Social Determinants of Diabetes Self-Management, and Diabetes Health Care Utilization in African American and Latino Men with Type 2 Diabetes

by

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Dedication

For my mother Lisa, my brother Robert & Pedro the Cat:
No matter what happens I know you'll always be there.

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Abstract

Diabetes is among one of the leading causes of death in the United States. This dissertation seeks to identify psychosocial and structural factors that influence self-care and health care utilization in Latino and African American men with diabetes on regional and national levels. My dissertation also explores how gender identity is conceptualized among Latino and African American men with diabetes, and examines how conceptualizations of masculinity influence self-care and health care utilization behaviors. Three empirical chapters examined different aspects of these topics. Chapter two identified differences in predictors of diabetes self-management and health care use in Latinos and African Americans with type 2 diabetes participating in a Detroit-based diabetes lifestyle intervention. Regression model results showed that older age increased diabetes self-management, while low levels of diabetes knowledge significantly decreased it, but these associations did not exist for health care utilization. Chapter three used data collected from three focus groups with African American and Latino men with type 2 diabetes to explore structural and psychosocial factors that influence health care use and self-management. Three themes emerged that characterize gender identity and its relationship to health behavior in men: 1) men's beliefs about being men; 2) manhood's influence on health behavior; and 3) men's role in diabetes education. Results suggest that the way men define gender roles may have implications for how they engage in their care. Chapter four explored whether social support and social integration mediate or buffer the relationship between race and health care utilization among U.S. men, using cross-sectional data from the 2001 National Health Interview Survey. My findings showed that non-Hispanic black men with high levels of social integration were less likely to forego care than their non-Hispanic white counterparts with high social integration. Also, non-Hispanic black men who did not attend church had higher odds of foregoing care compared to men Hispanic and non-Hispanic white men who did attend church services. The implications of my work highlight a need for more research on the direct impact of masculine roles, social integration and heterogeneity in predictors of diabetes self-management versus health care use on diabetes care for men.

Word Count: 345

Chapter 1

Introduction

Diabetes is a highly prevalent and damaging disease. It is one of the leading causes of death in the United States, and according to the Center for Disease Control and Prevention (CDC) 25.8 million Americans (8.3% of the U.S. population) live with a diabetes diagnosis. Estimates also suggest that approximately 7 million Americans have undiagnosed diabetes (Centers for Disease Control and Prevention, 2012). Diabetes also increases the risk for other health conditions such as heart disease and stroke and is the leading cause of kidney failure, non-traumatic lower-limb amputation and new cases of blindness in adults in the U.S (Centers for Disease Control and Prevention, 2012). Understanding factors that could increase self-care and health care use among those at high risk of diabetes in the U.S. could mitigate some of these serious costs to individuals and society.

Several factors that predict health care use and self-care have been identified in the social work, sociology and public health literatures, but a more focused examination of psychosocial factors that predict these outcomes and investigation into possible differences in predictors of self-care and health care use between African American and Latino men is needed. The overall objective of this dissertation is to identify individual and structural factors that influence self-care and health care utilization among Latino and African American men with diabetes. My dissertation seeks to understand the barriers and facilitators that allow for better self-care and increased health care use among men of color and differences in these between men of color in terms of race/ethnicity both on a regional and national scale. Use of regional data is critical for tailoring findings to specific populations and holding constant a range of measureable and unmeasured factors that vary across the US, while national data makes my study findings more generalizable. Further, my dissertation will explore how gender identity – specifically masculinity – is conceptualized among Latino and African American men with diabetes, and will examine how these conceptualizations of masculinity influence self-care and health care utilization behaviors.

Dissertation Contributions

Among men in the United States, the highest prevalence of diagnosed diabetes is found in African American men (8.5%) and Mexican men (9.7%), with lower levels among white men (6.3%) (Centers for Disease Control and Prevention, 2009). Even though this disparity is notable, racial/ethnic differences in health and health seeking behaviors of Latino and African American men have not been studied extensively as possible explanatory factors. In terms of risk factors, discrepancies in quality of care and access have been reported for low-income African Americans and Latinos, specifically if they utilize public health insurance or are uninsured. However, there is little information available about the factors that might differentiate men of color from non-Hispanic whites in terms of their diabetes self care or health care use. As a result, this dissertation will include an analysis of differences in the predictors of health care use and/or diabetes self-management among Latinos and African Americans with diabetes. Some literature suggests that factors like social support or notions of masculinity could vary among men of color and may influence these diabetes-relevant outcomes. This dissertation will contribute to the literature by providing a more in-depth examination of social determinants of self-care and health care use that differentiate African American, Latino and non-Hispanic white men. I will also examine some of the mechanisms through which gender perspectives and the larger social environment function to influence self-care and health care use behaviors in these populations.

Theoretical Framework

The Andersen Health Behavior Model (AHBM) (Andersen, 1995; Andersen & Newman, 1973) is a theoretical framework that can be used to elucidate the relationship between determinants of behavior, specifically environment and population characteristics, and self-care and health service utilization (see Figure 1.1). The AHBM acknowledges the role of the external environment (e.g. social, political and economic structures), in addition to the interaction between individual level health behaviors (e.g. self care, diet and exercise) and health care utilization and its influence on health outcomes (Andersen, 1995, p.6). The AHBM has also been used in previous research to study diabetes-related health behaviors and health outcomes (Balkrishnan et al., 2003). According the AHBM, population characteristics are fall into three categories: predisposing characteristics, enabling characteristics, and need variables. Predisposing characteristics are those that are present in an individual before health behavior decisions are made, such as race and ethnicity. Enabling characteristics are resources that can impact access to health care services and personal health choices; and need variables are the degree of need for services based on illness, degree of symptoms and/or perceived need.

[Insert Figure 1.1 Here]

BACKGROUND

In this section of the dissertation, I review the relevant literature, tracing the paths in Figure 1.2. I focus on key studies and associations, rather than providing an exhaustive review, and include literature that has considered racial/ethnic differences in these key associations where it is available. It is important to note that race/ethnicity in this dissertation is viewed as a determinant of levels of psychosocial factors, material resources and mediators in the conceptual model. I begin with the psychosocial enabling factors and then move to the more proximal factors. First, I discuss the direct association between the enabling factors (e.g., social networks) and my key outcomes of interest (e.g., self care and health care use). After this background literature review, I present the three studies I plan to complete, ending with a discussion of potential contributions to the fields of social work and sociology.

[Insert Figure 1.2 Here]

Diabetes Self-Care and Health Care Use Defined

Self-care behaviors can generally be defined as actions carried out by individuals on behalf of their own health. Diabetes self-care is typically defined as maintaining control of glucose levels, medication adherence, diet, exercise, and checking feet for sores (Hearnshaw & Lindenmeyer, 2006). In terms of health care use for diabetes specifically, persons with a new diagnosis of diabetes should receive an initial evaluation and moving forward, medical care from an interdisciplinary team including physicians, nurses, mental health professionals and dieticians (American Diabetes Association, 2010). Further, persons with diabetes should receive a blood glucose test administered by their health care provider every 3 months and should see a physician for a follow-up appointment every 6 months at a minimum or more frequently depending on stability of the disease (Turner, Williams, Taichman, & Vijan, 2010).

Psychosocial Factors

Social Support

The role of social support in diabetes care has garnered more attention recently in the research community. Generally, social support can fall into one of four categories: emotional (e.g., affection, acceptance), instrumental (e.g. financial support, self-management assistance), informational (e.g. education, information, advice) and affirmational (e.g. validation of self-care behaviors) (Tang, Brown, Funnell, & Anderson, 2008; Taylor & Rickabaugh, 1999). However, much variation exists in how social support has been examined in research (Tang et al., 2008). Studies of social support in diabetes care have measured social support via satisfaction with support, sources of support, types of support, size of support network and quantity of support received. Further, in studies examining multiple dimensions of social support simultaneously, positive outcomes for persons with diabetes have been reported (Tang et al., 2008).

Social support plays a critical role in facilitating self-care and health care use behaviors among persons with diabetes (DiMatteo, 2004). In terms of diabetes self-care, social support in the form of practical and emotional aid from family and friend relationships has been found to have a positive impact on recommended diabetes self-care behaviors such as regular glucose monitoring, and increased diet and physical activity (Gallant, 2003; Lloyd, Wing, Orchard, & Becker, 1993; Rosland et al., 2008; Schafer, McCaul, & Glasgow, 1986; Shenkel, Rogers, Perfetto, & Levin, 1985;

Sherbourne, Hays, Ordway, DiMatteo, & Kravitz, 1992; Tillotson & Smith, 1996). In terms of health care use, social support has been found in multiple studies to increase medical care utilization (Broadhead, Gehlbach, & Kaplan, 1989; Kouzis & Eaton, 1998).

Type and availability of social support differ both by gender and race/ethnicity, which can have significant consequences for diabetes management and health care use in African American and Latino men. While my dissertation does not focus on differences between men and women, it is important to note that social support is influenced by gender, specifically, differences in social support have been found between men and women (Treharne, Lyons, & Tupling, 2001). Gender-related values and beliefs play a key role in how men and women create, maintain and participate in social support networks with "maleness" emphasizing independence and "femaleness" promoting the expression of emotion (Stokes & Wilson, 1984; Straub, 2003). This translates into the tendency for men to be more self-reliant and women to seek support, which has resulted in women benefiting more from social support compared to men when it comes to health (Denton & Walters, 1999).

Social support has been shown to increase diabetes self-care and health care use among Latinos and African Americans. A study of predictors of social support, diabetes diagnosis acceptance, health-promoting behaviors, and glycemic index utilized face-to-face interviews with 63 African Americans with type 2 diabetes and revealed that physical functioning and social support can lead to acceptance of a diabetes diagnosis and increased health-promoting behaviors (McDonald, Wykle, Misra, Suwonnaroop, & Burant, 2002). Importantly though, African Americans are more likely to rely on informal social support networks from relatives compared to non-Hispanic whites (Ford, Tilley, & McDonald, 1998). Similarly, a cross-sectional analysis of 95 Hispanic adults living with diabetes found that persons in the sample typically had large informal networks made up predominately of family members (Gleeson-Kreig, Bernal, & Woolley, 2002). Another study of 76 Mexican American individuals living with type 2 diabetes found that high levels of informal social support resulted in increased diabetes management (Carranza & LeBaron, 2004). This research shows that social support networks may differ by race/ethnicity and thus may influence health management and utilization outcomes differently based on race. Because social support is so critical, it is important to further examine how different forms of social support may impact critical outcomes such as diabetes self-care and health care use among African American and Latino men.

Diabetes Knowledge

Similarly, knowledge of diabetes has a direct relationship with self-management behaviors and health care use (Bruce, Davis & Davis, 2003). Diabetes education programs, diabetes-related visits to health care professionals and self-monitoring of blood glucose (SMBG) are associated with diabetes knowledge in patients with type 2 diabetes (Bruce, Davis & Davis, 2003). One study found that respondents who engaged in SMBG reported better diabetes care understanding and assessment of their glycemic control than those who did not. Further, respondents who reported high evaluations of provider thoroughness of communication were more likely to engage in SMBG (Heisler et al., 2005). Research discusses health literacy as a key variable in determining an individual’s ability to understand prescribed self-care behaviors in order to manage their conditions. Health literacy levels have also been shown to be associated with knowledge of health issues and utilization of health services and are a strong predictor of health status (Bennett et al., 2003; Dolan et al., 2004; Shelton et al., 2011).

Masculinity and Men's Health Research

Research on the influence of gender attitudes on men's health behavior has primarily focused on how "hegemonic masculinity" (such as displaying strength) can prompt unhealthy behaviors (such as viewing illness as weakness) (Sloan, 2009). Hegemonic masculinity is a concept/theory that seeks to describe how and why men maintain dominance over women and people with other gender identities in society, with an emphasis on heterosexuality and a rejection of homosexuality (Connell, 1982). Specifically, in the social science literature, hegemonic masculinity has been defined as a way to keep women in a subordinate position in society played out through individual and group level processes that benefit men (but is not necessarily practiced by all men) (Connell, 1982). Early work characterizes male norms as "...values such as courage, inner direction, certain forms of aggression, autonomy, mastery, technological skill, group solidarity adventure and considerable amounts of toughness in mind and body" (Carrigan, Connell, & Lee, 1987, p. 75). Hegemonic masculinity is reproduced by social structures, institutions, and media and on an individual level, in a way that normalizes a specific set of male norms and enforces a system of punishments for non-conformity (Connell, 1987).

The gendered attitudes derived from hegemonic masculinity can sometimes conflict with health behaviors, for instance, messages men receive emphasizing self-reliance, and the commonly held beliefs in mainstream society regarding men, such as the value of autonomy, risk-taking, dominance and the need to suppress pain, can create a barrier to seeking out a health professional, asking for help, relying on others and following health guidelines given by authority figures (Gough & Conner, 2006). In terms of mainstream masculinity, traditional beliefs about masculinity for men in the United States can be characterized as a need to maintain independence, demonstrate fearlessness and strength and a discouragement of displays of emotion (Garfield, 2008). More importantly, men who adhere to more traditional definitions of masculinity have been documented to have poorer health outcomes and these beliefs can adversely affect help-seeking and self-management (Garfield, 2008).

The academic knowledgebase for men’s health has expanded with work on men’s health issues linking aspects of male gender, (e.g. masculinity) to poor health outcomes and risky health behaviors (e.g. Courtenay, 2000; White, 2004). This work has brought to light disparities in health outcomes between men and women and the state of men’s health, such as men’s increased risk for numerous health conditions (e.g. most cancers, obesity). However, men’s health research is a still a relatively new field, with much of the early research focusing on white-middle class men, research that has been generalized, perhaps inappropriately, to other groups of men (e.g., by race/ethnicity, class) (White, 2004). While studies do control for sex, they frequently do not include an in-depth discussion of how gender roles (e.g. masculinity) may influence health in men (Gough, 2006). Thus, while the study of men’s health has garnered more attention among academics, a dearth of research on impact of gender on health behaviors and outcomes remains (Gough, 2006).

Dissertation Outline

My dissertation begins with study 1, entitled *Differences in Predictors of Diabetes Self-Management and Health Care Use in Latinos and African Americans with Type 2 Diabetes*. It continues with study 2, *Structural and Psychosocial Factors that Influence Health Care Use and Self-Management for African American and Latino Men with Type 2 Diabetes: An Exploratory Study* and study 3, titled *Social Support and Integration as a Mechanism for Better Understanding the Relationship between Race and Health Care Utilization among Men*. This dissertation concludes with implications for social work and a discussion of plans for my future research.

Guided by the Andersen Health Belief Model (Figure 1.1), this dissertation will focus on an examination of the role of enabling factors in shaping the health behaviors of African American and Latino men (see Figure 1.3). Using a three-study model, this dissertation seeks to answer a set of related questions:

Study 1:

- Do socioeconomic status, education, social support, patient-provider relationships and diabetes knowledge influence diabetes self-care and health care use in similar ways among African Americans and Latinos with type 2 diabetes?

Study 2:

- How do Latino and African American men with diabetes conceptualize gender and masculinity?
- What is the impact of men’s conceptualization of gender and masculinity on their diabetes self-management and utilization of diabetes-related care (and health care in general)?

Study 3:

- Does social support and social integration mediate or buffer the relationship between race and health care utilization among men?

[Insert Figure 1.3 Here]

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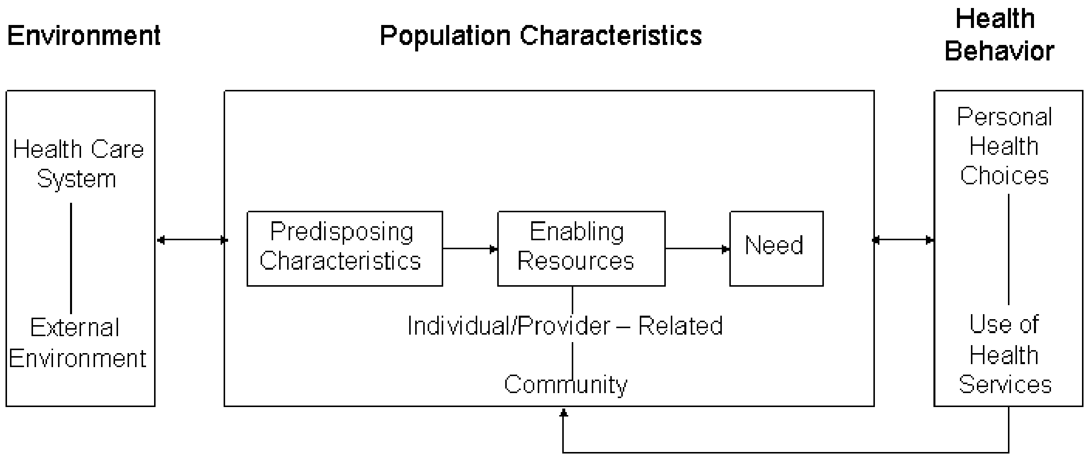
Figure 1.1 Anderson Health Belief Model



The Anderson Model of Health Care Utilization

RM Anderson. Revisiting the behavioral model and access to medical care: does it matter?
J Health Social Behavior 1995;36:1-10.

Figure 1.2 Conceptual Model

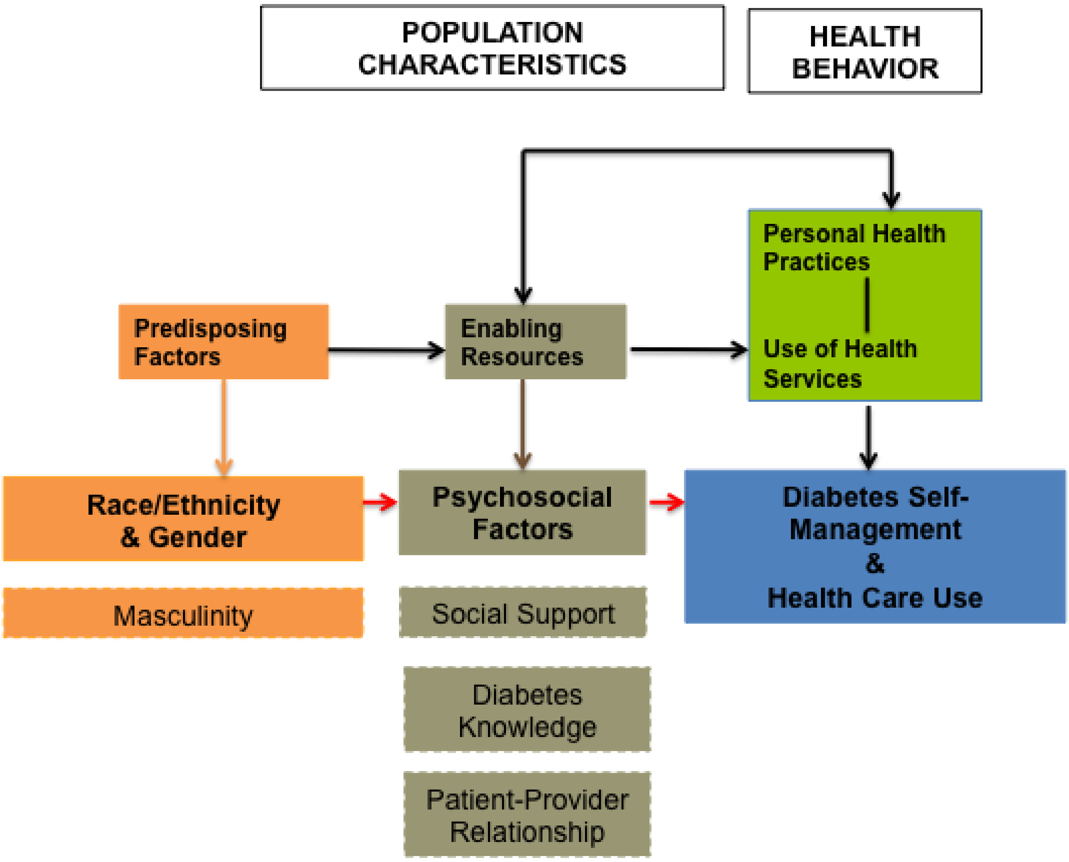
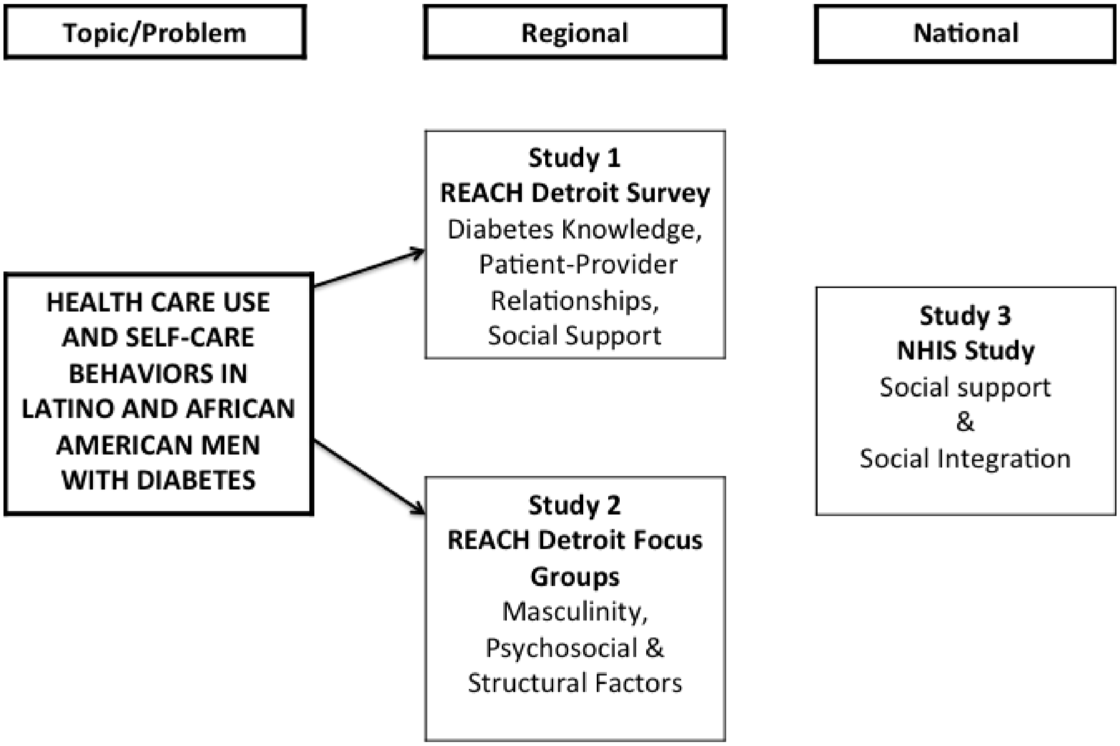


Figure 1.3 Dissertation Structure



Chapter 2

Differences in Predictors of Diabetes Self-Management and Health Care Use in Latinos and African Americans with Type 2 Diabetes

Abstract

Diabetes is a highly prevalent and debilitating disease. This study identified differences in predictors of diabetes self-management and health care use in Latinos and African Americans with type 2 diabetes participating in a Detroit-based diabetes lifestyle intervention. This study used baseline data from Racial and Ethnic Approaches to Health (REACH), a randomized, 6-month delayed control group design for which African American and Latino adult participants were recruited from 2 health systems in Detroit, Michigan (n=164). Regression model results showed that older age increased diabetes self-management, while low levels of diabetes knowledge significantly decreased it, but these associations did not exist for health care utilization. Future research efforts should be aimed at identifying how predictors of diabetes self-management and health care use vary in order to help enhance interventions targeting African Americans and Latinos with diabetes.

INTRODUCTION

Diabetes affects 25.8 million people, or 8.3% of the U.S. population, making it one of the most common diseases in the U.S. (Centers for Disease Control and Prevention, 2012). In 2012 the total cost of diabetes was estimated to be 245 billion and for persons with diabetes medical expenditures are 2.3 times higher than expenditures for persons without the disease (American Diabetes Association, 2013). As a result, there is an urgent need to develop a better understanding of what factors influence health behavior in persons with diabetes due to soaring costs and the increased prevalence of the disease. Individuals living with a diabetes diagnosis are instructed by health care providers to engage in diabetes-related self-care behaviors critical to successful management of the disease (Hearnshaw & Lindenmeyer, 2006). It is also essential that persons with diabetes attend routine or more frequent medical visits with physicians, depending on the severity of disease, to manage the condition (Turner, Williams, Taichman, & Vijan, 2010).

Many studies that focus on examining predictors of adherence to diabetes regimens utilize an ecological systems model, finding that a cluster of the same factors that influence self-management also influence health care use in similar ways (Fisher et al., 2005; Naar-King et al., 2006; Vacarro et al., 2012; Rees et al., 2010; Bastida et al, 2008; Hoerster, et al, 2011). Some of the most commonly studied factors include socioeconomic status (SES), social support, patient provider relationships and health literacy (Fisher et al., 2005; Naar-King et al., 2006; Vacarro et al., 2012; Lopez-Class, 2008; Rees et al., 2010; Bastida et al, 2008; Hoerster, et al, 2011).

The ecological systems model provides a framework to understand factors associated with self-care and health care use in persons with a chronic illness. It emphasizes an examination of how environmental and individual factors influence human actions (Kirst-Ashman & Hull, 2006). The ecological systems model covers three levels of elements that impact human behavior and development: micro, mezzo and macro factors. The micro level includes any individual characteristics that may affect personal development and social interactions. The mezzo level explores the effects that smaller groups – such as families - and social environments have on the individual. Lastly, while not measured in this study, macro aspects are comprised of larger entities, such as the cultural and political environment (Kirst-Ashman & Hull, 2006).

However, studies often use an ecological systems model in a generalizing way that suggests that the same system of associations exists between these key predictors and self-care on the one hand and health care on the other. This generalizing tendency, or failure to study separately both self-care and health care use in the same study, using the same predictors, may mask how these factors could influence the two distinct health care use outcomes of interest in different ways. Although prior research has identified a range of psychosocial factors that determine participation in diabetes self-management and diabetes health care utilization (Figaro, Elasy, BeLue, Speroff, & Dittus, 2009; DiMatteo, 2004; Gourlay et al., 2010; Bruce, Davis & Davis, 2003), no studies have examined how the associations between these predictors may differ when considering diabetes self-management versus when considering health care use. Utilizing a sample of African American and Latino men and women with type 2 diabetes from a Midwestern urban area, the objective of this study was to explore whether SES, education, social support, patient-provider relationships and diabetes knowledge influence diabetes self-care and health care use in similar ways. Identifying heterogeneity in predictors of diabetes self-management versus health care use can assist health care providers, researchers, and policy makers in developing more effective strategies for working with people of color with diabetes.

BACKGROUND

Past Research on Predictors of Diabetes Self-Management and Health Care Use

Past research has shown that SES, social support, patient-provider relationships, and diabetes knowledge/health literacy are linked to diabetes self-management and health care use (Figaro, Elasy, BeLue, Speroff, & Dittus, 2009; DiMatteo, 2004; Gourlay et al., 2010; Bruce, Davis & Davis, 2003). While past research helps to shed light on factors that may influence these important diabetes health behavior outcomes, few studies have been conducted that focus on African Americans and Latinos with diabetes and can assess heterogeneity that may exist within the broader group of people of color, and the research is lacking a comparison of how these factors may influence diabetes self-management and health care use differently.

Socioeconomic Status/Income

Differences in diabetes self-care behaviors and health care use based on socioeconomic status (or differences in income and employment status) have been recorded for communities of color (Figaro, Elasy, BeLue, Speroff, & Dittus, 2009; Levine et al., 2009; Liao et al., 2004). In terms of educational attainment, lower levels have been shown to be associated with poor chronic disease self-management and lower rates of health care use in Latinos and African Americans, which has significant implications for these racial/ethnic groups (Rothman et al., 2004; Williams, Baker, Parker, & Nurss, 1998). Specifically, for African Americans and Latinos with diabetes and heart disease, research has shown that lower educational level impacts health knowledge and self-management (Williams et al., 1998). Further, lacking health insurance and a usual source of care, situations more common among those of lower socioeconomic status, can have adverse consequences for self-care practices (i.e. less access to health care education and social support) (Liao et al., 2004). Additionally, diabetes can result in considerable economic burden, especially for individuals without health insurance or employment, making it harder for low-income individuals to effectively engage in diabetes self-management and health care utilization diabetes (Liao et al., 2004). Medical expenditures can range from medication costs, blood sugar test strips, insulin, syringes and hospitalization to doctor visits, depending on symptom severity. Further, research has also shown that low-income status is associated with increased symptom severity among persons with diabetes, suggesting that low income may make it more difficult for individuals to successfully manage their diabetes (Gulliford & Mahabir, 1999).

Many studies have examined the influence of various aspects of SES on health care use and diabetes self-management outcomes. In addition to SES, other studies suggest that social support, patient provider communication, and diabetes knowledge may also play a key role in adequacy of health care use and diabetes self-management in persons with diabetes.

Social Support

Social support plays a critical role in facilitating self-care and health care use behaviors among persons with diabetes (DiMatteo, 2004). In terms of diabetes self-care, social support in the form of practical and emotional aid from family and friend relationships has been found to have a positive impact on recommended diabetes self-care behaviors, such as regular glucose monitoring and increased dietary control and physical activity (Gallant, 2003; Lloyd, Wing, Orchard, & Becker, 1993; Rosland et al., 2008; Schafer, McCaul, & Glasgow, 1986; Shenkel, Rogers, Perfetto, & Levin, 1985; Sherbourne, Hays, Ordway, DiMatteo, & Kravitz, 1992; Tillotson & Smith, 1996). Social support also has been found in multiple studies to increase health care utilization (Broadhead, Gehlbach, & Kaplan, 1989; Kouzis & Eaton, 1998).

Patient-Provider Relationship

Different aspects of patient-provider relationships have also been found to influence diabetes-related health behaviors. Providers are a critical part of health care systems and play a role in teaching diabetes self-care skills and encouraging health care use. Previous research has shown that continuity of care and successful communication with a provider are two variables that can increase delivery of preventative care (Heisler, et al., 2005). One study found that respondents who reported high evaluations of provider thoroughness of communication were more likely to engage in diabetes self-management (Heisler, et al., 2005). However, research suggests that populations of color are more likely to encounter difficulty in communication with providers when compared to non-Hispanic Whites (Gourlay, et al., 2010), and non-White respondents were more likely to express uncertainty about cancer-screening and reported less patient-centered care (or direct communication with providers and regular medical care) (Gourlay, et al., 2010). In in-depth interviews and focus groups with African Americans diagnosed with diabetes, participants reported a perceived power imbalance between themselves and providers that was made worse if the provider was of a different race, and this contributed to poor shared decision-making for African Americans (Gourlay, et al., 2010). Additionally, study participants highlighted the importance of trust in the patient-provider relationship and stated that physicians who fostered trusting relationships made patients feel more comfortable participating in their medical care. Unsatisfactory relationships between providers and communities of color put them at greater risk for poor diabetes self-management and lower-than-needed health care utilization (Gourlay, et al., 2010).

Diabetes Knowledge

Knowledge of diabetes also has a direct relationship with self-management behaviors and health care use (Bruce, Davis & Davis, 2003). Diabetes education programs, diabetes-related visits to health care professionals and self-monitoring of blood glucose (SMBG) are associated with diabetes knowledge in patients with type 2 diabetes (Bruce, Davis & Davis, 2003). One study found that respondents who engaged in SMBG reported better diabetes care understanding and assessment of their glycemic control than those who did not (Heisler, et al., 2005).

While studies have shown that the variables discussed above are important determinants of self-management and health care use for diabetes in general population, the literature also shows that these predictors are distributed unequally by race and ethnicity. This means that persons of color with diabetes may face more substantial risks of low self-care or health care utilization than white Americans. However, no studies have specifically examined how these variables may influence diabetes self-management and health care use using a sample of people of color. Doing so can provide a view as to whether the distribution of these factors/resources is the key issue, such that they create disparities between whites and people of color, or whether additionally, they differentiate outcomes even within communities of color.

The Present Study

While they have considered many important determinants and shown associations with diabetes self-care and health care use, extant studies lack a more nuanced examination of how each of these determinants might influence these two important diabetes-related health behaviors in different ways. This study will contribute to the literature by identifying what determinants may be more or less important for diabetes self-management and health care use, allowing researchers and public health professionals to better assist persons with diabetes to obtain optimal health outcomes. The present study asks: do SES, social support, patient-provider relationships and diabetes knowledge influence diabetes self-management and health care use in the same way among African Americans and Latinos with diabetes?

METHOD

Sample

This study used baseline data from Racial and Ethnic Approaches to Health (REACH), a randomized, 6-month delayed control group design where African American and Latino adult participants were recruited from 2 health systems in Detroit, Michigan. The study cohort included 164 African American and Latino adults with type 2 diabetes. Participants were 18 years of age or older, had physician-diagnosed type 2 diabetes, self-identified as African American or Latino/ Hispanic, and lived in targeted zip codes (Eastside and Southwest Detroit). The design, methods and outcomes of the original study have been described more extensively elsewhere (Two Feathers, 2007).

The primary goals of the intervention were to improve diabetes-related lifestyle and self-management behaviors, and clinical outcomes. Using an empowerment-based approach, community health workers provided participants with diabetes self-management education and regular home visits, and accompanied them to a clinic visit during the intervention period. Lab measurements and interviews were conducted at baseline, 6 months, 12 months and a 6-month follow-up (Two Feathers, 2007). Latinos were more likely to participate than African-Americans (49.7% versus 26.8%), and the mean age of participants (53.0) was significantly lower than the age for non-participants (58.9). Surveys were conducted in the participant's home in their preferred language (English or Spanish) by a trained African-American or Latino interviewer (Two Feathers, 2007). The survey protocol received Institutional Review Board approval at the local participating health systems and the University of Michigan.

Analysis

For descriptive analysis, tabulations and percentages were calculated for all variables. Key independent variables were cross-tabulated with the outcomes (diabetes self-management and health care use), and differences across groups were calculated using t-tests for continuous variables and Pearson's chi-square tests for categorical variables.

Separate regression models were used to examine the association between predictors and diabetes self-care and health care use. Because participants received the intervention in two different locations, health care site was included in each model. Because self-care is a continuous variable, linear regression models were utilized, while logistic regression was used for health care use because the measure was dichotomous. Analyses were conducted using STATA V12.

Measures

Outcome Variables

Diabetes self-care was measured with a scale based on the Summary of Diabetes Self-Care Activities Scale (Toobert, Hampson, & Glasgow, 2000). Participants were asked: “On how many of the last 7 days did you: take your recommended insulin or diabetes pills? Take your recommended insulin dose or number of diabetes pills? Follow a healthful eating plan? Test your blood sugar at least as often as your doctor has recommended? Check your feet? And lastly, inspect the inside of your shoes? Response categories were: (1) 0-1 day (2) 2-3 days (3) 4-6 days (4) every day. Reliability/validity for the diabetes self-care scale was assessed by computing Cronbach’s alpha. The scale demonstrated internal consistency of above .70 (Cronbach, 1951). Diabetes treatment guidelines suggest that persons with a Type II diabetes diagnosis see a physician or nurse for diabetes related check-ups every 3 to 6 months depending on their health (American Diabetes Association, 2010; Turner et al., 2010). Based on these guidelines, *diabetes health care use* was measured based on how frequently participants saw their health care provider regarding their diabetes status. Participants were originally asked: “In the past 12 months, how many times did you see the doctor or nurse who takes care of your diabetes?” (0) 0 visits, (1) 1 visit, (2) 2-5 visits, (3) 6-10 visits, (4) 11-20 visits, and (5) More than 20 visits. The variable was recoded due to low counts in the “0,” “1,” and 20 or more categories to form two categories: (0) "5 or less visits" or (1) "6 or more visits."

Independent Variables

Independent variables were split into two categories: factors associated with self-care and health care use and sociodemographic factors.

Factors Associated with Self-Care and Health Care Use

Race was categorized as (0) Latino or (1) African American. *Social support* was measured by asking respondents: “Which of the following are currently problems for you- feeling that your friends and family are not supportive of your diabetes management efforts?” Responses were originally coded as “not a serious problem” (0), “minor problem” (1), “moderate problem” (2), “somewhat serious problem” (3), “serious problem” (4). Responses were collapsed due to low counts in categories for minor problem, somewhat serious problem and serious problem to form two categories: (0) "not at all a problem" and (1) "some problem."

Patient-Provider Relationship was evaluated using two scales: the Doctor Support Scale and the Doctor Satisfaction Scale. Doctor support scores were calculated using the mean value of a five-item scale that measured how participants perceived level of doctor support. Respondents rated questions as strongly disagree (1), disagree (2), neutral (3), agree (4), and strongly agree (5). The five-item scale included the following questions: (1) you feel understood by your doctor; (2) you feel trust in your doctor; (3) your doctor answers your questions fully and carefully; (4) your doctor tried to understand how you see things before suggesting a new way to do things; and (5) you get all the support that you need from your doctor. Doctor satisfaction scores were calculated using the mean of 5 possible categories. Respondents rated their satisfaction as: not at all satisfied (1), not very satisfied (2), somewhat satisfied (3), very satisfied (4), and completely satisfied (5). The four-item scale included the following questions: (1) The amount of time you spend with your primary care doctor; (2) How often you are able to meet with you primary care doctor; (3) The amount of contact you have with your doctor between clinic visits; and (4) Support provided you by other health professionals in your doctor’s office? Both scales were recoded into “high” and “low” scores, split at the median score for each. For the doctor support score, a low score was “1-3” and a high score was “4 or above.” For the doctor satisfaction scale, persons with low doctor satisfaction scored “1-3.2” and a high score was indicated by a “3.33 or above.”

Ability to navigate the health care system was measured by asking respondents “If you don't understand what the health care professional tells you…” with answer options originally coded as (1) You ask him or her to explain it then and there, (2) You ask a nurse in the office before you leave, (3) You don't ask for an explanation from anyone at the office. Due to low counts in categories in the second category “you ask a nurse in the office before you leave,” the variable was recoded to form two categories: (1) You ask him or her to explain it then and there or you ask a nurse in the office before you leave, or (2) You don't ask for an explanation from anyone at the office. *Diabetes knowledge* was measured by the item “how well do you understand how to manage your diabetes” that was originally coded: not at all (1) not well (2) fairly well (3) well or (4) very well. Due to small counts in categories “fairly well” and “well” I recoded such that: (0) "not at all" or (1) "not well, fairly well, very well" in order to determine who had a complete lack of diabetes knowledge versus those who had at least some knowledge of diabetes.

Sociodemographic Independent Variables

Sociodemographic independent variables found in other studies to be related to diabetes management and included here were education, income, and employment. *Education* was categorized as: less than high school education (0), or high school education or greater (1). Because of small sample size, for bivariate analysis with self-management education was split into to variables: education 1 greater than high school

(1) or (2) less than high school and education 2 greater than high school (0) and high school (1). *Income* was coded as (0) less than or equal to 20K, (1) greater than 20K and (2) don't know or refused to answer. *Employment* was coded as (0) not employed or (1) employed. *Marital status* was categorized as single (0) or married or partnered (1), and *age* was recorded in years at the time of the baseline interview. Other covariates included treatment site, coded as (1) for Southwest Detroit and (2) for Eastside Detroit. Randomization to control or treatment group was coded as (1) for randomized and (2) for non-randomized.

RESULTS

Table 2.1 describes demographic and other characteristics for the analytic sample. African Americans (56.5%) outnumbered Hispanics (43.5%) in the study and more women (71.4%) were enrolled in the study than men (28.5%). In terms of employment, 53.9% of the sample was not employed. Further, 40.9% of the sample had less than a high school degree and 70.1% reported being married or partnered. Lastly, 29.8% earned less than $20,000, while 31.8% reported yearly earnings of greater than $20,000.

A majority of the sample (60.4%) reported high levels of diabetes self-management while 64.1% reported visiting the doctor 5 times or less in the last year. Additionally, 66.8% of respondents reported support from their physician and 51.9% reported satisfaction with their physician. Most participants reported no problem with social support (79.2%) and "some" to "high" levels of diabetes knowledge (77.3%). Lastly, a majority of the sample demonstrated an ability to navigate the health care system (89.6%).

[Insert Table 2.1 Here]

Table 2.2 reports the bivariate associations between health care use and predictor variables. Statistically significant differences in these outcomes were found across race/ethnicity groups and education, income and social support levels. While 48% of Hispanic respondents attended 6 or more physician visits in the last year, only 26% of African Americans attended 6 or more visits. Additionally, 47% of participants with less than a high school degree or high school degree reported 6 or more physician visits, compared to 24 % of those with more education. 35% of participants who earned $20,000 or less reported 6 or more health care visits, compared to 22% of those earning over $20,000 in the past year. Lastly, those who reported a problem with social support were more likely to report 6 or more health care visits than those who did not.

[Insert Table 2.2 Here]

Table 2.3 reports the bivariate associations between diabetes self-management and predictor variables. Respondents reporting higher levels of physician satisfaction reported more diabetes self-management. Further, having some or high diabetes knowledge was associated with higher self-management scores. Lastly, respondents who reported higher levels of health care system navigation competence had higher self-management scores.

[Insert Table 2.3 Here]

Tables 2.4 and 2.5 report results from multivariate regression models used to test the associations between key variables and health care use controlling for covariates. Table 2.4 shows odds ratios and confidence intervals for each of the predictor variables. Nine models were tested with health care use as the outcome variable. Models 1 through

5 independently examine the role of social support, physician support, physician satisfaction, diabetes knowledge and ability to navigate the health care system after adjusting for gender, race/ethnicity, age, marital status, randomization to program and treatment site. Models 6 through 8 test the role of education, income and employment, one at a time. Lastly, model 9 includes all covariates. In the multivariate models, none of the focal variables were significant predictors of health care use.

[Insert Table 2.4 Here]

[Insert Table 2.5 Here]

Using ordinary least squares regression, table 2.5 shows coefficients and confidence intervals for models predicting diabetes self-management. A negative coefficient indicates that a predictor is associated with a lower score on the self-care scale. Models 1 through 5 are separate models that focus one at a time on social support, physician support, physician satisfaction, diabetes knowledge and ability to navigate the health care system, controlling for gender, race/ethnicity, age, marital status, randomization to program and treatment site. Models 6 through 8 test the role of sociodemographic factors relevant to diabetes self-management including education, income and employment, one at a time. Lastly, model 9 includes all sociodemographic and key variables. In terms of diabetes self-management, older age increased diabetes self-management (Coeff=0.023; $p<0.001$) and low levels of diabetes knowledge significantly decreased diabetes self-management (Coeff=-0.334; $p<0.05$).

DISCUSSION

The objective of this study was to explore whether socioeconomic status, education, social support, patient-provider relationships and diabetes knowledge influence diabetes self-care and health care use in similar ways. The present study found evidence that diabetes self-management and health care use were associated with different sets of predictors. Bivariate analyses showed that Hispanic respondents were more likely to report 6 or more physician visits in the last year than African Americans in this sample. Additionally, participants with less than a high school degree or high school degree were more likely to report 6 or more physician visits, compared to better-educated respondents, and those who earned $20,000 or less in the past year were more likely to report 6 or more visits than those who earned more. Lastly, those who reported a problem with social support were more likely to report more frequent visits to the doctor.

Biviarate analysis showed that respondents reporting higher levels of physician satisfaction were more likely to report higher scores on the diabetes self-management scale. Further, increased diabetes knowledge was associated with increased self-management. Lastly, respondents who reported higher levels of health care system navigation were more likely to engage in diabetes self-management. Multivariate analyses show that in terms of diabetes self-management, older age increased diabetes self-management and low levels of diabetes knowledge significantly decreased diabetes self-management, even net of the host of other factors included in the models.

Health Care Use Bivariate Comparisons

In the study, Hispanics attended physician visits significantly more than African Americans. African Americans were predominately seen at a large hospital on the eastside of Detroit while Hispanic participants were seen at a smaller community-based clinic focused on serving the Hispanic community in southwest Detroit. However, because analyses did not show significant differences in diabetes self-management or health care use based on treatment site, more research should be completed to explicate potential differences in treatment sites among African Americans and Hispanics to determine if this difference was a function of the sample and treatment sites, or if these differences can be replicated on a national level. Research shows that factors that influence health care use among persons with diabetes include older age, manageable cost of doctor visits, having health insurance and diabetes education (Miler, et al., 2012).

Lower educational attainment and yearly income also increased the likelihood of attending 6 or more physician visits in the last year. A study of differences by education in treatment adherence (including regular doctor visits) among persons with diabetes or HIV found that for both health conditions, adherence to treatment plans was stronger among patients with high socioeconomic status. Also, persons with diabetes with less education were more likely to report poor adherence to treatment, which led to lower self-reported general health (Goldman & Smith, 2002). Because the recommended number of visits is at least every 3 months for persons with diabetes, more investigation is needed to shed light on why persons with less education and less income have more frequent physician visits. One explanation may be due to poor health management, persons who are low income and/or have less education may have increased symptom severity, requiring more frequent trips to the doctor for treatment.

Lastly, those who reported a problem with social support from family members were more likely to have frequent visits to the doctor. Persons without social support may seek support from a physician and may also have more difficulty engaging in diabetes self-management because of the lack of social support from family members. Contrary to our study’s findings, a systematic review of social support diabetes intervention studies found that social support from family members and friends did not have a significant impact on diabetes control, however, forms of support from health care providers in the intervention did result in better diabetes control, indicating the possible effects of specific social support via health care professionals on diabetes self-management and health care use van (Dam, van der Horst, Knoops, et al, 2005). This calls for more research in order to help explain why we see an effect of family-based social support on diabetes control (i.e. health care use and self-management), in some instances but not in others.

Diabetes Self-Management Bivariate Comparisons

This study found that respondents reporting higher levels of physician satisfaction were more likely to report higher diabetes self-management scores. These results imply being satisfied with a physician may possibly imply better communication and the development of a satisfying relationship, resulting in better diabetes self-management. This finding is supported by previous research. A study of 2000 patients receiving diabetes care from Veteran Affairs facilities found that satisfaction with a providers' communication effectiveness was significant predictor of adherence to diabetes treatment plans (Heisler, Bouknight, Hayward, et al. 2002)

Lastly, respondents who reported higher levels of health care system navigation were more likely to engage in diabetes self-management. Persons comfortable with the health care system may have the ability to ask questions regarding their diabetes care, increasing diabetes knowledge and self-management behaviors. Data gathered from a qualitative study of individuals with Type 1 diabetes found to health care system navigation included specific aspects of the heath care system they utilized, such as challenging patient referral systems, lack of knowledge of current diabetes management trends and poor communication between providers (Rasmussen, Wellard, & Nankervis, 2001). Because engaging with health care is such a critical aspect of diabetes self-management more research is needed on predictors of health care system navigation and its relationship with diabetes self-management among persons with diabetes.

Multivariate Regression: Health Care Use and Diabetes Self-Management

For diabetes self-management, older age increased diabetes self-management and low levels of diabetes knowledge significantly decreased diabetes self-management. Older people may be more aware of their diabetes status because they have more access to health care via Medicare and may also be seen for other health conditions. Earlier work has found that obtaining Medicare coverage results in improvement in health outcomes for persons who were previously uninsured and living with cardiovascular disease or diabetes (McWilliams, Meara, & Ayanian, 2003; 2007). While our study found that among persons of color with diabetes, age resulted in improved diabetes self-management, using longitudinal data from the National Health and Nutrition Examination Survey, another study found that glycemic control and other health outcomes have improved among older persons enrolled in Medicare in recent years among adults with cardiovascular disease and diabetes, racial, ethnic, and socioeconomic differences still persist (McWilliams, Meara, Zaslavzky & Ayanian, 2009). More research should be conducted to determine through what mechanisms these disparities operate. Further, our finding confirms results from other studies showing that individuals who have low levels of diabetes knowledge are less likely to engage in diabetes self-care (Bruce, Davis & Davis, 2003; Heisler et al, 2005), while extending to a different study population.

Fewer variables were statistically significant in the multivariate models and in some cases significance levels differed from those found in the bivariate comparisons. One explanation may be that key independent variables, (i.e. controlling for race, gender, age, marital status, treatment site, randomization for health care use) reduced associations between key variables and self-management and health care use, even though each one of these control variables is not statistically significant in the multivariate analysis. For self-management, the multivariate results show that age helps to explain differences between bivariate and the regressions analysis after other factors are considered.

This study has limitations. The small sample size of Latinos and African Americans may have limited the ability to detect significant differences and to generalize those findings to other patient populations indicating the need for similar analysis to be run with larger samples. Further studies with larger sample sizes are needed to examine the influence of gender and race/ethnic group interactions on diabetes self-management and health care use for diabetes and other chronic diseases in an effort to inform health and intervention research to better serve these populations. It is also important to note that men and women who participated in the study were volunteers and recruited from a community health clinic and from a local hospital. As a result, the participants in this study had previous access to health care. This may have influenced the generalizability of my results because health outcomes and the responses to the REACH survey utilized to collect the data may be different for those who are invested in and have access to health care versus those without access to health care (i.e. differences in socioeconomic status and education levels etc.). Participants in REACH were also older (over 40 years of age), this may be attributed to the tendency of type 2 diabetes to be diagnosed later in life, making findings less generalizable to younger groups of Latinos and African Americans. Also, African Americans were less likely to participate in the intervention that Latinos (49.7% versus 26.8%), which may make findings less generalizable to African Americans in the sample. Last, this study was regional and thus findings may not apply on a national level. Despite these limitations, this is the first study to examine differences in predictors of health care utilization and self-management of a CHW-led diabetes lifestyle intervention for Latino and African American men and women.

Conclusion

This study demonstrates that among African Americans and Latinos with type 2 diabetes participating in a diabetes lifestyle intervention, different sets of factors influence diabetes self-management and health care use. Future research efforts should be aimed at identifying how predictors of diabetes self-management and health care use vary in order to help enhance interventions targeting African Americans and Latinos with diabetes.

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Table 2.1. Descriptive Characteristics of Analytic Sample, REACH Respondents

		N=164	
		N	%
Gender			
	Male	44	28.6
	Female	110	71.4
Race			
	Hispanic	67	43.5
	African American	87	56.5
Age [a]			
		53	0.98
Employment			
	Employed	71	46.1
	Not employed	83	53.9
Education			
	<HS	63	40.9
	HS	19	12.3
	>HS	72	46.7
Marital Status			
	Not Married	46	29.9
	Married/Partnered	108	70.1
Income			
	less than or equal to 20K	46	29.9
	greater than 20K	49	31.8
	Don't Know/Refused	59	38.3
Self-Management Score[b]			
	Low	57	39.6
	High	87	60.4
Health Care Use			
	5 or less	98	64.1
	6 or more	55	35.9
Social Support			
	Not a Serious Problem	122	79.2
	Serious Problem	32	20.8
Physician Satisfaction Score[b]			
	Low	74	48.1
	High	80	51.9
Physician Support Score[b]			
	Low	51	33.1
	high	103	66.9
Diabetes Knowledge			
	Don't understand at all	35	22.7

Understand very well, well, not well	119	77.3
Health Care System Navigation		
You ask physician or nurse	138	89.6
You don't ask for an explanation from anyone at the office	16	10.4

[a] Mean and Standard Deviation Reported

[b] Low=value 1, High=values 3.33-4

Table 2.2: Bivariate association between key variables and health care use

	6 or more visits		
	N	%	P-value
Gender			
Male	13	30	0.29
Female	42	38	
Race/Ethnicity			
African American	23	26	<0.01
Hispanic	32	48	
Employment			
Employed	22	31	0.23
Unemployed	33	40	
Education			
Less than HS	29	47	0.01
HS	9	47	
Greater than HS	17	24	
Marital Status			
Not Married	17	37	0.86
Married	38	35	
Income			
less than or equal to 20K	16	35	0.02
greater than 20K	11	22	
Social Support			
Not a problem	39	32	0.04
Some problem	16	52	
Physician Support Score*			
Low	21	42	0.28
High	34	33	
Physician Satisfaction Score*			
Low	25	34	0.67
High	30	37	
Diabetes Knowledge			
Don't understand at all	17	49	0.08
Understand very well, well, not well	38	32	
Health Care System Navigation, n(%)			
You ask physician or nurse	49	35	0.73
You don't ask for an explanation from anyone at the office	6	40	

*Low=value 1, High=values 3.33-4

Table 2.3: Bivariate association between key variables and self-management

		N	Mean	P-value
Gender				
	Male	42	2.16	0.53
	Female	102	2.08	
Race/Ethnicity				
	African American	81	2.16	0.27
	Hispanic	63	2.03	
Employment				
	Employed	77	2.14	0.53
	Unemployed	67	2.07	
Education 1				
	Greater than HS	69	2.15	0.29
	Less than HS	59	2.02	
Education 2				
	Greater than HS	69	2.15	0.29
	HS	16	2.24	
Marital Status				
	Married/Partnered	101	2.06	0.25
	Not Married	43	2.21	
Income				
	less than or equal to 20K	45	2.14	0.83
	greater than 20K	47	2.11	
Social Support				
	Not a problem	115	2.14	0.20
	Some problem	29	1.96	
Physician Support*				
	Low	46	2.03	0.36
	High	98	2.14	
Physician Satisfaction*				
	Low	69	1.97	0.02
	High	75	2.33	
Diabetes Knowledge				
	Don't understand at all	33	1.80	0.00
	Understand very well, well, not well	111	2.19	
Health Care System Navigation				
	You ask physician or nurse	129	2.15	0.03
	You don't ask for an explanation from anyone at the office	15	1.73	

*Low=value 1, High=values 3.33-4

Table 2.4 Odds of 6 or more health care visits from Logistic Regression models, African American and Hispanic REACH Participants with Type 2 Diabetes

	M1	M2	M3	M4	M5	M6	M7	M8	M9
Gender									
Male	1.358 [0.594,3.103]	1.309 [0.565,3.033]	1.439 [0.633,3.274]	1.402 [0.618,3.182]	1.412 [0.623,3.199]	1.289 [0.561,2.963]	1.333 [0.579,3.068]	1.439 [0.630,3.284]	1.111 [0.450,2.743]
Race/Ethnicity									
African American	0.426 [0.156,1.166]	0.387 [0.142,1.049]	0.412 [0.151,1.125]	0.429 [0.157,1.170]	0.402 [0.147,1.096]	0.49 [0.174,1.378]	0.398 [0.147,1.082]	0.486 [0.156,1.515]	0.638 [0.191,2.139]
Age									
	1.027 [0.993,1.062]	1.026 [0.992,1.061]	1.023 [0.989,1.058]	1.026 [0.992,1.060]	1.026 [0.992,1.061]	1.021 [0.986,1.056]	1.022 [0.986,1.058]	1.021 [0.987,1.057]	1.014 [0.976,1.053]
Marital Status									
Not Married or Partnered	1.211 [0.533,2.749]	1.282 [0.568,2.895]	1.221 [0.541,2.755]	1.296 [0.573,2.931]	1.263 [0.561,2.844]	1.352 [0.590,3.097]	1.31 [0.577,2.973]	1.225 [0.533,2.814]	1.228 [0.514,2.938]
Randomization									
Not Randomized	1.05 [0.507,2.173]	1.08 [0.524,2.230]	1.159 [0.560,2.398]	1.096 [0.532,2.258]	1.095 [0.530,2.265]	1.142 [0.551,2.368]	1.064 [0.513,2.203]	1.101 [0.530,2.288]	1.101 [0.504,2.408]
Treatment Site									
Southwest Detroit	0.583 [0.207,1.646]	0.586 [0.208,1.652]	0.501 [0.172,1.456]	0.574 [0.205,1.608]	0.557 [0.197,1.573]	0.558 [0.184,1.691]	0.572 [0.203,1.612]	0.521 [0.178,1.524]	0.53 [0.159,1.771]
Social Support									
Serious Problem	0.558 [0.238,1.309]								0.461 [0.180,1.180]
Physician Support Scale									
Low Score		1.345 [0.633,2.858]							1.936 0.813,4.612
Physician Satisfaction Scale									
Low Score			0.692 [0.327,1.468]						0.53 [0.226,1.247]
Diabetes Knowledge									
Don't Understand At All				1.544 [0.673,3.542]					1.587 [0.638,3.951]
Health Care System Navigation									
You don't ask for an explanation from anyone at the office					1.145 [0.354,3.709]				0.609 [0.157,2.371]
Income									

Less than or equal to 20K						1.092 [0.393,3.030]			1.19 [0.389,3.637]
Don't Know/Refused						1.818 [0.689,4.802]			1.662 [0.557,4.955]
Unemployed							1.31 [0.613,2.799]		1.074 [0.475,2.427]
Education									
Less than High School								0.527 [0.153,1.810]	0.521 [0.141,1.928]
Greater than High School								0.35 [0.116,1.057]	0.361 [0.110,1.190]
N	153	153	153	153	153	153	153	153	153

* p<0.05, **p<0.01, *** p<0.1

Reference Categories: Female, Hispanic, Married, Randomized, Southwest Detroit, High Score, Understand

How to Manage Diabetes, Ask someone in the office, 20K or greater, Employed, High School Degree or GED

Table 2.5 Coefficients from OLS Regression models of Diabetes Self-Management Scale, REACH Participants with Type 2 Diabetes

Gender	**M1**	**M2**	**M3**	**M4**	**M5**	**M6**	**M7**	**M8**	**M9**
Male	-0.177 [-0.426,0.073]	-0.173 [-0.428,0.082]	-0.175 [-0.422,0.072]	-0.183 [-0.425,0.058]	-0.192 [-0.438,0.054]	-0.168 [-0.420,0.084]	-0.175 [-0.430,0.080]	-0.178 [-0.426,0.069]	-0.159 [-0.423,0.106]
Race/Ethnicity									
African American	0.014 [-0.309,0.337]	0.028 [-0.293,0.349]	0.05 [-0.271,0.370]	-0.057 [-0.374,0.260]	-0.011 [-0.331,0.310]	-0.012 [-0.355,0.331]	0.024 [-0.298,0.345]	-0.098 [-0.461,0.265]	-0.145 [-0.523,0.233]
Age	0.022 *** [0.012,0.032]	0.022 *** [0.012,0.032]	0.021 *** [0.011,0.031]	0.023 *** [0.013,0.032]	0.022 *** [0.011,0.032]	0.024 *** [0.013,0.034]	0.023 *** [0.012,0.034]	0.024 *** [0.013,0.034]	0.023 *** [0.011,0.034]
Marital Status									
Not Married or Partnered	0.086 [-0.166,0.338]	0.076 [-0.176,0.329]	0.06 [-0.192,0.312]	0.066 [-0.178,0.311]	0.075 [-0.175,0.324]	0.075 [-0.180,0.330]	0.076 [-0.177,0.329]	0.059 [- 0.193,0.312]	0.029 [-0.231,0.288]
Randomization									
Not Randomized	-0.17 [-0.396,0.056]	-0.172 [-0.399,0.055]	-0.153 [-0.379,0.073]	-0.173 [-0.391,0.045]	-0.155 [-0.379,0.070]	-0.18 [-0.406,0.045]	-0.175 [-0.401,0.051]	-0.165 [-0.389,0.060]	-0.122 [-0.352,0.109]
Treatment Site									
Southwest Detroit	-0.149 [-0.467,0.170]	-0.146 [-0.465,0.173]	-0.199 [-0.526,0.127]	-0.152 [-0.462,0.157]	-0.12 [-0.436,0.196]	-0.168 [-0.515,0.179]	-0.143 [-0.461,0.176]	-0.179 [-0.501,0.143]	-0.244 [-0.601,0.112]
Social Support									
Serious Problem	0.089 [-0.196,0.374]								0.008 [-0.286,0.303]
Physician Support									
Physician Support Scale									
Low Score		-0.049 [-0.291,0.193]							-0.014 [-0.275,0.246]
Physician Satisfaction Scale									
Low Score			-0.168 [-0.403,0.067]						-0.158 [-0.407,0.091]
Diabetes Knowledge									
Don't Understand At All				-0.383 ** [-0.644,-0.121]					-0.331 * [-0.611,-0.051]
Health Care System Navigation									

You don't ask for an explanation from anyone at the office					-0.309 [-0.670,0.053]				-0.203 [-0.595,0.190]
Income									
Less than or equal to 20K						-0.079 [-0.392,0.233]			-0.06 [-0.386,0.267]
Don't Know/Refused						-0.131 [-0.442,0.180]			-0.059 [-0.394,0.275]
Employment									
Unemployed							-0.038 [-0.275,0.199]		-0.023 [-0.264,0.217]
Education									
Less than High School								-0.235 [-0.644,0.173]	-0.157 [-0.569,0.255]
Greater than High School								-0.013 [-0.378,0.352]	-0.007 [-0.381,0.367]
N	144	144	144	144	144	144	144	144	144
r2	0.148	0.147	0.158	0.196	0.164	0.15	0.147	0.16	0.225

* p<0.05, **p<0.01, ***
p<0.1

Reference Categories: Female, Hispanic, Married, Randomized, Southwest Detroit, High Score, Understand

How to Manage Diabetes, Ask someone in the office, 20K or greater, Employed, High School Degree or GED

Chapter 3

"*We Can Take Care of ourselves*": Defining Gender Identity and Its Influence on Health Behavior Among African American and Latino Men with Type 2 Diabetes

Abstract

This study explored structural and psychosocial factors that influence health care use and self-management. Participants were recruited from a sample of individuals who participated in one of three Racial and Ethnic Approaches to Community Health (REACH) Detroit Partnership diabetes lifestyle interventions. One focus group was conducted with African American men (n=9) and two focus groups with Latino men (n=13) over a 3-month period. Sessions lasted 90 minutes, were audiotaped and analyzed using thematic content analysis techniques. Three themes emerged that characterize gender identity and its relationship to health behavior in men: 1) men's beliefs about being men; 2) manhood's influence on health behavior; and 3) men's role in diabetes education. Results suggest that the way men define gender roles may have implications for how they engage in their care. These findings highlight the importance of conducting more research on the direct impact masculine identity on diabetes self-management and health care utilization.

INTRODUCTION

Today, 13 million (or 11.8%) of men live with diabetes in the U.S. In recent years, the percentage of diagnosed diabetes in men has increased at a faster rate than women and these numbers continue to rise (CDC, 2012). In the last 30 years, the age-adjusted percentage of diagnosed diabetes increased 156% (from 2.7% to 6.9%) for males and 103% (from 2.9% to 5.9%) for females (CDC, 2013). Moreover, African-American and Latino men are disproportionately affected by diabetes. Among men nationally, the highest prevalence of diagnosed diabetes is found in African American men (9.0%) and Mexican men (9.7%) compared to white men (6.5%), according to the Centers for Disease Control and Prevention (CDC, 2013). Because African American and Latino men are documented to have lower rates of glycemic control, they are at a higher risk for other health conditions such as heart disease, and stroke (Suh, et al., 2010; Egede, 2010). Men of color also have higher rates of diabetes-related complications such as kidney failure, non-traumatic lower-limb amputation and cases of blindness in the U.S (Suh, et al., 2010; Egede, 2010).

Effective glycemic control involves a rigorous self-management routine typically defined by maintaining control of glucose levels, medication adherence, diet, exercise, and foot care (Hearnshaw & Lindenmeyer, 2006). While access to health care and preventive interventions can play an important role in preventing diabetes and diabetes related complications, racial/ethnic and gender disparities in diabetes self-management and health care utilization still remain (Egede, 2010; Suh, et al., 2010). The role of masculinity in type 2 diabetes among African American men has been studied elsewhere (see Liburd, et al., 2013). However, this study did not include Latino men and there is still limited research for men in general, specifically for men of color regarding how men with a chronic illness conceptualize gender identity and manage diabetes within their own social and cultural context. This research may highlight psychosocial factors that play a key role in successful or poor diabetes self-management in men of color.

In recent years, a growing body of literature has addressed the role of gender identity in the management of health behaviors. However, chronic illness research on men has focused on diseases that disproportionately affect men such as prostate cancer (Gough, 2006). Additionally, the scant research available for the role of masculinity in the health of men of color primarily addresses substance abuse and sexual or mental health (i.e. suicide) (Gough, 2006). Identifying the ways in which gender identity and sex roles serve as barriers or facilitators to glycemic control in Latino and African American men is critical to helping these men obtain optimal health outcomes. The purpose of this paper is to explore how gender identity – specifically masculinity – is conceptualized among Latino and African American men with diabetes; and examine how these conceptualizations of masculinity may influence their self-management and health care utilization behaviors. This paper addresses the question: how do Latino and African American men with diabetes conceptualize gender and masculinity? And what is the impact of men’s conceptualization of gender and masculinity on their diabetes self-management and utilization of health care? My study utilizes focus group data from a sample of adult African American and Latino men with type 2 diabetes living in a Midwestern U.S. state. This descriptive study will assist in the development of a better understanding among health care professionals of how the psychosocial and cultural context of minority men with diabetes can influence their diabetes self-management behaviors.

BACKGROUND

Social Construction of Masculinity

Much of the early research on differences in health behavior between men and women categorized differences by sex, including sex as a variable in analysis, without much attention to how social constructions of masculinity and femininity might explain health behaviors (Gough, 2006). The biological view posits that male and female biological determinants are responsible for differences in health behaviors and that these biological characteristics are not modifiable (Creighton & Oliffe, 2010). For men, the biological view links health adverse behaviors to a masculinity that is derived from biological characteristics. For example, testosterone levels can explain high levels of aggression in men that are oftentimes linked to poor health outcomes (e.g. violence and crime) (Creighton & Oliffe, 2010). However, biological differences alone cannot adequately explain disparities in health behaviors between men and women.

Research on the social construction of gender suggests that behaviors in men and women can be attributed to social influences (Creighton & Oliffe, 2010). Specifically, gender-role socialization is the process through which cultural values, norms and ideologies of what it means to be a man or woman work to form gendered attitudes in men and women (Stockard, 1999). How gender is socially constructed in men depends on a complex intersection of variables such as ethnicity, economic status, educational level, sexual orientation, geography, social context and power relations (Duck, 2009; Garfield, 2008; Marriot, 1996). In general, masculinity can be defined as a universally accepted set of values, norms and ideologies of what it means to be a man that are both socially and culturally defined and shift over time and place. These values, norms and ideologies dictate attitudes and behaviors in men (Garfield, 2008). These cultural norms are transmitted to men at early ages by family and the larger society, through social interactions, internalized and used to guide thoughts and behavior in the outside world (Garfield, 2008).

Masculinity and Men’s Health Research

Research on the influence of gender attitudes on men’s health behavior has primarily focused on how “hegemonic masculinity” (such as displaying strength) can prompt unhealthy behaviors (such as viewing illness as weakness) (Sloan, 2009). Hegemonic masculinity seeks to describe how and why men maintain dominance over women and other gender identities in society (Connell, 1982). The gendered attitudes derived from hegemonic masculinity can sometimes conflict with health behaviors, for instance, messages men receive emphasizing self-reliance, the commonly held beliefs in mainstream society regarding men, such as autonomy, risk-taking, dominance and the need to suppress pain, can create a barrier to seeking out a health professional, asking for help, relying on others and following health guidelines given by authority figures (Gough & Conner, 2006). In terms of mainstream masculinity, traditional beliefs about masculinity for men in the United States can be characterized as a need to maintain independence, demonstrate fearlessness and strength and a discouragement of displays of emotion (Garfield, 2008). More importantly, men who adhere to more traditional definitions of masculinity have been documented to have poorer health outcomes (Garfield, 2008). The commonly held beliefs in mainstream society regarding men, such as promotion of independence, risk-taking, dominance and the need to suppress pain, can adversely affect help-seeking and self-management (Garfield, 2008).

The academic knowledgebase for men's health has expanded with work on men's health issues linking aspects of male gender, (e.g. masculinity) to poor health outcomes and risky health behaviors (e.g. Courtenay, 2000; White, 2004). This work has brought to light disparities in health outcomes between men and women and the state of men's health, such as men's increased risk for numerous health conditions (e.g. most cancers, obesity etc). However, men's health research is a still a relatively new field, with much of the early research focusing on white-middle class men, research that has been generalized to other cross-sections of men (e.g. race/ethnicity, class etc.) (White, 2004). While studies do control for sex, they frequently do not include an in-depth discussion of how gender roles (e.g. masculinity) may influence health in men (Gough, 2006). While the study of men's health has garnered more attention among academics, a dearth of research on impact of gender on health behaviors and outcomes remains (Gough, 2006).

Men of Color and Masculinity

Dominant sociocultural perspectives on gender socialization and masculinity have been developed for Latino and African American men and have key implications for health. Black and Latino masculinity are heavily debated and complex topics among academics; however, dominant perspectives on masculinity exist for African American and Latino men and its relationship to health. Men of color share similar aspects of mainstream male gender role socialization. However, they occupy different social spaces and the interplay between race, class, culture and other factors significantly impacts the way masculinity manifests itself among black men. For instance, Duck (2009) argues that black men must cope with discrimination in their daily lives and this lack of control can directly conflict with traditional African American and mainstream views of masculinity and result in increased levels of stress and helplessness. “Cool Pose” refers to the coping response Black men sometimes adopt which involves displaying physical aggression in order to project a powerful image to society (Pierre, 2001), but can interfere with interpersonal relationships and cultural obligations, particularly to significant others and extended family. Further, Pierre and colleagues (2001) argue that Black men can experience psychological distress as a result of trying to reconcile conceptions of masculinity that are promoted by mainstream society (e.g., aggression, dominance, risk-taking and individual achievement) with aspects of American culture (such as the promotion of mutual aid, survival and collective identity), preventing them from realizing a view of masculinity that is more suitable for African American men.

Research suggests that black masculinity can serve as barriers to black men attaining optimal health. Liburd, et al. (2007) conducted in-depth interviews with 16 African American men with diabetes. Findings suggest that the gender socialization and subsequent behaviors of African American men often contradict recommended diabetes management behaviors. For instance, men reported a desire to maintain control over their bodies and health care at all times and often declined social support offered by family and community networks. Men in the study also engaged in behaviors that increased their risk for diabetes-related complications such as poor dietary habits and alcohol consumption. Liburd, et al. (2007) attributed this to gender socialization and the idea, argued by other black masculinity scholars, that it is weak to show pain and cowardly to run from danger. Plowden and Young (2003) examined sociostructural factors that influence health behavior among African American men in an urban setting. The study revealed that men sampled encountered significant difficulty in accepting a caring environment, which served as a barrier to seeking care in this population. The findings could be linked to caring environments being a challenge to black masculine identity that promotes control, independence and suppression of emotions.

The concept of machismo was created to help explain masculinity in Latino men; however; because Latinos constitute such a diverse group—geographically and in terms of level of acculturation—the study of masculinity poses a unique challenge for researchers. Definitions of machismo vary, with little agreement on a specific definition of the concept, which has been characterized as having multiple and fluid meanings, and is heavily dependent on social context (Guttman, 1996; Courtenay, 2000; Quintero & Estrada, 1998). Mirande (1997) states machismo (male/masculine identity) can be defined as adherence to a code of ethics that guide behaviors in Latino men, but emphasizes that Latino men are not comprised of a large homogeneous population. For example, migration can influence how masculinity develops as Latino men negotiate cultural definitions of masculinity with mainstream definitions in the U.S. (Boehm, 2008; Smoth, 2005). Machismo can also be performative: in academic literature, the concept of machismo is sometimes associated with men who are from low-income or rural backgrounds, although machismo has also be used to describe men from other demographic backgrounds (Guttman, 1996). It’s also important to mention that because machismo is dependent on an individual’s social context, it can also be thought of as performative (Quintero & Estrada, 1998). One study found that machismo was situational among Mexican men whose performances of machismo changed from a street context (e.g. violence and aggression) to a private context (e.g. role as provider for family) (Quintero & Estrada, 1998), revealing how this cultural construct can shift based on time and space.

Research that examines the impact of machismo on health has not been explored extensively in the literature (Getrich, 2011). However, machismo and men's health behavior has garnered more attention with researchers focusing on how machismo influences health behaviors and health in general in Latino men (Hunter et al., 2007; McNaughton, 2008; Sobralske, 2006). Research has primarily been centered around conditions that effect men specifically, such as prostate cancer screening and treatment and vasectomies (Erviti, Sosa Sanchez, & Castro, 2010; Maliksi et al., 2008; Rivera-Ramos & Buki, 2011). In terms of other conditions, colorectal screening and machismo has recently received more attention (Fernandez et al, 2008; Goldman et al., 2009; Goodman, et al., 2006; Salas-Lopez et al, 2007). These studies have helped to develop a better understanding of how machismo can serve as a barrier to seeking out health care, specifically by making men reluctant to seek out medical care. While there have been attempts to explain machismo as a concept, the implications for diabetes self-management and health care use have not been explored extensively.

Understanding gender identities and attitudes is critical to understanding how African American and Latino men with chronic illness manage their health and interact with the health care system. To this authors' knowledge, no studies have been completed that seek to discover how African American and Latino men with type 2 diabetes define masculinity and how this definition influences their health behavior. The current study uses a sample of Midwestern African American and Latino men with type 2 diabetes to explore definitions of masculinity and how masculinity may serve as a barrier or facilitator to diabetes self-management and health care use.

METHODS

Sample

Participants were recruited from a sample of individuals who participated in one of three Racial and Ethnic Approaches to Community Health (REACH) Detroit Partnership diabetes lifestyle interventions. The first intervention was a nonrandomized, 1-group, pre- post-test design (n=180), the second intervention was a randomized, 6-month delayed control group design (n=164) and the final intervention was a randomized controlled trial. For each study, African American and/or Latino adult participants were recruited from 2 health systems in Detroit, Michigan. Data for each intervention were collected between 2002 and 2013. Each intervention was guided by the principles of community-based participatory research. Using an empowerment-based approach, community health workers provided participants with diabetes self-management education and regular home visits, and accompanied them to a clinic visit during the intervention period. Participants were 18 years of age, had physician-diagnosed type 2 diabetes, self-identified as African American or Latino/ Hispanic, and lived in targeted zip codes (Eastside and Southwest Detroit).

The Institutional Review Board at the University of Michigan approved protocols for recruitment and conduction focus groups. Written informed consent was obtained from each participant before each focus group. The focus group moderator read through the informed consent with participants in Spanish or English before signing.

Data Collection

African American and Latino men, 18 years or older, with a type 2 diabetes diagnosis who had participated in a REACH intervention were contacted via phone by a research assistant and asked to participate in the focus groups. If a participant agreed to be a part of the focus groups, a formal letter describing the study and location of the focus group was sent to their home. Focus groups are generally comprised of 6-10 people who engage in a discussion facilitated by a trained moderator. Moderators are tasked with eliciting different ideas and opinions from group members during the given time period. Focus groups typically last from 45 to 90 minutes and are structured by a guide of predetermined questions. Focus group discussions can produce rich data because they are free-flowing and usually involve the participation of a homogenous group of persons who are not familiar with one another, potentially lowering inhibitions (Krueger, 2002).

For the present study, one focus group was conducted with African American men (n=9) and two focus groups were conducted with Latino men (n=13) over a 3-month period. Sessions lasted 90 minutes and were audio-taped. Focus groups were conducted in community-based venues in Detroit, Michigan and participants received a $20 cash incentive for following each focus group. Focus groups with Latino men were conducted in Spanish. Demographic data were collected with a 6-item questionnaire at the beginning of each discussion (in Spanish or English). Focus groups were facilitated by trained focus group moderators experienced with working in Latino and/or African American communities. A research assistant was also present at each focus group to take notes. This study was designed, conducted and the data were analyzed using a community-based participatory approach (Minkler & Wallerstein, 2010).

The focus group guide addressed the following questions (see Table 3.1): 1) When you were growing up, what did you learn about being a man from the men in your community? And 2) how has what you learned about being a man from men in your community impacted your decisions about your health? This paper focuses on disseminating results from these focus group questions to explore how gender identity is conceptualized among Latino and African American men with diabetes; and to examine how these conceptualizations of masculinity may influence their self-management and health care utilization behaviors.

[Insert Table 3.1 Here]

Analysis

Immediately following each of the focus groups, focus group moderators, and note-takers met to compile a list of topics and themes that emerged from the focus group and created a summary document to be used in later analysis. Recordings from the groups were transcribed verbatim, and were analyzed using thematic content analysis techniques. This study identified codes, and engaged in confirming and refining themes with the dissertation committee using the *rigorous and accelerated data reduction* (RADaR) technique (Watkins & Gioia, in press). This technique assisted in coding transcripts for each focus group and in identification of patterns in themes. I first read through the transcript several times in an effort to gain a sense of the experience of focus group participants, but also in an effort to become “one” with the data (Watkins, 2012). Step one of the RADaR process involved formatting all the data (in this case my focus group transcripts) similarly. For step two I created the first set of data reduction tables by placing my focus group transcripts in a formatted spreadsheet and engaged in preliminary coding. Headings in my data reduction table included “question asked in focus group,” “text chunk,” “code,” “notes,” and “theme.” In steps three and four I finalized code and sub-code categories, then decided which chunks of text would be included in my final product. Lastly, a codebook was developed that included code definitions and examples (see Table 3.2).

Code categories were derived from the data (inductive approach) and also from existing literature on men’s health and diabetes (deductive approach) (Lacy & Luff, 2001). Code categories and sub-categories emerging from the data fell under four major areas: The first area, *men’s beliefs about being men*, included the code “description of how men are supposed to act” with the sub-codes of “role of respect, and “role of men as breadwinner.” The first area also included the code “perspectives on what you learned about being a man influence on health decisions” with the sub-code of “role of masculinity: strong men mentality.” The last major area *other* (participant initiated point) had one code “sense of responsibility” with the sub-code of “sense of responsibility for family/community” (see Table 3.2)

[Insert Table 3.2 Here]

[Insert Table 3.3 Here]

RESULTS

As stated, a total of 22 African American and Latino men participated in 3 focus groups conducted in community settings (see Table 3.3 above). Below I discuss in detail three emerging themes that characterize gender identity and it’s relationship to health behavior in men: 1) men’s beliefs about being men; 2) manhood’s influence on health behavior; and 3) men’s role in diabetes education.

Men’s Beliefs About Being Men

When asked how men in their community were encouraged to think and act, focus group participants described the role of respect as a key characteristic of men in their communities. Both African American and Latino men emphasized the need for having respect for themselves, authority figures and peers. Respect for authority was characterized as not participating in adult conversations and following instructions given by adults. Respect for peers was performed by treating friends and acquaintances, as one would expect to be treated. African American men highlighted the importance of the value for respect being passed down from generation to generation. For example, one African American focus group participant stated:

> *“Well, what I learned is respect and stay out of grown folks business. My daddy always told me “if I tell you to do something once I ain’t gone tell you twice” so I learned that and I teach it to my kids…”*

Also, while discussing the role of respect in the community, one Latino man stated:

> *“Well, for me the most important when I started recognizing in my case was the sign of respect. The respect that was given to elders was the primary base to show me how to follow the correct path.”*

While men in the focus groups discussed the importance of respect being passed down from generation to generation, they also agreed that younger generations did not possess the same value for respect, for themselves and others, that older generations did. For focus group participants, this “lack of respect” could be observed in young adults by their lack of regard for issues relating to race and style of dress. For men in the focus groups, this was made most apparent by their use of what they considered racial slurs. For example, one African American man noted:

> "*I hate to say it but my generation stopped teaching the values that we learned. I came up in the 70's but we were taught to respect ourselves because we were trying to break down that racial barrier… There was a lot of respect before. But that's where it stopped at.*

Meanwhile another remarked:

> *I was raised not to call your friend nigga. Now all of a sudden it's a household word, it's acceptable. You better pull you pants up too when you come in my house…That's a penitentiary mentality…But see I was taught to believe that there was a history with the "N" word so there was no respectful way of saying it to anybody…*

According to focus group participants, another key aspect of being a man for respondents was fulfilling the role as sole breadwinner for his family. Participants commented that the roles for men and women in the household were different: "*The woman in the house…because the man is in the street…with his duty to provide for his family."* Specifically, men are charged with the task of supporting the family financially with participants agreeing that *"…the man is supposed to bring home the bacon."* Men also added that they saw family as their primary responsibility before all else. For instance, an African American man stated: *"Yeah my father … He said "… you have to keep your head up and when you become a man you have a family and you have to learn that your family come first."*

Beyond being the sole breadwinner in his family, another aspect of being a man discussed by focus group participants involved the role of responsibility. In addition to providing financially for their family, men in the focus groups also stated that men were responsible for serving as the leader of their family, in addition to serving as the primary breadwinner. Men were also encouraged by fathers and other men in the community to take responsibility for their own actions when necessary. For instance, an African American man described the responsibilities of men as:

> *"The man is supposed to work and take care of this family, support his family, and lead and guide his family the way that he feels so you are supposed to work and support your family."*

Likewise, a Latino participant explained:

> "*Well I learned from my dad and other guys in the neighborhood that a man takes responsibility for his actions; he don't make excuses "oh it's his fault or their fault" for what happened because of what he did."*

In addition to working and familial responsibility, men also mentioned chivalry as a central component to manhood. For men in the focus groups, chivalry was defined as being a "gentleman," primarily displayed through actions such as opening doors for women. Men stated that in the focus groups, in many instances, women would respond with surprise because they were not accustomed to men behaving in a chivalrous way. According to an African American participant:

> *"I could be going into a store or any type of establishment and I stand back and I open the door and some of them will look at you real funny especially the young ones. They don't know the definition of chivalry."*

The above findings suggest that African American and Latino men acquire definitions of manhood from their communities that influence how they navigate their everyday lives. Below describes how these definitions of manhood influence health behavior according to focus group participants.

Manhood's Influence on Health Behavior

When men were asked for their perspectives on how what they learned about being men influenced their health decisions, they highlighted the role of certain aspects of masculinity. African American and Latino respondents stated that the need for men to maintain a "strong" image to the outside world played a key role in preventing them from seeking medical attention when they were ill. According to one focus group participant "*…nobody goes to the doctor until they're actually feeling pain. Until they can't stand the pain anymore."* Another focus group member commented:

> *"Well, the way I was raised… men are strong and we don't need to go to the doctor—we can take care of ourselves and when I first got diagnosed with diabetes I was still trying to do that on my own without listening to everybody else."*

Men also stated that in addition to severe illness serving as a motivator to go to the doctor, advice from family members regarding their symptoms also prompted men to seek medical attention. In several instances, after discussing physical ailments with family members, men sought out medical attention at the behest of loved ones. For instance, one focus group participant stated:

> *"I was staying with moms I was 19 years old and I was urinating an awful lot and she noticed and said "you need to go to the doctor" and I said "ok" so I went…"*

A need to maintain control over their actions also posed a barrier to seeking care for diabetes-related health problems. On participant commented that men want to be in control and that this can impede their ability to follow health advice from family, friends, and health care professionals. Another focus group participant explained *"…us men just [want] to be in control….I didn't want to listen to the doctors or anybody else…"*

In addition to identifying severe symptoms of illness and a need to maintain control as factors that impact health behaviors, Latino men discussed the concept of *machismo,* which prescribes how men should act, and its role in health behavior. Focus group participants describe machismo (or Latino masculine ideology) sometimes entails beliefs such as a real man can withstand pain, hardship and failure, which has significant implications for health. Specifically, these attitudes led to delays in seeking out medical care. Machismo also involved putting the needs of one's family and the role as breadwinner before any physical health needs. One participant stated that:

> *"[In] machismo we are taught that the men always had to be strong. …The man doesn't cry, the man is the provider of the family, the man shouldn't complain, the man doesn't go to the doctor. "*

Another commented:

> *"…their machista beliefs that nothing will affect them; one doesn't get hurt, one doesn't get sick, one doesn't go to the doctor, one shouldn't think of thyself but only of the family."*

Similarly, another participant stated:

> "*… one…wouldn't go to the doctor unless we were about to die….[the] machismo that we were taught was to be strong, be a man, have a say, and have*

responsibility…one is told that if you go to the doctor it is because you are not a man.“

Based on the responses of the men who participated in these focus groups, one might conclude that certain aspects of masculinity, as defined by African American and Latino communities, can sometimes have a detrimental effect on practicing health behaviors required to manage diabetes. While men discussed manhood as a barrier, they also described a proactive role men could take in helping others to manage the disease.

Men's Role in Diabetes Education

One code that was not asked about directly but came up consistently in each focus group among both African American and Latino men involved a shared sense of responsibility. This participant initiated point (PIP) consisted of a need for men with diabetes to work as health advocates among their friends and family in an effort to share information about diabetes prevention and treatment. One focus group participant stated that came with his father to offer support, but also to learn more about diabetes in order to share that information with others. Another participant shared with the group that he helped a family member with diabetes, going as far as paying for medical expenses "*I have a family member who I started to help. I took him and told him that if there was something to pay I would put it in for him."*

Focus group members also felt they had an obligation to their community as a whole regarding educating others about diabetes-related issues. One participant shared *"you have to become a promoter, you have to direct your community."* Other men who had positive experiences with health care professionals referred others to the same physician, nurse etc. Men also found that through counseling other regarding diabetes self-management, they also were able to receive something from the experience. For instance, an African American participant explained:

> *"Also it falls to us—the ones that do have diabetes. Instead of just trying to educate your family we have to communicate with people in general, talk to each other, put it out there, tell people what warning signs…"*

Similarly, a Latino man stated:

> *"…every time I see a diabetic, I counseled them. I say look, the exercise, to walk, or this, I continue to counsel. To counsel a friend from the community that has the same thing you have and maybe with your counseling he'll help you as well."*

The above responses imply that both Latino and African American men living with type 2 diabetes may feel a sense of responsibility and a desire to work in their families and communities to both treat and prevent diabetes.

DISCUSSION

The primary focus of this paper was to explore the lived experience of manhood and masculinity in Latino and African American men with type 2 diabetes and the intersection of definitions of masculinity with diabetes self-management and health care use. Focus groups with men revealed three main themes. Results from this exploratory study of African American and Latino men with type 2 diabetes suggest that the way men define gender roles may have implications for how they engage in their diabetes care. Our study is supported by previous research on diabetes and other chronic illness (e.g. Liburd, 2007; Geitrich, 2011), which indicates that the experience of masculinity in African American and Latino men can impact management of chronic conditions (e.g. diabetes and colorectal cancer) and health care use.

For men, across racial/ethnic boundaries, showing respect to elders, and fulfilling the role of breadwinner in the family were the two central values that emerged in discussions. In terms of a man's responsibility for the financial stability of his family, this could have implications for diabetes-related health behavior. Specifically, the need to be the primary breadwinner could result in long work hours or other time consuming activities that may impede a mans ability to engage in diabetes self-management but also to utilize health services. Men in the focus groups reported that having enough time to seek out health services when they felt ill, after long work hours, was a barrier to utilizing health care. Among men, research has shown that 'working hard' can be linked to traditionally masculine ideals (i.e. physical strength, breadwinner, etc.) (Connell, 1995; O'Hara, Gough, Seymour-Smith & Watts, 2013). Our results are supported by previous research, which states that chronic stressors related to work (e.g. long hours) may lead to an increase in poor diet, low rates of exercise and increases in obesity (Heraclides, 2011). Past research has linked work-related psychosocial stress with type 2 diabetes and other chronic conditions such as heart disease and metabolic syndrome (Heraclides, 2011). Regarding respect for elders, the role of older adult community members in diabetes care should be explored further.

Men also felt that family was their primary responsibility, sometimes putting the needs of family above their own, even when it came to health matters. In the literature, traditional feminine ideals are typically associated with being a caretaker (O'Hara, Gough, Seymour-Smith & Watts, 2013). This finding suggest that traditional definitions of masculine ideals should be reevaluated, perhaps to include less traditional characteristics and calls for an evaluation of how these new ideals might influence diabetes self-management (O'Hara, Gough, Seymour-Smith & Watts, 2013).

Another barrier to self-management specifically identified by respondents was the need for men to maintain a "strong" image to the outside world, which prevented men from seeking medical care until symptoms were severe. This finding has been confirmed elsewhere in the men's health literature (Courtenay, 2000). For Latino men, this was expressed through the concept of *machismo.* Another aspect of masculinity that men reported as a barrier to diabetes self-management was the need to maintain control over their actions to not have that impeded by a health care professional telling them what to do. Previous literature supports this funding (Courtenay, 2000). Both displaying a strong image and the need to maintain control in African American and Latino men with diabetes should be considered in diabetes self-care regimens.

In terms of diabetes self-care, men also reported being offered and acceptance of social support from significant others and family members. This finding identifies the critical role social support plays in successful diabetes management. Men were more inclined to share symptoms of illness with individuals close to them. As a result, family and friends members played a key role in prompting men to seek out medical attention after learning of their physical symptoms. Public health interventions targeting men of color with diabetes should include an integration of the family unit into diabetes health care programs and self-care regimens. Prior research shows that social support plays a critical role in facilitating self-care and health care use behaviors among persons with diabetes (DiMatteo, 2004). In terms of diabetes self-care, social support in the form of practical and emotional aid from family and friend relationships has been found to have a positive impact on recommended diabetes self-care behaviors such as regular glucose monitoring, and increased diet and physical activity (Gallant, 2003; Lloyd, Wing, Orchard, & Becker, 1993; Rosland et al., 2008; Schafer, McCaul, & Glasgow, 1986; Shenkel, Rogers, Perfetto, & Levin, 1985; Sherbourne, Hays, Ordway, DiMatteo, & Kravitz, 1992; Tillotson & Smith, 1996). In terms of health care use, social support has been found in multiple studies to increase medical care utilization (Broadhead, Gehlbach, & Kaplan, 1989; Kouzis & Eaton, 1998). Interestingly, research on masculinity purports men who adhere to traditional gender norms and values are resistant to receiving support because it challenges their autonomy and is a direct threat to their gender identity (Courtenay, 2000). However, the acceptance and utilization of social support from family members calls for a reevaluation of the literature's previous definitions of masculinity and an unwillingness of men to engage in social support due to its conflict with gender ideals.

Men also identified a desire to work with other family and community members as diabetes health advocates to share information about diabetes prevention and treatment. This finding aligned with previous research, which found that peer support from persons with the same chronic illness can increase self-management knowledge and improve health outcomes (Dennis, 2003; Brown et al., 2011). Peer support programs with Latino and African American men with type 2 diabetes may provide a venue for men to share their experiences and receive advice and positive reinforcement that may not be available from busy health care professionals. Public health interventions targeting African American and Latino men with diabetes should consider incorporating men into the design of the intervention as a strategy for sharing health information. This finding (men’s desire to work as health advocates) also seems to be in conflict with more traditional notions of masculinity, such as a need for autonomy (Courtenay, 2000). My findings show that men may adopt traditional masculine ideals and beliefs with regard to some behaviors but ignore them with regard to other behaviors important for their own diabetes control and for the health of the community. This calls for more research on masculine identity for men living with a chronic illness.

Limitations

In this study, qualitative research methodology was used to help enhance an understanding of the psychosocial factors that influence diabetes self-management and health care use among African American and Latino men with type 2 diabetes in an Midwestern urban setting. The use of the RADar technique made it possible to thoroughly identify these psychosocial factors. While these findings may potentially be applicable to other urban, Midwestern men of color, it is not possible to generalize on a national level. However, the findings in this study should be used as a springboard for future research to develop a more comprehensive picture of psychosocial factors that influence diabetes self-management and health care use in men of color.

It is also important to note that men in the focus groups were former or current participants in the REACH diabetes lifestyle intervention and recruited directly from health care systems. Because participants volunteered and were recruited directly from either a hospital or community health clinic, it can be inferred that the participants in this study some level of access to health care. This limits the generalizability of my focus group results could vary between men who have utilized health care versus those without access to health care. Additionally, response rates were lower for African Americans compared to Latinos, limiting generalizability for African American men in the sample.

Moreover, because older men are more likely to be diagnosed with type 2 diabetes, most of the men in our sample were over the age of 40 years old, potentially making findings less relevant to other age groups of men. Lastly, the literature relating masculinity to health behaviors and health outcomes in men of color largely discuss Latino and African American men in separate studies; however my study has found that on many levels, African American and Latino men share the same views on not all, but a majority of topics. More research should be conducted to elucidate similarities (and differences) in masculinity and health in men of color.

Conclusions

The findings from this study contribute to the existing literature by describing the mechanisms through which masculine identity might influence diabetes self-management. Results from the focus groups held with African American and Latino men with type 2 diabetes suggested that men's beliefs about being men impacted diabetes-related health behaviors. Our research also demonstrated that both Latino and African American men with diabetes desire to take a more proactive role in diabetes education programs in their families and communities. This finding highlights the importance of conducting more research on peer-support models for men with diabetes and potentially integrating male family or community members in diabetes self-management regimens for men. Social workers and other health care professionals should consider the direct impact masculine identity and modify their approaches to delivering care to men living with chronic illness accordingly.

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Table 3.1 — “Men’s Health Care-Related Behaviors and Beliefs” Section of REACH Focus Group Questionnaire

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1. *When you were growing up, what did you learn about being a man from the men in your community?*
    a. Probe: How are men supposed to act?
    b. Probe: What are men supposed to do? (in relation to work, family, friends).
2. *How has what you learned about being a man from men in your community impacted your decisions about your health?*
    a. Probe: How serious would a problem need to be to go to the doctor?
    b. Probe: What keeps you from going to the doctor?

Table 3.2 — Code Categories

1. **Men's beliefs about being men:**
    1. Description of how men are supposed to think and act.
        - i. Role of respect.
        - ii. Role of men as breadwinner.
        - iii. Role of responsibility.
        - iv. Chivalry
    2. Perspectives on what you learned about being a man influence on health decisions.
        - i. Role of masculinity: "strong men" mentality.
        - ii. Receiving Advice
        - iii. Role of masculinity: need for control.
2. **Other:**
    1. Sense of responsibility.
        - i. Sense of responsibility for family/community (something that was not asked but came up anyway, participant initiated point (PIP)).

Table 3.3 — Sociodemographic characteristics in REACH sample of Latino and African American men with type 2 diabetes (N=22)

	African American (n=10)	Latino (n=12)
Average Age	63	52
Born Outside of US		
Yes	0	12
No	10	0
Primary Language		
Spanish	0	12
English	10	0
Work for Pay		
Yes	3	10
No	7	2
Marital Status		
Married	6	7
Single/Divorced/Never Married	4	4
Cohabitating	0	1

Appendix A

REACH 2011 Focus Group Guide

Community Health Worker Diabetes RCT with Latinos in Detroit
Focus Groups with Latino and African American Men in Detroit

FOCUS GROUP GUIDE

Men’s health care-related behaviors and beliefs:

Root Question #1: *When you were growing up, what did you learn about being a man from the men in your community?*

- Probe: How are men supposed to act?
- Probe: What are men supposed to do? (in relation to work, family, friends).

Root Question #2: *How has what you learned about being a man from men in your community impacted your decisions about your health?*

- Probe: How serious would a problem need to be to go to the doctor?
- Probe: What keeps you from going to the doctor?

Root Question #3: *As a man, how do you feel about using diabetes medication? (including insulin and pills)*

- Probe: What influences how or when your take your medication?
- Probe: What influences whether you take your medication?

Health Services and Health Care:

Root Question #4: *What could the health care system or your doctor do to make it more likely that men in your community would use the health care services that they offer?*

- Probe: What could family and friends do?
- Probe: What could the community do?
- Probe: How would this be different for you specifically?

Root Question #5: *Many diabetes self-management programs are offered to men with diabetes. How well do you think programs work for men with diabetes in your community?*

- Probe: Does it matter if men and women are in the same group?
- Probe: Does it matter if the leader is a man or a woman?
- Probe: Does is matter if your doctor or other health care provider is the same race?
- Probe: Have you participated in any group program or service other than REACH for diabetes-related issues? What did you like about the program? Anything you did not like?

Root Question #7: *If you could design a program for men with diabetes to help them care for themselves, what would it look like?*

- Probe: What activities should it include?
- Probe: Who should plan and lead activities?
- Probe: Where should it be?
- Probe: Who should participate? (only men or their family also?)
- Probe: What could motivate men to come?
- Probe: Would it matter if it was in groups or one-to-one

Community Health Worker/REACH Specific Questions (part of process evaluation):

Root Question #7: *Now we will talk specifically about your experience with Family Health Advocates (FHAs) in the REACH program. In what ways do you think having a male FHA might be different form having a female FHA?*

- Probe: Was your FHA a man or a woman?
- Probe: Do you think your experience with the program would have been different if you had a male FHA?

Chapter 4

Social Support and Integration as Mechanisms for Better Understanding the Relationship Between Race and Health care Utilization Among Men

Abstract

In this study I examine whether social support and social integration mediate or buffer the relationship between race and health care utilization among U.S. men. This study used the 2001 National Health Interview Survey (n=53,893). The sample includes Latino, African American, non-Hispanic white, and Asian men living with self-reported diabetes for a total of 7,148 men. Findings revealed that non-Hispanic black men with high levels of social integration were less likely to forego care than their non-Hispanic white counterparts with high social integration. Also, non-Hispanic black men who did not attend church had higher odds of foregoing care compared to men who did attend church services. More research should be conducted on how different aspects of social networks influence health care use based on race/ethnicity among men.

INTRODUCTION

Diabetes is known to affect 25.8 million people of all ages and 8.3 percent of the U.S. population, and the burden is even greater, given an estimated additional 7 million undiagnosed cases (National Institute of Diabetes and Digestive and Kidney Diseases, 2011). Among men nationally, 12% (or 13 million) have a diabetes diagnosis, with higher prevalence found among African American and Hispanic men compared to non-Hispanic white men, according to the Centers for Disease Control and Prevention (CDC)

(CDC, 2012; 2013). Additionally, if untreated, diabetes can be a debilitating and fatal disease. Serving as one of the most prevalent causes of death in the United States, diabetes can also lead to the development of other life threatening conditions such as stroke and kidney failure. Diabetes is also the primary cause of non-traumatic lower-limb amputation and new cases of blindness in adults in the U.S (CDC, 2012).

Link and Phelan (1995) coined the term “fundamental causes” of health, which refers to social conditions that facilitate access to critical resources, such as socioeconomic status (SES). While fundamental cause theory was developed primarily to explain the impact of SES on health outcomes, other social factors, such as race, can be considered fundamental causes of disease because they also affect multiple disease outcomes through multiple mechanisms (Williams, 1999). Similar to SES, race can impact access to resources that directly affect health and mortality such as money, knowledge, power, prestige, and social connections (Link, Phelan & Tehranifar, 2010; Tehranifar, 2009). Additionally, other literature has found that race differences in health outcomes and health behaviors persist even after controlling for socioeconomic status (Williams, 1999).

Discovering the mechanisms that are implicated in fundamental cause approaches and through which racial/ethnic background influences health is critical to better understanding racial/ethnic disparities in health among men with a diabetes diagnosis. There is a growing interest in men’s health and work has emerged that connects aspects of male gender identity to poor health outcomes (e.g. Courtenay, 2000; White, 2004). This area of research has also highlighted disparities among men in rates of diagnosis and severity of symptoms for several diseases compared to women (White, 2004).

Mechanisms that might help to explain race/ethnic differences in health may include social support and social integration. The role of social support and social integration in diabetes care has garnered much attention in the research community, and research has shown the positive effect of different types of social support and levels social integration on health (Cohen, 2004; Berkman, Glass, Brissette, & Seeman, 2000). There is only limited research on race and health care utilization among men with a chronic illness, a group less likely to be engaged with their social networks and also less likely to utilize health services (Smedley et al., 2002). It is also important to look at men specifically because gender norms may result in lower levels of social support and social integration among men than among women (Denton, Prus & Walters, 1999).

Social support can fall into one of four categories with regard to the way it might influence health behaviors or health care use: emotional (e.g., affection, acceptance), instrumental (e.g. financial support, self-management assistance), informational (e.g. education, information, advice) and affirmational (e.g. validation of self-care behaviors) (Tang, Brown, Funnell, & Anderson, 2008; Taylor & Seeman, 1999). However, much variation exists in how social support has been examined in research (Tang et al., 2008). Studies of social support in diabetes care have measured social support via indicators of satisfaction with support, perceived social support as well as with measures of sources of support, types of support, size of support network and quantity of support received. In terms of social integration, aspects and levels of social engagement and attachment can also influence health in important ways, particularly, frequency of church attendance and level of involvement in religion (Aaron, 2003). This study focuses on two specific outcomes, self-reported emotional support (defined as what) and social integration (defined as church attendance, phone calls to friends or family and visits with friends and family).

Differences in social support and social integration across racial/ethnic groups may help to explain variation in health and health care use across these groups, but social support and social integration may also operate differently by race/ethnicity among men with diabetes, having a greater affect for some racial groups than others. Gorman (2007) and colleagues studied whether social support and social integration mediated or buffered the relationship between multiple measures of SES and health outcomes (specifically, hypertension and self- rated health) using a national dataset. Their study showed that social integration serves as buffer to for the negative impact of low SES on self-rated health (Gorman, 2007). The present study builds on this work by exploring whether specific aspects of social networks provide the same buffer effect against the negative effects of racial minority status on health.

While most studies focus on the impact of a fundamental cause on health outcomes, my study will focus instead on three key health behaviors: physician visits, emergency room visits and foregone care, all of which can directly impact subsequent health outcomes and mortality for persons living with diabetes. Seeing a doctor regularly is an essential part of managing diabetes. In terms of health care use for diabetes specifically, persons with a new diagnosis of diabetes should receive an initial evaluation and moving forward, medical care from an interdisciplinary team including physicians, nurses, mental health professionals and dieticians (American Diabetes Association, 2010). Further, persons with diabetes should receive a blood glucose test administered by their health care provider every 3 months and should see a physician for a follow-up appointment every 6 months at a minimum or more frequently depending on stability of the disease (Turner, Williams, Taichman, & Vijan, 2010). Also, individuals with diabetes who present in emergency rooms with diabetes-related complications that are the result of poor glycemic control (Leese, et al., 2003). A study of the relationship between race/ethnicity and emergency room use may shed light on how social support and social integration may mediate or buffer the race-health care use relationship for men that are struggling with managing their diabetes. Because consistent and quality medical care is so essential to proper diabetes management, it is also critical to understand examine whether social support and social integration explain or moderate the influence of race on foregone care due to cost.

Based on limitations in the prior literature, this study seeks to understand if social support and social integration serve as pathways that may explain race/ethnic differences in health care utilization, or if they may moderate the association. I use the 2001 National Health Interview Survey to examine on how racial/ethnic differences in health care use and ways that social networks explain or moderate this association operate among men with a diabetes diagnosis. Contributions to the literature include an assessment of these relationships that can inform the work of health professionals and health programs by showing whether engagement with social support and social integration may influence health care use among men and also by assessing whether this relationship varies among men of different racial backgrounds.

BACKGROUND

Race/ethnicity: A Fundamental Cause of Health Disparities

Disparities in health status by racial/ethnic background persist in the United States (Williams & Sternthal, 2010). For instance, African Americans continue to have poorer health status than their white counterparts even after accounting for variables that are known to directly influence health outcomes, such socioeconomic status. Compared to non-Hispanic whites, Latinos are more likely to die of diseases such as diabetes and hypertension. In general, minorities are more likely to develop a wide range of illnesses earlier, are less likely to recover from these illnesses and present with more severe symptoms (Williams & Sternthal, 2010).

Disparities in health have been both conceptually and empirically explored using fundamental cause theory (FCT) (Link & Phelan, 1995). FCT posits that social factors (i.e., race, gender and SES) can influence the availability of resources that directly affect health outcomes. While the mechanisms through which these more distal social factors that influence health may change, the relationship between things like race and SES and health outcomes persists (Link & Phelan, 1995). While many studies have focused on SES as the primary fundamental cause of disease, racial/ethnic differences in health outcomes remain across levels of SES (Williams, 1999). More specifically, African Americans consistently experience poorer health outcomes regardless of SES background when compared to non-Hispanic whites (Williams, 1999).

Race and ethnic background influence access to health care and health care utilization in important ways (Smedley et al., 2002; Ault-Brutus, 2012). The Institute of Medicine (2002) report, *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care* outlines racial/ethnic disparities in health care use in the U.S. The study calls for increased research on factors such as patient characteristics, patient-provider relationships and treatment suitability that might help to account for the influence of race on differences in health care use (Smedley, et al., 2002). Racial-ethnic differences in health care utilization for persons living with a diabetes diagnosis have also been documented, with African Americans and Hispanics receiving disproportionately less care than non-Hispanic whites across a range of services (Yeboah-Korang, et al., 2011; Hazel-Fernandez, et al., 2014).

The Role of Social Support and Social Integration

As stated, this study focuses on two specific outcomes, self-reported emotional support and social integration (defined as church attendance, phone calls to friends or family and visits with friends and family). Social support plays a critical role in facilitating health care use behaviors among persons with diabetes (DiMatteo, 2004). Social support in the form of practical and emotional aid from family and friend relationships has been found to have a positive impact on recommended diabetes self-care behaviors such as regular glucose monitoring, and increased diet and physical activity (Gallant, 2003; Lloyd, Wing, Orchard, & Becker, 1993; Rosland, et al., 2008; Schafer, McCaul, & Glasgow, 1986; Shenkel, Rogers, Perfetto, & Levin, 1985; Sherbourne, Hays, Ordway, DiMatteo, & Kravitz, 1992; Tillotson & Smith, 1996). In studies examining multiple dimensions of social support simultaneously, positive health outcomes for persons with diabetes have been reported (Tang, et al., 2008). For health care utilization specifically, social support has been found in multiple studies to increase different measures of medical care utilization, such as routine health care visits (Broadhead, Gehlbach, & Kaplan, 1989; Kouzis & Eaton, 1998), however, no studies have looked specifically at men living with a chronic illness.

The literature regarding emotional support's influence on health care utilization has focused primarily on the influence of this type of support on mental health care use. Specifically, individuals reporting receipt of emotional support were less likely to utilize mental health services in the veteran population (Osei-Bonsu, 2014). Similarly, while fewer in number, other studies found that lower levels of emotional support decreased the likelihood of attending routine check-ups among a female sample (Willet, 2012). Additionally, in general individuals who report low levels of social are more likely to frequent emergency rooms for routine care (Ramaswamy, 2013; Carret, 2007; Aminzadeh, 2002; Padgett, & Brodsky, 1992). These findings reveal a need to investigate how emotional support may increase or decrease different types of health care utilization in a nationally representative sample of men with a chronic illness. Given what we know about how social support and social integration impact different health care use outcomes I can posit that both these variables may influence other health care use behaviors, specifically foregoing care. The influence of race/ethnicity on foregoing care among men has not been studied in great detail. Because social support and integration gave been shown to increase various types of health care utilization, it is also important to understand the influence of social support on foregoing care due to cost.

Social integration (i.e. church participation) has also been shown to influence health care practices (Aaron, 2003; Benjamins, 2006), particularly by increasing health care utilization in vulnerable, uninsured and chronically ill populations (Aaron, 2003). Specifically, church attendance has been positively linked to usage of preventative health care utilization such as attending routine doctor visits, dental visits, pap smears, prostate screening and routine health care check-ups (Benjamins, 2006). Church attendance has also been found to decrease emergency room usage, particularly by individuals who reported receiving health information from church organizations (Akincigil, 2011). To the author's knowledge, no studies have been completed assessing the influence of church attendance on foregoing care due to financial concerns.

It is also important to note that type and availability of social support and levels of integration differ both by race/ethnicity. A study of predictors of social support, diabetes diagnosis acceptance, health-promoting behaviors, and glycemic index utilized face-to-face interviews with 63 African Americans with type 2 diabetes and revealed that physical functioning and social support can lead to acceptance of a diabetes diagnosis and increased health-promoting behaviors compared to non-Hispanic whites (McDonald, Wykle, Misra, Suwonnaroop, & Burant, 2002). Additionally, African Americans are more likely to rely on informal social support networks from relatives compared to non-Hispanic whites revealing racial/ethnic differences in type of social support (Ford, Tilley, & McDonald, 1998). Another study of 76 Mexican American individuals living with type 2 diabetes found that high levels of informal social support resulted in increased diabetes management (Carranza & LeBaron, 2004). Because the role of social support is so critical, it is important to further examine how social support may impact the relationship between race and health care use among a multiracial group of men.

Research has considered the role of social support and integration in health care use; however, to date, no study exists that examines how key aspects of social support and integration may mediate or moderate the links between race/ethnicity and health care utilization. Race and ethnicity can influence the type and level of social support and social integration due to availability, attitudes and values about social networks based on racial background (Ford, Tilley, & McDonald, 1998). Assessing the role of social support and social integration in the association between race and health care use may help to illuminate racial disparities in utilization of medical services in men with a chronic illness.

METHOD

Sample

This study used data from the 2001 National Health Interview Survey (NHIS). NHIS is a nationally representative, cross-sectional survey conducted annually by the National Center for Health Statistics at the U.S. Department of Health. The primary aim of NHIS is to examine trends in health status (illness and disability), health care and health behaviors among non-institutionalized individuals in the U.S. Face-to-face interviews were conducted with all members of households sampled and one adult randomly selected for inclusion in the Sample Adult File. I used data from the 2001 NHIS (N = 53,893). For the present study, after restricting the sample to men those reported that they had been told by a physician they had diabetes (N = 7148) and those with complete data for the variables used in my study, the sample includes Latino, African American, non-Hispanic white, and Asian men living with self-reported diabetes for a total of 7,148 men.

Measures

Outcome Variables

I measured health care use with three items: first, how many *emergency room visits* respondents had in the past 12 months: (0) none, (1) 1 to 3 visits and (2) 4 or more visits. Second, whether participants *saw a general doctor* in the last 12 months (0) no and

(1) yes. I also measured *foregone medical care,* using an item that asked “have you foregone care due to cost in the last 12 months? The variable was coded as (0) did not forego, (1) did forego care.

Independent Variables

Self-reported *Race/ethnicity* is the key independent variable, coded as (0) non-Hispanic white, (1) non-Hispanic African American, and (2) Hispanic.

Mediating/Moderating Variables: Social Networks and Integration

Social support was determined by asking “How often do you get emotional support?” coded as never/rarely (0), usually/sometimes (1) and always (2). *Level of social integration* was measured using two items: 1) Did you attend any church services in the last two weeks? Response options were (0) no and (1) yes. A social integration index was created using those two variables that were highly correlated. The social integration index had a scale reliability coefficient of 0.587.

Other Covariates

Sociodemographic control measures identified in previous literature as being related to health care use included household *income* for 2011 coded as (0) $0 - $34,999, (1) $35,000-$74,999, and (2) $75,000 and over; *age* in years (measured as a continuous variable), *poverty status,* coded as (0) at or above poverty level (1) below poverty threshold (threshold was categorized based on the 2001 US federal poverty guidelines). Poverty status (29%) and household income (24%) had high rates of missing data. *Last, self-rated health status* was measured as (0) excellent, (1) very good, (2) good, (3) fair, (4) poor; and *nativity status* (0) not born in the US (1) US born. Socioeconomic status was assessed by the following measures: *education,* coded as (1) less than high school,

(2) high school but less than BA/BS, and (3) BA/BS or more; *employment status,* coded as (1) unemployed, (2) not in labor force and (3) employed; *marital status* coded as (1) single, (2) married, or (3) living with partner. Lastly, to simplify multiple types of health insurance coverage available *health insurance status* was coded as (1) covered or (2) not covered.

Analysis

Demographic characteristics are presented for my sample of men; to compare sociodemographic characteristics across race/ethnic groups, a t-test was used for continuous variables, Fisher's exact test was used for categorical variables with expected count under 5 in any cell, and Pearson's chi-square test was used for all other categorical variables.

Multiple logistic regression models were used to assess whether emotional support and/or social integration mediated the relationship between race/ethnicity and doctor visits and foregone care. Ordered logistic regression was used to test these associations for emergency room visits. A mediator variable is one that explains the relationship between a predictor and an outcome variable (Baron & Kenny, 1986), here race/ethnicity and health care use indicator, respectively. Separate models examined the health care utilization outcomes of emergency room visits, doctor visits and foregone care. Model 1 includes only an indicator of race/ethnicity. Models 2 and 3 include indicators of race/ethnicity and emotional support or social integration as independent predictors, as well as adjusting for sociodemographic covariates. To determine if key predictors might influence the race/ethnicity-health care use relationship differently, two sets of models were run, one including emotional support and the other including social integration variables.

To determine if emotional support and social integration moderated the relationship between race and health care utilization, I tested interactions between race/ethnicity and emotional support and social integration. A moderator variable is one that influences (or buffers) the strength of a relationship between a predictor and outcome variable (Baron & Kenny, 1986). For moderation tests, race/ethnicity was used as a predictor of each outcome variable (foregone care, emergency room visits and doctor visits) and I also included the main effects of emotional support and social integration and interaction terms between race and each of these (race x emotional support; race x social integration index; race x church visits). As for the mediation models, Models 4 and 5 included sociodemographic control variables and two sets of models were run for each outcome variable, one including emotional support interactions (Model 4) and another including social integration interactions (Model 5) Statistical analyses were conducted using Stata software version 13 (Statacorp, 2013). The present study is exempt from the internal review board process because it uses a de-identified secondary data set.

RESULTS

Sample characteristics

Table 4.1 presents weighted sample characteristics for all variables included in the analyses. Hispanic men were more likely than non-Hispanic white and African American men to report no emergency room visit in the last 12 months (p<0.001). Slightly more non-Hispanic black men reported 4 or more emergency room visits compared to non-Hispanic white and Hispanic men (p<0.001). Non-Hispanic white men were the most likely to have seen a doctor in the last year at 66 percent, compared to 50 percent of

Hispanic men (p<0.001). Table 4.1 also shows that non-Hispanic black men were most likely to report foregoing medical care due to financial barriers in the last year (p<0.05).

Non-Hispanic white men were the oldest at 44.9 years on average, while Hispanic men were the youngest at 37.9 years (p<0.001). Hispanic men were much less likely to have been born in the U.S. at 39 percent, compared to 89 percent of non-Hispanic blacks and 96 percent of non-Hispanic whites (p<0.001). Non-Hispanic white men had the highest levels of education and were least likely to be living below the poverty threshold (p<0.001). Hispanic men were less educated, were most likely to be living below the poverty level and were the most likely to be uninsured than non-Hispanic Black and white men (p<0.001). Non-Hispanic black men had the lowest levels of employment and were least likely to be married (p<0.001).

Table 4.1 also shows, for my focal mediating and moderating variables, that Hispanic men were most likely to report "always" receiving emotional support, while non-Hispanic white men were least likely (p<0.05). However, non-Hispanic white men (96%) were the most socially-integrated based on my social integration scale compared to non-Hispanic black men (94%) and Hispanic men (93%) in the sample (p<0.001). Non-Hispanic black men were the most likely to have frequented a place of worship (p<0.001).

[Insert Table 4.1 Here]

Association between Race and Health Care Utilization

Doctor Visits

Table 4.2 reports results for testing for mediation and moderation of emotional support and social integration on the relationships between race/ethnicity and doctor visits, adjusting for covariates in Models 1-5. The adjusted odds ratio for non-Hispanic black men and Hispanic men as compared to non-Hispanic white men indicates the odds of the event for a man of color (Hispanic or black), relative to a non-Hispanic white man, with all covariates held constant. Model 1 shows the race/ethnicity association with doctor visits, no significant racial/ethnic differences were found for seeing a physician in the last 12 months. Model 2 shows the association between race/ethnicity with doctor visits, including emotional support. In model 2, emotional support was not significant and thus did not serve as a mediator. While Model 3 in Table 4.2 shows that higher levels of social integration increased doctor visits (1.602** [1.177,2.179]) for the overall sample, net of other covariates, the social integration scale does not explain the association between race/ethnicity and doctor visits. Specifically, there are not substantial changes in odds ratios for race/ethnicity in Models 1 through 3. Emotional support also did not serve as a mediator because odds ratios for race and emotional support did not change and were not significant. Therefore, I cannot help to better understand the race-health care utilization relationship for men with diabetes by controlling for social integration (specifically church attendance, making phone calls and visiting with friends and family members) and emotional support. In table 4.2, models 4 and 5 show that social integration and emotional support do not moderate the relationship between race/ethnicity and doctor visits because no interaction terms were statistically significant.

[Insert Table 4.2 Here]

Emergency Room Visits

Coefficients in table 4.3 show that emotional support and social integration were not mediators between race and emergency room visits. Model 1 shows coefficients for the association between race and emergency room visits. In model 1, Hispanic men were less likely to report emergency room visits (-0.542*** [-0.832,-0254]). Model 2 tests the association between race and emergency room visits and includes emotional support to test for mediation. In model 2, Hispanic men continued to be less likely to report any ER visits (-0.550 *** [-0.841,-0.259]) however, emotional support was not significant and thus does not help to explain the race-emergency room relationship. Model 3 includes the social integration scale and church attendance to test for mediation. In model 3, social integration did not change the association of race on emergency room visits, revealing that social integration also does not serve as a mediator. After adjusting for social integration, Hispanic men who attended church in the last 2 weeks (0.182* [0.033, 0.331]) were still less likely to have emergency room visits (-0.517 *** [-0.804,-0.229]), however, because Hispanic men were still less likely to have emergency room visits, no mediation effect exists for church visits. Model 4 includes an emotional support x race interaction to test for moderation. Model 5 includes a social integration x race interaction and church x race interaction to also test for moderation. Both models 4 and 5 show that social integration and emotional support do not moderate the relationship between race/ethnicity and emergency room visits because no interaction terms were statistically significant.

[Insert Table 4.3 Here]

Foregone Care

Table 4.4 reports the association between race and foregone care testing to the mediation and moderation effects of social integration and emotional support. Model 1 tests the association between race and foregone care. In model 1, odds ratios show that Hispanic men were also less likely to report forgoing care (0.548** [0.346,0.868]). Model 2 shows the association between race and foregone care, adding emotional support to the model to test for mediation. Model 2 shows that Hispanic men remained less likely to forego care compared to non-Hispanic black and non-Hispanic white men (0.55* [0.345, 0.878]) after emotional support, showing that emotional support does help to explain the race-foregone care relationship. Similarly in model 3, Hispanic men continued to be less likely to forego care compared to their counterparts (0.538 * [0.336,0.862]), thus the social integration scale and church attendance also did not serve as mediators. Next, in model 4, I added interaction terms to test whether emotional support moderated the association between race/ethnicity and foregone care (emotional support x race). No significant main effects for race and no significant effects for the emotional support by race interaction term were found in model 4, revealing that emotional support does not buffer the relationship between race and foregone care in my sample. In model 5, main effects show that African Americans were more likely to forego care (5.456** [1.218,24.436]) and Hispanic men were less likely to forego care (0.254** [0.065,0.995]). The interaction term (race x social integration) shows that non-Hispanic black men with high levels of social integration were less likely to forego care (0.234* [0.053,1.045]) compared to non-Hispanic white men with high levels of integration. Also, in model 5, my race by church attendance interaction term shows that non-Hispanic black men who attended church had a lower odds of foregoing care (0.222***

[0.110,0.448]). Thus, for non-Hispanic black men high social integration and church attendance in the last two weeks serves as a buffer against foregoing care. Level of social integration and emotional support were not mediators for the race-foregone care relationship among men in the sample, because no significant changes in odds ratios were found in models 2 and 3.

[Insert Table 4.4 Here]

Predicted Values

Figure 4.1 presents a graph of the race/ethnicity and social integration interaction with predicted probabilities for foregone care. In the graph, social integration is measured as (0) no social integration (answered no to both questions included in the scale), (.5) some social integration (answered yes to one question), and (1) high social integration (answered yes to both questions). Figure 4.1 displays the predicted probability of foregone care at different levels of social integration, for each racial/ethnic group. For non-Hispanic white men, as levels of social integration increase, the probability of foregone care does not change. However, for non-Hispanic black men, higher levels of social integration significantly reduced their level of foregone care.

[Insert Figure 4.1 Here]

DISCUSSION

My findings reveal that social integration and social support do not serve as mediators or help to explain assist in explaining the relationship between race/ethnicity and health care utilization. In terms of moderation, when interaction terms (between race/ethnicity and emotional support and race/ethnicity and social integration) were added to the models, levels of social integration or social support did not serve as buffers between race and my health care use variables for non-Hispanic white and Hispanic men. However, for non-Hispanic black men a greater level of social integration significantly reduced the odds of foregoing care, revealing that indeed, level of social integration can moderate the relationship between race and foregoing care.

Further, my study shows that the effect of social networks operate differently for African American men. Specifically, non-Hispanic black men in my sample who reported attending church in the last two weeks were less likely to forego care. This is supported by previous research that links church attendance with health care use and also with increased health information that can lead to higher rates of health care utilization (Benjamins, 2006, Akincigil, 2011). Considering that men are less likely to seek help for health and mental health conditions (Addis & Mahalik, 2003; O'Brien, Hunt, & Hart, 2005), it is important to investigate further the specific pathways through which church may influence foregoing care and other types of health care use in African American men with a chronic illness. More research is needed to discover what aspects of social networks enable African American men to seek treatment.

While social integration and emotional support were not mediators or buffers in the race-health care use relationship for Hispanic men, another key finding was Hispanic men were less likely to utilize emergency rooms and less likely to forego care. This is contrary to previous studies, which have shown that Hispanic immigrants (specifically Mexican immigrants), forego care and utilize emergency rooms as usual source of care at higher rates than US citizens and persons who have immigrated from other countries (Akresh, 2009). In my study, 39% of the Hispanic men in the sample were born in the United States. Research has shown that social networks can influence perception of illness in the Latino community and social ties may provide access to information and resources (such as medication) that can influence when and why individuals seek care (Pai, et al., 2014). Among Latinos, economic factors may contribute to the sharing and borrowing of medications within social networks and may also contribute to using home remedies instead of prescribed medications (Pai, et al., 2014). While few studies have been completed that assess help-seeking behaviors in Latino men with type 2 diabetes, research has shown that Latino immigrant men may first consult social networks for health care needs before seeking out more formal health care services (Rogler & Cortes, 1993). All of these factors may influence decisions to forego care among Latino men, particularly if they have a large social network.

Study Limitations

Because the data used in this study are cross-sectional, it could not provide definite information about cause-and-effect relationships between race, social networks and health care use in men. Also, this study may not have captured other important more complex aspects of social networks, beyond church attendance and emotional support. For the foregone care measure, language and cultural barriers could have resulted in misinterpretation of survey questions and interpretation of/responses to this question may have been different depending on the respondent's racial/ethnic background.

Conclusion

In sum, this study shows that race/ethnicity does directly influence health care use among U.S. men with diabetes and social integration serves as buffer in the race-health care utilization relationship. In a sample of men from a population-based survey, more frequent social ties were associated with decreased foregone care in non-Hispanic black men. In order to further explain why some men are socially integrated more than others, it may be necessary for future studies should measure masculinity in different racial/ethnic groups of men to gain a better sense of the influence on gender norms on levels of social integration in this population. Study findings also suggest that health professionals working with men consider how their racial/ethnic background may influence the availability and influence of social networks on utilization of care. Further, more research should be conducted on how different aspects of social networks influence health care use based on race/ethnicity among men. In addition, identifying racial differences in the influence of social networks on health will assist health care practitioners and policy makers in developing interventions that may help to decrease gender and race gaps in health for men with diabetes.

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Table 4.1 Sample characteristics, adults aged 18 and older

Dependent Measures	Non-Hispanic White	Non-Hispanic Black	Hispanic	p-value
Doctor Visits, %(n)	0.664(4212)	0.625(716)	0.498(821)	0.000
ER visits, %(n)				0.000
No visits	0.812(5132)	0.789(876)	0.863(1445)	
1 to 3 visits	0.175(1107)	0.190(236)	0.122(213)	
4 or more visits	0.012(84)	0.021(28)	0.014(24)	
Foregone Care, %(n)	0.047(339)	0.077(94)	0.058(121)	0.002
Demographic characteristics				
Age, mean(SE)	44.894(0.195)	40.381(422)	37.885(334)	0.000
US born, %(n)	0.962(6079)	0.888(1013)	0.386(683)	0.000
Socioeconomic status				
Income, %(n)				0.000
$0 - $34,999	0.299(1755)	0.491(498)	0.51(775)	
$35,000-$74,999	0.397(1917)	0.36(299)	0.365(405)	
$75,000 and over	0.304(1277)	0.149(104)	0.126(118)	
Education, %(n)				0.000
Less than high school	0.117(721)	0.245(284)	0.430(741)	
High school graduate	0.296(1842)	0.290(326)	0.242(395)	
Some college	0.291(1864)	0.312(350)	0.222(372)	
College degree	0.290(1860)	0.148(176)	0.090(152)	
Poverty threshold, %(n)				0.000
At or below poverty level	0.729(4600)	0.692(773)	0.614(1040)	
Below poverty level	0.050(370)	0.100(135)	0.136(277)	
Employment status, %(n)				0.000
Unemployed	0.029(174)	0.073(69)	0.039(71)	
Currently Working	0.756(4660)	0.678(758)	0.806(1335)	
Not in labor force	0.214(1486)	0.248(312)	0.154(275)	
No medical insurace, %(n)	0.112(722)	0.218(250)	0.385(650)	0.000
Marital Status, %(n)				0.000
Single	0.288(2423)	0.446(623)	0.324(647)	
Married	0.652(3568)	0.451(417)	0.603(920)	
Living with partner	0.059(323)	0.100(94)	0.068(107)	
Social support and integration, %(n)				
Emotional support				0.001
Never/rarely	0.037(278)	0.052(67)	0.054(103)	
Usually/sometimes	0.452(2965)	0.413(504)	0.386(692)	
Always	0.511(3080)	0.535(569)	0.560(887)	
Attended Church	0.487(2979)	0.601(674)	0.553(884)	0.000
Social Integration Scale, mean(SE)	96(0.002)	94(0.004)	93(0.005)	0.000
Health Status, %(n)				0.000
Excellent	0.364(2206)	0.314(334)	0.331(539)	
Very good	0.331(2104)	0.266(295)	0.327(526)	
Good	0.215(1404)	0.272(303)	0.240(419)	
Fair	0.066(444)	0.102(149)	0.075(146)	
Poor	0.024(163)	0.041(55)	0.030(52)	

Note: All analysis were weighted.

Table 4.2: Odds ratios from logistic regression models: doctor visits among men with diabetes age 18 and older (n=7148)

	Model 1	Model 2	Model 3	Model 4	Model 5
Non-Hispanic White					
Non-Hispanic Black	1.098 [0.899,1.340]	1.098 [0.899,1.340]	1.079 [0.883,1.319]	1.124 [0.874,1.447]	1.668 [0.723,3.846]
Hispanic	0.844 [0.700,1.019]	0.844 [0.700,1.019]	0.838 [0.694,1.011]	0.863 [0.689,1.08]	0.750 [0.386,1.457]
Emotional Support					
Never/Rarely		0.915 [0.689,1.213]		0.963 [0.667,1.391]	
Usually/Sometimes		0.992 [0.873,1.127]		1.002 [0.863,1.164]	
Always					
Social Integration Index			1.602** [1.177,2.179]		1.675** [1.153,2.433]
Attended Church Last 2 Weeks					
No					
Yes			0.938 [0.824,1.067]		0.922 [0.798,1.066]
Race*Emotional Support					
Non-Hispanic Black x Never/Rarely				1.259 [0.622,2.550]	
Non-Hispanic Black x Usually/Sometimes				0.909 [0.637,1.297]	
Hispanic Black x Never/Rarely				0.572 [0.286,1.146]	
Hispanic Black x Usually/Sometimes				1.008 [0.719,1.414]	
Race*Social Integration Index					
Non-Hispanic Black x High Social Integration					0.640 [0.278,1.475]
Hispanic x High Social Integration					1.028 [0.555,1.903]
Race*Church					
Non-Hispanic Black x Yes Church					0.964 [0.664,1.399]
Hispanic x Yes Church					1.185 [0.863,1.627]

a Covariates included in models 1-5: age, education, marital status, self-rated health, employment, income, poverty level and health insurance status

b Binary outcome, logistic regression.

*P < .05 **P < .01 ***<.001

Table 4.3: Coefficients from ordered logit regression models: emergency room among men with diabetes age 18 and older (n=7148)

	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**
Non-Hispanic White					
Non-Hispanic Black	-.040 [-0.255,0.175]	-0.045 [-0.259,0.169]	-0.003 [-0.218,0.212]	0.048 [-0.227, 0.322]	0.362 [-0.734,1.459]
Hispanic	-0.543*** [-0.832,-0,254]	-0.550 ***[-0.841,-0.259]	-0.517 *** [-0.804,-0.229]	-0.566** [-0.916,-0.215]	-0.491 [-1.508,0.526]
Emotional Support					
Never/Rarely		-0.074 [-0.404,0.257]		-0.085 [-0.483,0.313]	
Usually/Sometimes		-0.086 [-0.236,0.064]		-0.060 [-0.229,0.119]	
Always					
Social Integration Index					
			0.071 [-0.283,0.425]		0.121 [-0.293,0.536]
Attended Church Last 2 Weeks					
No					
Yes			0.182 * [0.033,0.331]		0.192* [0.022,0.362]
Race*Emotional Support					
Non-Hispanic Black x Never/Rarely				0.305 [-0.552,1.161]	
Non-Hispanic Black x Usually/Sometimes				-0.282 [-0.694,0.130]	
Hispanic Black x Never/Rarely				-0.465 [-1.423,0.492]	
Hispanic Black x Usually/Sometimes				0.094[-0.355,0.543]	
Race*Social Integration Index					
Non-Hispanic Black x High Social Integration					-0.323 [-1.406,0.759]
Hispanic x High Social Integration					-0.076 [-0.995,0.843]
Race*Church					
Non-Hispanic Black x Yes Church					-0.144 [-0.555,0.268]
Hispanic x Yes Church					0.081 [-0.355,0.517]

a Covariates included in models 1-5: age, education, marital status, self-rated health, employment, income, poverty level and health insurance status

b Interval outcome, ordered logit regression.

*P < .05 **P < .01 ***<.001

Table 4.4: Odds ratios from logistic regression models: foregone care among men with diabetes age 18 and older (n=7148)

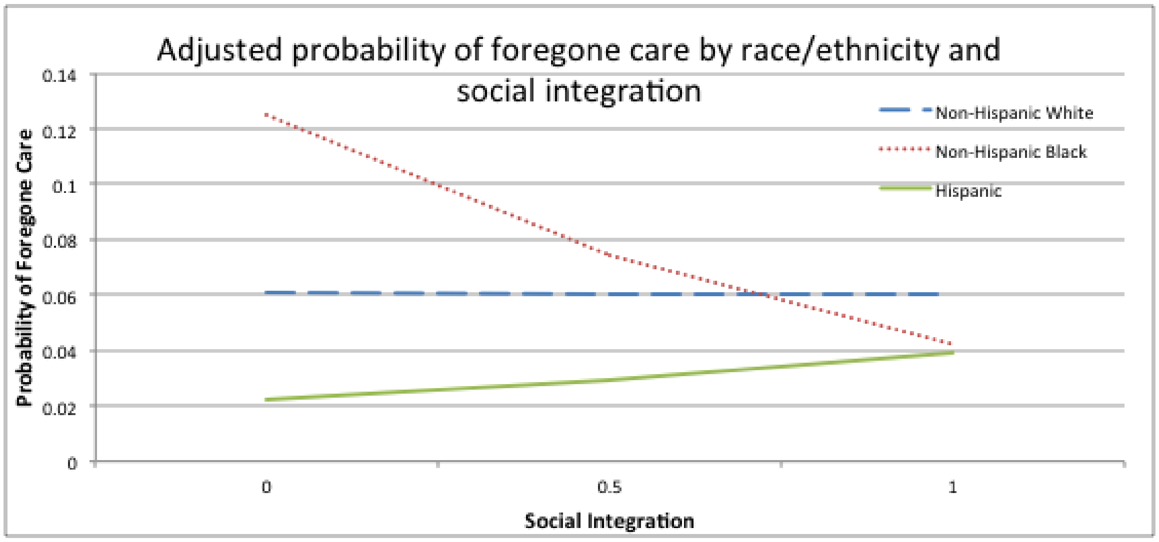
	Model 1	Model 2	Model 3	Model 4	Model 5
Non-Hispanic White					
Non-Hispanic Black	0.871 [0.599,1.265]	0.889 [0.611,1.294]	0.851 [0.592,1.225]	1.237 [0.683, 2.242]	5.456** [1.218,24.436]
Hispanic	0.548** [0.346,0.868]	0.550* [0.345,0.878]	0.538 * [0.336,0.862]	0.783 [0.4331.414]	0.254** [0.065,0.995]
Emotional Support					
Never/Rarely		1.777* [1.131,2.791]		2.425** [1.405,4.186]	
Usually/Sometimes		1.598*** [1.255,2.034]		1.874*** [1.369,2.565]	
Always		.	.		
Social Integration Index			0.959 [0.575,1.597]		0.985 [0.531,1.828]
Attended Church Last 2 Weeks					
No					
Yes			0.916 [0.713,1.177]		1.076 [0.775,1.493]
Race*Emotional Support					
Non-Hispanic Black x Never/Rarely				0.408 [0.114,1.455]	
Non-Hispanic Black x Usually/Sometimes				0.616 [0.314,1.210]	
Hispanic Black x Never/Rarely				0.427 [0.135,1.347]	
Hispanic Black x Usually/Sometimes				0.582 [0.290,1.171]	
Race*Social Integration Index					
Non-Hispanic Black x High Social Integration					0.234* [0.053,1.045]
Hispanic x High Social Integration					1.966 [0.540,7.160]
Race*Church					
Non-Hispanic Black x Yes Church					0.222*** [0.110,0.448]
Hispanic x Yes Church					1.283 [0.656,2.510]

a Covariates included in models 1-5: age, education, marital status, self-rated health, employment, income, poverty level and health insurance status

b Binary outcome, logistic regression.

*P < .05 **P < .01 ***<.001

Figure 4.1


Adjusted probability of foregone care by race/ethnicity and social integration
Probability of Foregone Care
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
0
0.5
1
Social Integration
Non-Hispanic White
Non-Hispanic Black
Hispanic

Chapter 5

CONCLUSION

Driven by the dearth of research on men of color with chronic illness, my dissertation is broadly focused on the social determinants of racial health disparities in African American and Latino men, with a particular focus on diabetes. Specifically, it explores psychosocial and structural factors that influence self-care and health care utilization among Latino and African American men with diabetes, both on a regional and national scale. Several factors that predict health care use and self-care have been identified in the social work, sociology and public health literatures, but a more focused examination of psychosocial and structural factors that predict these outcomes in African American and Latino men is lacking. My dissertation is comprised of three interlocking publishable papers examining different aspects of this significant gap in the literature by contributing to research on African American and Latino men living with chronic illness as it relates to self-care, health care utilization and intervention design. For these three areas, each of my empirical chapters (two, three and four) reviews literature and helps to draw conclusions regarding 1) differences in predictors of health care use and diabetes self-management; 2) structural and psychosocial barriers to diabetes self-management and health care use; and 3) racial/ethnic differences in health care use and the mediating effect of social ties on the race-health care use relationship.

My dissertation makes important contributions to the empirical literature in public health, social work and sociology. In study 1, I found that for diabetes self-management, older age increased the likelihood that a man would manage his diabetes and that low levels of diabetes knowledge significantly decreased diabetes self-management. However, these same associations did not exist for health care utilization. This study adds to the literature by revealing potential differences in predictors between self-management and health care use. One reason why older individuals in my study are more likely to engage in diabetes care may be because older persons are more likely to be seen for health conditions related to aging and are more likely to be covered by Medicare; research shows that enrollment in Medicare health insurance results in improvement in health outcomes among individuals with diabetes and/or other chronic illnesses (McWilliams, Meara, & Ayanian, 2003; 2007). This research can be used as a springboard to further investigate why age and diabetes knowledge played a role in diabetes self-management and not health care utilization. Also, my findings call for a closer examination as to why age may influence diabetes self-management beyond enrollment in Medicare and being seen for other health conditions. Additionally, the specific aspects of health insurance and interaction with medical care that influence self-management should be identified.

In study 2, three themes emerged that characterize gender identity and its relationship to health behavior in men: 1) men's beliefs about being men; 2) manhood's influence on health behavior; and 3) men's role in diabetes education. Results from my exploratory study contribute to the empirical literature by suggesting that the way men define gender roles may have implications for how they engage in self-care. A portion of my findings have been confirmed by previous literature on masculine identity and health behaviors, but had not been studied or applied specifically to African American and Latino men with diabetes. For instance, similar to previous research (Courtenay, 2000), my study found that both racial/ethnic groups of men desired to maintain a “strong” image to the outside world, in this case “strong” was synonymous with “healthy” which ultimately resulted in delayed health care seeking until symptoms were severe. However, my dissertation also had several important findings. First, men stated that family was their primary responsibility, sometimes putting the needs of family above their own, even when it came to health matters. This finding is supported by previous literature, specifically the masculine ideal of being the “breadwinner” (Courtenay, 2000).

Second, men accepted and were thankful for support from significant others and family members when it came to diabetes self-management and health care utilization. The positive impact of social support on glycemic control has been identified in the literature (Gallant, 2003; Lloyd, Wing, Orchard, & Becker, 1993; Rosland et al., 2008; Schafer, McCaul, & Glasgow, 1986; Shenkel, Rogers, Perfetto, & Levin, 1985; Sherbourne, Hays, Ordway, DiMatteo, & Kravitz, 1992; Tillotson & Smith, 1996), however, unlike previous literature that states men do not engage in social support due to a need for autonomy (Courtenaty, 2000), my findings show a willingness of men to accept support from loved ones. Because of the critical role of social support in diabetes management, this research should be replicate in larger more representative samples and more research is needed to determine why African American and Latino men with diabetes may be more receptive to support from family members. Last, my work showed that men wanted to provide support to their community by spreading awareness of diabetes symptoms, and self-management education. The willingness of men to participate in these peer support networks has been mentioned elsewhere (Dennis, 2003; Brown et al., 2011), however, the findings had not been replicated for men with type 2 diabetes. Again, more research is needed to also confirm these findings in larger more representative samples, while also determining what these support networks and community-based diabetes education programs may look like.

In study 3, my findings showed that the effect of social integration (defined in my study by church attendance, and a social integration scale) differs by race/ethnicity. This study made an empirical contribution to the literature by reconfirming race as a fundamental cause of health (Williams, 1999). However, my study was unique because unlike previous studies that have focused solely on health outcomes when examining race as a fundamental cause, my study focused on a health behavior (three types of health care use). My study also contributes to the literature by using a nationally-representative sample to confirm the specific mechanisms through which race influences health for a group of men living with a chronic illness (type 2 diabetes). Specifically, black men in my sample with high levels of social integration were less likely to forego care than their non-Hispanic white counterparts with high social integration. Also, non-Hispanic black men who did not attend church had higher odds of foregoing care compared to men who did attend church services. While foregone care was not the outcome, my findings have been supported by previous research that shows that persons with more frequent church attendance are more likely to utilize health care services (Benjamins, 2006, Akincigil, 2011). Again, more research is needed to discover what specific aspects of church attendance increase health care utilization, specifically for African American men with diabetes. The findings can then help to tailor health interventions for this population considering the critical role frequent health care use plays in management diabetes and related conditions.

My dissertation also helped to advance theoretical perspectives. First, based on the Andersen Health Beliefs Model and my research questions, I developed a conceptual model specific to factors the influence self-management and health care utilization in men with diabetes. This model traced the direct association only between the enabling and psychosocial factors and my key outcomes of interest (e.g., self care and health care use). For my dissertation, I split enabling factors into two categories: psychosocial factors (e.g., social support, diabetes knowledge, and patient-provider relationships) and socioeconomic status. Second, my dissertation also helped to expand fundamental cause theory. Previous research has described how socioeconomic status (Link & Phelan, 1995) and race (Williams, 1999) are fundamental causes of health outcomes because they directly impact access to critical resources that influence health. Less research has been conducted however, on the specific mechanisms through which fundamental causes, specifically race, influence health, particularly in men with a chronic illness. Additionally, while most studies focus on the impact of a fundamental cause on health outcomes, my dissertation focused on health behaviors (physician visits, emergency room visits and foregone care). I showed how social integration, particularly church attendance, was protective for African American men in the race-health care use relationship, compared to other racial/ethnic groups of men.

Study Limitations

The first chapter of my study had a small sample size of Latinos and African Americans with type 2 diabetes, which limited the ability to detect significant differences and prevented me from generalizing findings to African Americans and Latinos on a national level. Further research should utilize larger sample sizes to provide more power to capture differences in predictors of health care use and diabetes management on a national level for men. Because the data used in chapters two and four are cross-sectional, they could not provide definite information about cause-and-effect relationships between race, social and structural factors and health care use and self-management in men. Therefore, future research should utilize longitudinal data sets to measure changes over time and to shed light on causal relationships between important variables and health care use and self-management for men with diabetes. Also, chapter four may have captured other important more complex aspects of social networks, beyond church attendance and emotional support. It may be useful for future research to examine other more meaningful and nuanced aspects of social networks.

My dissertation also did not consider the role of acculturation and language and their potential influence on diabetes self-management and health care utilization. Further, while the findings of chapter three of my dissertation apply to men of color in Detroit, Michigan, it is not possible to generalize on a national level. The findings of chapter two can be used springboard for to examine qualitative data on a statewide and national level in an effort to develop a more comprehensive picture of the structural and psychosocial factors that influence diabetes self-management and health care use in men of color. Last, while qualitative work in chapter three did not find any significant differences between Latino and African American men in terms of gender identity and it's influence on health care use and self-management, research has found important differences in how Latino and African American men define various aspects of gender. Thus more research should be conducted to elucidate similarities (and differences) in masculinity and health in men of color.

Directions for Future Research

The findings of my dissertation lead to several potential research questions that will help to inform diabetes interventions and the work of social workers and health care professionals targeting men of color with diabetes. Both quantitative and qualitative data will be critical in finding ways to best intervene with Latino and African American men with diabetes, and in the promotion of self-management behaviors and health care use. Quantitative work allows researchers to test how population characteristics influence health care use and self-management while also controlling for several variables in a way that can be generalizable on a national level. Qualitative work allows for an exploration of topics such as definitions of masculinity from these men in addition to how these definitions influenced their health behaviors. Qualitative findings and regional data are also embedded in local contexts, which is helpful for identifying social and structural variables from the surrounding community that may influence health and health behaviors.

Based on my dissertation’s limitations and findings, potential research questions I plan to pursue include:

- Identification of specific aspects of church attendance that may influence health care utilization in African American men with type 2 diabetes using a national dataset and focus groups or in-depth interviews (mixed-methods).

- Examination of predictors of health care utilization and diabetes self-management in a national sample of men with diabetes using a longitudinal data set (quantitative).
- Examination of the influence of age on self-management and health care utilization behaviors in men of color with diabetes using a national dataset and focus groups or in-depth interviews (mixed-methods).
- The influence of acculturation and language on self-management and health care utilization among Latino men with diabetes (quantitative).
- Identification of barriers and facilitators to diabetes self-management and health care utilization among a sample of Latino, African American, and non-Hispanic white men with no access to health care (qualitative).

Ultimately, this work will help us understand the social causes of race- and gender-based health disparities and their persistence, and help to identify practical solutions.

Implications for Social Work

The findings of my dissertation have important implications for social work research and practice. Social workers employed in medical settings are charged with the task of providing "…services designed to help patients, families and groups improve or maintain optimal functioning in relation to their health" (NASW, 2015). Social workers in medical care also "use their knowledge to develop standards of practice, recommend health policy, improve health programs and ensure patients, families and organizations receive high quality and state of the art social work services" (NASW, 2015). Thus, in addition to engaging in more research on the influence of church attendance on health care use and diabetes management, social workers in practice should consider the role of church when assessing and working with African American men with chronic illness. My research also considers the critical role of gender identity for both Latino and African American men in diabetes self-management and interactions with medical care, assessment social work practice tools should also be created to assess how aspects of gender identity might serve as barriers and/or facilitators to diabetes care.

Lastly, according to the National Association of Social Workers (NASW), specific ethical standards are relevant to the professional activities of all social workers (researchers and practitioners). These ethical standards concern social workers' ethical responsibilities to clients, social workers' ethical responsibilities in practice settings and social workers' ethical responsibilities to the broader society. Of particular importance to are social workers' ethical responsibilities to clients to support their personal autonomy and act as a source of empowerment and to advocate on behalf of the client. Social workers are charged with the task of respecting and promoting the right of clients to self-determination and with assisting clients in their efforts to identify and clarify goals to identifying barriers to goals. It is my hope that my research provides the foundation for future social work researchers and practitioners to help create a community-based intervention that is developed by the community and considers their specific needs, while addressing social justice issues, that aligns directly with the goals and ethical standards of social work as a profession.

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