Stress and t2dm among Black men

Abstract

This study used focus-group methodology to seek understanding about the unique influence of stress, gender, and culture on type-2 diabetes mellitus (t2dm) prevention and management among Black men. Twenty men from Iowa were recruited from a larger longitudinal study on Black families; each of these men participated in one of three focus groups. Ninety-five percent of the men in the sample were Black and all were either diagnosed with t2dm (n = 10), were pre-diabetic (n = 1), or had experience with t2dm through family and friends (n = 9). Our results revealed the existence of significant stress and some pessimism with respect to perceived ability to prevent and manage t2dm. The subjects made it clear that, while their families are primary sources of support for managing stress, including t2dm, they can also be a source of stress, particularly with respect to parenting. Black men had mixed opinions on their relationships with respect to their healthcare providers; some had positive, long-standing relationships while others reported little or no relationship with their providers. In response to life stress, Black men reported experiencing inadequate and disrupted sleep as well as consuming too much alcohol at times. Some of the participants reported engaging in physical activity to manage their stress. The study concluded that, as researchers develop t2dm prevention and management programs, they should continue to consider the unique role that stress in its various forms, plays in the lives of Black men.

Keywords: Black, men, type 2 diabetes, stress, gender, qualitative
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There are significant race-related disparities in type-2 diabetes mellitus (t2dm) with respect to rates of incidence, prevalence, and outcomes. Blacks are nearly 4 times as likely to be diagnosed with t2dm relative to Whites (Marshall, 2005) and they may also exhibit poorer t2dm management (Kirk, et al., 2005; Kirk et al., 2006), higher rates of t2dm-related morbidity (e.g., amputations, heart disease, stroke), and mortality (Centers for Disease Control and Prevention; CDC, 2011). In 2011, the age-adjusted prevalence of diagnosed t2dm per 100 individuals was highest among Black men (9.9), followed by Black women (9.0), White men (6.5), and White women (5.4) (CDC, 2013). Black men are affected by t2dm at earlier ages than other adults (Bell et al., 2010). After diagnosis, Black men experience 1.5 to 4 times the rate of blindness, renal disease, and limb amputations when compared to Black women and Whites, respectively (Bell et al., 2010; CDC, 2014).

The underlying reasons for the persistent t2dm disparities of Black men are not well understood (Jack, Gross, & Troutman, 2010) but a few explanations have been proposed. Stress appears to play a role in the onset and progression of t2dm (Pouwer, Kupper, & Adriannse, 2010) perhaps in part due to its negative influence on many important t2dm-related health behaviors, including diet, physical activity, metabolic control, and access to and quality of care, among others (Breland, McAndrew, Gross, & Leventhal, 2013; Chan, Gaskin, Dinwiddie, & McCleary, 2010; Wagner, Tennen, Feinn, & Finan, 2013). Stress has been shown to exacerbate depressive symptoms (Kendler, Karkowski, & Prescott, 1999) and further compromise the health of individuals with t2dm (Wagner, Abbott, Heapy, & Yong, 2009). Black men report higher rates of stress compared to their White counterparts (Sellers, Cherepanav, Hamner, Fryback, & Palta, 2013) and are more likely to have experienced stress attributable to racial discrimination compared to Black women (Moody-Ayers, Stewart, & Covinsky, 2005).
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There has also been a critical underrepresentation of Black men in research investigations examining the effectiveness of interventions aimed at t2dm prevention and management (Jack, et al., 2010). Although some interventions have helped individuals to enhance their self-care behaviors and better manage their t2dm (McGinnins, McGrady, Cox, & Grower-Dowling, 2005; Norris, Engelgau, Narayan, 2001; Surwit, et al., 2002), much of the published work on t2dm, including the nationally recognized Diabetes Prevention Program (DPP), have observed poorer outcomes among Blacks (DPP Research Group, 2004) and lower levels of participation among Black men specifically (Davis-Smith, 2007; Dodani, & Fields, 2010; West, Prewitt, Bursac, & Felix, 2008). The reasons for the lack of participation by Black men with t2dm are not well-described in the literature.

Previous studies using samples of women have been used to structure interventions for men, although the barriers to successfully managing t2dm may be qualitatively different between the genders (Jack et al., 2010). Current interventions, particularly those related to stress, may not be adequately tailored to the cultural and gender-based needs of Black men with t2dm. Socially-constructed masculine behaviors and attitudes may also negatively influence self-care behaviors (Jack, et al., 2010). Gender roles (e.g., strong focus on achieving and maintaining success) and masculinity may not only explain differences in the experience of stress between men and women (Moody-Ayers, et al., 2005) but may also help explain why some men seem less likely to engage in t2dm-related self-care behaviors (Liburd, Namageyo-Funa, Jack & Gregg, 2007; Jack, et al., 2010).

The purpose of this study was to seek understanding of the ways in which stress, gender, and culture uniquely influence t2dm prevention and management among Black men. To this end, focus groups were utilized to investigate these issues. Despite having higher rates of risk and
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poorer outcomes, Black men have up to now been underrepresented in t2dm research. This qualitative study addresses this underrepresentation by exploring unique experiences related to stress, gender, and culture among Black men affected by the disease.

Method

Participants

Participants were recruited from the Family and Community Health Study (FACHS), a large-scale longitudinal study of 889 Black families residing in rural, suburban, and metropolitan areas in Georgia and Iowa; the recruitment procedures are described in greater detail elsewhere (Cutrona, Russell, Hessling, Brown, & Murry, 2000). For this study, 20 Black men from the Iowa sample were recruited with the goal of understanding how their perspectives might inform the development of community-based interventions to prevent or manage t2dm and its associated complications. Particular attention was paid to the role of stress in the subjects’ lives. Focus groups were conducted to explore these issues because this method allowed for significant in-depth exploration of diverse perspectives in a cost-effective manner (Miles & Huberman, 1994).

Ninety-five percent of the men in our sample were Black (n = 19). One man was White but qualified for inclusion in the Iowa FACHS because he was married to a Black woman. All of the men had been affected by t2dm; half were diagnosed with t2dm (n = 10), one was pre-diabetic, and the others (n = 9) had experience with t2dm through family and friends. Their mean level of education was some amount of college/technical school (range was less than high school–advanced degree). Their mean level of individual income was $40,000 to $45,000 (range was less than $10,000–$75,000 to $100,000) (2 refused to provide information; See Table 1).

Procedures
In June 2013, men comprising the Iowa FACHS sample were contacted by both letter and telephone to inquire about their potential interest in participation in the focus groups. Interested participants were assigned to one of three focus groups based on their availability. The focus group meetings took place in a private YMCA meeting room in Des Moines, Iowa. Des Moines, the state capital of Iowa, is the most populated city in the state; though the city has a predominately White population, it has the largest population of Blacks in Iowa (The State Data Center of Iowa and the Commission on the Status of African Americans, 2015). The YMCA was chosen as a meeting place because it is a well-respected and centrally-located facility in the Des Moines community.

The facilitator for two of three groups was a Black male and a fourth-year undergraduate in the Department of Kinesiology. A few weeks prior to the focus group meetings, the facilitator received one hour of training to gain familiarity with the research protocol. The second author (TRH), a Black female faculty member with advanced training in qualitative methods, trained the facilitator. She also observed the activity in the two focus groups and played the supportive role of keeping notes and taping the discussions. The third focus group was led by the second author (TRH) in collaboration with a postdoctoral fellow who was also a Black female. Each group was comprised of approximately 6 to 7 men and each group session lasted for approximately 90 minutes.

Each focus group session began with the facilitators introducing themselves to the men and briefly describing the study’s purpose. The Informed Consent statement was read aloud and the facilitators responded to questions about this statement before signatures were obtained from all men. The men then introduced themselves to one another. A diabetic-friendly meal was
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provided and each participant was paid $50 for his participation. Study procedures complied with Iowa State University’s Institutional Review Board guidelines.

The purpose of the study was to understand the ways in which stress, gender, and culture may uniquely influence t2dm prevention and management among Black men. The focus group questions (see Table 2) related to t2dm examined the meaning and experience of t2dm within the context of being a Black male (e.g., What does it mean for a Black man to be diabetic?). The questions related to stress asked Black men to reflect on their experienced levels of stress (e.g., Can you comment on the level of stress in your life?) and their impact on important health outcomes like sleep (e.g., How adequate would you say your sleep has been?). The questions related to diabetes prevention and management focused on diet and included food choices, meal planning and preparation, grocery shopping, and family legacy for each of these areas of t2dm (e.g., What are some barriers to consuming healthy foods? Who most often prepares the food you eat?), as well as physical activity questions that explored the amounts and types of such activity as well as barriers to engaging in regular exercise (e.g., What kind of exercise do you enjoy?). Through these questions men were asked to reflect on how their experiences were impacted by their various roles as Black men and possibly influenced their diabetes prevention or management attempts.

Data Analysis

The first author used content analysis procedures to assess, categorize, and interpret the data (Miles & Huberman, 1994). She independently evaluated, compared, and contrasted data and developed a list of emerging data themes (Orchard et al., 2005). The second and third authors carefully listened to the focus group audio recordings and independently developed a list of major themes discussed in the group. The second and third authors also reviewed the first
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author's list of themes to ensure that the first author adequately captured the insights and perspectives of the participants. The second and third author agreed that the themes and results presented in the following sections accurately describe the focus group highlights and contributed suggestions on how to more fully explain each theme using insights obtained directly through focus-group experiences and/or listening to focus-group recordings.

Results

The conversations among participants made it clear that the sources of stress for Black men are many and varied. Overall, five themes related to stress, gender, and culture emerged: (1) diagnosis and management of t2dm, (2) parenting and family, (3) health, (4) sleep, and (5) stress responses.

**Diagnosis and management of t2dm.** A diagnosis of t2dm came as no surprise to many of the men since they had several previously-diagnosed family members. A few men expressed a high degree of fatalism concerning the diagnosis of t2dm. One participant, for example, noted the reality that all persons will face death saying: “In life, something will get you. You will get got. And you can’t beat that.” The legacy of t2dm appeared to be a stressor for many of the men who spoke at length about family members dying young as a result of complications of t2dm (e.g., amputations, peripheral neuropathy). In recalling their own diagnosis of t2dm, most men stated that they became aware of their t2dm not through regular medical check-ups, but only when their symptoms had become severe and resulted in a medical emergency. In recalling his diagnosis of t2dm another participant stated: “I was not feeling like myself. I was Superman. It was a wake-up call. My blood sugar was 835.” Others described tingling in their left arm, difficulty in seeing, feeling shaky, and experiencing night sweats as indications of t2dm that
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were later confirmed by their medical care providers. In general, routine medical care had not been sought by the men in our focus group.

When one man in one of the focus groups encouraged others to take responsibility for their lives and health, there was much agreement within the group. The men recognized that living stress-free is one way to prevent or manage t2dm. “As Black men we take up the Superman cape and we don’t realize that we are vulnerable to particular things.” The men were very aware of the importance of health behaviors (i.e., diet and physical activity) in the management of t2dm but were challenged to regularly engage in them. Several of the men admitted to growing up in poverty as children who were typically directed to eat everything on their plates. Many of them mentioned that during their childhood their families were unable to afford healthy foods such as fresh fruits, vegetables, and lean meats; family meals tended toward fried foods or “soul-food,” high in calories, salt, fat, and sugar. Reflecting on how these early experiences influenced their food choices as adults, one man stated: “If you are a [Black] man you should be able to eat all of the food on your plate.” Even though they recognized the types of food that they needed to eliminate from their diets, doing so was difficult because they had become so accustomed to them. “After I was diagnosed, I started taking pills but kept drinking soda. Then I had a TIA [transient ischemic attack], the whole left side of my body went numb. It was a wake-up call. I need to pay attention to what I am doing.” Eating healthy food was a source of stress in that many of the healthiest foods were simply not affordable and/or otherwise accessible. “We have a smaller [local grocery store chain] in our [predominantly Black] neighborhood with nowhere near the variety [of foods] that the other locations for this grocery chain offers in other areas [of the city].”
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**Parenting and family.** One large source of stress for the Black men was their need to care for multiple family members, including adult children and grandchildren, who have returned to the family home. Men did not feel empowered to speak with their wives about the challenges of such living arrangements. A poignant moment came when a man stated: “*Family looks to you because you are the head of your family and t2dm can make it difficult to fulfill duties. Everyone in the family comes to us. We have a very large family living in one house.*” This man and others commented on the stress created by adult children returning with their children (and sometimes their adult friends) to live in his home. He noted that his adult children do not contribute to the finances or important chores in the household. “*I come home after 10 hours of work and they [adult children] are all in their pj’s. Then they get offended when I ask them to clean!*” One man reflected on the paradox of being a “king of the castle,” providing food and shelter for his returned adult child while at the same time not feeling empowered to ask them to contribute to the household or find other housing, and stated: “*How do you kick your own daughter and grandchild out?*” Another man agreed, commenting: “*Manhood says you are supposed to take care of everyone.*” It was clear from these comments that parenting can represent a primary source of stress for Black men. Finally, several focus-group participants spoke at length about the paradox that seems inherent to the role of head of household. On the one hand, the Black men described themselves as “kings of their castle” who are the primary breadwinners and decision-makers, but have little control over who lives in their homes, over household schedules, or over food choices. During the discussion on making t2dm-friendly food choices, many of the participants agreed when one man stated: “*I don’t read labels. My wife does all of the grocery shopping.*”
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**Health.** The men reported mixed reviews with respect to their health care. Some spoke highly of the care that they received from their physicians, perhaps due in part to long-standing relationships. Having a personal relationship with one’s physician promoting feelings of ease and comfort was noted as a key to a good patient-provider relationship. Other men expressed frustration with their physicians. One man’s frustration led him to self-manage his medication: “They have a plan for putting me on the medicine but never a plan for getting me off. That ain’t gonna work. So, I made my own plan for getting me off.” Others admitted to completely avoiding health care, and their reasons for doing so were varied but appeared to result in part from long-standing histories of not going to the doctor regularly during childhood. For instance, there was much agreement when one man asserted that he did not go to the doctor as child and only sought health care when he was in his late 40s or 50s. “I was Superman. I (thought) I ain’t ever going to the doctor. It takes drastic things to happen to you to get your attention.” Some men noted that they had avoided health care because they were either uninsured or under-insured during some periods. Many of the men in the focus groups applauded the Affordable Care Act since it will offer health care coverage to individuals previously without such coverage.

**Sleep.** Our focus groups revealed that stress associated with parenting, finances, and health undermined participants’ sleep quality. For example, in making attempts to financially support multiple members of their households, some of the men mentioned that they were working multiple jobs, and sometimes odd shifts, to make ends meet, often resulting in reduced or disturbed sleep. Many men reported getting just 3 or 4 hours of sleep per night as a result of their work schedules. One man stated that he got 7 hours of sleep each evening but admitted to taking regular 12 hour naps on the weekends. One man admitted that, after a long week of work, “I nap at my son’s basketball games to make up on sleep.”
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Disrupted or inadequate sleep was a common symptom of some of the illnesses the men were coping with. Some of them reported disturbed sleep because their t2dm or other health-related concerns (e.g., enlarged prostates) caused them to get up very often to use the bathroom. Managing other illnesses such as hypertension or sleep apnea were noted as sources of stress; helping children and other close family members manage life stress (e.g., unemployment, chronic illnesses) were others. One man shared, “I was diagnosed with t2dm and the same week my son was diagnosed with cancer. I was totally focused on my child’s health for 3 years. I did not begin treatment for my t2dm for at least a good year or more. My son was our complete focus.” It became clear that Black men have so many other competing demands that their personal health and well-being is often last on their list of priorities.

**Stress responses.** Many of the men admitted to engaging in negative health behaviors in response to the stress they face daily. For instance, some admitted to consuming large amounts of beer and hard liquor, although some stated that they had replaced alcohol with soda. Some reported mood changes (e.g., depression, impatience) in response to stress and elevated blood sugar levels attributable to t2dm (e.g., “My wife says I am aggressive and edgy.”). One man reflected on his exercise routine and stated that he engaged in regular physical activity as a way of relieving stress. He noted that the benefits of using physical activity to manage stress included: “Feeling better, reducing stress, improving my lungs, controlling weight, and I don’t get colds or get sick.” Yet, despite the acknowledged benefits of engaging in regular physical activity, the responsibilities of marriage and family can make engaging in such beneficial activity challenging. Most of the men admitted to being very active throughout their youth; physical activity such as playing ball and riding bikes was very important to them while they were growing up. The men highlighted the responsibilities that come with adulthood and caring for
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family as primary reasons for the reduction or elimination of physical activity in their later years.

“It’s [been] tougher to exercise over the years. Life happens.” There was much agreement when one man stated: “It’s hard to exercise when you have children. They have minds of their own. But you need time for you and should make yourself a priority.”

Discussion

The purpose of this focus-group study was to seek understanding of the ways in which stress, gender, and culture uniquely influence t2dm prevention and management among Black men. While some of the Black men recognized that managing stress is important to the prevention and management of t2dm, there was also a notable amount of fatalism. Some men felt that there was little that they could do to prevent or manage the disease, a sentiment that has been identified in other published studies (Breland, et al., 2013). Clearly, interventions that are tailored for Black men should educate them on the realities of the illness; t2dm is a chronic disease that can be prevented or managed through intensive lifestyle changes involving both diet and exercise (Orchard et al., 2005; Norris et al., 2001). Interventions that include information on how to prepare favorite family recipes in a healthy, yet culturally appropriate and affordable manner would also be welcomed (Samuel-Hodge et al., 2006).

For the Black men in our focus groups, the family unit is a primary source of support for managing stress, including challenges associated with t2dm. Clearly, a t2dm diagnosis affects families and not just individuals (Chesla, et al., 2004). Female spouses and partners manage many aspects of t2dm and adult children may also assist with caregiving and support (Savoca & Miller, 2001). While the men in our groups made it clear that they rely on their families in coping with stress, their families can also be a source of stress. While many Black men self-identify as heads of households, they often do not feel empowered to communicate their wants...
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and needs to their spouses (Hammond, 2012). Interventions are needed within existing family networks to bolster and encourage adaptive coping and support, while at the same time giving men the tools to manage the more challenging aspects of their relationships. Black men may benefit from learning skills such as assertiveness training and setting boundaries to help them become more effective communicators (Duckworth & Mercer, 2006). At the same time, given the magnitude of family and financial responsibilities, interventions must be both affordable and time-limited so as not to further strain family resources and schedules (West, et al., 2008). Indeed, our focus group participants revealed that they frequently compromised sleep and exercise to meet the demands of their lives, and sometimes used alcohol in excess to cope with their stressors. T2dm interventions will therefore need to emphasize the need for adequate sleep and moderation in alcohol consumption, since both are linked to t2dm-related health outcomes (Emanuele, Swade, & Emanuele, 1998; Knuston, Ryden, Mander, & Van Cauter, 2006; Zizi, et al., 2012). Resiliency-based interventions may hold promise for Black men since they empower individuals to see stressful situations as challenges and thereby provide opportunities for personal growth, positively influencing t2dm-related outcomes (e.g., hba1c, BMI; Steinhardt, Mamerow, Brown, & Jolly, 2009).

The men in our focus groups expressed mixed feelings with regard to their relationships with and quality of care provided by their physicians. Many of the participants became aware of their illnesses only after experiencing a medical emergency, calling into question both the frequency and quality of their routine preventive medical care. The study took place in Iowa, predominately White and with a relatively small Black population largely residing in select urban areas (The State Data Center of Iowa and the Iowa Commission on the Status of African-Americans, 2015) where access to goods and services, including health care, could be a
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challenge. Interestingly, none of the men reported experiencing racial discrimination in health care settings, contrary to findings noted in other published research (Peek, Wagner, Tang, Baker, & Chin, 2011). Indeed, many were pleased with their relationship with their providers. Others, however, were frustrated with their care, perhaps due to poor communication, a lack of experience, or lack of access. Fortunately, both patients and health care providers can be taught strategies to help them communicate more effectively (McEnroe-Petitte, 2012; Post, Cegala, & Marinelli, 2001; Post, Cegala, & Miser, 2002). Type-2 diabetes prevention or management programs for Black men should incorporate such strategies into their curricula.

The limitations of this study include the relatively small sample size and the recruitment of participants from a single longitudinal study. Additionally, opinions and perspectives of the participants may be different from those who were unwilling to attend. Our focus group participants were overwhelmingly Black; there was only one White participant, and it seems possible that this man’s perspectives and experiences were not identical to the Black men in the study. However, this man was a part of a Black family and thus knowledgeable about the issues discussed. He also made an equal contribution to the discussions.

**Future Implications**

T2DM prevention and management programs tailored to the needs of Black men are sorely needed. The number of existing published interventions for Blacks is relatively small, with the best outcomes observed among older Black women (Samuel-Hodge, Johnson, Braxton, & Lackey, 2014). A need remains for the development of interventions that consider the many roles that Black men occupy (e.g., husband, father, employee) and the stress that may accompany gender-role conflicts and responsibilities (Wester, Vogel, Wei, & McLain, 2006). The use of ecological models like the Gender-Centered Diabetes Management Education Ecological
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Framework (Jack, Toston, Jack, & Sims, 2008), that articulate how gender-, individual- and family-level factors affect short-term, immediate, and long-term outcomes related to health behaviors, may assist both health-care providers and researchers in integrating masculinity into diabetes management and education research. As researchers develop prevention and management programs, they should consider the unique role that gender, stress, and culture play in the lives of Black men. Doing so will help ensure that future interventions are successful in eliminating the disparities in t2dm prevalence, incidence, and outcomes among racial and gender groups.
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