Kidney Medicine

Race, Income, and Medical Care Spending Patterns in High-Risk Primary Care Patients: Results From the STOP-DKD (Simultaneous Risk Factor Control Using Telehealth to Slow Progression of Diabetic Kidney Disease) Study

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Rationale & Objective: Little is known about how socioeconomic status (SES) relates to the prioritization of medical care spending over personal expenditures in individuals with multiple comorbid conditions, and whether this relationship differs between Blacks and non-Blacks. We aimed to explore the relationship between SES, race, and medical spending among individuals with multiple comorbid conditions.

Study Design: Cross-sectional evaluation of baseline data from a randomized controlled trial.

Setting & Participants: The STOP-DKD (Simultaneous Risk Factor Control Using Telehealth to Slow Progression of Diabetic Kidney Disease) study is a completed randomized controlled trial of Duke University primary care patients with diabetes, hypertension, and chronic kidney disease. Participants underwent survey assessments inclusive of measures of sociodemographics and medication adherence.

Predictors: Race (Black or non-Black) and socioeconomic status (income, education, and employment).

Outcomes: The primary outcomes were based on 4 questions related to spending, asking about reduced spending on basic/leisure needs or using savings to pay for medical care. Participants were also asked if they skipped medications to make them last longer.

Analytical Approach: Multivariable logistic regression stratified by race and adjusted for age, sex, and household chaos was used to determine the independent effects of SES components on spending.

Results: Of 263 STOP-DKD participants, 144 (55%) were Black. Compared with non-Blacks, Black participants had lower incomes with similar levels of education and employment but were more likely to reduce spending on basic needs (29.2% vs 13.5%), leisure activities (35.4% vs 20.2%), and to skip medications (31.3% vs 15.1%), all $P < 0.05$. After multivariable adjustment, Black race was associated with increased odds of reduced basic spending (OR, 2.29; 95% CI, 1.14-4.60), reduced leisure spending (OR, 1.94; 95% CI, 1.05-3.58), and skipping medications (OR, 2.12; 95% CI, 1.12-4.04).

Limitations: This study was conducted at a single site in Durham, North Carolina, and nearly exclusively included insured patients. Further, the impact of the number of comorbid conditions, medication costs, or copayments was not assessed.

Conclusions: In primary care patients with multiple chronic diseases, Black patients are more likely to reduce spending on basic needs and leisure activities to afford their medical care than non-Black patients of equivalent SES.

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Visual Abstract included

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Limited interaction with medical care is a pervasive problem for many high-risk groups.[1] Among ethnic and racial minorities, several factors contribute to reduced engagement with health care systems, including issues surrounding medical mistrust and the reduced availability and offering of services.[2] Identification of these challenges has prompted the development of several strategies to facilitate health care access for those who need it most, such as interventions that target improvements in diabetes and blood pressure control, as well as medication adherence.[3-9] However, despite these efforts to target the distal effects of low engagement in care, few studies have examined how the actual costs of medical care incurred by patients may contribute to financial strain, particularly among high-risk groups.

Low socioeconomic status (SES) has been linked to adverse health outcomes across numerous conditions, yet mounting evidence suggests that SES itself is an incomplete proxy for actual spending patterns and debt.[10-12] For example, Black patients are noted to incur significantly greater medical debt than White patients, yet only 42% of this observed difference is explained by health status, income, or insurance.[13] Therefore, broad SES assessments alone likely do not fully capture the financial contributors to medical care engagement and adherence.

Identifying the determinants of low health care engagement is of particular importance in chronic kidney disease (CKD), in which early disease management can mitigate progression and improve outcomes.[14] Individuals with CKD are among those who incur the highest health

PLAIN-LANGUAGE SUMMARY

This study was inspired by the abundance of patients who struggle with the financial burden of medical care as well as the impact of social determinants of health. We sought to understand if the racial and social disparities witnessed in other aspects of patient lives affect their adherence to medical care. Our results indicate that particularly among Black participants, the cost of medical care represents a significant financial burden that negatively affects available funds for basic and leisure needs as well as medication adherence. As the cost of medical care continues to increase, we hope to emphasize the importance of considering the financial impact among patients with limited resources.

care costs, driven predominantly by inadequately controlled comorbid hypertension and diabetes, and progression to end-stage kidney disease (ESKD).[15,16] Notably, Black individuals with CKD have a markedly increased risk of progression to ESKD or death compared to non-Blacks with CKD and are more likely to report substantial barriers to care.[17-20] Aligned with studies in other health conditions, low SES is more commonly noted among ethnic and racial minorities and has been directly correlated with higher rates of kidney failure.[21-23] Yet, while out-of-pocket cost burden for patients with CKD has been shown to reduce medication and treatment adherence, little work has examined the relationship between race, SES, and actual medical care spending patterns.[24,25]

As the population of patients with multiple concomitant chronic diseases continues to grow, understanding whether financial barriers affect adherence to medical care is critical to improving outcomes. In a diverse cohort of primary care patients with diabetes, hypertension, and early CKD, we sought to determine the relation of personal expenditures for medical care, and to determine if these differed by race and SES.

METHODS

Study Overview

The Simultaneous Risk Factor Control Using Telehealth to Slow Progression of Diabetic Kidney Disease (STOP-DKD) study is a randomized controlled trial evaluating the effectiveness of a tailored multifactorial telehealth intervention to reduce kidney function decline compared to an educational group among primary care patients with DKD and poorly controlled hypertension. Details of the study protocol and baseline instruments have been previously described.[26] Briefly, primary care patients with early DKD and poorly controlled hypertension completed a baseline examination between April 2014 and December 2015. As part of the baseline examination, participants were administered a comprehensive battery of survey instruments and questionnaires, including questions regarding their socio-demographics, comorbid conditions, medical care expenditures, and medication-taking behaviors. All study procedures and protocols were approved by the Duke University Institutional Review Board (no. Pro00044811), and informed consent was obtained from each participant.

Covariates

As part of the baseline examination, participants were asked to provide details regarding their SES, such as household income, education, and employment. Income was assessed by the question: "Can you tell me which of the following ranges represents your household income over the past 12 months?" Possible responses included: "less than $15,000," "$15,000-$29,999," "$30,000-$59,999," "$60,000-$89,999," "$90,000 or more," "don't know," or refused. For the purpose of this analysis, income was dichotomized into <$30,000 and ≥$30,000. We categorized education by the response to the question: "What is the highest grade or year of school you have completed?" with the following possible responses: "grades 1-8 (elementary/middle school)," "grade 12 or General Educational Development (high school graduate)," "associates degree (Associate of Arts or Associate of Science)," "college 1-3 years (some college or technical school)," "college graduate (includes masters, doctorate, or professional degrees)," "don't know," or refused. We categorized education into ≤ high school graduate and > high school graduate. We assessed employment status with the question: "How would you describe your work status?" Possible responses included: "employed for wages, full-time," "employed for wages, part-time," "self-employed," "not employed for wages," "retired, not working," "retired working part-time or more" or "unable to work or disabled," "don't know," or refused. Respondents answering "employed for wages, full-time" were categorized as working full-time. All other responses were categorized as not working full-time.

To examine the factors that may influence medication-taking behaviors, household chaos was assessed using a validated Confusion, Hubbub and Order Scale (CHAOS) tool[27] using the following 4 statements: (1) My life is organized, (2) My daily activities from week to week are unpredictable, (3) Keeping a schedule is difficult for me, and (4) I don't like to make appointments too far in advance because I don't know what might come up. Responses ranged from "Definitely false" (0) to "Definitely true" (4), with the first question being reverse scored. The questions were summed (for a score ranging from 0-16) and kept continuous for analysis.

Race was assessed by response to the question: "How would you describe your race?" with the following possible responses: "Black/African American," "White or Caucasian," "Asian," "American Indian/Alaska Native,"

"Native Hawaiian or other Pacific Islander," "Other," "don't know," or refused. For the purpose of this study, race was dichotomized into Black/African American or not Black/African American. Other covariates included age (kept as a continuous variable), sex, and health insurance status, which was assessed by the question "Do you have either insurance or another program which helps pay for your medications?" with responses dichotomized as yes or no.

Outcomes: Medical Care Spending

The primary outcomes for this substudy were based on 4 questions related to medical care and prescription drug spending (1) "Have you reduced spending on basics like food or clothing in order to pay for your medical care or prescription drugs?" (2) "Have you reduced spending on leisure activities like vacations, eating out, or movies in order to pay for your medical care or prescription drugs?" (3) "Have you used all or a portion of your savings to pay for your medical care or prescription drugs?" and (4) "Have you ever skipped any medication doses or taken less medicine than prescribed to make a medicine last longer?" Possible responses included "Yes," "No," refused, or "I don't have savings" for the savings question. Participant responses were categorized as yes if they responded "yes" and no if they responded "no," "I don't know," or refused to answer.

Statistical Analysis

Participant characteristics were presented both overall and stratified by race. Continuous variables (age and chaos score) were described using the mean ± standard deviation and compared across race using a 2-sample Mann-Whitney U test. Categorical variables were analyzed as frequency (percent) and compared using the Fisher exact test. Because these comparisons are meant to be descriptive in nature, we did not adjust for multiple testing.

Separate multivariable logistic regression models were used to assess the association between race and each medical care spending outcome, and models were adjusted for age, sex, income, education, employment, and household chaos. The cohort was then stratified by race, and the same model (omitting race) was fit within each stratum to determine differential effects of SES components on medical care spending by race. All models were assessed for quality of fit and model assumptions, both visually and by comparing model-predicted probabilities with observed probabilities. Originally, health insurance was to be included as a confounder in the model, because health insurance is an important measure that is associated with race and medical care spending. However, the majority of participants reported having health insurance, resulting in collinearity with the intercept and unstable estimation; thus, insurance status was ultimately removed from all models.

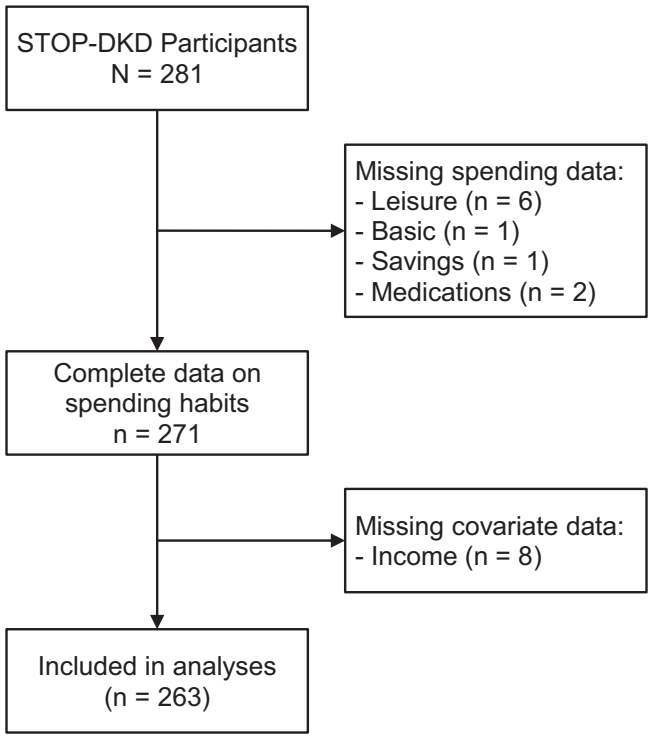

Figure 1. Flowchart of study participants.

All hypothesis tests performed were 2-sided at the nominal level of 0.05. Analyses were performed using SAS 9.4 (SAS Institute) and R 3.4.4 (R Core Team).

RESULTS

Of 281 STOP-DKD baseline participants, 10 participants were missing data on at least one of the outcome measures and another 8 participants were missing income data, and thus were excluded (Fig 1). These 18 participants were slightly older, female, Black, not employed full-time, and reported more household chaos, but were not significantly different from those included in the analytic cohort in any specific characteristic. Our final analytic cohort consisted of 263 participants with complete data on medical expenditures and covariates of interest. Note that when modeling the outcome related to the use of savings, an additional 18 participants were excluded for not reporting any savings. Of the included total participants, 144 (55%) were Black, with a mean age of 62 years and roughly half men and half women. The vast majority had health insurance (98%) and 70% had an income ≥$30,000. The majority of participants also had ≥ high school education; however, few were employed full-time (Table 1).

Medical Care Spending

One hundred fifteen participants (44%) answered yes to at least one of the 4 questions regarding medical spending

Table 1. Study Participants Baseline Demographics

Characteristic	Overall	Non-Black	Black	*P* Value
n (%)	263	119 (45.2%)	144 (54.8%)	
Age, y	61.8 ± 8.8	63.4 ± 8.2	60.5 ± 9.2	0.01
Sex				0.06
Female	125 (47.5%)	49 (41.2%)	76 (52.8%)	
Male	138 (52.7%)	70 (58.8%)	68 (47.2%)	
Household chaos score[a]	6.71 ± 4.0	6.52 ± 4.0	6.86 ± 4.0	0.42
Health insurance				>0.99
Yes	258 (98.1%)	117 (98.3%)	141 (97.9%)	
No	5 (1.9%)	2 (1.7%)	3 (2.1%)	
Annual household income				0.02
<$30,000	79 (30.0%)	27 (22.7%)	52 (36.1%)	
≥$30,000	184 (69.9%)	92 (77.3%)	92 (63.9%)	
Highest education				0.60
≤HS diploma	85 (32.3%)	36 (30.3%)	49 (34.0%)	
>HS diploma	178 (67.7%)	83 (69.8%)	95 (66.0%)	
Employment (3 categories)				0.16
FT, PT, self-employed	100 (38.02)	42 (35.29%)	58 (40.28%)	
Retired, not working or PT or more	112 (42.59%)	58 (48.74%)	54 (37.5%)	
Unemployed, unable, disabled	51 (19.39%)	19 (15.97%)	32 (22.22%)	
Current employment				0.69
FT	79 (30.0%)	33 (27.7%)	46 (31.9%)	
Other or not FT	184 (70.0%)	86 (72.3%)	98 (68.1%)	

Note: Data are presented as mean ± SD or n (%).
Abbreviation: FT, full-time; HS, high school; PT, part-time; SD, standard deviation.
[a]Chaos score ranges from 6-30 based on responses to a validated questionnaire regarding life organization, stability, predictability, and schedule.

difficulties. Overall, the most commonly reported medical spending difficulty was a reduction in leisure spending (n = 75, 29%). Fifty-eight (22%) participants reported a reduction in basic spending, 60 (24%) participants reported use of savings, and 63 (24%) reported skipping medications. Overall, any medical spending difficulty was more commonly reported by Black participants than non-Blacks (51% vs 35%). Black participants were more likely to report a reduction of basic spending ($P < 0.01$), leisure spending ($P = 0.01$), and skipping medications than non-Blacks ($P < 0.01$) (Fig 2). Of note, Black participants were less likely to report having a savings account than non-Blacks (8% vs 5%, $P = 0.05$); there was no significant difference in the use of savings by race.

After adjustment for age, sex, income, education, employment, and household chaos, Black race (vs non-Black) remained independently associated with higher odds of reduced basic spending (OR, 2.32; 95% CI, 1.15-4.67) (Table 2), leisure spending (OR, 1.98; 95% CI, 1.07-3.66) (Table 3), and skipping medications (OR, 2.17; 95% CI, 1.14-4.12) (Table 4). There was no statistically significant association between race and use of savings (Table 5). Among non-Black participants, education (≤ high school diploma) was associated with reduced basic spending, whereas income (<$30,000) was associated with reduced leisure spending and use of savings. Among Black participants, only income (<$30,000) was associated with reduced basic spending, whereas education (≤ high school diploma) was associated with reduced leisure spending, and neither were significant regarding odds of use of savings or skipping medications. Interestingly, a higher household chaos score was associated with

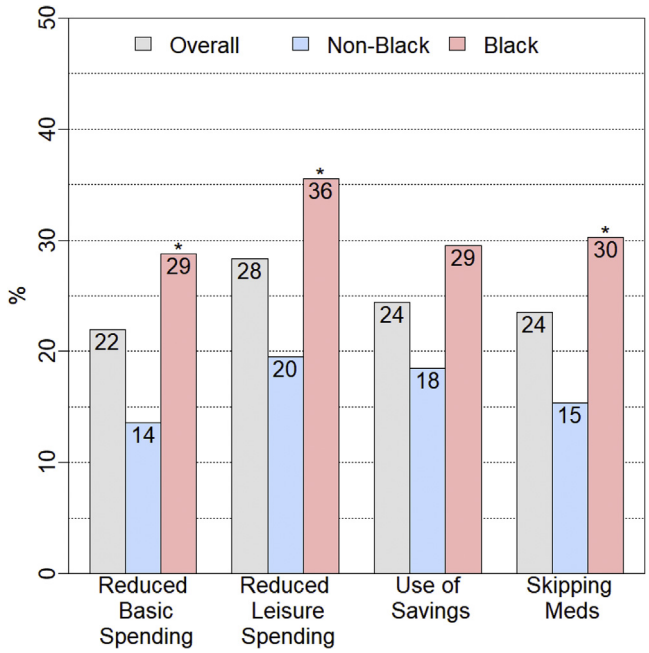

Figure 2. Spending pattern percentages by race. *$P < 0.05$.

Table 2. Odds of Reduced Basic Spending

	Overall, n = 263	Non-Black, n = 119 (45.2%)	Black, n = 144 (54.7%)
Race			
Non-Black	Ref	—	—
Black	2.32 (1.15-4.67)		
Age (per 1-year increase)	1.01 (0.96-1.06)	1 (0.92-1.09)	1 (0.95-1.06)
Sex			
Female	Ref	—	—
Male	0.66 (0.34-1.31)	0.42 (0.13-1.41)	0.82 (0.35-1.92)
Income			
≥$30,000	Ref	—	—
<$30,000	2.88 (1.36-6.14)	2.87 (0.76-10.9)	3.34 (1.27-8.76)
Education			
>HS diploma	Ref	—	—
≤HS diploma	1.89 (0.93-3.85)	4.49 (1.29-15.7)	1.14 (0.45-2.86)
Employment			
FT/PT/self	Ref	—	—
Retired	1.58 (0.61-4.08)	0.69 (0.15-3.03)	2.89 (0.83-10.14)
Unemployed/disabled	2.97 (1.12-7.91)	1.11 (0.19-6.34)	4.63 (1.35-15.94)
Chaos score (per 1-point increase)	1.02 (0.93-1.11)	0.97 (0.84-1.13)	1.05 (0.94-1.18)

Note: Data are presented as odds ratio (95% confidence interval).
Abbreviations: FT, full-time; HS, high school; PT, part-time; Ref, reference.

increased odds of use of savings overall and among Black participants but not non-Black participants.

DISCUSSION

In this study of primary care patients with CKD and risk factors for CKD progression, we found that Black participants were more likely to reduce spending on basic needs and leisure, as well as being more likely to skip medications than non-Black participants after adjustment for SES. There was no association between race and use of savings, although Black participants were less likely to report the presence of savings in general. Other than race, income was found to be the most consistent socioeconomic driver of medical spending difficulty, whereas education was inconsistently associated with spending patterns. Our findings assert that factors other than SES alone affect the personal financial burden of medical care.

To our knowledge, this is the first study to examine racial differences in medical spending patterns in a high-

Table 3. Odds of Reduced Leisure Spending

	Overall, n = 263	Non-Black, n = 119 (45.2%)	Black, n = 144 (54.7%)
Race			
Non-Black	Ref	—	—
Black	1.98 (1.07-3.66)		
Age (per 1-year increase)	0.97 (0.93-1.01)	0.98 (0.91-1.05)	0.96 (0.91-1.01)
Sex			
Female	Ref	—	—
Male	1.53 (0.82-2.83)	2.93 (0.96-8.9)	1.03 (0.47-2.25)
Income			
≥$30,000	Ref	—	—
<$30,000	2.44 (1.21-4.94)	5.73 (1.76-18.65)	1.24 (0.48-3.22)
Education			
>HS diploma	Ref	—	—
≤HS diploma	1.8 (0.95-3.4)	1.13 (0.38-3.36)	2.66 (1.13-6.25)
Employment			
FT/PT/self	Ref	—	—
Retired	2.05 (0.89-4.76)	1.2 (0.33-4.35)	3.11 (0.98-9.85)
Unemployed/disabled	2.08 (0.86-5.03)	1.07 (0.22-5.29)	3.7 (1.16-11.78)
Chaos score (per 1-point increase)	1.06 (0.98-1.14)	1.05 (0.93-1.19)	1.05 (0.95-1.16)

Note: Data are presented as odds ratio (95% confidence interval).
Abbreviations: FT, full-time; HS, high school; PT, part-time; Ref, reference.

Table 4. Odds of Skipping Medications

	Overall, n = 263	Non-Black, n = 119 (45.2%)	Black, n = 144 (54.7%)
Race			
Non-Black	Ref	—	—
Black	2.17 (1.14-4.12)		
Age (per 1-year increase)	0.97 (0.93-1.01)	0.92 (0.85-1)	0.99 (0.94-1.04)
Sex			
Female	Ref	—	—
Male	1.15 (0.62-2.13)	1.17 (0.39-3.51)	1.16 (0.54-2.48)
Income			
≥$30,000	Ref	—	—
<$30,000	2.14 (1.01-4.51)	2.73 (0.75-9.97)	1.86 (0.73-4.73)
Education			
>HS diploma	Ref	—	—
≤HS diploma	1.14 (0.58-2.26)	1.11 (0.34-3.67)	1.31 (0.56-3.04)
Employment			
FT/PT/self	Ref	—	—
Retired	1.05 (0.45-2.44)	1.43 (0.35-5.85)	0.89 (0.3-2.62)
Unemployed/disabled	1.31 (0.54-3.19)	0.54 (0.1-3.06)	1.7 (0.57-5.07)
Chaos score (per 1-point increase)	1.05 (0.97-1.14)	1.1 (0.95-1.26)	1.03 (0.93-1.14)

Note: Data are presented as odds ratio (95% confidence interval).
Abbreviations: FT, full-time; HS, high school; PT, part-time; Ref, reference.

risk group of primary care patients. Studies of medical nonadherence in the general population suggest higher rates of cost-related nonadherence in Black individuals compared with non-Black individuals.[28,29] Further, typically unmeasured factors such as physician mistrust and medical suspicion have also been shown to be independently correlated with adherence and decisional control among Black patients.[2] Individuals are more likely to spend money on medical care and medications if physician trust is higher. Whereas these observations provide insight into the factors associated with medication nonadherence, it does not lend insight into the disproportionate impact of medical cost on personal financial burden in Black patients compared with non-Black patients.

The current study represents a patient-centered evaluation of how the cost of medical care affects medical care adherence within the framework of costs of living rather than traditional SES measures of income, education, and employment. Our results support the idea that the classic definitions of SES may not sufficiently capture

Table 5. Odds of Use of Savings

	Overall, n = 263	Non-Black, n = 119 (45.2%)	Black, n = 144 (54.7%)
Race			
Non-Black	Ref	—	—
Black	1.5 (0.78-2.91)		
Age (per 1-year increase)	0.99 (0.95-1.03)	0.99 (0.91-1.07)	0.98 (0.93-1.04)
Sex			
Female	Ref	—	—
Male	1.15 (0.6-2.21)	1.36 (0.42-4.39)	1 (0.44-2.28)
Income			
≥$30,000	Ref	—	—
<$30,000	1.99 (0.93-4.25)	7.1 (2.03-24.81)	0.96 (0.34-2.69)
Education			
>HS diploma	Ref	—	—
≤HS diploma	1.72 (0.87-3.38)	2.51 (0.79-7.94)	1.71 (0.68-4.28)
Employment			
FT/PT/self	Ref	—	—
Retired	1.49 (0.59-3.75)	0.69 (0.15-3.08)	2.46 (0.72-8.47)
Unemployed/disabled	2.26 (0.88-5.82)	1.35 (0.24-7.56)	3.23 (0.94-11.04)
Chaos score (per 1-point increase)	1.09 (1-1.18)	1.08 (0.94-1.24)	1.1 (0.99-1.23)

Note: Data are presented as odds ratio (95% confidence interval).
Abbreviations: FT, full-time; HS, high school; PT, part-time; Ref, reference.

the financial limitations that contribute to disparities. Few studies have examined the association of medical spending with personal financial sources such as leisure funds or savings, which may be a more robust measure of personal financial stability than income or education alone.[28] For example, emerging literature surrounding the impact of generational affluence on mortality highlights the link between low wealth, measured as total net worth rather than income, and increased risk of death, disability, and chronic disease.[10] For individuals with CKD, understanding the financial barriers to medical care is critical. In 2012, the average direct per-person Medicare cost of CKD was $20,162.[30] Such high medical costs are a known barrier to both the initiation of treatment and medical care adherence for patients with CKD and ESKD.[25] Cost is of particular importance for Black patients with CKD, who suffer poorer health outcomes and higher rates of progression to ESKD than their White counterparts and thus incur greater medical care costs.[17,25]

Robust evidence supports the relationship of poverty with the exacerbation of racial health disparities through disproportionate access to health care, limited education on health-promoting behaviors, and increased exposure to marketing of high-risk products such as tobacco, alcohol, and nutritionally poor food items.[31-35] Relatedly, higher household chaos (ie, less household stability) has also been associated with Black race, medication nonadherence, and inadequate financial status.[36] Taken together, these findings suggest that racial minorities with decreased kidney function remain highly vulnerable to the adverse health outcomes of CKD, warranting a comprehensive, patient-centered approach to CKD care that is responsive to, and respectful of, the unique needs of each individual.

The current study has limitations worthy of mention. Although our study cohort was a diverse population with greater than half being of Black race, this work was conducted within a single health system in the Southeastern United States which may not be generalizable to other regional populations. We also recognize that our ascertainment of SES does not account for other factors such as generational wealth, cost of living, and other assets that were not captured in our data. Further, our cohort was almost entirely insured, which may not be representative of the general primary care population. While our study was unique in its routine assessment of medical spending patterns, we were unable to evaluate the underlying drivers of these spending habits such as copayments and actual costs of medical care. Further, individuals without savings were excluded from the analysis of odds of savings, the results of which may represent individuals with higher SES and should be interpreted with caution; however, all participants were included in the other 3 outcomes of medical care spending. Finally, while all of the participants in our cohort had multiple comorbid conditions including, diabetes, hypertension, and CKD, we did not evaluate the impact of the number of comorbid conditions or medication class, which may affect differential medical care spending patterns.

The results of this study indicate that Black race is an independent predictor of medical spending difficulty, highlighting important contributors to disparate health outcomes of Black as compared to White individuals. Income remains an important influence on the relative affordability of medical care, but other less commonly measured factors may also be specific indicators of medical care spending difficulties than SES alone. It would also be informative to determine if there is a correlation between medical spending and health outcomes such as improved blood pressure or blood glucose control. Moving forward, a more comprehensive assessment of the barriers and facilitators to medical care spending is needed to inform system-level interventions to attenuate the poor health outcomes of high-risk in Black populations with multiple comorbid conditions.

ARTICLE INFORMATION

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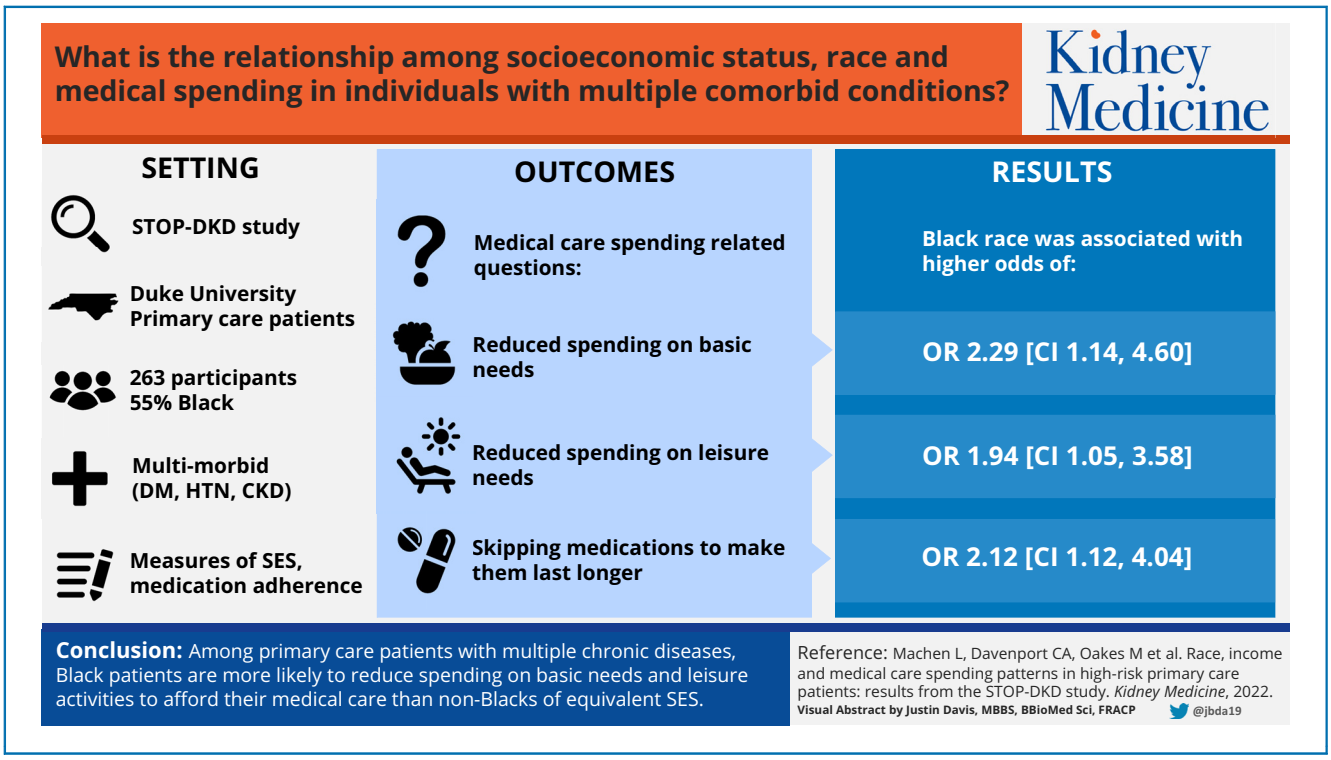
What is the relationship among socioeconomic status, race and medical spending in individuals with multiple comorbid conditions?
Kidney Medicine
SETTING
STOP-DKD study
Duke University Primary care patients
263 participants 55% Black
Multi-morbid (DM, HTN, CKD)
Measures of SES, medication adherence
OUTCOMES
Medical care spending related questions:
Reduced spending on basic needs
Reduced spending on leisure needs
Skipping medications to make them last longer
RESULTS
Black race was associated with higher odds of:
OR 2.29 [CI 1.14, 4.60]
OR 1.94 [CI 1.05, 3.58]
OR 2.12 [CI 1.12, 4.04]
Conclusion: Among primary care patients with multiple chronic diseases, Black patients are more likely to reduce spending on basic needs and leisure activities to afford their medical care than non-Blacks of equivalent SES.
Reference: Machen L, Davenport CA, Oakes M et al. Race, income and medical care spending patterns in high-risk primary care patients: results from the STOP-DKD study. Kidney Medicine, 2022.
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