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Family Support and Colorectal Cancer Screening among Urban African Americans

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Abstract

Colorectal cancer (CRC) is the third leading cause of cancer death among African Americans. Less than 50% of African Americans have had CRC screening. This study examined the relationships between family support and influence, cultural identity, CRC beliefs, and a screening informed decision among 129 urban African Americans. Family support ($p < .01$) significantly predicted CRC beliefs and CRC beliefs significantly predicted informed decision ($p < .01$). Based on study results, practitioners should routinely assess family support and CRC beliefs with African Americans patients. This may improve patient-provider shared decision-making satisfaction and CRC screening adherence among African American patients.

Keywords

colorectal cancer screening; family support; African Americans; decision-making

Introduction

The incidence rate of colorectal cancer (CRC) among African Americans is 20% higher and the mortality rate is 45% greater than Caucasians¹. Routine CRC screening is a key factor in CRC prevention¹, yet African Americans reported lower screening rates of fecal occult blood testing and endoscopy within the recommended time interval than Caucasians². Increasing CRC screening rates is crucial in reducing the CRC disparity experienced by

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Conflict of Interest

The authors have no conflict of interests to disclose.

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African Americans. Understanding the factors that influence an informed decision about CRC screening may be a strategy. An informed decision occurs when an individual understands the nature of the disease or condition; understands the clinical service and its potential consequences; has considered preferences; has participated in decision making at a personally desirable level; and makes a decision consistent with his or her preferences and values³. Informed decision interventions are not limited to decision aids, but include websites, DVDs, CDs and other types of media. Additionally, informed decision interventions can be done outside of healthcare settings in the community. Previous studies have found informed decision interventions increase decision satisfaction and screening adherence³. However, little is known about the factors that influence an informed decision about CRC screening among African Americans.

Research suggests few correlates of an informed decision about CRC screening. Having a family history of colorectal cancer is positively associated to CRC screening decisions⁴⁻⁶. Interventions targeting families with a family history of CRC only impact a select group of individuals and are not appropriate for individuals with average risk for CRC. Other studies have found that a person's beliefs about CRC risk, efficacy of CRC testing, CRC prevention and perceived barriers are associated with the intent to be screened and performance of CRC screening behavior⁴⁻⁹. Among African Americans higher perceived barriers scores were associated with less likelihood of having been screened with an FOBT in the past year ($OR = 0.91$; $CI: 0.86-0.97$)⁵. Research has found that a person is more likely to be screened if the person believes that CRC can be prevented and has a higher perceived risk of getting CRC⁹. Interventions designed to increase CRC screening intention and CRC screening behavior based on CRC beliefs have been marginally effective among African Americans^{10, 11}.

Previous studies have examined psychosocial resources, like social support, that may influence an informed decision about CRC screening among African Americans. Most studies have examined social ties/network (e. g., church attendance/membership) and its relationship to CRC screening among African Americans¹²⁻¹⁴. Research has shown that African Americans that attend church are more likely to be adherent to CRC screening guidelines and see a health care provider regularly¹⁴. Therefore, research and interventions that utilize the church have limited generalizability to the segment of African American that need the most support to become or maintain adherence to CRC screening guidelines and are most likely targeting those with access to the requisite information and support for colorectal cancer screening.

The family has a significant influence on the health of its individual members¹²⁻¹⁹. Characteristics of the family have been shown to be predictors of health outcomes including mortality, cardiovascular heart disease, and hypertension among African Americans¹²⁻¹⁹. Jernigan et al, found that African Americans are more likely most likely to report that their main influence for cancer screening was a family member¹². Understanding the African American family as a health-promoting unit and the role it takes in influencing cancer screening related beliefs can lead to the creation of more decision aids and interventions that are pertinent in terms of the support African Americans receive from their family.

Cultural identity has been used to understand health behaviors related to mammography, smoking and breast self-examination in African Americans²⁰⁻²⁴. Cultural characteristics that are prevalent and most predictive among African Americans include collectivism, racial pride, religiosity, and time orientation^{23, 24}. One study found that certain cultural characteristics, time orientation and religiosity, were predictive of mammography adherence²³. In spite of what is known about cultural identity and cancer screening, cultural

identity has yet to be extensively examined in relation to CRC beliefs and an informed decision about CRC screening³.

Despite previous research and interventions, CRC screening rates, incidence and mortality rates among African Americans remain disparate. Little new knowledge has been generated in terms of factors that may lead to innovative interventions to increase CRC screening, and reduce CRC disparities among African Americans. The purpose of this correlational study is to examine the relationships between family support and influence, cultural identity, CRC beliefs, and their relationship to an informed decision about CRC screening among African Americans and to test the model of an informed decision. Investigating these variables may elucidate new strategies to reduce CRC disparities among African Americans.

Methods

Participants—Inclusion criteria included being (1) an African American man or woman, (2) regardless of CRC screening history and family history of CRC, (3) age 50 and older and (4) able to speak English. Exclusion criteria included men and women that (1) were not African American, (2) were younger than 50 years of age, (3) have or had CRC and (4) do not have insurance coverage for CRC screening. Individuals without health care insurance coverage for CRC screening were excluded because lack of health insurance and/or coverage for CRC screening is a known barrier to CRC screening. Study participants received a \$25 gift card for the average of 30 minutes of time spent in data collection.

Design and Procedures

Prior to data collection, the institutional review board of a University in the Midwest approved recruitment materials and the informed consent. Potential participants were recruited from places of business (e.g., barbershops and a local medical center), community organizations and through the social networks of the residents of Detroit, Michigan. Eligible participants were asked to refer others meeting the inclusion criteria to participate in the study.

Measures

Family Support and Influence—The Medical Outcomes Study Social Support Survey (MOS-SSS) was used to measure family support²⁵. The MOS-SSS measures the perceived availability of social support through five dimensions of social support: emotional support, informational support, tangible support, affectionate support and positive social interactions²⁵. Participants were instructed to rate each of the 19 items using a 5-point Likert scale, with 1 corresponding with none of the time and 5 representing all of the time. A higher score for an individual scale or for the overall support index indicates more support. For this study, the measure was found to be reliable ($\alpha = .93$).

An additional 4-item scale to measure family influence was developed by the PI to specifically to measure the influence of the family on the respondent to complete and/or support CRC screening. Participants were instructed to rate each of the four items using a 5-point Likert scale, with 1 corresponding with strongly disagree and 5 representing strongly agree. A higher score indicates higher family support and influence for CRC screening. For this study, the scale was found have adequate internal consistency reliability ($\alpha = .74$).

Cultural Identity—The Cultural Identity Scale was modified to be applicable to African American women and men²⁴. Some of the 32-items specifically state “Black women” so for this study the scales were modified to be appropriate for both genders to respond. The subscales measure five significant African American cultural characteristics; collectivism, religiosity, racial pride, present time orientation and future time orientation using a 4-point

Likert scale. There is no total score for the Cultural Identity Scale. Lower scores on the subscales indicate lower perceptions of the cultural characteristics. For this study, the subscales were found to be reliable: collectivism ($\alpha = .82$), religiosity ($\alpha = .89$), racial pride ($\alpha = .81$), present-time orientation ($\alpha = .71$) and future-time orientation ($\alpha = .70$).

Colorectal Cancer Beliefs—To measure the beliefs about CRC screening among African Americans, the 35-item CRC Perceptions Scale was used⁶. The scale measures CRC susceptibility, CRC severity, CRC screening benefits and barriers to screening using a 5-point Likert scale, with 1 corresponding with strongly disagree and 5 representing strongly agree. Higher scores on the scale indicate that the respondent has positive perceptions about CRC and CRC screening. For this study, the measure was found to be reliable ($\alpha = .92$).

Informed Decision regarding CRC Screening—PI adapted an informed decision regarding CRC screening scale from a 28-item measure of informed choice regarding prenatal testing²⁶. The adapted measure assessed CRC screening understanding and preferences (Fecal occult blood test and colonoscopy), knowledge of risks related to CRC screening, value of CRC screening and decisional consistency. The survey use a 4-point Likert scale with 1 corresponding to strongly disagree to 4 corresponding to strongly agree. Lower scores indicate an informed decision that is low. Content validity was established by a review of the instrument by two experts in the field of decision-making. The measure was pre-tested and found to be adequately reliable for an exploratory measure ($\alpha=.65$). For this study, the measure had an adequate level of internal reliability ($\alpha = .68$).

Data Analysis

PASW SPSS-W 17.0 Windows program was used for data analysis. All data was cleaned and examined for outliers. Cross-tabulations and descriptive statistics were used to provide a profile of the study participants. Bivariate correlations were computed between each of the study variables (cultural identity, family support and influence, CRC beliefs and informed decision). Multiple regression analysis was used to examine the explained variance of the study variables. Path analysis, using AMOS 17.0, was used to test the model of an informed decision about CRC screening.

Results

Sample characteristics

The final sample for the study included 64 African American men and 65 African American women with health care coverage for CRC screening, and no personal history of CRC. Participants ranged in age from 50 to 86 years, with a mean of 58.5 (SD = 7.6) years. Fifty percent of the participants had completed some college courses and 70% were not married.

Family support and influence, cultural identity and colorectal cancer beliefs

The relationship between family support and some of the subscales of cultural identity were significant. Collectivism, religiosity and future-time orientation were positively and significantly related to the family support (Table 1). There was a significant negative relationship between family support and present-time orientation (Table 1). Family influence was positively and significantly related to racial pride ($r = .26, p < .01$). The relationship between the scores of the cultural identity subscales and CRC beliefs varied. Collectivism ($r = .26, p < .01$), religiosity ($r = .21, p < .01$) and future-time orientation ($r = .35, p < .01$) had significant positive relationships to CRC beliefs. Present-time orientation was positively and significantly related to negative beliefs about CRC and CRC screening ($r = -.33, p < .01$).

Family support and influence and colorectal cancer beliefs

The relationship between family support and CRC beliefs was statistically significant ($p < .01$; See Table 1). The relationship between family influence and CRC beliefs was not statistically significant (Table 1).

Correlates of an informed decision

Family support was positively and significantly related to an informed decision (Table 1). Present-time orientation had a significantly negative correlation to an informed decision about CRC screening ($r = -.31, p = .00$). Family influence and other cultural identity subscales did not have a statistically significant relationship to an informed decision. CRC beliefs and an informed decision about CRC screening was statistically significant ($p < .01$) (Table 1).

Path analyses

The multiple regression model with family support and influence and the five subscales of cultural identity, as predictors of CRC beliefs accounted for 36% of the variance. However, family support was the only statistically significant variable in the model ($\beta = .46, p < .01$; Table 2). The linear regression model with CRC beliefs as a predictor of an informed decision regarding CRC screening was statistically significant and accounted for 9% of the variance in informed decision making ($R^2 = .08, F(1,128) = 12.24, p < .05$; Table 2). The fit and misfit indices of the path analysis of the overall model show that the model did not fit the data well ($\chi^2 = 10.16, 7df, p = .18, N = 129, NFI = .952, CFI = .981, RMSEA = .059$) (Table 2).

Discussion

This study focused on the relationships among family support and influence, cultural identity, CRC beliefs and an informed decision regarding CRC screening among African Americans. In the current study, the relationship between religiosity and future-time orientation indicated that those respondents placing a higher value on a religiosity were more apt to plan for the consequences of events that are far away. In addition, perceived low family support was related to a person being more present-time oriented, meaning that the person is more likely to delay an activity that requires planning or future thought, like CRC screening. These results cannot be compared to past studies as this study is one of the few to examine the relationships between characteristics of cultural identity and family support.

The study's findings indicate that collectivism, religiosity and future-time orientation, certain cultural characteristics, may be related to having positive CRC beliefs. The findings of this study show that respondents who place a high value on religiosity have CRC beliefs that support CRC screening. These results support Holt, Lewellyn and Rathweg (2005) findings that religiosity had a positive effect on health among African Americans²⁷. A new finding that adds to the literature is that respondents who scored high on collectivism, a belief in the importance of the family, had beliefs that supported CRC screening. Another new finding is that respondents who were more future-time oriented had positive CRC beliefs. These new results of this study add to the body of knowledge related to cultural identity and CRC beliefs among African Americans^{6, 20–24}.

In this study, positive perceived family support was related to having positive beliefs about CRC screening. Previous research on the relationship between perceived family support and health related behaviors have reported similar results¹². This result supports the findings of Jernigan, et. al (2001) who found that African Americans reported that the support of family members was important in receiving cancer screening. Further, the current study found that

study participants with positive beliefs related to colorectal cancer screening are more likely to make an informed decision about colorectal cancer screening. While, this study is one of the few to examine the relationship between CRC beliefs and an informed decision regarding CRC screening the results support previous research on CRC beliefs and CRC screening behavior. Ruffin, Creswell, Jimbo and Feters (2009), found that CRC beliefs and information about colon cancer were important reasons to receive CRC screening. Menon et. al. (2011) found that tailoring CRC screening education to address CRC beliefs resulted in increased CRC screening rates.

In the current study, the overall model of an informed decision did not fit the data well. A larger sample followed over time may yield different results. However, the exploratory nature of the results and how close the model came to good fit indices indicates that further research is needed to continue to develop the model of an informed decision among African Americans.

The results of this study sheds light on new factors that influence an informed decision regarding CRC screening among African Americans. Also important to note is the significant participation of African American men in this study compared to similar studies.

Limitations

This study has important limitations that should be noted. First, the research design for this study was correlational and cross-sectional. Correlation research has limitations because only conclusions about relationships between factors of family support and influence, cultural identity, CRC beliefs and an informed decision can be drawn. Cause and effect cannot be inferred. Second, the study was limited to 129 African American men and women, age 50 and older. Thus, results cannot be generalized to other studies of men and women who are younger or are from other ethnic groups. Third, this study was limited to African American women and men living in a large urban area in the Midwest. African American women and men living in suburban and rural areas may have different experiences and outcomes. Last, as with any survey research, study participants may have given responses that could be considered socially acceptable, instead of providing accurate responses to the questions. More research on the relationship between family support and influence, cultural identity, CRC beliefs and an informed decision regarding CRC screening among African Americans is needed before conclusions can be drawn.

Implications for practice

This study has implications for nurse practitioners providing colorectal cancer screening information to African American women and men aged 50 and older who have or have not been screened for colorectal cancer. The results from this study indicate that perceived family support, certain cultural characteristics, and colorectal cancer beliefs are related to an African-Americans' informed decision about colorectal cancer screening. The measures used in this study shed light on the study's variables. Yet, the measures may not be practical for clinical use. Use of this study's measures requires at least 10–30 minutes of the patient's time and another 10–20 minutes of time to score the measure(s). However, assessing family support and beliefs related to colorectal cancer screening is important. Assessments, whether a part of a checklist or patient-provider discussion, should include questions about what the person has heard about colorectal cancer screening and from whom, how the person will get to and from the colonoscopy, who they will talk to about their decision regarding colorectal cancer screening and what might that person say. Additionally, assessing if the individual is more likely to plan for events or deals more in the present moment may also be key in increase the numbers of African American adhering to CRC screening guidelines.

Previous research has found that provider recommendation is a top reason why a person completes CRC screening. However, despite provider recommendation, CRC screening rates remain near 50%. Assessing family support, certain aspects of cultural identity, and CRC beliefs may increase patient-provider communication, lead to shared decision making between the patient-provider, increase patient satisfaction and increase CRC screening adherence among African Americans.

Conclusion

Preliminary results from this study are encouraging as they add knowledge regarding the factors that influence an informed decision regarding CRC screening among African Americans. Further research could provide more details into the sociodemographic context of an informed decision about CRC screening. Further research in this area may also inform intervention research that may improve CRC screening rates among African Americans.

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Table 1

Correlations between variables (N = 129)

Measure	1	2	3	4	5	6	7	8	9
1. Collectivism	—								
2. Religiosity	.36**	—							
3. Racial pride	.13.8	.23**	—						
4. Present-time orientation	-.24**	-.18*	-.10	—					
5. Future-time orientation	.37**	.45**	.02	-.32**	—				
6. Colorectal Cancer Beliefs	.26**	.21*	-.14	-.33**	.35**	—			
7. Family Influence	.04	.14	.26**	.03	.13	.09	—		
8. Family support	.40**	.27**	-.04	-.31**	.30**	.50**	.11	—	
9. Informed decision	.16	.15	.06	-.31**	.11	.30**	.03	.24**	—

Note.

* $p < .05$,** $p < .01$

Table 2

Direct and Indirect Causal Effects of the Variables in the Overall Model (n = 129)

Effect	Causal effects				R ²	
	Direct	Indirect	Total	β		
On colorectal cancer beliefs:						
Collectivism	.006	.000	.006	.069	.36	
Religiosity	.020	.000	.020	-.091		
Racial pride	-.113	.000	-.113	-.103		
Present-time orientation	-.141	.000	-.141	-.129		
Future-time orientation	.179	.000	.179	.130		
Family support	.414	.000	.414	.462**		
Family influence	-.144	-.144	-.125		.09	
On informed-decision regarding colorectal cancer screening:						
Colorectal cancer beliefs	.296	.000	.296	.300**		
Collectivism	.000	.002	.002			
Religiosity	.000	.006	.006			
Racial pride	.000	-.033	-.033			
Present-time orientation	.000	-.042	-.042			
Future-time orientation	.000	.053	.053			
Family support	.000	.123	.123			
Family influence	.000	-.043	-.043			

 $\chi^2 = 10.16$, 7df, $p = .18$, $N = 129$, NFI = .952, CFI = .981, RMSEA = .059
* $p < .05$,** $p < .01$