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Masculinity, Racism, Social Support, and Colorectal Cancer Screening Uptake Among African American Men: A Systematic Review

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Abstract

Colorectal cancer (CRC) is highly preventable when CRC screening is utilized, yet CRC screening completion among African American men is relatively low and their mortality rates remain 50% higher juxtaposed to their White counterparts. Since a growing body of literature indicates masculinity, racism, and social support each have strong influences on CRC screening uptake, this systematic review examined the connections between these three sociocultural factors and CRC screening uptake among African American men. Potential studies were retrieved from MEDLINE, CINAHL, EMBASE, and PsycINFO. Cited reference searching for the final sample was employed to identify and assess additional studies for inclusion using Scopus. The methodological quality of the reviewed evidence was also evaluated. Nineteen studies met inclusion/exclusion criteria. Thirteen studies employed nonexperimental research designs; a quasi-experimental design was present in four, and two utilized experimental designs. Studies were published between 2000 and 2014; the majority between 2009 and 2013. Social support was most frequently addressed (84%) while masculinity and racism were equally studied with paucity (11%) for their influence on CRC screening. After evaluating conceptual and methodological characteristics of the studies, 42% fell below average in quality and rigor. The need for increased attention to the sociocultural correlates of CRC screening for African American men are highlighted in this systematic review, and important recommendations for research and practice are provided. Alongside a call for more rigorous research, further research examining the influence of masculinity and racism on CRC screening completion among African American men is warranted.

Keywords

African Americans, colonic neoplasms, early detection of cancer, minority health, review

Introduction

While colorectal cancer (CRC) is highly preventable, and treatable when diagnosed in the early stages, it remains the second leading cause of cancer-related deaths in the United States for adult men and women (American Cancer Society [ACS], 2014a). Despite consistently declining CRC-related mortality rates over the past 20 years, African Americans are disproportionately affected, having the highest age-adjusted mortality rate and the poorest 5-year survival rate when compared with other racial or ethnic groups in the United States (ACS, 2013, 2014b; Jemal et al., 2007; Desantis et al., 2013). Despite more widespread availability of several forms of early detection, the underutilization of CRC screening accounts for up to 42% of the racial disparity in new CRC cases (Siegel, DeSantis, & Jemal, 2014). African American men are particularly burdened by CRC disparities; they rank last among all racial/ethnic groups of both genders for age-adjusted CRC mortality and 5-year survival rates (ACS, 2014a). Compared with their White counterparts,

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African American men have incidence and mortality rates 25% and 50% higher, respectively (ACS, 2014a). Factors contributing to this disproportionate burden of CRC among African American men are complex but well documented. Studies have identified a lack of timely diagnosis and treatment, medical mistrust, lack of health insurance, socioeconomic disadvantages, and differences in access to high-quality regular screening as a few of the potential contributors to CRC disparities (Fenton, Tancredi, Green, Franks, & Baldwin, 2009; Griffith, McGuire, Royak-Schaler, Plowden, & Steinberger, 2008; Holden, Jonas, Porterfield, Reuland, & Harris, 2010; Jemal, Siegel, Xu, & Ward, 2010; Mitchell, Watkins, & Modlin, 2013; Rogers, Goodson, & Foster, 2015; Thorpe, Richard, Bowie, Laveist, & Gaskin, 2013).

Routine screening detects CRC at an earlier, more treatable stage, and the U.S. Preventive Services Task Force (USPSTF) recommends routine screening at age 50 for all men at average risk using a combination of the following: fecal occult blood tests (FOBT) annually, flexible sigmoidoscopy every 5 years, or colonoscopy every 10 years (USPSTF, 2008). Due to documented disparities in new diagnoses and survivorship, some health providers have lowered their recommended screening age to 45 for African American men rather than 50 years (Agrawal et al., 2005; Rex et al., 2009). Screening uptake is relatively low among African American men, a pattern that is poorly understood (Breen, Wagener, Brown, Davis, & Ballard-Barbash, 2001; Brittain, Taylor et al., 2012; Rim et al., 2011).

In addition to low screening uptake, other behavioral factors contribute to CRC morbidity and mortality disparities affecting African American men: diet and physical activity. Studies indicate that daily fruit and vegetable consumption for many African American men is low, while roughly half of African American men report no leisure time physical activity (Guenther et al., 2006; Kant et al., 2007; Ward et al., 2004; Wolf et al., 2008). These behavioral factors coupled with a lack of access to screening and health insurance, and disadvantaged socioeconomic circumstances, increase African American men's CRC risk and create formidable barriers to CRC screening uptake—increasing the likelihood of delayed diagnoses and poorer prognoses in this population (Klabunde et al., 2011; White, Vernon, Franzini, & Du, 2011; Winterich et al., 2011; Woods, Narayanan, & Engel, 2005). Much of the extant research on CRC disparities affecting African American men has focused on modifiable lifestyle factors such as improving diet, exercise, and preventive screening, but these studies often neglect how social contextual factors shape these behaviors.

Given the need for a greater understanding of the impact of social contextual factors on CRC disparities, the authors advocate for a more comprehensive approach by exploring the relationship between and among three sociocultural factors linked to CRC disparities affecting African American men: masculinity, racism, and social support. In doing so, the authors hope to provide insight into the extent to which cultural, environmental, interpersonal, and social conditions influence CRC preventive decision making among African American men.

A growing body of literature has established that an important aspect of gendered and cultural identity for men is their experience and performance of masculinity (Brittain, Loveland-Cherry et al., 2012; David & Brannon, 1976; Griffith, Gunter, & Watkins, 2012; Levant, 1992; Mahalik et al., 2003; Rogers & Goodson, 2014). Examining culturally influenced masculinity is of great importance in further understanding the cancer prevention experiences of African American men because there are aspects of cancer prevention and early detection experiences that may challenge the self-representations and cultural role expectations of African American men (Griffith & Johnson, 2013; Henry J. Kaiser Family Foundation, 2007). There is an unacknowledged sense of vulnerability that is often inherent in the cancer-related experience for men that may conflict with culturally accepted gender norms (Christy, Mosher, & Rawl, 2014; Hoyt, Stanton, Irwin, & Thomas, 2013; Sharpley, Bitsika, & Denham, 2014).

In the context of examining how cultural identity relates to suboptimal CRC screening rates, it is also imperative that those invested in ameliorating cancer disparities consider how the experience of race and racism influences African American men's cancer preventive health behaviors. Previous research suggests an association between racism and CRC screening, such that African American men who reported experiencing health care–related racism were less likely to be current with routine preventive screening (Crawley, Ahn, & Winkleby, 2008; Holmes-Rovner et al., 2002; Shariff-Marco et al., 2010). Racism and perceptions of racial discrimination have been long identified as important social determinants of health disparities, with dire consequences for medically underserved and socioeconomically disadvantaged African American men (Born et al., 2009; Shavers et al., 2012; Williams & Mohammed, 2009).

Given the current study's focus on exploring elements of social identity that shape CRC preventive health behaviors, it is also important to examine the role of interpersonal relationships in supporting the uptake of CRC screening among African American men. Studies have documented that men tend to receive, provide, and seek out less health-related social support than women (Eisler & Blalock, 1991; Helgeson, 1995; Oliver, Pearson, Coe, & Gunnell, 2005). Furthermore, studies have established that the receipt of social support is positively related to CRC screening uptake among African Americans broadly

(Kinney, Bloor, Martin, & Sandler, 2005). A recent study by Brittain, Taylor et al. (2012) reported that social support was positively related to informed decision making about CRC screening among African American men in particular. Owing to the fact that culture helps define the roles of individuals and their expectations in family and community relationships (Airhihenbuwa, 1995), and that those interpersonal relationships heavily influence the experiences of health and performance of health behaviors, the research team endeavored to undertake a thorough and thoughtful analysis of social support as a potential determinant of African American men's CRC screening uptake.

The aim of this study was to identify and clarify the mechanisms through which cultural masculine ideals, social support, and racism influence CRC screening uptake. Study findings address implications for the development of interventions that target how community members, health care providers, and public health messaging campaigns engage African American men in the process of planning and completing cancer-related preventive health behaviors. An investigation into the relationships between CRC screening and masculinity, racism, and social support would be informative on several fronts. Each of these factors represents deeply complex aspects of the social milieu in which health decisions are made. The challenge is to move beyond the assertion that preventive health decisions are determined in the vacuum of a health care system or patient–provider relationship apart from cultural, familial, or social influences. For African American men specifically, issues of gender expectations and roles, perceptions of discrimination due to race, and family, are implicitly linked at the nexus of preventive health in a way that is understudied and perhaps misunderstood. In an effort to address aforementioned gaps in the knowledge base on CRC screening uptake among African American men, the authors developed a systematic review with a twofold purpose: (a) to synthesize the evidence from published studies examining the influence of masculinity, racism, or social support on CRC screening uptake among African American men and (b) to assess the methodological quality of this evidence.

Rationale for Systematic Literature Reviews

Systematic literature reviews represent an efficient research method with a rationale firmly grounded in several premises. Researchers should conduct systematic reviews before embarking on primary research to reduce replication and help ensure that any primary research conducted subsequently is informed by evidence (Bambra, 2011). This method also provides a synthesis of the best research evidence for clinical decisions, thus ultimately strengthening the link between research evidence and optimal health (Cook, Mulrow, & Haynes, 1997).

Among its advantages, systematic literature reviews can help counteract the generalizability deficiency often evident in studies conducted among one particular population, as reviews include multiple studies conducted across varying groups (Egger, Smith, & O'Rourke, 2001; Light & Pillemer, 1984). Moreover, systematic reviews render transparency in the review process—leading to the replacement of unhelpful descriptors such as "no clear evidence," "some evidence of a trend," "a weak relationship," and "a strong relationship" oftentimes used to describe a body of research (Rosenthal, 1990). Finally, another positive feature of systematic literature reviews is the critical appraisal of the methodological quality of primary studies (Oxman & Guyatt, 1988). As a central part of the review process, critical appraisal permits systematic and careful assessment of studies to determine their reliability, relevance, and value (Belsey, 2009; Higgins & Green, 2011).

Method

Data Sources

The Matrix Method for conducting Systematic Literature Reviews described by Garrard (2014) was followed. When developing the search, the principles of the Cochrane Handbook—combining keywords and subject headings specific to the database searched for each concept—were followed (Higgins & Green, 2011). The core search strategy was based on an analysis of the key terms, Medical Subject Headings (MeSH), and keywords from relevant articles in four computerized databases: MEDLINE, CINAHL, EMBASE, and PsycINFO. Keywords and MeSH terms for the searches included colorectal cancer, fecal occult, sigmoidoscopy, colonoscopy, masculinity, perceived discrimination, social ties, and African American or Black (see the appendix). Using Scopus, the largest bibliographic database of peer-reviewed research literature, cited reference searching for the final sample was employed to identify and assess additional studies for inclusion. This article does not contain any studies with human participants performed by any of the authors. Furthermore, for this type of study, formal consent and institutional review board approval are not required.

Study Selection. For inclusion in this review, articles had to (a) be studies on human subjects published in the English language, (b) be conducted and published in the United States, (c) be empirical or analytical research studies published in peer-reviewed journals,

(d) be published between January 2000 (2 years before the USPSTF's CRC screening recommendations for screenings starting at age 50 for all men at average risk were initially published) and June 2014, (e) be focused exclusively on CRC screening, (f) have assessed the influence of masculinity, racism, or social support on CRC screening, and (g) have samples that included African American men.

The research team employed two rounds of screening to identify studies that met the aforementioned inclusion criteria. In the first round, the titles and abstracts of retrieved articles were independently scanned to determine their eligibility for further screening. Articles that were determined to potentially meet the eligibility criteria, as well as articles for which it was not clear from the title or abstract whether they were consistent with the review's eligibility criteria, were submitted to a second round of screening. This round involved two authors from the research team examining the entire text to determine if they met the eligibility criteria. If there was conflict between the two reviewers' assessments, the two authors met to discuss their disagreements and achieve consensus.

Data Abstraction. To structure and systematically organize the information collected from each study, the authors employed a review matrix. This matrix captured information regarding the purpose/research question(s), keywords, sample characteristics, study design, study findings (in reference to masculinity, racism, or social support), and other major factors/findings, limitations, and generalizability.

Methodological Quality Score. Many scholars have recommended assigning an overall methodological quality score (MQS) to assess the conceptual and methodological characteristics of reviewed studies (Lee, Schotland, Bacchetti, & Bero, 2002; Miller & Wilbourne, 2002; Rogers et al., 2015; Wortman, 1994). Each reviewed study was assigned an overall MQS where highest possible score was 19 (Table 1). The criteria for the MQS included an assessment of each study's use of theory, design and sample size, utilization of complex analytical techniques, and any reporting of the validity and reliability of the study's data. The frequency distributions of each criterion of the MQS for the reviewed studies along with the scoring criteria are listed in Table 1. A higher MQS reflects better methodological quality. To establish the reliability of the methodological quality scoring processes and data abstraction, five of the studies (26%) were randomly selected and assigned to two reviewers. Percent agreement was calculated; reviewers discussed their disagreements and achieved consensus prior to assigning the final MQS.

Results

Sample

A total of 150 articles were initially identified from the four databases searched. Among these, 32% (48) met the eligibility criteria for the first round of screening via titles and abstracts. Meeting the criteria after the second round of screening were 12% ($N = 19$) of the 48 studies, which represented 13% of the articles retrieved originally. Figure 1 provides details regarding the identification, screening, eligibility, and inclusion processes.

Studies' Characteristics. A total of 19 articles met the inclusion criteria (see Table 2). These included 13 (68%) studies with a nonexperimental research design, 4 (21%) with a quasi-experimental design, and 2 (11%) with an experimental design. Forty-two percent were published in the following journals: *Cancer Nursing* ($n = 2$), *Journal of Cancer Education* ($n = 2$), *Journal of General Internal Medicine* ($n = 2$), and *Oncology Nursing Forum* ($n = 2$). The remaining 58% were featured in journals devoted to cancer (e.g., *Cancer Causes and Control; Cancer Epidemiology, Biomarkers & Prevention; Journal of Psychosocial Oncology*), men's health (e.g., *American Journal of Men's Health; Journal of Men's Health*), preventive medicine (e.g., *American Journal of Preventive Medicine; Preventive Medicine*), public health (e.g., *BMC Public Health; Journal of Community Health; Journal of Public Health Research*), and nursing journals (e.g., *The Journal of Nurse Practitioners*). Studies were published between 2000 and 2014, and most studies ($n = 12$) appeared between 2009 and 2013. One author published more than one study on the topic (16%), namely, Brittain ($n = 3$) (Brittain, Loveland-Cherry, et al., 2012; Brittain, Taylor, et al., 2012; Brittain & Murphy, 2014). The factors most frequently assessed in the reviewed studies were the influence of social support (84%), masculinity (11%), and racism (11%) on CRC screening uptake among African American men (see Table 3).

Masculinity, Racism, Social Support, and CRC Screening Uptake

Masculinity. While only 2 of the 19 included studies (11%) addressed issues of masculinity in the context of CRC screening for African American men, the qualitative study by Winterich et al. (2009) provided a particularly nuanced analysis and interpretation of this issue. This investigation consisted of individual qualitative interviews with 64 men including 35 African American men (55%) aged 40 to 64 from diverse socioeconomic backgrounds. Winterich et al. (2009) reported findings that refute a common myth that the invasive nature of the colonoscopy as negative and offensive is a view

Table 1. Criteria for Assessment of Reviewed Studies' Methodological Quality Characteristics and Frequency Distributions for Each Characteristic.

Methodological quality characteristic	Scoring options (Maximum total score = 19 points)	Distribution of characteristics among (19) reviewed studies	
		Frequency (*n*)	Percentage
Conceptual			
Does a theoretical framework drive the study?	Explicit use of theory = 2 points	8	42.1
	Implicit use of theory = 1 point	6	31.6
	Not reported = 0 points	5	26.3
Research design			
What is the research paradigm?	Experimental = 3 points (*e.g., RCT*)	2	10.5
	Quasi-experimental = 2 points (*e.g., observational, comparison pretest/posttest*)	4	21.1
	Nonexperimental = 1 point (*e.g., exploratory and/or qualitative*)	13	68.4
What is the study's design?	Longitudinal = 2 points	1	5.3
	Cross-sectional = 1 point	18	94.7
Does the study exclusively focus on African American men?	Yes = 1 point	1	5.3
	No = 0 points	18	94.7
Sampling			
What is the sample design?	Random/nationally representative = 3 points	2	10.5
	Random/not nationally representative = 2 points	5	26.3
	Convenience/nonprobability = 1 point	12	63.2
What is the sample size?	Large ($n > 300$) = 2 points	8	42.1
	Medium ($100 \geq n \geq 300$) = 1 points	7	36.8
	Small ($n < 100$) = 0 points	4	21.1
Data analyses			
What were the most advanced statistical techniques utilized?	Multivariate statistics = 4 points (*e.g., Structural equation modeling*)	7	36.8
	Multiple/logistic regression = 3 points	5	26.3
	ANOVA/bivariate statistics = 2 points	1	5.3
	Descriptive/univariate statistics = 1 point	2	10.5
	Qualitative analyses = 0 points (*e.g., grounded theory, content analysis*)	4	21.1
Was any validity reported?	Yes = 1 point	7	36.8
	No = 0 points	12	63.2
Was any reliability reported?	Yes = 1 point	12	63.2
	No = 0 points	7	36.8

Note. ANOVA = analysis of variance; RCT = randomized control trial.

exclusively held by African American men. In fact, both Black and White participants in this study expressed feelings of embarrassment about engaging in any medical exam that involved the rectum, because the rectum is often framed by hegemonic masculinity as a private body part for which penetration even in the medical context would present an affront to traditional masculine identity (Beeker et al., 2000; Greiner, Born, Nollen, & Ahluwalia, 2005; Winterich et al., 2009).

The authors (Winterich et al., 2009) framed masculinity in broad and fluid terms, highlighting how health care interactions often overlook the gendered medical experience for men and the role of masculine ideals on health beliefs and behaviors. With regard to African American men's constructions of masculinity and the experience of CRC screening, this study reported an aversion to anal penetration for medical purposes was closely tied to a broadly held disdain for homosexuality. In particular, the authors revealed that few African American men, across a range of educational and income levels, could objectively discuss colonoscopy as a scientific and preventive medical procedure independent of the sense of violation that they felt was inherent in the experience.

Having explicated why some African American men are reluctant to engage in CRC screening, specifically colonoscopy, Winterich et al. (2009) suggest the following

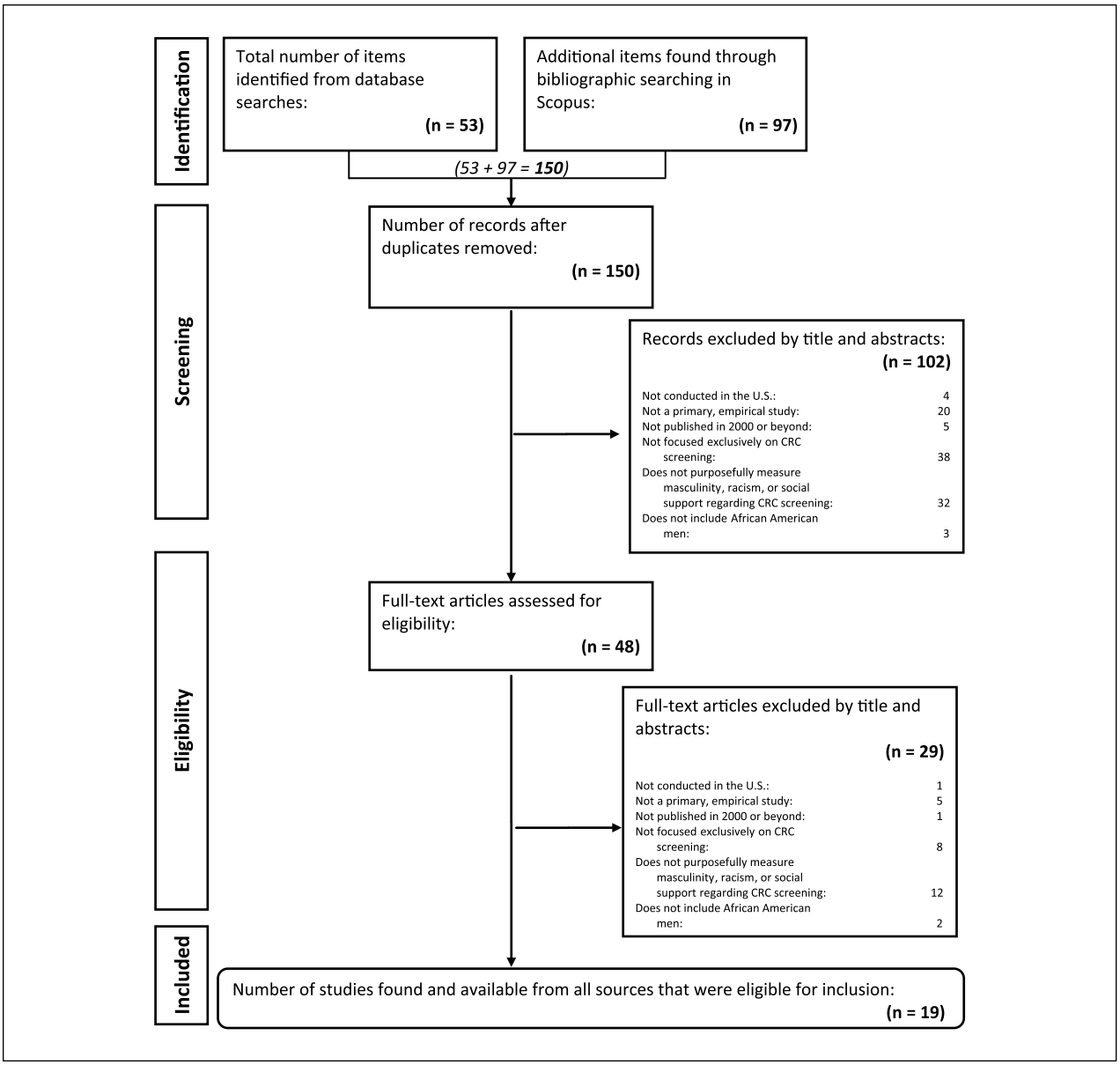

Figure 1. PRISMA flow diagram.

approaches for reducing CRC screening disparities for this population: designing and utilizing culturally targeted informational materials on CRC screening delivered by trustworthy community stakeholders; increasing awareness among physicians about the concerns of some heterosexual African American men regarding anal exams and tests; increasing the sensitivity and skill level of physicians around both performing invasive screening tests and explaining and preparing men for those tests; and, finally, increasing physician effort around objectively framing the scientific nature and preventive necessity of such screening tests, particularly for African American men, to allay additional concerns (Winterich et al., 2009).

In contrast to how Winterich et al. (2009) prioritized considerations of masculinity in examining men's CRC screening beliefs and behaviors explicitly, Beeker et al. (2000) very briefly touched on masculinity in the context of being a restraining influence on men's motivation to complete CRC screening in their qualitative study employing focus group methodology. The authors offered a single quote, with minimal contextualization, that characterized how exams involving the rectum were problematic in the view of a single African American male participant (Beeker et al., 2000). While it appears from the limited available evidence that invasive CRC screening modalities may compromise some African American

Table 2. Matrix of (19) Reviewed Studies, According to Theoretical Design and Methodological Features.

Study	Theoretical framework	Research paradigm	Study design	Sample design	Most advanced statistical analysis	Validity and reliability reported
Anderson et al. (2011)	Not reported	Quasi-experimental	Cross-sectional	Convenience/nonprobability	Multivariate statistics	*Validity*: No *Reliability*: No
Beeker, Kraft, Southwell, and Jorgensen (2000)	Explicit use	Nonexperimental	Cross-sectional	Convenience/nonprobability	Qualitative Analyses	*Validity*: No *Reliability*: No
Born et al. (2009)	Not reported	Nonexperimental	Cross-sectional	Convenience/nonprobability	Multivariate statistics	*Validity*: No *Reliability*: Yes
Brittain, Loveland-Cherry et al. (2012)	Explicit use	Nonexperimental	Cross-sectional	Convenience/nonprobability	Multiple/logistic regression	*Validity*: Yes *Reliability*: Yes
Brittain, Taylor et al. (2012)	Implicit use	Nonexperimental	Cross-sectional	Convenience/nonprobability	Multiple/logistic regression	*Validity*: Yes *Reliability*: Yes
Brittain and Murphy (2014)	Explicit use	Nonexperimental	Cross-sectional	Convenience/nonprobability	Multiple/logistic regression	*Validity*: No *Reliability*: Yes
Brouse, Basch, Wolf, and Shmukler (2004)	Explicit use	Nonexperimental	Cross-sectional	Convenience/nonprobability	Descriptive/univariate statistics	*Validity*: No *Reliability*: Yes
Christy et al. (2013)	Not reported	Experimental	Longitudinal	Random/not nationally representative	Multivariate statistics	*Validity*: Yes *Reliability*: Yes
Cronan, Devos-Comby, Villalta, and Gallagher (2008)	Implicit use	Nonexperimental	Longitudinal	Random/not nationally representative	Multiple/logistic regression	*Validity*: No *Reliability*: No
Griffith, Passmore et al. (2012)	Not reported	Nonexperimental	Cross-sectional	Convenience/nonprobability	Qualitative analyses	*Validity*: Yes *Reliability*: Yes
Halbert et al. (2011)	Not reported	Quasi-experimental	Cross-sectional	Random/nationally representative	Multivariate statistics	*Validity*: Yes *Reliability*: Yes
Kinney et al. (2005)	Implicit use	Quasi-experimental	Cross-sectional	Random/not nationally representative	Multivariate statistics	*Validity*: Yes *Reliability*: No
Mitchell et al. (2013)	Implicit use	Nonexperimental	Cross-sectional	Convenience/nonprobability	Descriptive/univariate statistics	*Validity*: No *Reliability*: No
Tarasenko, Wackerbarth, Love, Joyce, and Haist (2011)	Explicit use	Nonexperimental	Cross-sectional	Convenience/nonprobability	Descriptive/univariate statistics	*Validity*: No *Reliability*: Yes
V. L. S. Thompson, Bugbee, Meriac, and Harris (2013)	Explicit use	Nonexperimental	Longitudinal	Random/not nationally representative	Multiple/logistic regression	*Validity*: Yes *Reliability*: Yes
Wang et al. (2014)	Explicit use	Experimental	Cross-sectional	Random/not nationally representative	Multivariate statistics	*Validity*: No *Reliability*: Yes
Weitzman, Zapka, Estabrook, and Goins (2001)	Explicit use	Nonexperimental	Cross-sectional	Convenience/nonprobability	Qualitative analyses	*Validity*: No *Reliability*: Yes
Winterich et al. (2009)	Explicit use	Nonexperimental	Cross-sectional	Convenience/nonprobability	Qualitative analyses	*Validity*: No *Reliability*: No
Ye, Williams, and Xu (2009)	Implicit use	Quasi-experimental	Cross-sectional	Random/nationally representative	Multivariate statistics	*Validity*: No *Reliability*: No

Table 3. Key Factors Associated With Colorectal Cancer Screening Uptake Among African American Men in a Sample of (19) Reviewed Studies.

Key factor	Study	
Masculinity	Beeker et al. (2000)	Winterich et al. (2009)
Racism	Born et al. (2009)	V. L. S. Thompson et al. (2013)
Social support	Anderson et al. (2011)	Griffith, Passmore et al. (2012)
	Beeker al. (2000)	Halbert et al. (2011)
	Brittain, Loveland-Cherry et al. (2012)	Kinney et al. (2005)
	Brittain, Taylor et al. (2012)	Mitchell et al. (2013)
	Brittain and Murphy (2014)	Tarasenko et al. (2011)
	Brouse et al. (2004)	Wang et al. (2014)
	Christy et al. (2013)	Weitzman et al. (2001)
	Cronan et al. (2008)	Ye et al. (2009)

men's sense of hegemonic masculinity, additional research is needed to stimulate and inform behavioral interventions for African American men that will assist in negotiating masculine ideals in a way that will better promote preventive health.

Racism. In relation to CRC screening for African American men, the assessment of racism was reported in only two publications (11%). In a study that included 197 low-income African Americans as well as Whites, all recruited from a single community health center, Born et al. (2009) examined the relationship between medical mistrust, perceived discrimination, demographic characteristics, and FOBT completion. In this study, perceived discrimination was employed as a proxy for racism, and results indicated that both White and African American participants who reported low perceived discrimination were more likely to report a higher level of trust in their physicians. The age and income of the participant better predicted FOBT completion than race or perceived discrimination in the final multivariate model (Born et al., 2009). Perceived discrimination was associated with income, and trust in physicians was associated with perceived discrimination; neither discrimination nor trust covaried with race. The authors posited that discrimination experienced among participants of both races was more likely the result of inequality in access to FOBT care due to poverty than racial discrimination. The number of African American men was not clearly distinguishable from author's reports. The inherent limitations of the research included convenience sampling, demographic homogeneity of participants, and overrepresentation of low-income participants and clouds potential gender-specific interpretation or generalization beyond a very limited scope.

Using a larger regionally representative and random sample of African American adults aged 50 to 75 ($N = 1,028$), including 338 men (33%), V. L. S. Thompson et al. (2013) examined sociocultural attitudes that may influence adherence to CRC screening guidelines. Neither male gender roles nor ethnic identity (as a proxy for race) predicted CRC screening completion in this sample. Racial discrimination was explicitly measured using a medical distrust and discrimination scale; however, a gender analysis was not conducted to determine if African American men and women perceived racial discrimination differently and if those perceptions influenced CRC screening by gender. Despite insignificant findings relating racial discrimination and male role norms to CRC screening outcomes, this investigation represents an important first step in understanding how sociocultural experiences intersect with CRC preventive efforts among African Americans more broadly. The implications of these two studies include the need for additional research and clinical efforts that demonstrate the importance of considering how the experience of race, racism, and racial discrimination explain CRC screening decision making, especially among African American men.

Social Support. Social support was the most frequently examined factor influencing CRC screening among African American men, reported by 16 reviewed studies (84%). Among these studies, the focus was primarily on two sources of social support: normative support provided by family members or social networks and support from health care providers. For instance, Brittain, Loveland-Cherry et al. (2012) examined the sociocultural factors (e.g., CRC beliefs, cultural identity, family support) that influenced an informed decision about CRC screening among a purposive sample of 64 African American men and 65 African American women aged 50 to 86 years or older in Detroit, Michigan. The participants were recruited from various barbershops, social organizations, and a National Cancer Institute–designated comprehensive cancer center for the descriptive, cross-sectional study. Sherbourne and Stewart's Medical Outcomes Study–Social Support Survey measured the participants'

overall perceived family support (Sherbourne & Stewart, 1991). The relationship between an informed CRC screening decision and family support was significant among African American men, but not among the women in the study. Interestingly, familial support was the significant predictor of CRC screening beliefs among both African American men and women (Brittain, Taylor et al., 2012). Similarly, Christy et al. (2013) compared the effects of two clinic-based interventions on patient–provider discussions about CRC screening among 693 African Americans between 51 and 80 years of age from 11 Midwestern urban primary care clinics (five Veterans Affairs [VA] clinics and six non-VA). Older participants who were living with a partner or married had lower odds of having a discussion with their primary care provider about CRC screening; however, odds of a discussion were higher for participants who had a family member/friend encourage CRC screening.

Interpersonal processes (i.e., the role of significant others as influencers of health-related decision making) were a key form of social support in the study by Mitchell et al. (2013). The researchers identified predictors of CRC screening behaviors of 558 African American men over the age of 18 and examined the influence of social determinants on the screening behaviors of their sample. Utilizing survey research methods at a community health fair in northeast Ohio, being married had a positive association with completing any form of CRC screening among the men.

Several studies similarly noted that encouragement from family and social networks seemed particularly consequential to CRC screening completion among African Americans. For example, in a study that included nearly 300 African American adults in South Carolina, Kinney et al. (2005) reported that African American participants in their study were significantly more likely than Whites to be members of a church and to routinely attend religious services. The social connectedness fostered by religious affiliation was an influential mechanism through which support for CRC screening was effectively delivered for African Americans in this sample. For African American men specifically, research using the Health Information National Trends Survey indicates that not having family members or friends to discuss health issues with lessens the likelihood that African American men will complete CRC screening (Ye et al., 2009).

Anderson et al. (2011) mirrored these findings in a retrospective study of community health center patients; they reported that having a next of kin increased the likelihood that African Americans would complete CRC screening when offered a free colonoscopy. Taken together, these studies support the premise that social and familial ties facilitate important preventive health behaviors, including CRC screening, for African American men. Research conducted by Cronan et al. (2008) demonstrate that family and social network support for CRC screening might be patterned among socioeconomic lines for African Americans. This study reported that while 54% (n = 31) of African Americans in this sample reported being encouraged to complete CRC screening by a family member or friend, they were more likely to receive that encouragement if they had a higher income and higher level of educational attainment.

The authors also examined a group of studies that provided insight into the extent to which support from health care providers influenced the completion of CRC screening among African Americans broadly, and African American men in particular. For example, Beeker et al. (2000) undertook a qualitative investigation into the barriers to and facilitators of CRC screening among a diverse group of older adults. This investigation identified health care providers as the most important source of encouragement and feedback for CRC screening decision making but noted that African American participants repeatedly discussed receiving minimal or only cursory information about CRC screening from providers. A lack of social and informational support from primary care physicians was also identified as a barrier to CRC screening among nearly a third of African American participants in a study of middle-age adults in a randomized controlled trial to promote colon health (Brouse et al., 2004). A study by Weitzman et al. (2001) utilized qualitative focus groups to develop recommendations for increasing the supportive services provided by physicians to promote CRC screening. While the sample included very few African American male participants, study authors suggested that physicians could engage patients in a more supportive manner by providing personally delivered directives and a referral to complete screening; integrating CRC recommendations into routine primary care visits; and having explicit discussions with patients to dispel fear and stigma about invasive CRC screening tests (Weitzman et al., 2001). Cronan et al. (2008) also reported that only 43% (n = 68) of participants reported receiving a recommendation for CRC from their physicians. In this study, socioeconomic status influenced which patients received CRC referrals—those with higher incomes, more education, and health insurance.

Methodological Quality Assessment

To determine which studies met specific methodological standards, each study in this review's final sample was assessed and scored (see Table 1). To assess for interrater reliability and validity of the methodological quality scoring process, a random sample of five studies (26%) were scored by two reviewers. An agreement rate of 89% for all nine questions on the MQS form was achieved by

the reviewers. On five of the questions (study design, the exclusive study of African American men, sample size, validity, and reliability), reviewers agreed 100%.

The reviewed studies varied in terms of their methodological quality (Table 1). The average MQS was 9.95 ($SD = 3.26$) with a median score of 10.0. The range was 5 to 15 points (out of 0 to 19 total possible points). While none of the studies achieved the maximum score, 42% ($n = 8$) scored below the aforementioned MQS average.

In terms of conceptual quality, 10 studies (53%) explicitly used 1 or more of the following theories or conceptual models: PRECEDE-PROCEED model ($n = 3$), preventive health model ($n = 3$), health belief model ($n = 1$), health theory ($n = 1$), item response theory ($n = 1$), masculinity theory ($n = 1$), social cognitive theory ($n = 1$), social-ecological model ($n = 1$), stages of change/transtheoretical model ($n = 1$), and the theory of planned behavior ($n = 1$). Five studies (26%) did not report a theoretical framework.

Regarding the research design, 95% of the reviewed studies ($n = 18$) comprised cross-sectional designs and more than a third (37%) examined medium ($100 \leq n$ participants ≤ 300) samples. Although all studies included African American men in their sample, only one study had a sample exclusively comprised of African American men.

The majority of the studies utilized a nonexperimental research design (68%), a phenomenon that may have affected the overall methodological quality of the study. Of the seven studies (37%) utilizing more robust statistical techniques, only 11% ($n = 2$) were experimental in design. Convenience/nonprobability sample designs were utilized the most (63%). The majority of researchers failed to report the validity of their data: Only 37% reported validity ($n = 7$) but 63% reported reliability ($n = 12$).

Two experimental studies, Christy et al. (2013) and Wang et al. (2014), obtained the highest MQS of 15 total points. These studies used large (>300 participants), random (but not nationally representative) samples and multivariate logistic regression modeling for analyses. The two-group, clinic-based randomized control trial (RCT) evaluated by Christy et al. (2013) did not report any theoretical framework that guided the study but did report both validity and reliability. Conversely, the RCT consisting of African American primary care patients for the study led by Wang et al. (2014) was guided by stages of change/transtheoretical model and reported the reliability of the data collected but not the validity. Table 2 presents the theoretical, design, and methodological features of the 19 reviewed studies in detail.

Discussion

This study is the first to synthesize the evidence from extant literature examining connections between masculinity, racism, social support, and CRC screening completion among African American men. The authors identified only two studies explicitly addressed CRC screening among African American men in the context of masculinity (Beeker et al., 2000; Winterich et al., 2009). Each called attention to how men's perceptions of normative masculinity influence their views toward being physically examined or undergoing invasive screening tests. The authors of each study interpreted patient concerns about the invasiveness of sigmoidoscopy and colonoscopy through the lens of homophobia that was described as emblematic of some segments of the African American community. However, the qualitative nature of these two studies precludes generalization of these findings. Further studies, using reliable and valid measures, are needed to systematically assess whether homophobia due to normative masculinity is associated with discomfort around CRC screening among African American men. Additionally, more research is needed to determine whether education for both providers and patients around these norms may help to allay concerns related to masculinity and sexuality.

Similar to the authors' findings on masculinity, there was a paucity of existing research on the relationship between racism and CRC screening among African American men. Interestingly, neither of the two included studies reported finding a significant relationship between measures of racism or perceived racial discrimination and CRC screening outcomes. In fact, Born et al. (2009) determined that indicators of socioeconomic status created barriers to CRC screening access and contributed to perceived discrimination during health care experiences in a way that race did not. These findings, while limited, raise important questions about the need to unpack the confluence of factors that place medically underserved African American men with few socioeconomic resources at increased risk for delayed CRC screening and related disparate outcomes. In addition, future studies might consider a mixed-methods research design to capture the depth and breadth of health care experiences among diverse subsets of African American men, particularly those with fewer socioeconomic resources, to more comprehensively understand the intersection of race and CRC screening access and completion.

As a result of the authors' review, it is evident that the powerful influence social relationships have on CRC screening completion among African American men has generated great interest among both researchers and practitioners as it appeared in 84% of the reviewed studies. Since social networks can occur in many settings (e.g., community, work, religious, familial) and the characteristics of social network members (e.g., age, socioeconomic status) may also define one's social network, it is important that future studies take this two-pronged approach into consideration when striving to improve CRC screening uptake

among African American men (Heaney & Israel, 2002; Kinney et al., 2005). Per findings from the recent study by Coleman Wallace, Baltrus, Wallace, Blumenthal, and Rust (2013), who examined factors that predict physicians' recommendations for CRC screening and reasons for not undergoing screening, additional research should be extended beyond providers to patient navigators who can facilitate improved early detection screening for African American men and foster empowerment and trust, in opposition to the deep-rooted distrust African Americans have with the health system and providers (Gamble, 1997; Laveist, Nickerson, & Bowie, 2000).

Studies examining the influence of social support on the use of screening tests for other cancers also corroborate the research team's findings. For instance, Jones, Steeves, and Williams (2009) conducted a qualitative study of 17 African American men ages 40 to 71 years. After exploring how and when these men obtained prostate cancer screening, the researchers learned that family involvement was one of three major themes that emerged from the data. In detail, "the majority of the men said that having a member of the family involved with health decisions, such as prostate cancer screening, was important to them" (Jones et al., 2009, p. 170). The support African American men receive from their health care providers for CRC screening is also consistent with the literature for other diseases, besides CRC. In the study conducted by Garbers and Chiasson (2006), a telephone-based survey assessing breast cancer screening behavior and knowledge was completed by 300 African American and Caribbean women who were at least 40 years of age. Physician recommendation was one of the strongest predictors of mammography uptake; women were eight times more likely to have ever had a mammogram if recommended by their physician.

While most of the literature on the association between social relationships and health has focused on structural aspects of support, the current study's findings agree with Kinney et al. (2005) who suggest that it is the type of support provided by social network members that may influence health outcomes. This view focuses on functional aspects of social support traditionally constructed by House (1981), such as *appraisal* (e.g., providing information that is useful for self-evaluation purposes), *emotional* (e.g., providing empathy, love, trust, and care), *informational* (e.g., providing advice, suggestions, and information that a person can use to address problems), or *instrumental* (e.g., providing tangible aid and service that directly assist a person in need) support.

The methodological quality of the reviewed studies was assessed to fulfill the second purpose of this review. Relative to a perfect score totaling 19, the MQS of 9.95 indicates these studies are of medium quality overall. The extensive use of nonexperimental research designs is the first weakness of this body of literature. Only 2 of the 19 reviewed studies (11%) utilized experimental designs (specifically, RCTs). The majority (n = 13; 68%) employed nonexperimental research designs (e.g., exploratory and/or qualitative studies). The paucity of nonexperimental designs may be attributable to the sensitive and individualized nature of cancer screening decision making paired with the difficulty in consistently assessing sociocultural intentions underlying such decisions. Considering that more rigorous studies will help explain the relationships among the multifarious factors affecting CRC screening completion among African American men, future research might consider utilizing a rigorous but flexible mixed-methods research design to produce data that are both higher in quality and greater in depth. For instance, using one or more of the many validated instruments measuring constructs of social support, perceived racism, or masculine identity in conjunction with semistructured interviews would undoubtedly strengthen the rigor of several of studies identified here that solely employed qualitative methodology. Furthermore, a sequential mixed-methods investigation that attuned the types of probing questions asked of patient–participants based on their responses to initial validated questionnaire items could capture greater multidimensionality and tease apart the barriers faced by African American men making CRC screening decisions. It is important to acknowledge the need for both increased rigor and diversity in designing future research studies that will provide the highest quality of data to support practitioners, patients, policymakers, and scientific stakeholders.

The second weakness of this body of literature involved the deficiency of samples comprised exclusively of African American men. Nearly half of the studies (42%) involved a large sample size sample (n > 300) and 63% employed convenience/nonprobability sample designs. Although the sample sizes are respectable, the fact that only one of the studies exclusively examined African American men does not allow for generalizable results that can assist in developing effective interventions to increase CRC screening uptake among this population.

A final weakness in this group of studies involves data analyses. The most advanced statistical techniques (e.g., structural equation modeling) were only utilized by a little more than a third of the studies (37%). Weak sample and research designs from some studies appeared to be remunerated by more punctilious statistical analyses. However, determining the quality of the evidence being reported becomes problematic when 63% of the reviewed studies did not report any test of validity for their own data. Accordingly, future researchers should be sure to document their sample-specific validity (and reliability) to assure that measurement error is not weakening the evidence (B. Thompson, 2003).

This systematic investigation is not without limitations. The possibility of having missed one or more

relevant studies is one limitation and weakness inherent in nearly all systematic literature reviews. Yet the research team made every effort to make certain their search yielded all applicable data. For example, to be inclusive as possible throughout the search process, cited reference searching later became essential for the current review. This technique retrieved additional references which were not indexed appropriately in the databases the authors originally searched. As a result, future researchers should consider including ethnicity details of their samples (e.g., African Americans, American Indians/Alaska Natives) in their abstract or keywords to decrease the chance that relevant research is missed in databases searches. Another limitation involves the lack of validation of the MQS criteria the authors utilized and its bias toward quantitative studies. However, the criteria were based on previously published reports that adequately captured most of the salient methodological characteristics of empirical studies (Goodson, Buhi, & Dunsmore, 2006; Rogers et al., 2015).

Conclusions

This systematic review reports that social support was most frequently addressed while masculinity and racism were equally yet scarcely examined for their influence on CRC screening. Many studies in the review have examined the critical pathways by which normative social support, provided by social networks or family members, and health care provider support influence CRC screening completion among African American men. Yet research that explains the poorly understood, complex role masculinity and racism play in contributing to CRC screening disparities among African American men is needed to contribute to solutions that eliminate cancer health disparities. After assessing the methodological and conceptual characteristics of the reviewed studies, future interventions should consider employing an experimental research paradigm and multivariate statistical techniques for samples exclusively composed of African American men. Taken together, findings from this review contribute to the body of knowledge necessary for further understanding the impact of sociocultural factors in influencing African American men's orientation to and apprehension about CRC screening.

Appendix

Search Strategy: MEDLINE (OVID)

1. exp Colorectal Neoplasms/
2. ((colorectal or colon*) adj1 (cancer* or neoplasm* or tumor*)).ti,ab.
3. or/1-2
4. exp Colonoscopy/
5. exp Colonography, Computed Tomographic/
6. exp Sigmoidoscopy/
7. exp Mass Screening/
8. exp "Early Detection of Cancer"/
9. exp Digital Rectal Examination/
10. ((rectal or colon*) adj1 exam*).ti,ab.
11. (colonoscop* or sigmoidoscop* or colonography or fobt).ti,ab.
12. ((cancer or mass) adj1 screen*).ti,ab.
13. or/4-11
14. 3 and 13
15. exp African American/
16. (african american* or black*).ti,ab.
17. or/15-16
18. 14 and 17
19. exp Racism/ or exp Prejudice/ or exp "Discrimination (Psychology)"/
20. exp Masculinity/
21. (prejudice* or racism or discrimination or masculin*).ti,ab.
22. exp Social Support/
23. ((social or family or peer) adj1 (ties or support* or network* or factor*)).ti,ab.
24. or/19-23
25. 18 and 24

Authors' Note

The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

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