

Where are they? The inclusion of African-American men in empirical studies of type 2 diabetes self-care management

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ABSTRACT

Background: African-American Men experience higher rates of serious complications of diabetes, due in part to poor disease management. Yet it is unclear to what extent research has been devoted to type 2 diabetes management in this population. **Purpose:** A need exists to clarify the extant literature on self-care management (SCM) practices of African-American Men with type 2 diabetes. **Materials and Methods:** A systematic literature and methodological quality scoring (MQS) using the Garrard matrix method was performed. Low scores (0-1) indicate low representation of African-American men; highest score (3) indicate high inclusion of African-American men in the samples. The search targeted articles focused on type 2 diabetes self-care management, and which included samples of African-American Men. Each publication was reviewed and assigned a MQS by the researchers, who reached 100% concordance with the MQS. **Results:** Initial screening yielded 122 articles, but only 41 met full study inclusion criteria. These studies represent a combined sample size of 9,171 participants of which less than one-third (3,007; 32.8%) were clearly identifiable as African-American men. Only 7 studies had samples consisting 100% of African-American Men. Mixed methods approaches were used least ($n = 9$ studies), followed by quantitative approaches ($n = 15$ studies). Qualitative approaches were most commonly used ($n = 17$ studies). Most ($n = 24$) studies scored low (0 to 1 score), indicating low-level of inclusion of African-American Men in their sample. **Discussion:** In spite of the growing body of literature on managing type 2 diabetes, there is a paucity of information focused on a high-need and high-risk group – African-American Men. The exclusion of this population can result in adverse health consequences, given the high comorbidities associated with uncontrolled diabetes. **Conclusion:** Including more African-American Men in self-care management studies can help determine the factors affecting research participation among this group as well as to further understand the complexity that these men face regarding managing their diabetes.

Key words: Diabetes, African-American Men, Management

INTRODUCTION

Recruiting research participants in type 2 diabetes management research has proved to be a strenuous undertaking.^[1] The matter of recruiting is amplified when considering minority populations, specifically African-

American men. The limited inclusion of African-American men in type 2 diabetes self-care management (SCM) studies raises concern regarding how credible results from previous SCM studies can be generalized, as well as how valuable they can be for African-American men. Scarcely any studies have examined the beliefs and attitudes of African-American men, as well as African-Americans in general, with reference to anticipated impediments to being included and participating in research.

Several reasons are noted in the literature to explain low participation of racial/ethnic minorities in health-related research, including socioeconomic constraints,^[2-6] language and literacy barriers,^[7,8] lack of access to medical care,^[4,9-11] and the inability to recruit minorities into

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research studies.^[12,13] Mistrust of the scientific community is also theorized as a significant reason for the shortage of ethnic minorities in clinical studies.^[7,14-24]

From a historical standpoint, the legacy of the enslavement of African-Americans sets a powerful basis for mistrust of authority figures and government leaders.^[1,18,24] In addition, the prominent Tuskegee syphilis experiment is an ever-present and painful reminder of African-American men's involvement in health-related research. The Tuskegee syphilis experiment study alone, has contributed to the construction of an immensely negative view of research and of healthcare professionals among African-Americans.

Previous studies of disparities in healthcare regarding race have documented patterns suggestive of African-American men's high levels of disengagement from healthcare organizations.^[25-29] African-American men generally attend fewer annual healthcare appointments than European American men^[29] and are less likely than African-American women to seek help from physicians.^[30] Accordingly, it is critical that African-American men with chronic diseases such as type 2 diabetes are able to successfully manage their conditions, especially if they are not likely to seek professional assistance.

Diabetes SCM and African-American men

African-American men experience higher rates of at least three serious complications of diabetes: Blindness, amputations, and end-stage renal disease (ESRD) compared to other groups.^[30] Despite the irregular burden of diabetes and its associated ramifications among African-American men, it is unclear to what extent any clinical or ethnographic research been devoted specifically to type 2 diabetes management in this population. For this reason, a critical need exists to improve what is known about the SCM practices of African-American men with type 2 diabetes.

The purpose of this systematic review is to identify and synthesize the research literature centered on one major research question: How well African-American men are included in empirical studies of diabetes SCM?

MATERIALS AND METHODS

The review process involved rigorous methodological initiatives to generate a comprehensive analysis of the published research literature on type 2 diabetes SCM. The methodology used for this systematic review is detailed below. Utilizing Garrard's matrix method^[31] of conducting systematic reviews, the following major steps were conducted:

1. Database search to identify relevant articles,
2. development of inclusion/exclusion criteria to select articles,

3. three-step screening process to identify SCM factors among published articles,
4. instrumentation to guide extraction process, and
5. data extraction to retrieve study characteristics among retrieved articles.

Database search

A systematic search was performed (per Garrard method) to retrieve peer-reviewed articles addressing SCM among African-American men living with type 2 diabetes. Five major health literature databases: Academic Search Complete (EBSCO), ERIC (EBSCO), ScienceDirect (Elsevier), MEDLINE (Ovid), and PsycINFO were searched using keywords such as type 2 diabetes management, SCM, African-American men and type 2 diabetes, and men's health and type 2 diabetes. The date of the last search was August 2012.

Inclusion/exclusion criteria

Articles were selected if they (a) were empirical studies that included any reference to African-American men in their sample, (b) the published studies included sample participants with a medical diagnosis of type 2 diabetes, and (c) the publications were written and published in English between the years 1996 and 2012. The starting point (1996) was selected as it marks the availability and entree of diabetes blood testing strips as reflected in the research literature. All study design types were included (cross-sectional, focus groups, case-control, qualitative, quantitative, longitudinal, group randomized, and quasi-experimental). Exclusion criteria included (a) theoretical studies and thought pieces that did not included African-American men living with type 2 diabetes and (b) studies that did not address male involvement and participant in type 2 diabetes research.

Screening of articles

Screening process involved three tiers. First, screening questions based on inclusion and exclusion criteria were generated to guide retrieval, yielding 122 abstracts [Figure 1]. Second, full articles were evaluated for fit with

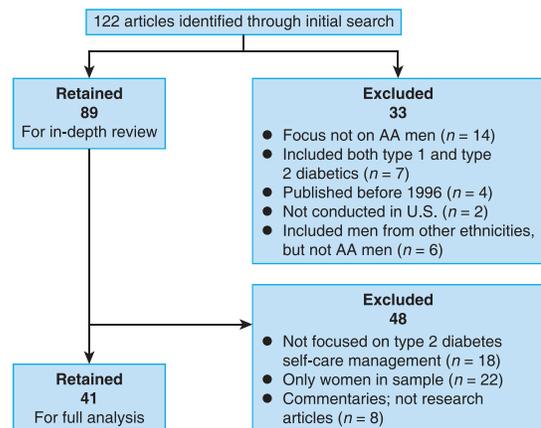


Figure 1: 122 articles identified through initial search

other inclusion criteria. Irrelevant titles, duplicates, and narrative/commentary pieces were automatically excluded. Studies that addressed type 2 diabetes SCM were retained. Third, additional articles were identified by purling, that is, the performance of a thorough review of the references/citations of retrieved articles for publications that might have been missed through the database search. Purling is often performed to ensure that all relevant articles are retrieved (Garrard, 2004).

Instrumentation

A methodological quality scoring (MQS) rubric^[31] was tailored to the needs of our study and was used to standardize data extraction methods applied to reviewed studies. The MQS was designed to guide identification and assessment of methodological characteristics among reviewed articles (e. g., key factors associated with SCM, characteristics of the measures used to assess such factors). The MQS also details the data extraction process, the type of information extracted from reviewed studies, and the rationale used to determine key study and methodological characteristics. Specific to this study, we sought to identify and qualify the extent to which African-American men were included in SCM studies. The scoring criteria are described in Table 1.

Data extraction

Characteristics of articles (e. g., purpose of study, study design, and theoretical framework) were entered into the MQS, and then categorized based on similarity of study aims, and of investigated factors (e. g., health literacy and its association with diabetes knowledge, perceived self-efficacy, and disease self-management).

RESULTS

The research question guiding the study focused on the extent to which African-American men are included in empirical studies of diabetes SCM.

Table 1: Scoring rubric for research articles

African-American (AA) men targeted and included	3	Studies focused only on AA men with 100% AA men in sample Studies with AA men and women, with at least 50% of their sample are AA men
AA men targeted, some included	2	Studies focused on AA men and women and we can determine % of AA men in their sample
AA men targeted; none included or cannot determine	1	AA men appear to be targeted, but none included or insufficient info to calculate % of AA men
AA men neither targeted nor included or cannot determine	0	No information is available in the methods section about whether or not they tried to include AA men

Description of studies

Among 122 articles initially identified as publications highlighting research that has achieved inclusion of African-American men in type 2 diabetes self-management related studies, 41 (33.6%) met the final criteria. The combined sample across these studies represent 9,171 participants, of which 3,924 (42.72%) are men of any race/ethnicity and 3,007 (32.8%) were clearly identified as African-American men. Among these, seven studies (17.1% of studies) (combined N = 1,350; 14.7% of combined samples) focused exclusively on African-American men. Seven other publications included samples described such that participants’ sex or racial/ethnic characteristics could not be disaggregated. Consequently, for these studies representing 2,328 participants or 25.4% of participants across all studies, the numbers and proportion of African-American men could not be calculated. Table 2 provides full details of our findings.

Analysis features

Seven studies received the lowest score of “0” [Table 2], indicating the lack of data needed to determine the extent to which African-American men were included. A similar number of studies achieved the highest score of 3, denoting efforts to exclusively target African-American men for their sample and achieving that aim. Most (n = 24; 58.5% of studies) received a “1” inclusion score, indicating that information was available for us to i) ascertain that African-American men were part of those targeted in some form, and 2) calculate the proportion of African-American men actually included in the study. As per Table 2, African-American men were included at an average of about 30% among studies with “1” score.

Methodological approaches utilized in research

Qualitative approaches accounted for most of the studies (n = 17; 41.5% of studies), followed by qualitative (n = 15; 36.6% of studies) and mixed methods (n = 9; 22.0% of studies). All three types had more than half of their respective studies score low (i. e., 1) [Table 1]. Yet studies which utilized mix methods had a larger proportion which scored low (44.4% with ‘0’ score, and 55.6% with “1” score) relative to studies using other methods. None of the mixed methods studies received a score higher than 1.

Among the seven studies exclusively focused on African-American men, four used qualitative approaches and none were mixed methods. The three quantitative studies were performed by the same lead author and their team.

DISCUSSION

Insufficient attention has been centered on the recruitment and retention of African-American men in research, as well

Table 2: Characteristics of reviewed studies and major findings

Authors	Year	Approach	Sample	Total	Men	Women	AA men/ women	#AA men	% men	% AA men	Score		Theoretical framework	Data collection method	Key findings			
Anderson <i>et al.</i>	1996	Qualitative	AA men and women with T2DM	34	12	22	34	12	35.3	35.3	3		US	Not reported	3	Focus group questions	Identify issues that could serve as topics for a series of educational videos portraying psychosocial issues of urban black individuals with diabetes	
El-Kebbi <i>et al.</i>	1996	Qualitative	AA adults with T2DM	45	-	-	45	-	-	Undete- rmined	3	1,322	AA adults	US	Not reported	3	Open-ended interview question guide	Potential barriers that too dietary adherence among low-income, urban black patients with T2DM
Resnick <i>et al.</i>	1998	Quantitative	AA men and women with T2DM	1,531	591	940	1,531	591	38.6	38.6	3	#REF!	Blacks andwhites	US	Not reported	3	Baseline interview questions and medical examination; data from three NHEFS follow- up interviews 1982-1984, 1987, and 1992	Associations of BMI and fat distribution with diabetes are modified by race
Anderson- Loftin and Moneyham	2000	Qualitative	AA adults with T2DM	22	-	-	22	-	-	Undete- rmined	3	#REF!		US	Nursing care management model (major concepts: Sick care, health- making, nurse-client relationship)	3	Questions during the focus group sessions	Symptom management; health choices; health and social services; characteristics of healthcare providers
Fitzgerald <i>et al.</i>	2000	Quantitative	AA and whites with T2DM	672	-	-	-	-	-	Undete- rmined	1			US	Not reported	1	Diabetes care profile (DCP)	Attitudes toward diabetes as measured by the 16 scales of the DCP differ by diabetes treatment modality and race/ethnicity
Hendricks and Hendricks	2000	Qualitative	AA men with T2DM	30	30	NA	30	30	100.0	100.0	3			US	Not reported	3	Educational classes; follow- up telephone call	A1c level; perception of general health; present diabetes knowledge; daily foot care; dietary patterns; exercise and medication patterns
Aljsem <i>et al.</i>	2001	Quantitative	AA men and women with T2DM	308	187	121	308	187	60.7	60.7	3			US	Health belief model; self-efficacy concept	1	Self-reported questionnaires	Relationships of diabetes-specific treatment barriers and self-efficacy with self- care behaviors

Table 2: Continued

Authors	Year	Approach	Sample	Total	Men	Women	AA men/ women	#AA men	% men	% AA men	Score	Theoretical framework	Data collection method	Key findings
Batts <i>et al.</i>	2001	Quantitative	AA adults with T2DM aged 35–75 years	119	–	–	–	–	–	Undetermined	3	US Not reported	3 2 baseline screening visits; blood pressure was obtained by taking the mean of 6 measurements over 2 visits	Priorities and needs for diabetes care among urban AA adults with T2DM
Egede and Bonadonna	2003	Qualitative	AA men and women with T2DM	39	22	17	39	22	56.4	56.4	3	US ISAS theory	3 Interview guide	Explore the concept of fatalism in relation to diabetes self-management behavior (SMB) in AAs with T2DM
Becker <i>et al.</i>	2004	Qualitative	AA adults living with > 1 chronic illnesses	167	–	–	167	–	–	Undetermined	3	US Not reported	3 Interviews	Cultural factors that underpinned the development of self-care processes and the use of these practices in daily life after diagnosis of a chronic illness
Chesla <i>et al.</i>	2004	Mixed methods	AA men and women with T2DM	159	63	96	159	63	39.6	39.6	3	US Not reported	3 Questionnaire; follow-up semistructured interview	Examine how family factors influence health and health practices in AA patients with T2DM
DeCoster and Cummings	2004	Mixed methods	AA and white adults with T2DM	34	5	9	14	5	–	14.7	3	US Not reported	3 Interviews; self-assessed diabetic control survey	T2DM coping methods; patient race and gender influenced coping style; relationship between coping and self-assessed diabetic control
Fisher <i>et al.</i>	2004	Qualitative	Ethnically diverse men with T2DM	271	271	NA	63	63	–	23.2	1	US Not reported	1 2 home visits to complete questionnaires and interviews; Center for Epidemiological Studies–Depression (CES–D) Scale	A1c; time since diagnosis; BMI; income; patient ratings of their current spousal relationship (general relationship satisfaction, negative conflict resolution, and shared activities)
Anderson-Loftin <i>et al.</i>	2005	Quantitative	AA adults with T2DM	97	–	–	97	–	–	Undetermined	3	US Not reported	3 Screening visit; experimental/control group; data collected at baseline and 6 months postintervention	A1c; lipids; BMI; medical history; medications and treatment; diabetes education; exercise

(Continued)

Table 2: Continued

Authors	Year	Approach	Sample	Total	Men	Women	AA men/ women	#AA men	% men	% AA men	Score	Theoretical framework	Data collection method	Key findings
Heisler <i>et al.</i>	2005	Quantitative	Ethnically diverse adults with T2DM	686	-	-	686	-	-	Undeter- mined	1	US Not reported	1 Survey	Frequency and correlates of knowing one's most recent HbA1c test result; whether knowing one's HbA1c value is associated with a more accurate assessment of diabetes control and better diabetes self-care understanding, self-efficacy, and behaviors related to glycemic control
Wenzel <i>et al.</i>	2005	Qualitative	AA adults with T2DM	7	-	-	7	-	-	Undeter- mined	3	US Not reported	3 Focus group interviews	Facilitators and barriers to self-care AAs living with T2DM; compare experiences men and women; solicit recommendations for programs of care
Baptiste-Roberts <i>et al.</i>	2006	Quantitative	AA men and women with T2DM	185	44	141	185	44	23.8	23.8	3	US Not reported	3 Baseline screening visits and survey	Describe perceived body image; relationship between perceived body image and BMI; examine the correlates of dissatisfaction with body image
Jacobs <i>et al.</i>	2006	Qualitative	AA men and women with T2DM	66	34	32	66	-	51.5	Undeter- mined	3	US Not reported	3 Open-ended discussion guide	Trust and distrust in physicians; consequences of trust and distrust in relationship to receipt of healthcare
Sarkar <i>et al.</i>	2006	Mixed methods	Ethnically diverse adults with T2DM	408	-	-	-	-	-	Undeter- mined	1	US Self-efficacy theory	1 Questionnaire	Self-efficacy; health literacy; SMBs
Utz <i>et al.</i>	2006	Quantitative	AA men and women with T2DM	73	31	42	73	31	42.5	42.5	3	US Not reported	3 Questions during focus groups sessions	Identify facilitators and barriers to self-managing T2DM among AAs living in rural communities; use of prescribed and alternative therapies; elicit recommendations for programs of diabetes care from participants

Table 2: Continued

Authors	Year	Approach	Sample	Total	Men	Women	AA men/ women	#AA men	% men	% AA men	Score	Theoretical framework	Data collection method	Key findings
DeWalt <i>et al.</i>	2007	Mixed methods	AA and whites with T2DM	268	-	-	-	-	-	Undete- rmined	1	US Not reported	1 Questionnaire	A1c; literacy; trust
Liburd <i>et al.</i>	2007	Qualitative	AA men with T2DM	16	16	NA	16	16	100.0	100.0	3	US Not reported	3 Interviews	Themes that emerged in illness narratives of a small sample of AA men living with T2DM; lived experience of Black manhood and masculinity and its intersection with the challenges of diabetes self-management
Polzer	2007	Qualitative	AA men and women with T2DM	29	10	19	29	10	34.5	34.5	3	US Grounded theory	3 Interviews	Asking participants what it was like for them taking care of their diabetes and how their spritual beliefs and practices affected their self- management
Polzer and Miles	2007	Qualitative	AA men and women with T2DM	29	10	19	29	10	34.5	34.5	3	US Grounded theory	3 Interview questions	How spirituality affects self-management of T2DM
Jones <i>et al.</i>	2008	Mixed methods	Rural AAs with T2DM	21	-	-	21	-	-	Undete- rmined	3	US Not reported	3 Group sessions to obtain information about diabetes and family/peer support	Impact of family and friends on the management of persons with diabetes and their willingness to be involved in a culturally tailored program
Peek <i>et al.</i>	2008	Qualitative	AA adults with T2DM	48	-	-	48	-	-	Undete- rmined	3	US Interview guides created based on Theory of Planned Behavior, Ecological Model, and Shared Decision Making Model	3 Topic guides for in-depth interviews; focus groups	Patient definitions and perceptions of shared decision making; barriers and facilitators of SDM; perceived impact of race/culture on SDM

(Continued)

Table 2: Continued

Authors	Year	Approach	Sample	Total	Men	Women	AA men/ women	#AA men	% men	% AA men	Score	Theoretical framework	Data collection method	Key findings
Rosland <i>et al.</i>	2008	Mixed methods	AA adults with T2DM	94	-	-	94	-	-	Undete- rmined	1	US Not reported	1 Suveys andquestionnaire	Sociodemographics; health status; A1c levels; social support from family and friends; diabetes SMBs; physical activity; diabetes care self-efficacy,and depressive symptoms
Tang <i>et al.</i>	2008	Mixed methods	AA adults with T2DM	89	-	-	89	-	-	Undete- rmined	3	US Symbolic interaction theory	3 Survey	Diabetes-related social support; medication/ insulin use; foot care; self-monitoring of blood glucose; physical activity (PA); dietary patterns; diabetes specific quality of life
Duru <i>et al.</i>	2009	Quantitative	AA/ blacks and whites with diabetes	764	-	-	205	-	-	Undete- rmined	3	US Not reported	3 Analysis used data from a Translating Research Into Action for Diabetes (TRIAD) questionnaire	Whether several risk factors(Hb A1c; systolic blood pressure; higher low-density lipoprotein) were more strongly associated with poor control of multiple intermediate outcomes among blacks with diabetes than among similar whites
Samuel- Hodge <i>et al.</i>	2009	Quantitative	AA adults with T2DM	117	-	-	117	-	-	Undete- rmined	3	US Not reported	3 Physiologic measures; PA monitor; food questionnaire; diabetes knowledge scale	A1c; body weight; blood pressure; PA; food frequency; diabetes knowledge
Thompson <i>et al.</i>	2009	Qualitative	AA men with T2DM	43	43	0	43	43	100.0	100.0	3	US Non reported	3 Focus groups interviews	What healthinformation and needs do AA men have? How do AA men describe their efforts to obtain health information? What factors facilitate or inhibit health- informationseeking by AA men?
Chlebowy <i>et al.</i>	2010	Mixed methods	AA adults with T2DM	38	-	-	38	-	-	Undete- rmined	3	US Not reported	3 Interview questions in focus group	Facilitators and barriers to self-management of T2DM

Table 2: Continued

Authors	Year	Approach	Sample	Total	Men	Women	AA men/ women	#AA men	% men	% AA men	Score		Theoretical framework	Data collection method	Key findings		
Hammond	2010	Quantitative	AA men aged 18 and older	216	216	0	216	216	100.0	100.0	3	Is it same sample?	US	Not reported	3	Survey	Background factors; masculine role identity/ socialization factors; recent healthcare experiences; recent socioenvironmental experiences; healthcare system outcome expectations
Hammond <i>et al.</i>	2010	Quantitative	AA men aged 20 and older	610	610	0	610	610	100.0	100.0	3		US	Not reported	3	Survey	Associations between traditional masculinity norms, medical mistrust, and preventive health services delays
Hammond <i>et al.</i>	2010	Quantitative	AA men aged 18 and older	386	386	0	389	386	100.0	100.0	3		US	Andersen Behavioral Model; Theory of Reasoned Action	3	Survey	Demographic factors; physical/mental health status; traditional male norms; health- promoting male subjective norms; health value and mistrust
Walker <i>et al.</i>	2010	Quantitative	AA adults age ≤ 40 with T2DM	201	-	-	201	-	-	Undete- rmined	3		US	Health Promotion Model; Transthe- oretical Model	3	Counseling visits; group sessions; monthly phone contacts; encour-agement postcards	Diabetes complications; risk factors; proper diet; recommendations for exercise; medications; monitoring blood glucose
McCleary- Jones	2011	Quantitative	AA men and women with T2DM	50	12	38	50	-	24.0	24.0	3		US	Health literacy framework; self-efficacy component of Bandura's Social Cognitive Theory	3	Rapid estimate of adult literacy in medicine; diabetes knowledge test; diabetes self- efficacy scale; summary of diabetes self- care activities	Health literacy and its association with diabetes knowledge, perceived self-efficacy and disease self- management
Onwudiwe <i>et al.</i>	2011	Qualitative	AA patients with diabetes	31	-	-	31	-	-	Undete- rmined	1		US	Not reported	1	Structured topic guide consisting of open ended questions	Explore patient's perceptions about barriers to self- management of diabetes
Peek <i>et al.</i>	2011	Mixed methods	AA adults with T2DM	974	-	-	345	-	-	Undete- rmined	1		US	Not reported	1	Data from cross-sectional survey	Racial differences exist in patient preferences for shared decision making

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(Continued)

Table 2: Continued

Authors	Year	Approach	Sample	Total	Men	Women	AA men/ women	#AA men	% men	% AA men	Score	Theoretical framework	Data collection method	Key findings
Bhattacharya	2012	Qualitative	AA men and women living with T2DM	31	15	16	31	-	48.4	48.4	3	US Self-Determination Theory; Grounded Theory	3 Interview	Psychosocial and emotional issues on being diagnosed with T2DM.
Hooker <i>et al.</i>	2012	Qualitative	AA men aged 45-88	49	49	-	49	-	100.0	100.0	3	US Not reported	3 One-on-one interview	Ascertain perspectives on masculinity in AA men aged 45-84 years; determine if these perspectives vary by age or PA behavior; identify the potential influence these views may have on health; distinguish how these perspectives may be applicable to engaging older AA men in community-based health promotion
				9,057	2,657	1,512	6,177	2,339	25.8					
		Total sample size	AA men											
4 qual and 2 quant (Hammond)		1,350	1,350											
		413 *REF!	243											

AA: African American, T2DM: Type 2 diabetes mellitus, NA: Not applicable, NHEFS: National health epidemiologic follow-up study, BMI: Body mass index, ISAS: Individual symbols audience situation

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as barriers to entry into studies, therefore resulting in the current gap in research literature. The objective of this study was to analyze the research literature in order to ascertain the extent to which African-American men are included in empirical studies of type 2 diabetes SCM. Our results reveal an abysmally low number of studies targeting African-American men, as well as a low number and proportion of African-American men comprising the limited number of studies.

More than half of the seven published studies exclusively focused on African-American men utilize qualitative approaches. While qualitative methods are not problematic, and indeed are critical for exploratory phases of understanding phenomenon, it also is an indicator of the slow progress being made toward understanding type-2 diabetes management issues specific to African-American men that have not yet gone beyond exploration.

Studies were found that included African-American men, but there were several for which we were unable to ascertain their actual numbers or proportion. This was due largely to the lack of details in the methods sections describing recruitment protocols and final samples, as well as in the results sections of these various papers. One reason for the lack of information may be that obtaining African-American men in particular was not the aim, but rather the outcome of achieving a diverse sample. Other reasons may be word limits faced by authors, as they struggle to include critical information in a constrained amount of space. In either of these cases, it is understandable in such case why the details would not be included. Nevertheless, the lack of information still points to the paucity of information regarding African-American men as they manage their type-2 diabetes.

The participation and inclusion of African-American men in public health research studies is imperative for addressing health disparities among this population. Nonetheless, for many different reasons, participation is low in many research studies.^[32] Distrust of researchers by many African Americans poses a well-documented, serious challenge to investigator efforts to meet the mandates that require inclusion of minorities in research set out by the National Institutes of Health (NIH), the federal agency in the US that funds a significant amount of biomedical and public health research and sets the national research agenda. Gamble (1997) asserts that the history of medical experimentation on African-Americans during slavery laid the foundation of distrust.^[20]

Historically, nonparticipation of African-Americans in research has been linked to the history of racism in medical

research.^[20,24,33-37] The most powerful example of this is the Tuskegee Syphilis Study. For many black men, the Tuskegee study became a symbol of their mistreatment by the medical establishment, a metaphor for deceit, conspiracy, malpractice, and neglect, if not outright racial genocide.^[38] In regards to recruitment, researchers would do well to solicit and incorporate the suggestions of African-American community members and potential participants in designing research protocols and recruitment strategies. The model of community consent and a collaborative relationship with the population under investigation is not new, and its use has been described in the United States^[8,39-41] as well as international communities.^[42] The challenge that this poses to researchers however, are finding ways to adequately implement community consent in the African-American population in which the collective community can be valued as highly as the individual.

Notable examples of studies of this type include those published by Hammond and colleagues,^[25,43,44] in terms of sample size and representation of African-American men and the approaches used to recruit and retain their participants. Hammond has the largest sample of African-American men utilized in studies of this type, yet their work is not specific to type-2 diabetes. The work of Hammond and colleagues is to be commended given their unparalleled ability to recruit, retain, and follow hundreds of African-American men over time, and consequentially making meaningful contributions to the extant literature regarding African-American men and chronic disease. The problem for the remainder of the behavioral science and health promotion world is our inability to replicate and enhance what Hammond's team has accomplished. Until there is a sizeable cadre of researchers who are able to achieve similar success, progress toward meaningful new knowledge of type-2 will not be achieved.

Limitations

Implications of this study are that it offers a comprehensive view of various points of concentration for how often African-American men are included in research, and consequentially identifies gaps in the knowledge base in this area. Despite its usefulness, the review has several constraints that should be considered. It is possible articles were missed due to search strategies employed, or overlooked in the identification and screening process, which may cause the conclusions based upon the final criteria may be incorrect. We assert, however, that it is unlikely as we utilized the assistance of a medical reference librarian, with expertise in systematic literature searches and reviews, to validate our search protocol and findings. Another limitation is that this review focused on published

studies written in English. It is possible that studies about African-American men have been published in a language other than English, but we worked under the assumption that the likelihood was negligible. Third, this search was centered on African-American men in the United States, who are living with type 2 diabetes and excluded those with other chronic diseases. We believe this restriction is appropriate given the aims of the study. The search for publications was restricted to papers available between 1996 and 2012. Consequently, it is possible that papers published prior to 1996 may be missed. However, our preliminary investigation revealed very few publications related to diabetes self-management prior to 1996. This was due largely to the inability to easily self-monitor hemoglobin A1c levels until the mass availability of glucose monitoring strips in 1996.

Despite potential limitations, the review provides insight on guidance and direction for future research, identification of the difficulty of recruiting and barriers to participation in empirical research, and the need for developing culturally appropriate, effective recruitment strategies. These strategies should firmly address factors such as lack of minority researchers, socioeconomic status, physician reassurance, factors being studied, mistrust, and data confidentiality.

Implications for research and practice

Increasing the number of African-American male participants in empirical research requires an improved understanding of the factors affecting the decision to participate. Attention to sensitivity of information collected and collaboration with African-American investigators, colleges, universities, the medical sector, community members, and researchers may improve African-American male representation in empirical research studies. Also, strategies employed by Hammond and colleagues, and others like them should be replicated. Therefore, future research efforts should proactively address recruitment methods tailored to African-American men. Investigators would do well to solicit and incorporate the suggestions of African-American community members and potential participants in designing research protocols and recruitment strategies.^[16] The model of community consent and a collaborative relationship with the population under investigation is not new, and its use has been described in the United States^[8,39-41] as well as international communities.^[42] However, finding ways to effectively implement community consent, as a complement to individual consent, may be particularly important in African-American and other ethnic minority populations in

which the collective community can be valued as highly as the individual.

Not only might this inclusive approach lead to fewer failed efforts, it could help forge strong community partnerships; thereby, transcending the devastating effects of societal mistrust. Researchers should encourage open discourse on the past misuse of minority participants that generated the overall distrust of researchers and describe provisions that they have made to protect participants in their particular studies. The presence of institutional review boards has done little to alleviate fear and suspicion of research among racial/ethnic minorities,^[45,46] therefore, acknowledging institutional review board approval for a project is not sufficient. Researchers should also provide frank explanations for studies and initiatives that specifically target racial/ethnic minorities or that are likely to result in the disproportionate representation of racial/ethnic minorities among study participants.

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