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Sociocultural Differences and Colorectal Cancer Screening Among African American Men and Women

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The colorectal cancer (CRC) mortality rate among African Americans is 45% higher than Caucasians (American Cancer Society [ACS], 2011). Routine CRC screening is a key factor in CRC prevention (ACS, 2011). In general, 50% of individuals eligible for CRC screening have not been screened and the rates of adherence to CRC screening recommendations are low (ACS, 2011). However, almost 50% of eligible individuals have insurance coverage for CRC screening (Ward, Barnes, Freeman, & Schiller, 2011). Studies have shown that African Americans aged 50–64 years are less likely to be screened for colorectal cancer and be screened within the recommended time interval than Caucasians (ACS, 2011; Seeff et al., 2004). Increasing CRC screening rates is crucial in reducing the CRC disparity among African Americans. Results of intervention research to increase CRC screening (e.g., mass mailings, reminders, mass screenings) have had limited success (Powe, Faulkenberry, & Harmond, 2010; Rimer, Briss, Zeller, Chan, & Woolf, 2004; Stone et al., 2002).

Because of the amount of information available from family, friends, and the Internet, many people make an informed decision, which is one that is consistent with a person's understanding and preferences, without provider interaction and prior to an appointment with a healthcare provider (Rimer et al., 2004). Consequently, research is needed to help healthcare providers better understand whether informed decisions about CRC screening among African Americans are influenced by psychosocial factors (Underwood, Powe, Canales, Meade, & Im, 2004). The purpose of the current study was to examine the relationships among factors (e.g., cultural identity, family support, CRC beliefs) that may influence an informed CRC screening decision in older African American men and women and to determine if the variables differ among African American men and women.

Purpose/Objectives: To examine sociocultural factors that influence an informed decision about colorectal cancer (CRC) screening among African American men and women.

Design: Descriptive, cross-sectional.

Setting: A medical center, a National Cancer Institute-designated comprehensive cancer center, and various social organizations and barbershops in a midwestern city of the United States.

Sample: A purposive sample of African American women (n = 65) and African American men (n = 64) aged 50 years and older.

Methods: Participants completed a self-administered survey.

Main Research Variables: Cultural identity, CRC beliefs, family support, and informed decision.

Findings: Family support was positively related to CRC beliefs among participants, and CRC beliefs were positively related to an informed decision. However, among men, family support positively related to an informed decision about CRC screening. In addition, t-test results indicated that the men and women were significantly different. Family support predicted CRC beliefs among men ($p < 0.01$) and women ($p < 0.01$). CRC beliefs predicted CRC screening informed decisions among men ($p < 0.01$) and women ($p < 0.05$). However, the accounted variance was dissimilar, suggesting a difference in the impact of the predictors among the men and women.

Conclusions: Family support has a significant impact on CRC beliefs about CRC screening among African Americans. However, how men and women relate to the variables differs.

Implications for Nursing: To improve CRC screening rates, informed decision-making interventions for African Americans should differ for men and women and address family support, CRC beliefs, and elements of cultural identity.

Literature Review

Previous research has found that cultural characteristics most predictive of health behaviors among African Americans include collectivism, racial pride, religiosity,

and time orientation (Lukwago, Kreuter, Bucholtz, Holt, & Clark, 2001). Russell, Perkins, Zollinger, and Champion (2006) found that a strong sense of cultural identity was positively associated with increased breast health awareness and breast cancer screening among African American women. However, limited research exists about cultural identity and CRC screening among African Americans.

Studies on the African American culture have found that the family is a major source of strength and the foundation for health practices (Becker, Gates, & Newsom, 2004; Billingsley & Caldwell, 1991). Previous studies on the African American family and health have found that the family has a significant influence on the health of its members (Brittain, Taylor, & Wu, 2010; Loveland-Cherry, 2005; Novilla, Barnes, De La Cruz, Williams, & Rogers, 2006). CRC screening research has found that social support is related to CRC screening adherence among African Americans (Kinney, Bloor, Martin, & Sandler, 2005). One limitation of previous research, though, is the use of a sample population older than 64 years, the age group most likely to be screened for CRC (ACS, 2011).

CRC beliefs that have been shown to predict intent and behaviors include perceived susceptibility or fatalism, saliency, worries, expected outcomes, and barriers (Brenes & Paskett, 2000; Green & Kelly, 2004). Barriers include lack of access to CRC screening, lack of insurance coverage for CRC screening, and lack of knowledge about CRC screening, among others. Results of previous studies have found that negative beliefs about CRC screening, higher perceived barriers, low worries, and low perceived susceptibility were related to lower rates of CRC screening among African Americans (Brenes & Paskett, 2000; Green & Kelly, 2004).

An informed decision occurs when a person makes a decision that is consistent with their testing preferences, values, and understanding (Briss et al., 2004). Previous studies have focused on whether decisions made about CRC screening are congruent with a patient's preference, perceived value, and understanding of CRC screening (Leard, Savides, & Ganiats, 1997; Ling, Moskowitz, Wachs, Pearson, & Schroy, 2001; Wolf & Schorling, 2000). Very few studies have examined the factors that influence an informed CRC screening decision among African Americans.

Studies have shown that men are three times less likely to go to healthcare providers and obtain routine health screenings compared to women (Galdas, Cheater, & Marshall, 2005; Sandman, Simantov, & An, 2000). African American men were even less likely to consult healthcare providers and obtain health screenings than Caucasian men (Brown, 2001). Although they may not consult healthcare providers often, African American men report having a CRC screening more often than African American women (43% versus 38%) (Meissner, Breen, Klabunde, & Vernon, 2006).

Previous studies on CRC screening have had several limitations. Studies examining barriers, beliefs, intention to screen, support, and CRC screening behaviors among minorities did not report gender differences (James, Campbell, & Hudson, 2002; Wolf et al., 2001). Evidence supporting the relationships between cultural identity, family support, CRC beliefs, and an informed decision regarding CRC screening, as well as gender differences, are limited, particularly in older adult African Americans (Brenes & Paskett, 2000; Green & Kelly, 2004; Myers, Vernon, Tilley, Lu, & Watts, 1998).

Given the evidence reviewed, the current study sought to determine if a positive association existed between (a) cultural identity and CRC beliefs, (b) family support and CRC beliefs, and (c) family support, CRC beliefs, and an informed decision; in addition, the study sought to (d) evaluate whether those associations differ among African American men and women.

Theoretical Framework

The Preventive Health Model (PHM) (Myers, 2005) was the theoretical framework that supported this research. The PHM proposes that internal and external factors influence preventive health behaviors and the health behaviors are reflective of a person's self-system (Myers, 2005). In addition, the PHM proposes that a person forms an intention to act (e.g., to be screened or not screened) based on the self-system when faced with a health problem (e.g., disease risk) (Myers et al., 2005). The implementation of the action plan is modified by decision making, including preference clarification and behavioral alternative selection (Myers et al., 2005). The PHM is one of the few health behavior models to incorporate a decision-making process with beliefs, barriers, costs, benefits, and sociocultural and demographic characteristics to address the gap between psychosocial factors and the intention to be screened for cancer (Myers et al., 2005). For the current study, only a portion of the PHM was used; the self-system was represented by cultural identity, family support, and CRC beliefs, and intention to act was defined as making an informed decision regarding CRC screening (see Figure 1).

Methods

Study Design, Setting, and Sample

A descriptive, cross-sectional design was used to explore the variables of interest. The predictors of an informed decision regarding CRC screening were cultural identity (e.g., collectivism, religiosity, racial pride, present-time orientation, future-time orientation), family support, and CRC beliefs. To assess the power for an analysis of separate models to examine factors related

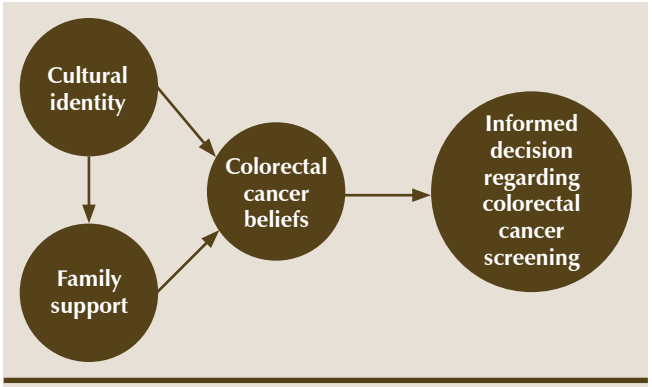

Figure 1. Conceptual Model: Influences of an Informed Decision Regarding Colorectal Cancer Screening Among African Americans

to an informed decision regarding CRC screening in men and women, a power analysis was conducted (Erdfelder, Faul, & Buchner, 1996). A sample size of 64 was required for each group to have 0.8 power to detect medium effect size multiple correlations (R^2 = 0.15) with seven predictors and an alpha of 0.05.

Participants who completed the questionnaire received a $25 gift certificate for a local department store. The purpose and content of the study were written in the instructions for the questionnaire and in the research information sheet. All study procedures were reviewed and approved by the institutional review board of the University of Michigan in Ann Arbor.

African American men and women without a personal history of CRC were recruited from businesses and self-referrals in Detroit, MI. The majority of the participants were recruited from a medical center and National Cancer Institute-designated comprehensive cancer center in Detroit where they were employed; however, participants could not hold the following credentials: RN, NP, PA, MD, or PhD. In addition, men were recruited from social organizations and barbershops.

All participants consented to participate prior to completing questionnaires. African American men and women were eligible for the study if they were aged 50 or older and able to speak and read English. Exclusion criteria included men and women who did not self-identify as being African American, were younger than 50 years, have or had CRC, or did not have insurance coverage for screening.

Instruments

To measure cultural identity, the **cultural identity measure** was adapted (Lukwago et al., 2001). For the current study, the term "Black women" was changed to "Black people" to make the scale appropriate for use in both genders. The cultural identity subscales have 32 items and measure five significant African American cultural characteristics: collectivism, religiosity, racial pride, present-time orientation, and future-time orientation. Participants rated collectivism on a four-point Likert-type scale, ranging from 1 (not at all important) to 4 (very important). Participants rated religiosity, racial pride, and time orientation (present and future) on a four-point Likert-type scale, ranging from 1 (strongly disagree) to 4 (strongly agree). Each scale was scored separately and no total cultural identity score exists. The internal consistency reliabilities for the measures were reliable and valid (Lukwago et al., 2001). For the current study, reliabilities for all of the subscales were adequate: collectivism (α = 0.82), religiosity (α = 0.89), racial pride (α = 0.81), present-time orientation (α = 0.71), and future-time orientation (α = 0.7).

The **Medical Outcomes Study–Social Support Survey (MOS-SSS)** (Sherbourne & Stewart, 1991) was used as an overall measure of perceived family support. The MOS-SSS measures an individual's perception of the availability of overall social support in their network through five dimensions of social support (emotional support, informational support, tangible support, affectionate support, positive social interactions) (Sherbourne & Stewart, 1991). Participants rated the items using a five-point Likert-type scale, ranging from 1 (none of the time) to 5 (all of the time). To obtain the overall social support index, the average of the scores for the 19 items was calculated. A higher score for an individual scale or for the overall support index indicates more support. The MOS-SSS internal consistency reliability for the study was adequate (α = 0.93).

Participants completed the **Colorectal Cancer Perceptions Scale** (Green & Kelly, 2004) as a measure of their beliefs about CRC screening. Participants rated each of the 35 items on CRC susceptibility, severity, benefits, and barriers to screening using a five-point Likert-type scale, ranging from 1 (strongly disagree) and 5 (strongly agree). A score is obtained for each subscale and the scores are summed for a total score. For ease of data analysis, the scale was reverse scored, so higher scores on the scale indicated the respondent had positive perceptions about CRC and CRC screening. Internal consistency for the sample in the current study was α = 0.92.

An informed CRC screening decision was assessed with a 28-item scale adapted from a prenatal testing informed choice measure (Marteau, Dormandy, & Michie, 2001). The adapted measure assessed CRC screening preferences for fecal occult blood testing, digital rectal examination and colonoscopy, understanding of CRC screening, knowledge of CRC screening risks, value of CRC screening, and decisional consistency. The survey used a four-point Likert-type scale, ranging from 1 (strongly disagree) to 4 (strongly agree). Lower scores indicated a lower informed decision regarding CRC screening. Content validity was established by a review

Table 1. Sample Characteristics

Characteristics	n	%
Gender (N = 129)		
Male	64	50
Female	65	50
Age (years) (N = 127)		
50–59	81	64
60–69	36	28
70–79	5	4
80 and older	5	4
Educational level (N = 124)		
High school graduate or less	43	35
Some college	63	51
Bachelor's degree or more	18	15
Marital status (N = 127)		
Divorced	39	31
Married	38	30
Single or never married	30	24
Widow or widower	20	16
Personal income ($) (N = 120)		
Less than 9,000	10	8
9,001–29,999	40	33
30,000–49,999	44	37
50,000–69,999	20	17
70,000–89,999	6	5
Health insurance (N = 129)	129	100

Note. Because of rounding, not all percentages total 100.

of the instrument by two decision-making experts. The measure was pretested and found to be adequately reliable for an exploratory measure, which had an adequate level of internal reliability ($\alpha = 0.68$) in the current study.

Gender was measured by self-reported gender (1 = men, 2 = women), and was used to divide the data into two subgroups (men and women) for comparison of the bivariate relationships. The number of women and men was similar (men = 64, women = 65).

Data Analysis

Data were analyzed using SPSS®, version 17.0. Descriptive statistics were obtained for all variables using either frequency distributions or measures of central tendency and dispersion to examine the characteristics of the sample. Pearson product moment correlations were calculated between each of the study variables for men and women. T tests were used to examine gender differences. Multiple regression analysis was performed to determine the significant predictors of CRC beliefs and an informed decision regarding CRC screening, by gender.

Results

Sample Characteristics

A total of 129 African American (65 women and 64 men) participants consented to take part, out of the 132 initially approached to participate in the study. Participants ranged in age from 50–86 years, with a mean of 58.5 years (SD = 7.6) (see Table 1). More than half of the sample had some college education. Although data were missing, 41% of the participants reported an annual household income of $29,999 or less. That is lower than the U.S. median household income, which is $50,221, and comparable to Detroit's median household income of $29,500 (U.S. Census Bureau, 2005–2009).

Colorectal Cancer Beliefs

The relationship between family support and CRC beliefs was statistically significant among women ($r = 0.45$, $p < 0.001$) and men ($r = 0.5$, $p < 0.001$) (see Table 2). T-test results indicated that the family support scores among women and men were significantly different ($t = –2.94$, $p < 0.05$). The CRC beliefs scores among women and men also were significantly different ($t = 1.9$, $p < 0.05$) (see Table 3).

The relationship between the racial pride subscale of cultural identity and CRC beliefs among women was statistically significant in the negative direction ($r = –0.25$, $p < 0.05$). Among men, collectivism, religiosity, and future-time orientation were significantly and positively associated with colorectal beliefs ($p < 0.001$). However, present-time orientation was negatively associated with CRC beliefs ($r = –0.39$, $p < 0.001$). T-test results revealed that women differed in terms of collectivism, religiosity, future-time orientation, and CRC beliefs ($p < 0.05$). The relationship between present-time orientation and CRC beliefs ($r = –0.39$, $p < 0.001$) was statistically significant in the negative direction. T-test results revealed that men differed in present-time orientation ($p < 0.05$).

The relationship between family support and an informed decision was not statistically significant among women; however, it was statistically significant among men ($r = 0.4$, $p < 0.001$). The relationship between CRC beliefs and an informed decision regarding CRC screening was statistically significant among women ($r = 0.25$, $p < 0.05$) and men ($r = 0.32$, $p < 0.05$). T tests revealed no difference in an informed decision between men and women.

Table 4 presents the results of the multiple regression analyses. In the female regression analysis, the five factors of cultural identity and family support accounted for 30% of the variance in CRC beliefs. In addition, CRC beliefs account for only 6% of the variance in an informed decision regarding CRC screening. For the male model, the five factors of cultural identity and family support accounted for 44% of the variance in CRC beliefs. In addition, CRC beliefs accounted for 10% of the variance in an informed decision regarding CRC screening. Family support was the significant predictor of CRC beliefs among men ($\beta = 0.39$, $p < 0.05$)

Table 2. Intercorrelations for Scores on the Cultural Identity Subscales, Family Support, and Informed Decision Scale

	African American Women								African American Men							
Variable	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Cultural identity																
Collectivism	–								–							
Religiosity	0.16	–							0.47**	–						
Racial pride	–0.12	0.14	–						0.49**	0.42**	–					
Present-time orientation	–0.17	–0.97	0.02	–					–0.24	–0.18	–0.35**	–				
Future-time orientation	0.3*	0.15	–0.09	–0.23	–				0.38*	0.62**	0.11	–0.33**	–			
Colorectal cancer beliefs	0.07	–0.08	–0.25*	–0.21	0.04	–			0.36**	0.33**	0.02	–0.39**	0.48**	–		
Family support	0.24	0.06	–0.25*	–0.09	0.23	0.45**	–		0.46**	0.33**	0.23	–0.4**	0.28*	0.5**	–	
Informed decision	–0.07	0.01	–0.13	–0.18	–0.04	0.25*	–0.02	–	0.32*	0.22	0.38**	–0.38**	0.18	0.32*	0.4**	–

*Correlation is significant at the 0.05 level (two-tailed).
**Correlation is significant at the 0.01 level (two-tailed).

and women (β = 0.43, $p < 0.01$). CRC beliefs were the significant predictor of an informed CRC screening decision among men (β = 0.32, $p < 0.01$) and women (β = 0.25, $p < 0.05$).

Discussion

Findings from the current study expand the limited research on the relationships among cultural identity, family support, CRC beliefs, and informed CRC screening decisions among African Americans. In the study, the relationship between family support and CRC beliefs was statistically significant among men and women ($p < 0.001$). That finding is supported by previous research findings that African American men and women rely on a small family network, dependent on the mother or female family members, for counsel and information regarding cancer screening (Jernigan, Trauth, Neal-Ferguson, & Cartier-Ulrich, 2001).

The findings suggest that African American men and women are different in their perception of cultural identity (except racial pride), family support, and CRC beliefs. Those gender differences may be rooted in the roles that each gender traditionally is socialized to assume related to shaping, affirming, or communicating health beliefs and behaviors. Previous research has shown that mothers are very influential regarding family health and, many times, are the decision makers (Kim-Goodwin, 2004). In addition, the mother's acceptance or rejection of health-related behaviors is crucial (Kim-Goodwin, 2004). The results further support that the African American male role, as it relates to his family's health behaviors, has not changed very much compared to the past (Courtenay, 2003). Previous studies have found that males of all backgrounds are most often the receivers of health information and not the seekers or communicators (Courtenay, 2000; Jernigan et al., 2001). Those role differences may be responsible for the perceptual differences among African American men and women with regard to cultural identity, family support, and CRC beliefs. However, for both genders, family support was the most significant predictor of positive CRC beliefs. Additional research on gender differences, family support, CRC beliefs, and informed decisions regarding CRC screening may help to advance understanding on how the variables relate to each other in an informed decision model.

Another important finding is that the amount of variance explained by the male and female models differed. The explained variance in CRC beliefs was 30% among women and 44% among men. Those results are similar to previous research results. Green and Kelly (2004) found that 33% of the variance in

Table 3. Gender Differences and Model Variables

Variable	Women $\bar{X}$	Women SD	Men $\bar{X}$	Men SD	t	df
Collectivism	21.74	2.53	20.77	3.04	–1.97*	127
Religiosity	31.27	4.13	29.53	4.68	–2.22*	126
Racial pride	23.18	4.1	24.02	2.99	1.3	126
Present-time orientation	8.52	2.32	9.72	2.42	2.86*	127
Future-time orientation	15.18	2.04	14.11	2.63	–2.6*	127
Colorectal cancer beliefs	108.97	13.72	103.46	17.02	1.9*	127
Family support	64.12	10.48	57.64	14.15	–2.94*	126
Informed decision	25.03	4.53	23.66	4.55	–1.71	127

*$p \leq 0.05$
df—degrees of freedom

CRC screening behaviors among older African Americans was explained by social support, knowing someone who has had cancer, history of CRC screening, family history of CRC, personal history of cancer, and demographic variables. However, Green and Kelly (2004) did not report gender comparison data. The differences among women and men extended to CRC beliefs and informed decision making. CRC beliefs explained 6% of the variance in an informed decision regarding CRC screening among women and 10% of the variance among men in the current study. Many informed decision studies solely examined the impact of decision aids, not the factors that influence an informed decision (Dolan & Frisina, 2002; Wolf & Schorling, 2000). Therefore, comparing this study to the literature is difficult, in terms of CRC screening, informed decisions, and the percent of explained variance.

The current study may be one of the few to examine an informed decision as an outcome variable, not whether the participant reports being screened for CRC. In addition, this is one of the few studies of informed decision making done in a community setting. The current study adds to the knowledge of what may influence an informed decision and the predictors of an informed decision related to CRC screening among African American women and men.

The findings from the current study should inform future research on informed decisions regarding CRC screening. Future research may include examining the relationships between having a healthcare provider, history of screening, and the CRC informed decision scale score. To advance knowledge concerning informed decision making, future research should examine CRC screening as the outcome variable to understand the role of an informed decision in CRC screening in the community setting. The focus of the current study was to examine relationships between an informed decision, cultural identity, family support, and CRC beliefs. In fact, Rimer et al. (2004) makes the point that the study of informed decisions is a new field of study and that the lack of evidence related to the effectiveness of informed decisions is not surprising, particularly in community settings.

Limitations

The findings of the current study are valuable in expanding understanding of informed CRC screening decisions among African American men and women. However, several limitations must be noted. First, the research design for the study was correlational and cross-sectional. Correlation research has limitations because only relationships between factors of cultural identity, family support, CRC beliefs, and informed decisions could be drawn. Cause and effect cannot be inferred. Second, the study was limited to 129 African American men and women aged 50 and older; therefore, the results cannot be generalized to men and women who are younger or from other ethnic groups. Third, the study was limited to African American women and men living in a large urban area in the Midwest United States. African American women and men living in suburban and rural areas may have different experiences and outcomes than those who live in an urban area. Region and type of setting have important

Table 4. Results of Overall Multiple Regression Models Related to Research Questions

Variable	African American Women Standardized β	African American Women p	African American Women R^2	African American Men Standardized β	African American Men p	African American Men R^2
Colorectal cancer beliefs	–	–	0.3	–	–	0.44
Collectivism	–0.00	0.96	–	0.25	0.07	–
Religiosity	–0.2	0.1	–	–0.09	0.52	–
Racial pride	–0.15	0.21	–	–0.24	0.06	–
Present-time orientation	–0.17	0.15	–	–0.2	0.1	–
Future-time orientation	–0.1	0.41	–	0.18	0.18	–
Family support	0.43	0.00**	–	0.39	0.00**	–
Informed decision	–	–	0.06	–	–	0.1
Colorectal cancer beliefs	0.25	0.04*	–	0.32	0.01*	–

*$p < 0.05$; **$p < 0.01$

influences. Additional testing of the study variables should be done among larger samples of older African American adults before conclusions can be drawn concerning gender differences and the influence of cultural identity, family support, and CRC beliefs on informed CRC screening decisions.

Conclusion

Family support significantly predicted CRC beliefs and CRC beliefs significantly predicted an informed decision among older African American men and women. The results suggest that a new variable, family support, may help to increase understanding of factors that influence informed decisions and that CRC beliefs, as reported in previous studies, continue to affect CRC screening informed decisions. In addition, the findings revealed that African American men and women differed significantly in their responses to most survey items. Collectivism, racial pride, present-time orientation, CRC beliefs, and family support also were significant correlates of an informed CRC screening decision among African American men. The findings showed that, for African American women, CRC beliefs were the singular correlate of an informed CRC screening decision, unlike African American men. Therefore, nursing interventions to increase CRC screening completion among African Americans should include assessments of family support, CRC beliefs, racial pride, and present-time and future-time orientation.

Implications for Nursing

Future nursing research should consider examining family support and informed CRC decisions to understand CRC screening adherence and uptake. The study results suggest that nurses should assess patients' perceived family support and CRC beliefs, as those factors may lead to an informed decision regarding CRC screening. Further, nurses should assess patients' ability to plan and prepare for tests that require advanced preparation and planning, as those factors may significantly impact patients' ability to complete CRC screening. Nursing interventions tailored for African American men and women should be different, as factors that influence informed CRC screening decisions may be different.

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Brittain is an assistant professor in the College of Nursing at Michigan State University in East Lansing.

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