occurred 118 times among all 10 sources (two focus groups and eight individual interviews), but one source alone (a telephone interview) referred to race/ethnicity 75 times. In this case, the survivor discussed growing up in the South during Jim Crow laws and his experiences with racism and racial inequality. The majority of references to race/ethnicity by other survivors were used to identify cultural group membership (e.g., I'm African American) and discuss features unique to the African American community (e.g., food typically eaten by African Americans).

Discussion of race/ethnicity in reference to health behavior change was primarily focused on the diet of African Americans including typical foods eaten, food preferences, and methods of food preparation (e.g., frying pork chops, using ham hocks for flavoring). Some survivors also reported a preference for talking to African American HCPs about their health because they can better "relate" due to a shared cultural history. As one survivor explained, "I can sit down and talk to them [African American doctors] about things that I'm not necessarily comfortable talkin' with a white doctor about."

Themes

As compared to coding categories that relate to specific ideas or topics in the data, themes represent more subtle and/or global "beliefs, attitudes, values, or sentiments" [59, 61, p. 195]. Five themes emerged from the analysis of the data: personal responsibility, resilience, desire for health information, intentions to change, and beliefs in divine control. The theme beliefs in divine control was initially coded as a category but also emerged as a major theme based on survivors' references to religious/spiritual beliefs across all coding categories. Given that beliefs in divine control was discussed in the previous section, the section below focuses on discussion of the remaining four themes. Table 2 provides examples of each theme.

"You're supposed to help yourself"—personal responsibility

"Personal responsibility" emerged as a theme highlighting the importance of actively participating in one's health. Survivors described "taking charge," "being aggressive" with their health, and educating themselves to make good decisions. Personal responsibility was also illustrated by references to taking a proactive approach to health (e.g., "be your own doctor") and adopting healthy behaviors to prevent illness (e.g., "you gotta check the motor or the oil will run out"). Previous research has shown beliefs valuing independence and autonomy shape how people respond to illness and perceive health in the USA in general [63]; our findings suggest that

Table 2 | Examples of emergent themes

Themes	Survivors' words
Personal responsibility	• "Ma'am, you're supposed to help yourself. You're supposed to help yourself before the doctor. You are the best doctor, even though you got to get up and wash your face sometimes. You don't have to bathe every day, but you got to keep yourself kind of healthy-like. You got to help yourself. Now once you do all you can do with your hands, now you know you can't look in your face. You got to get a mirror."
Resilience	• "I believe in being aggressive. I feel like you can choose the way you want to come out of any situation. You can choose to be like you said the little lady is, wants somebody to help her and she wants to depend on, but I'm different. I believe in being aggressive, and I know what I want, and I go after what I want."
	•"So a lot of people, they will just have their surgery and there is nothing wrong but they will just sit home and just deteriorate. Because that's their choice. That's right. You can choose the way you want to come out of a situation."
Desire for health information	•"If you know that in your family that there's cancer, especially like lung cancer, then it would behoove you to give up smoking, but as far as colon cancer, I haven't read anything that says that if you ate this and you did this there was the possibility that you could [change things]. There's nothing you can read that says so and so, and so you don't know what it is."
Intentions to change	• "My medical doctor. Whatever he changes he tells me about, I try to follow them. I may not follow them 100 %, but I do follow them, maybe 80–90 %."
	• "For my health, and I believe that a lot of stuff that we eat causes some of the illness that we have. I believe that, and so, I'm trying [to change]. It's hard for me to do it, but I'm trying."
Beliefs in divine control	• "To a certain degree, you can't choose. I feel like everybody's destiny is already mapped out before they get here. Before you get here. That's what the scripture says."
	• "My faith has helped me to be strong when they told me I had it. At one time I thought if they told me that I would just break apart, you know?"

African Americans' attitudes about CRC reflect these same values [64, 65].

"Having the right mindset"—resilience

"Resilience" was reflected in survivors' discussion of two types of mindsets in dealing with CRC. A "cancer mindset" was described as feeling sorry for oneself, excessive worrying about things beyond one's control, and/or "giving up the fight." In contrast, a "survivor mindset" was described as a conscious choice to be confident and "fight" cancer as well as a refusal to "claim" cancer. Survivors placed value on having a "survivor" mindset by comparing themselves to people who had "given in" and lost their confidence to fight.

"You can't do what you don't know"—desire for health information

"Desire for health information" emerged in survivors' discussions about trying to educate themselves about health behaviors that might reduce cancer recurrence and prevent and/or treat comorbid conditions (e.g., diabetes, heart disease). For survivors, the themes of desire for information and personal responsibility were related in that having more information was described as promoting a greater sense of personal responsibility. In short, knowing more facilitates the ability to "take charge" and make good decisions about their health [66]. Survivors expressed a strong desire for recommendations about using supplements (e.g., does fish oil help?), diet (i.e., what should I eat/not eat? How can I still eat my [African American] foods?), exercise (e.g., how do I exercise given my mobility and where I live?), reducing the side effects of CRC treatment (e.g., how do I stop having so much diarrhea?), and treating other conditions (e.g., how do I manage my sugar and change my diet?). Peers, including other cancer survivors, were the major source of information, and survivors reported struggling to make sense of the various pieces of health information, which were often conflicting. Many survivors expressed a specific interest in more discussion of health information with their HCPs [66].

"It's hard for me, but I'm trying to change"—intentions to change

Survivors reported a range of intentions to make positive health behavior changes. The most frequently discussed behaviors were diet and exercise and, to a lesser extent, substance use (e.g., I know I shouldn't smoke; my Johnnie Walker is hard to give up). Intentions to change behaviors ranged from thinking one "should" make changes, wanting to make changes but not being sure how, working on changing behavior although sometimes failing to maintain the behavior, and maintaining positive changes (usually smoking cessation and exercise). In short, despite general knowledge that “eating better” and/or regular exercise can improve current health and reduce risk for future disease, there was consensus that it was challenging to know what changes to make, to get started on making changes, and to maintain positive behaviors.

DISCUSSION

The purpose of this study was to understand the relevance of general models of behavior change and culturally relevant beliefs to patterns of health behaviors in older African American CRC survivors. Results provide support for applying TPB [32, 33] and self-efficacy [37, 67, 68], which have not been previously studied in older African American CRC survivors, to better understand the adoption and maintenance of health behaviors in this population. In focus groups and interviews, survivors discussed their attitudes about behavior changes, others’ beliefs about making changes, and their perceived control and confidence in making changes as important influences on behavior change. In addition to supporting general models of behavior change, findings suggest that spirituality, fatalism, and medical mistrust may also be influential in the adoption and maintenance of health behaviors in this population.

The majority of survivors in our sample endorsed the importance of God and self (“it’s up to you and God”) in managing and improving their health behaviors post-cancer. Many survivors reported intentions to change specific health behaviors but were unable to make changes given their individual needs (e.g., physical ability) and available resources (e.g., income, neighborhood safety). They emphasized the importance of critically evaluating health information for themselves but experienced frustration and sometimes disappointment in their attempts to access accurate and appropriate information. Despite publically available guidelines from the American Cancer Society about diet and physical activity for cancer survivors [69], our sample of older African American CRC survivors did not report receiving counseling from their HCPs about these guidelines and were unaware of the content of the guidelines.

In research on diabetes management, Peek et al. [70] suggest that new culturally translational strategies may be needed to improve the health outcomes of African Americans. These strategies should incorporate an individual’s beliefs and cultural norms and adapt interventions to their needs and resources, especially in low-income, racial/ethnic minority populations [71, 72]. Findings from the current study suggest a similar approach may be helpful in improving the health behaviors of older African American CRC survivors. Based on our results, we suggest several factors to consider in developing culturally tailored strategies in this population. Of note, our data clearly suggested within-group differences even within our sample of 17 survivors, thus we emphasize that these considerations are guidelines rather than a one-size-fits-all, prescriptive approach to promoting positive health behavior changes in older African American CRC survivors.

Improving provision of information

Survivors in this study identified gaps in knowledge about recommended guidelines for diet and exercise behaviors posttreatment. Consistent with TPB [32, 33] and research on health message framing [73], survivors also reported more readily adopting (or intending to adopt) health behaviors for which the benefits were tangible (e.g., managing glucose levels, reducing bowel irritation). In contrast, behaviors with less tangible and less immediate benefits (e.g., improving general health, reducing general risk for comorbid conditions) were perceived as more difficult to adopt and maintain. In a study of breast cancer survivors, Rabin and Pinto [74] found women were more likely to adopt healthier behaviors if they understood how the behavior was tied to outcomes such as cancer recurrence. This study and the work of Peek et al. on information provision with African American patients [23, 27, 40, 66] suggest that discussions about health behavior change with older African Americans CRC survivors might be improved by (1) providing specific and detailed information about how to improve behaviors such as diet and exercise and (2) delineating the immediate and longer term benefits of adopting positive health behaviors (e.g., reducing CRC recurrence and preventing comorbid conditions).

Examples from our sample of 17 survivors include wanting specific information on making healthier versions of traditional African American foods and recipes (e.g., baking instead of frying pork chops, steaming instead of stewing greens with ham hocks). Survivors also expressed a need and desire for exercise recommendations tailored to their individual physical capabilities (e.g., sitting exercises for people who are disabled or less mobile). Previous research shows differences in SES can also affect the extent to which people adopt positive diet and exercise behaviors [75, 76]. A lower SES environment can create barriers to healthy eating (e.g., over-reliance on convenience stores, lack of adequate grocery stores, limited or no access to fresh produce) and physical activity (e.g., limited access to safe walking routes, fewer parks or gyms) [75]. Therefore, we suggest that HCPs may benefit from being prepared to tailor education and interventions (e.g., home-based exercise, access to safe walking routes) to those older African CRC survivors with limited resources and physical abilities.

Cultural considerations

Religion and spirituality—While levels of religious/spiritual involvement varied in our sample, most survivors emphasized the importance of their beliefs in maintaining their post-CRC health. Reliance on God to cope with cancer is consistent with broader literature on African American culture, which reflects high levels of religiosity/spirituality, an integration of these beliefs into daily life, and the importance of religion/spirituality in helping to improve health and well-being [21, 22, 77, 78]. Accordingly, our findings suggest that selectively drawing on an individual's religious and spiritual beliefs may help increase motivation and intentions for change and development of a survivor mindset [49]. The use of religious beliefs has been effective in implementing interventions in other African American populations [79], and in fact, evidence shows that older African Americans prefer HCPs who are respectful of their religious/spiritual beliefs [66]. Expanding on these findings, our survivors also indicated the importance of knowing the religious/spiritual beliefs of their HCPs. Thus, understanding individual religious/spiritual beliefs may provide an avenue for HCPs to establish rapport with this population and influence how information about health behaviors is perceived and adopted.

Our findings suggest that using language rooted in the religious/spiritual beliefs of older AA CRC survivors may also enhance the effectiveness of messages given about health behavior change. Our participants used phrases such as "you have to be obedient to God," "God is in me," and "God works through doctors," which suggests how religious and spiritual beliefs may be tied to health behaviors and motivation for change for some survivors. Future research might benefit from understanding how to incorporate religious/spiritual beliefs into messages about health behavior change after CRC diagnosis.

Personal responsibility and resilience—Our findings show that emphasizing the role of personal responsibility (e.g., "you have to take care of yourself") and resilience (e.g., survivor mindset) was critical in discussions about health behavior changes with older African American CRC survivors. For example, survivors used metaphors about how taking care of one's health was like "checking the oil in a car" or "being your own doctor." Messages to survivors about making health behavior changes might benefit from drawing on this type of language (e.g., "making sure your car's motor is working properly") to promote a survivor mindset and facilitate behavior changes.

Race/ethnicity—In seeking to improve the delivery of health information to older African American CRC survivors, it is important to consider the history of institutionalized racism and inequality in the USA. Inequality in educational opportunities has negatively impacted literacy levels for older African Americans [66], highlighting the need to accommodate a range of general and health literacy levels when presenting health information [40]. Equally important is considering how racism and racial inequality may have influenced the dynamics of patient–provider relationships. Our findings (e.g., some survivors stated a preference for African American HCPs) support previous research, which suggests that older African Americans may experience suspicion or mistrust of white physicians and/or medical institutions [40, 80]. As a result, older African American survivors may have difficulty asking questions or seeking clarification of HCP recommendations [66]. Care practices and/or interventions that promote collaboration and allow survivors to "tell their story and be heard" [66] may minimize the effects of inequalities or mistrust experienced by some older African Americans, thereby facilitating more likely adoption of positive health behaviors.

Limitations

Our study had several notable strengths including a multi-method approach to analysis, community-based recruitment, use of empirically validated theories to inform qualitative inquiry, and in-depth information about health behaviors in a population characterized by health disparities. Nevertheless, results should be interpreted in light of certain limitations. First, this study revealed some challenges in using population-based methods to recruit older African Americans CRC survivors. Theoretically, using a SEER registry for recruitment should ensure a community-based sample, which was our intended population. However, from a pool of 339 survivors, 13.5 % (n=46) agreed to participate and ultimately only 5 % (n=17) completed the study. Barriers to recruitment included an inability to locate survivors, refusals to participate, health limitations, and difficulties with mobility, transportation, and childcare. Second, given the recruitment issues, we were unable to complete all the focus groups and had to revise our study design to include interviews. Using two different methods of data collection may have introduced confounds (e.g., social desirability, social inhibition) that may limit the ability to directly compare results. Third, our interview team, while diverse with respect to race/ethnicity, was comprised only of women. It is possible that having female moderators for the all-male group may have influenced the type of or extent to which content was disclosed. Fourth, our sample, although community-based, may not be representative of the larger population of older African American CRC survivors living in urban areas. We acknowledge, especially given the low participation rate, that a self-selection bias may have offered a limited perspective on our research question.

CONCLUSION

Despite these limitations, findings show this sample of older African American CRC survivors is generally motivated to improve their health and believe changing their health behaviors is possible. Our findings emphasize the importance of tailoring information provision, considering beliefs about personal responsibility and faith, and considering survivors' individual mobility needs and financial/environmental resources. Knowledge about the beliefs and attitudes associated with making health behavior changes can inform the development of interventions to address the diversity of challenges that older African American CRC survivors may experience in adopting more positive health behaviors. Providing information that targets the beliefs, abilities, and resources of older African American CRC survivors can potentially reduce disparities in survival rates and survivor health outcomes by promoting the adoption of positive health behaviors post-cancer.

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