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Gender differences in psychosocial characteristics and diabetes self-management among inner-city African Americans

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Abstract

Aims: To characterize differences in psychosocial variables between inner-city African American men and women with type 2 diabetes, and to test if the relationships between psychosocial variables and diabetes self-management behaviours differ by gender.

Design: Secondary analysis.

Methods: We used baseline data from participants enrolled in the Prevention through Lifestyle Intervention and Numeracy 4 Success-Diabetes study ($N = 37$). Differences in psychosocial variables between genders were compared using chi-square tests. A two-way analysis of variance was then used to compare self-management scores by different psychosocial characteristics and gender.

Results: There was no statistically significant difference in psychosocial characteristics between genders. High diabetes knowledge and self-efficacy were associated with better self-management behaviours in African American women but not in men. In contrast, high numeracy was associated with better diabetes self-management only in men. Low depression, high health literacy, and high social support were associated with better self-management practices in both genders.

KEYWORDS
African Americans, diabetes, diabetes self-management, gender-specific differences, psychosocial characteristics

1 | INTRODUCTION

Diabetes self-management—encompassing physical activity, healthy diet, medication taking, self-monitoring of blood glucose and carbohydrate intake—is a cornerstone of effective glycaemic control (Lee et al., 2019). Education and support programs that reinforce diabetes self-management have been shown to be effective at improving haemoglobin A1c, reducing hospital admissions, and lowering diabetes-related complications (Powers et al., 2015). However, research has established that traditional diabetes self-management interventions do not produce the desired long-term, sustained lifestyle changes and health-promoting behaviours, particularly among African Americans (AAs) (Bhattacharya, 2012; American Diabetes Association, 2018). Inadequate adherence to diabetes self-management results in poorer glycaemic control among AAs than non-Hispanic Whites (American Diabetes Association, 2018). These findings suggest that there may be underlying reasons why AAs may not take their medications as prescribed and/or engage in healthful lifestyle behaviours (Boampong, 2019).

Several psychosocial factors, including diabetes knowledge, depression, self-efficacy, social support, and health literacy, have been suggested to influence diabetes self-management (Pouladi, 2018). These variables often interact synergistically to influence one's health (Neuman & Fawcett, 2011). For instance, the support of friends, family, health professionals and health educators may act as facilitators to the development of health literacy, which in turn, empowers an individual to participate in healthcare processes that can subsequently alter health outcomes (Edwards et al., 2015).

According to Sousa and Zauszniewski's theory of diabetes self-care management (Sousa & Zauszniewski, 2005), psychosocial characteristics such as knowledge and social support build confidence in self-care, which lead to better self-care management and glycaemic control. Additionally, individuals with greater diabetes literacy and numeracy tend to engage in positive self-management behaviours (Marciano et al. 2019), whereas individuals with depression are less likely to be proactive in managing diabetes (Devarajooh & Chinna, 2017). Understanding how psychosocial characteristics are associated with health behaviours such as diabetes self-management is crucial in designing culturally sensitive interventions to narrow health disparity gaps faced by AAs.

2 | BACKGROUND

A growing body of literature prioritizes the critical role of gender in the management of health behaviours that shape outcomes for chronic illnesses such as diabetes. For example, women tend to report higher severity of depression and greater perceived burden, and experience greater restrictions in social interactions than men (Gucciardi et al. 2008; Misra & Lager, 2007). Men, on the other hand, report fewer diabetes-related worries, and are more likely to engage in physical activity as part of their disease management (Navuluri, 2002). In a qualitative study aimed to explore gender-specific barriers to diabetes self-management among AAs (Chlebowy et al., 2013), lack of personal time, inadequate family support, and insufficient knowledge about how to manage diabetes were noted as major barriers for self-management among men. In contrast, perceived lack of disease control, embarrassment, and financial burden were identified as major hindrances for women in the study (Chlebowy et al., 2013).

Empirical evidence suggests that non-physiological differences between women and men regarding health are socially constructed (Mayor, 2015). In particular, the social roles of women as caregivers significantly increase the number of stressors imposed on them, which negatively impact their physical and mental health (Schulz & Beach, 1999). Since caregiving increases one's risk for depression, psychological distress, impaired self-care, and poor self-reported health (Burton et al., 2003), it is likely that the worse health outcome observed among women be attributed to this gender role. Traditional gender roles in some cultures are suggested to influence men's and women's diabetes self-management differently (Adu et al., 2019). For instance, traditional family role expectations of women providing meals and caring for the family often interfere with their ability to comply with a diabetic regimen, particularly in relation to diet and physical activity (Vongmany et al., 2018). Such gender-role bound decisions could affect women's psychological well-being, which may negatively impact self-management practices (Hendriks et al., 2018). Additionally, traditional masculine roles of men as breadwinners may encourage men to prioritize fulfilment of these gender roles more than health-promoting behaviours such as engaging in physical activity or adhering to a healthy diet (Chlebowy et al., 2013).

These socially constructed non-physiological differences between women and men regarding health may impact how the key psychosocial characteristics, as suggested by Sousa and Zauszniewski (2005), are associated with diabetes self-management. Indeed, limited but available empirical studies have identified a number of psychosocial variables in relation to diabetes self-management and often, the relationship differed by gender. For example, in a cross-sectional study of AAs with diabetes, Glover et al. (2019) found that social support was associated with fewer diabetes complications in men but not in women. In another study, women with diabetes reported greater social support but had more depressive symptoms than men (Crabtree et al., 2016). Self-efficacy—"people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives" (Amer et al., 2018)—determines how one motivates themselves and behaves over time (Beckerle & Lavin, 2013). In general, men have been found to have higher levels of self-efficacy, which could be due to their masculine socialization to be courageous and problem solve (Shead, 2005). However, no prior research examined the gender difference as it relates to AAs' self-efficacy to cope with diabetes. Similarly, patients with diabetes must engage in constant self-management which requires adequate health literacy, defined as "one's capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions" (Egbert & Nanna, 2009). Differences in health literacy, health knowledge, and motivation to adopt and maintain health-promoting behaviours may contribute to gender-health disparities. Nevertheless, literature on gender differences in health literacy among AAs in the context of diabetes self-management is scarce.

Taken together, gender-specific differences in diabetes self-management are not well-understood; but available evidence suggests that men and women may be affected by their psychosocial environments differently, thereby dictating their self-care behaviours. Thus, understanding gender-specific differences that influence coping and self-efficacy is crucial to inform future interventions that aim to promote better health in individuals with diabetes. In particular, with increasing number of AAs developing diabetes each year, it is important to understand how different psychosocial characteristics are associated with their diabetes self-management and if gender plays a role in the relationship. Therefore, the aims of this study were to: (1) Characterize differences in psychosocial variables between inner-city AA men and women with type 2 diabetes, and (2) test if the relationships between psychosocial variables and diabetes self-management behaviours differ by gender.

3 | PARTICIPANTS AND METHODS

3.1 | Research design

The study design was a secondary analysis of the baseline data collected from the Prevention through Lifestyle intervention And Numeracy (PLAN) 4 Success-Diabetes trial that took place from November 2016 to August 2018 (Han et al., 2019). The PLAN 4 Success-Diabetes was a health literacy-enhanced diabetes self-management intervention, which was recently pilot tested using a single-arm pre- and post-test design. This nurse-driven intervention model aimed to promote physiological (haemoglobin A1C and fasting glucose) and psychological outcomes (health literacy, disease knowledge, self-efficacy, and depression) among AAs with diabetes.

3.2 | Sample/setting

Community-dwelling AAs were recruited via referrals from inner-city federally-qualified health clinics in inner-city Baltimore, Maryland. Study eligibility was based on the following: (1) Self-identified as AA; (2) aged 18 years or older; and (3) had uncontrolled diabetes (defined as HbA1C ≥ 7.0%). Exclusion criteria included inability to give informed consent, physical or mental health conditions that could limit active participation in the study (e.g., blindness in both eyes, severe immobility, and psychiatric diseases), and haematological condition that would affect HbA1C assay (e.g., haemolytic anaemia, sickle cell anaemia). The parent study aimed to recruit 30 individuals to provide the data to determine the feasibility of the PLAN 4 Success-Diabetes and to calculate the targeted sample size for a definitive randomized clinical trial in the next step.

3.3 | Procedures

The study protocol was approved by the Johns Hopkins Institutional Review Board (IRB #00061339). Potential candidates for study participation were scheduled for a baseline clinic visit for eligibility verification. All participants provided written informed consent prior to inclusion in the study. Following informed consent, participants filled out a structured study questionnaire that assessed their sociodemographic, medical and psychosocial characteristics, and diabetes self-management behaviours. Psychosocial characteristics included health literacy, diabetes knowledge, self-efficacy, depression, and social support. A trained staff nurse performed venipuncture to assess physiological lab panels (HbA1C, fasting glucose, and lipids).

3.4 | Evaluation instruments

Health literacy was measured using two established instruments: Literacy Assessment for Diabetes (LAD) and the Newest Vital Sign (NVS). The LAD is a reliable and validated word recognition test composed of three-graded word lists (60 words related to diabetes) in ascending difficulty (Bailey et al., 2014). Each item on the LAD was scored "1" if correct, and "0" if incorrect, with total possible scores ranging from 0 to 60, where higher scores indicated higher diabetes literacy levels. The NVS is also a validated instrument that consists of four items that measure numeracy (Huang et al., 2018). Participants were asked to answer questions that require mathematical calculation of nutritional information (e.g., fat, sodium) after reviewing a nutrition label. One point was assigned for each correct response, with total possible scores ranging from 0 to 4.

Diabetes knowledge was measured by the Diabetes Knowledge Test (DKT), a 23-item multiple-choice-type test with supported reliability and validity (Fitzgerald et al., 2016). The DKT has two sections: the first 14 items assess general knowledge of diabetes, while the latter 9 constitute the insulin use subscale appropriate for those who use insulin (Fitzgerald et al., 2016). Correct responses were given a score of "1" with higher scores indicating greater diabetes knowledge.

Diabetes self-efficacy was measured using the Stanford Diabetes Self-Efficacy scale (DSES) (McEwen et al., 2016), an 8-item Likert-type validated instrument that assesses participants' efficacy in managing diabetes and maintaining healthy lifestyles. The items ask participants to rate their confidence level in managing different diabetes-related self-management tasks regarding diet, exercise, blood sugar monitoring, and illness management on a scale of "0" (not at all confident) to "10" (totally confident). Participant scores were the sum across all items in the instrument, with possible scores ranging from 0 to 80. Higher scores indicated greater diabetes self-efficacy.

Depression was measured using the 9-item Patient Health Questionnaire (PHQ)-9 (Levis et al., 2019). The PHQ-9 is a validated and reliable instrument that addresses the severity of depressive symptoms for the past 2 weeks based on the Diagnostic and Statistical Manual of Mental Disorders, 4th edition (Levis et al., 2019). Each item on the PHQ-9 scores from "0" (not at all) to "3" (nearly every day), with total scores ranging from 0 to 27. Higher scores indicate greater symptom severity.

Social support was assessed using the modified Medical Outcomes Study Social Support Survey (mMOS-SS), a valid and reliable assessment tool with similar psychometric properties as the original 19-item MOS-SS (Moser et al., 2012). mMOS-SS has 10 items, and covers the emotional and instrumental domains of social support. Each item asks respondents about the frequency and accessibility to other individuals to help with physical and emotional needs. Response options range from "none of the time" (1 point) to "all of the time" (5 point), with higher scores indicating higher levels of social support (total score range = 10–50).

Finally, a diabetes self-management index was created for the purpose of this study (Han et al., 2019). This index included eight questions on medication taking, non-smoking, moderation in alcohol consumption, meal planning, limited consumption of high-fat/high-sugar/high-sodium foods, and engaging in medium/high-intensity exercise. These questions were coded into dichotomous responses with participation in each of these self-management behaviours coded as "1" and no participation as "0". A summary score for the index could range 0–8, with higher scores indicating better self-management of diabetes (Han et al., 2019).

3.5 | Statistical analysis

We used descriptive statistics (means, standard deviations, and proportions) to summarize the sample characteristics. In order to account for the small sample size, we used chi-square tests and compared psychosocial characteristics between AA men and women. Psychosocial characteristics were dichotomized into low/high based on either pre-existing cut-offs or other relevant scale scores. Specifically, we used 10 as the cut-off score on the PHQ-9 scale to categorize participants into low vs. high groups of depression (Manea et al., 2012). On the three health literacy and knowledge tests (i.e., LAD, NVS, and DKT), we used 70% of the scale scores to indicate high vs. low groups of diabetes literacy, numeracy, and diabetes knowledge, respectively. As for diabetes self-efficacy and social support, we classified scores at one standard deviation above the group mean scores as high and those below as low. Finally, we employed two-way analysis of variance (ANOVA) to examine the relationships between psychosocial characteristics and diabetes self-management behaviours by gender. Each analysis included two between-group factors (i.e., psychosocial characteristics and gender groups) and one within-group factor (diabetes self-management). A p-value of ≤ .05 was considered statistically significant for all tests.

4 | RESULTS

4.1 | Sample characteristics

Of 221 referrals, 64 individuals were scheduled for eligibility verification appointments, and 37 completed the baseline assessment, of which all 37 consented participants were considered for analysis. Further details about recruitment process including participant referrals, screening, and eligibility verification have been published elsewhere (Han et al., 2019).

Table 1 shows the key sociodemographic characteristics of the study sample. The sample was mostly middle-aged (mean age [SD] = 53.4 [9.2] years) and female (68%). The majority (73%) had a high school diploma and above. Less than one-third were married (22%) and employed (32%), respectively. More than three-quarters of the sample (76%) reported living with others. The majority (78%) reported little difficulty with current income, though less than half of the sample (46%) reported an annual household income of more than $20,000. Compared to women, a greater proportion of men in the study sample had high education (75% vs. 68%) and high income (50% vs. 44%). Women were more likely to be married (24%) compared to men (17%). The sample overall reported high levels of diabetes self-management with the mean self-management score of 6.7 (2.4) out of maximum 8-point.

4.1.1 | Differences in psychosocial characteristics by gender

Psychosocial characteristics by gender are outlined in Table 2. A higher proportion of women reported high diabetes literacy and numeracy. In contrast, a higher proportion of men had high diabetes knowledge, self-efficacy, and social support. Both genders had at least a quarter with high depression. None of the psychosocial characteristics differed significantly by gender.

4.1.2 | Relationships between psychosocial characteristics and diabetes self-management by gender

In general, both AA men and women in the low depression, high diabetes literacy, and high social support groups tended to have higher self-management scores when compared to their counterparts

TABLE 1 Sociodemographic characteristics of study sample

Characteristics	Women (n = 25)	Men (n = 12)	Total (N = 37)
Age in years (range = 28–68), mean (SD)	53.1 (9.6)	54.0 (8.6)	53.4 (9.2)
≥High school graduate, %	68	75	73
Married, %	24	17	22
Employed, %	32	33	32
Living with others, %	80	67	76
Comfortable with current income, %	76	83	78
Annual household income >$20 K, %	44	50	46
Self-management total (range = 1–7), mean (SD)	6.8 (2.3)	6.7 (2.6)	6.7 (2.4)
Take diabetes medication, %	92	100	95
Non-Smoking, %	80	75	78
Non-alcohol consumption, %	72	50	65
Follow meal plan, %	40	33	38
Seldom consume foods high in fat, %	32	42	35
Seldom consume foods high in sugar, %	32	42	35
Seldom consume foods high in salt, %	52	67	57
Exercise ≥4 days a week, %	20	8	16

TABLE 2 Comparison of psychosocial characteristics by gender

	Proportion of individuals who self-rated each category of psychosocial characteristics by gender and in total, %		
	Women ($n = 25$)	Men ($n = 12$)	Total ($N = 37$)
Depression[1]			
Mild (<10)	72	75	73
Moderate/Severe (≥10)	28	25	27
Diabetes knowledge[2]			
Low (<7)	72	67	70
High (≥7)	28	33	30
Self-efficacy[3]			
Low (<70)	76	67	73
High (≥70)	24	33	27
Diabetes literacy[4]			
Low (<42)	8	17	11
High (≥42)	92	83	89
Diabetes numeracy[5]			
Low (<3)	60	75	65
High (≥3)	40	25	35
Social support[6]			
Low (<40)	60	75	65
High (≥40)	40	25	35

Note: Chi-square tests were used to compare the differences in proportions between the two genders for each psychosocial variable using a *p*-value of .05. None of the observed difference was statistically significant.

[1]Depression: Measured using PHQ-9 (range 0–27); dichotomized into mild (<10) and moderate/severe (≥10) depression.

[2]Diabetes knowledge: Measured using DKT (range 0–23), dichotomized into poor (<7) and good (≥7) knowledge.

[3]Self-efficacy: Measured using, DSES (range 0–80), dichotomized into low (<70) and high (≥70) efficacy.

[4]Diabetes literacy: Measured using, LAD (range 0–60), dichotomized into low (<42) and high (≥42) literacy.

[5]Diabetes numeracy: Measured using, NVS (range 0–4), dichotomized into low (<3) and high (≥3) efficacy.

[6]Social support: Measured using, mMOS-SS (range 10–50), dichotomized into low (<40) and high (≥40) support.

(see Table 3). Additionally, women in high diabetes knowledge and high self-efficacy groups had higher self-management scores than women in low groups. The differences in the self-management scores between high and low groups of diabetes knowledge and self-efficacy were minimal among men, if any, and in the opposite direction. Finally, men but not women in high diabetes numeracy group reported better self-management score. None of the observed difference was statistically significant.

5 | DISCUSSION

Few published studies have examined gender differences in psychosocial characteristics that may impact diabetes self-management, especially among AAs. To our knowledge, this is the first study to characterize gender differences in psychosocial characteristics that affect diabetes self-management among AA men and women. We found that men, in general, reported better psychosocial characteristics than women except for health literacy. Literature indicates that although women with diabetes tend to seek out information about the disease and are more attentive to the symptoms of diabetes, they often do not make use of this knowledge to fully manage their disease conditions (Vongmany et al., 2018). It has been suggested that the higher levels of demands and obligations in social roles among women as main caregivers of the household might impose greater distress, thereby negatively affecting women's self-efficacy and disease management (Devarajooh & Chinna, 2017). Future research should consider a larger sample of AAs with a mixed-methods design to elicit gender-specific trends in relevance to key psychosocial characteristics that are salient to diabetes self-management.

TABLE 3 Self-management scores by psychosocial characteristics and gender

	Self-management score[1], mean (SD)		
	Women ($n = 25$)	Men ($n = 12$)	Total ($N = 37$)
Depression[2]			
Mild (<10)	7.4 (1.9)	7.3 (2.4)	7.4 (2.1)
Moderate/Severe (≥10)	5.0 (2.4)	4.7 (2.5)	4.9 (2.3)
Diabetes knowledge[3]			
Low (<7)	6.7 (2.4)	6.7 (2.9)	6.7 (2.6)
High (≥7)	7.0 (1.8)	6.3 (2.3)	6.7 (2.4)
Self-efficacy[4]			
Low (<70)	6.4 (2.4)	6.8 (2.6)	6.8 (2.6)
High (≥70)	8.0 (1.4)	6.5 (3.1)	6.5 (3.1)
Diabetes literacy[5]			
Low (<42)	4.0 (1.4)	6.0 (5.7)	6.0 (5.7)
High (≥42)	7.0 (2.2)	6.8 (2.2)	6.8 (2.2)
Diabetes numeracy[6]			
Low (<3)	7.2 (2.2)	6.4 (2.9)	6.9 (2.4)
High (≥3)	6.1 (2.4)	7.3 (2.1)	6.7 (2.4)
Social support[7]			
Low (<40)	6.5 (2.3)	6.3 (2.9)	6.3 (2.5)
High (≥40)	7.3 (2.4)	7.0 (2.5)	7.2 (2.2)

Note: Two-way ANOVA was used to examine the relationships between psychosocial characteristics and diabetes self-management behaviours by gender, using a *p*-value of .05. None of the observed differences were statically significant.

[1]Self-management score (range 0–8): included eight questions on medication taking, non-smoking, moderation in alcohol consumption, meal planning, limited consumption of high-fat/high-sugar/high-sodium foods, and engaging in medium/high-intensity exercise. Questions were coded into dichotomous responses. Higher scores indicating better self-management of diabetes.

[2]Depression: Measured using PHQ-9 (range 0–27); dichotomized into mild (<10) and moderate/severe (≥10) depression.

[3]Diabetes knowledge: Measured using DKT (range 0–23), dichotomized into poor (<7) and good (≥7) knowledge.

[4]Self-efficacy: Measured using, DSES (range 0–80), dichotomized into low (<70) and high (≥70) efficacy.

[5]Diabetes literacy: Measured using, LAD (range 0–60), dichotomized into low (<42) and high (≥42) literacy.

[6]Diabetes numeracy: Measured using, NVS (range 0–4), dichotomized into low (<3) and high (≥3) efficacy.

[7]Social support: Measured using, mMOS-SS (range 10–50), dichotomized into low (<40) and high (≥40) support.

It is not completely clear why a higher proportion of women in our study sample belonged to high diabetes literacy and numeracy groups than men. Existing literature regarding the association between gender and health literacy is mixed (Lee et al., 2015). Using data from the Health, Aging and Body Composition (Health ABC) Study which included 2,510 older adults, Quartuccio et al. (2018) found that the average health literacy score for women was higher than men. Similarly, Clouston et al. (2017) found that the level of health literacy was significantly higher in women than men in a longitudinal study ($N = 2,122$). In contrast, several researchers found no differences between men and women (Singh & Aiken, 2017; Garcia-Codina et al., 2019). A most recent observational cross-sectional study of 72 participants showed that a greater proportion of men had better diabetes numeracy (Turrin & Trujillo, 2019). These inconsistent findings may have to do with different instruments, sampling, and study designs used in the studies. Another possibility may be associated with the greater medical service utilization among women than men (Lee et al., 2015), where the traditional gender expectations among women in caring for sick family members give them more opportunities to interact with the healthcare system and build their knowledge base, thereby resulting in higher health literacy levels than those of men (Lee et al., 2015). A qualitative analysis on the self-management experiences among 35 men and women with diabetes showed that women tended to use more socially interactive education resources, and reported influence from a wider group of people in their social support networks when compared with men (Mathew et al., 2012). On the other hand, men were more passive in terms of knowledge acquisition, where they relied primarily on their spouse for support (Mathew et al., 2012). These suggest that women, whether consciously or unconsciously, obtain health-related knowledge whereas men have fewer opportunities to do so.

Adequate health literacy is crucial in applying the requisite knowledge, decision-making, and problem-solving skills for effective diabetes management (Marciano et al., 2019). Similarly, numeracy is a multidimensional skill and is of importance in individuals with diabetes, given that many self-management skills, including medication management, interpretation of glucometer readings, adjustment of insulin, and dietary assessment, all rely on numerical skills (Heilmann, 2020). Indeed, we observed higher diabetes self-management scores among men in the high diabetes literacy and numeracy groups; among women, this trend was observed for diabetes literacy but not for numeracy. Previous studies have indicated that individuals with good health literacy do not necessarily possess numeracy skills (Heilmann, 2020). Future research is warranted to investigate how AA men and women use different health literacy skills (e.g. reading vs. numeracy) for their diabetes self-management.

Depressive symptoms are associated with negative coping and poor decision-making towards disease management (Yasui-Furukori et al., 2019). A quarter of our study sample had moderate to severe depression (≥10) using the PHQ-9. While there is consistent evidence to suggest that depression disproportionately affects women (Al-Dwaikat et al. 2020), this difference was negligible in our study likely due to the small sample size. Nevertheless, consistent with existing literature (Chlebowy et al., 2013), we found a clear trend in the association between depression severity and decreased ability to adhere to proper diet, exercise and medication. Our finding suggests the importance of promoting emotional well-being to facilitate diabetes self-management among AAs.

We observed a trend where high social support was associated with better self-management among women; the level of social support did not appear to be associated with self-management among men. This is consistent with previous literature, whereby benefits derived from social support varied by gender, likely as a result of cultural and situational context (Al-Dwaikat et al., 2020). For example, a qualitative study revealed that women tended to report greater influence from a wider group of people in their social support networks, since they were more likely than men to disclose their diabetes to others (Mathew et al., 2012). On the other hand, men were more private in their disclosure of disease, and tended to report a spouse as their sole support system (Mathew et al., 2012). This qualitative finding coincides with that of another study in which men indicated that they receive the greatest amount of support from family, particularly their spouse, whereas women reported receiving greater support from friends (Rodriguez-Madrid et al., 2019). Since only a small proportion of men in our sample were married, it is likely that the lack of association between social support and diabetes self-management among men may be attributed to the lack of perceived support systems. Existing studies indicate that the type of support received by men is dietary rather than informational due to the social role of female spouse in the preparation of meals (Vongmany et al., 2018). This may partially explain the higher adherence to healthier food options among male participants in our study.

It is noteworthy that although the mean self-management index score for women was comparable to that of men, the types of self-management behaviours exhibited varied between genders. For instance, a greater proportion of men reported greater adherence to their diabetes medication regimen and consumed healthier foods compared to women, whereas more women reported greater likelihood of following meal plans, engaging in less risky health behaviours (i.e., non-smoking and non-drinking), and exercising adequately. This finding reiterates the differences in needs and challenges of diabetes self-management among AA men and women, which may inform ethnic and gender-sensitive diabetes care, counselling, and support.

Study limitations should be noted. This study was a secondary analysis of data pulled from a pilot trial. Therefore, the main limitation is insufficient power associated with the small sample size. In addition, the study sample consisted of relatively well-educated participants with 73% having a high school or higher level of education, in comparison to the national rate of 61% (Kunter et al., 2006). Given the small size and potential sampling bias, the study findings should be interpreted with caution. Finally, data on self-management were collected using a self-report questionnaire that was developed for the purpose of this study. Self-reported data may over or underestimate actual self-management behaviours (Prince et al., 2020).

6 | CONCLUSION

Men and women may be affected differently by their psychosocial characteristics in carrying out diabetes self-management. While we observed some trend in gender-specific differences in the relationships between psychosocial variables and diabetes self-management, none of the relationships were statistically significant due, most likely, to our small sample size. Thus, future research is warranted to use a larger study sample with adequate statistical power. Additionally, qualitative studies may help characterize facilitators and barriers to diabetes self-management, particularly, in the context of gender roles in complex chronic disease management. Given that AAs continue to be disproportionately affected by diabetes, studies on gender-specific differences in disease management among AAs are of utmost importance to reduce both ethnic and gender-specific disparities.

AUTHOR CONTRIBUTIONS

Conceived and designed the study: HRH. Conducted the literature search: HHKT. Analysed the data: HRH, HHKT. Contributed analysis: HRH, HHKT, MN. Wrote the paper: HHKT. Contributed to the revision process: HRH, HHKT, MN.

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CONFLICT OF INTEREST

None.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

ETHICAL APPROVAL

This study was approved by the Johns Hopkins Medicine Institutional Review Board.

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