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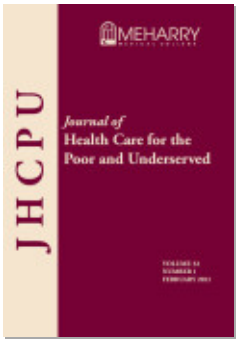

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Differences in Uptake of Low-Dose CT Scan for Lung Cancer among White and Black Adult Smokers in the United States—2017

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Abstract: To study racial/ethnic differences in the utilization of low-dose computerized tomography (LDCT) scan for lung cancer among adult smokers. Cross-sectional data (n=2,640) of adults aged 55–74, were from the 2017 Behavioral Risk Factor Surveillance System, Lung Cancer Screening module. Weighted, multivariable logistic regression was conducted. Most, 70.9%, were White and 52.2% male. About 16.0 % reported receiving LDCT scan in the past 12 months, 12.0% of Blacks and 17.4% of Whites. More Whites (55.0%) had ≥30 pack-years smoking history than Blacks (20%). Blacks had lower odds, .52 (CI: 0.28–0.96) of receiving LDCT scan than Whites. The odds of receiving LDCT scan were higher for those who were male, who tried to quit smoking in the past year, and for those with more education, health insurance, high blood pressure, lung disease, or cancer history (other than skin or lung cancer). This study suggests racial differences in the use of LDCT scan.

Key words: racial and ethnic disparity, lung cancer, cancer screening, tobacco smoking,

Lung cancer is the leading cause of cancer death in the United States (US). It is estimated that there will be 228,820 new cases of lung cancer and 135,720 deaths from lung cancer in 2020.[1] Racial/ethnic disparities in lung cancer prevalence, staging, treatment, survival, and mortality, have been well documented in the US.[2] In fact, Black men have the highest rates of lung cancer incidence and mortality compared to other racial/ethnic groups.[3,4] Despite advances in lung cancer management, Black patients have a lower survival rate than Whites.(4) Only 13% of Blacks diagnosed with all stages of lung cancer survive five years, whereas 16% of Whites survive five years after their lung cancer diagnosis.(2) The survival rate of lung cancer depends on the disease stage

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at the time of diagnosis. The five-year survival is considerably higher among patients diagnosed with early stage lung cancer. Research shows that Blacks are less likely to undergo invasive staging and therefore are more likely to be diagnosed at later stages when curative surgical treatment is not suitable.[5,6] Therefore, early detection of lung cancer is critically important to decrease lung cancer burden among the Black population.

Research on racial/ethnic differences in the utilization of low-dose computerized tomography (LDCT) scan for lung cancer is limited. LDCT scan is an effective method to identify early-stage lung cancer when effective treatment options are available that improve overall survival.[7] The National Lung Cancer Screening Trial (NLST) demonstrated that screening for lung cancer with LDCT led to a 20% reduction in lung cancer mortality among asymptomatic individuals aged 55–74 years with at least 30 pack-years smoking history, who were either currently smoking or had quit within the past 15 years. Majority of the sample, over 90%, were Whites in the NLST.[7] Findings from NLST informed national lung cancer screening recommendations for such high-risk individuals.[8]

Despite the fact that LDCT scan identifies lung cancer in an early stage when best treatment options are available, poor uptake of LDCT scan among eligible individuals has been reported.[9] For example, a study conducted by Jemal and Fedewa in 2015, showed that fewer than 4% of all eligible individuals reportedly received LDCT scan.[9] A few studies investigated the barriers that adults face related to the utilization of LDCT scan. Reported barriers included younger age, education attainment, cost, patients' lack of awareness about LDCT, fear of cancer diagnosis, perceived stigma, healthcare providers' knowledge.[10–15] Delmerico and colleagues found that current smokers were less likely to consider undergoing LDCT scan than former smokers, and 33% of current smokers were worried to learn whether they had cancer.[16] Little research has investigated possible racial/ethnic differences related to the utilization of LDCT scan. In this study, we used a large, representative cross-sectional dataset to examine the association between race and the utilization of LDCT scan for lung caner among adults aged 55–74, who were current smokers, and identified individual-level predictors of LDCT scan use.

Methods

Data source. Cross-sectional data from the 2017 Behavioral Risk Factor Surveillance System (BRFSS), Lung Cancer Screening module were utilized. Briefly, BRFSS is computer-assisted telephone survey of non-institutionalized adults aged ≥18 years.[17] Sponsored by the Centers for Disease Control and Prevention and state health departments, BRFSS is conducted annually for all 50 states and the District of Columbia, Puerto Rico, Guam, and the US Virgin Islands. The BRFSS questionnaire consists of three parts: 1) the core questionnaire, 2) optional models on specific topics, and 3) state-added questions. All State Health Departments must administer the core questionnaire annually without modification. However, states may choose to administer optional modules and state-added questions according to their needs. BRFSS collects information on socio-demographics, health conditions, health risk behaviors, health care

access and preventive services utilization. Detailed information about BRFSS have been published previously.[17] The data used in this study come from eight states that administered the Lung Cancer Screening module in addition to the core questionnaire (Florida, Georgia, Maryland, Missouri, Nevada, Oklahoma, Vermont and Wyoming). The median response rate for the 2017 BRFSS survey was 45.9%. The median response rates for included states ranged from 38.2% to 64.1%.[17] The BRFSS data is de-identified and publicly available. The analysis of publicly available, de-identified data does not constitute human subjects research as defined in federal regulations at 45 CFR 46.102, therefore, does not require Institutional Review Board review.[18]

Study population. Study participants were identified based on a single question from the lung cancer screening module: "In the last 12 months, did you have a CT or CAT scan?" Responses included "yes, to check for lung cancer", "no (did not have a CT scan)" and "had a CT scan, but for some other reason". We excluded respondents who reported having a CT scan but for some other reason, yielding a total of 40,485 respondents. We included older adults, ages from 55 to 74 years, who reported no history of lung cancer diagnosis (n=17,810). We further restricted the sample to current smokers who reported having smoked at least 100 cigarettes in their entire life and at the time of survey reported smoking cigarettes every day or some days (n=2,951). For all included measures described below, we excluded "don't know" or "refused" responses and missing values (n=311), yielding analytical sample of 2,640 adults.

Measures. *Dependent variable*: Self-reported receipt of CT or CAT to check for lung cancer in the past 12 months was dichotomized as "yes, had CT or CAT in the past 12 months to check for lung cancer" vs. "no".

Predictors: Demographic characteristics included race/ethnicity (non-Hispanic Whites (hereafter, Whites), non-Hispanic Blacks (hereafter, Blacks) and other), age (55–64 vs. 65–74), marital status (married/partnered vs. not-married), educational attainment (high-school diploma or less, attended college or technical school, or graduated from college or technical school), employment status (employed, unemployed, retired, unable to work and homemaker/student). Clinical characteristics included general health status (excellent/very good, good, or fair/poor), health insurance coverage (insured vs. uninsured) and chronic health conditions. Chronic health conditions were all dichotomized as "yes, ever told had" or "no" and included heart disease, high blood pressure (HTN), current asthma (ever told and still have it), ever told they had lung disease (chronic obstructive pulmonary disease (COPD), emphysema, or chronic bronchitis), skin cancer, and other than skin or lung cancer. We calculated smoking pack-years by multiplying the number of packs of cigarettes smoked per day by the number of years the person has smoked. We categorized pack-years as (≤ 29.9 pack-years vs. ≥30 pack-years). A smoking quit attempt in the past 12 months was dichotomized as "yes" when current smokers made a quit attempt and "no" when they did not make a quit attempt.[17,19]

Statistical analysis. To provide population estimates and generate representative results we accounted for BRFSS complex survey design. We calculated the percentages and 95% confidence intervals (CI) for study variables to describe sample characteristics. Multivariable logistic regression model was performed to assess the association

between race/ethnicity and utilization of LDCT scan after adjusting for all factors and to generate adjusted odds ratios (AOR) and 95% CIs. All statistical analyses were based on weighted data and were conducted with STATA statistical software (version 14.2). Associations were considered statistically significant at the $p \leq .05$ level.

Results

Sample characteristics. The sample of 2,640 adults represent 1,141,892 individuals in the included eight states. Table 1 presents demographic and clinical characteristics of study participants. The sample was 70.9% White, 15.3% Black, and 52.2% male. In 2017, 15.9% reported receiving LDCT scan in the past 12 months. Majority of the sample, 59%, had high-school or lower level of education and had health insurance coverage, 87%. About 8% of adults had history of cancer, other than lung cancer. More than 48% of participants tried to quit smoking in the past 12 months.

Table 2 presents sample characteristics by race/ethnicity. More Blacks were younger, aged 55–64, (82.2% vs. 65.4%), had high school or lower level of education (61.2% vs. 57.8%) compared with Whites. In the past 12 months more Whites (17.4%) received LDCT scan for lung cancer compared with Blacks (12.0%). In the sample, 46.4% had ≥30 pack-years smoking history of which 55% were Whites and 20% were Blacks. Larger proportion of Blacks, 75%, tried to quit smoking in the past 12 months compared with Whites, 45.8%.

Association between race/ethnicity and LDCT scan utilization. Table 3 presents results from the multivariable logistic regression analysis. Blacks had about half the odds (.52) of receiving LDCT scan in the past 12 months compared with Whites, after adjusting for all other factors (95% CI 0.3–0.9). The odds of receiving LDCT scan were significantly higher for those who were male, or who tried to quit smoking in the past year, and for those with higher education level, health insurance, HTN, lung disease, or cancer history (other than skin or lung cancer). Adults who had lower odds of receiving LDCT scan were those who ever had heart disease, those in excellent/very good health, and those living in Nevada, Oklahoma or Wyoming. Smoking pack-year history was not a statistically significant predictor in the regression model when controlling for all other variables.

Discussion

We investigated if there were racial differences in the reported utilization of LDCT scan for lung cancer and identified individual-level predictors of LDCT scan among adult smokers. We found that 12% of Blacks and 17.4% of Whites had LDCT scan in the past 12 months, which are higher than the rate of LDCT scan use reported previously. In fact, previous research showed that 3.9% of the eligible individuals received LDCT scan in 2015.[9] However, the direct comparison between the current study and previous studies cannot be exact due in part to differences in study populations.[9,19] In previous studies, researchers included only adults who met the NLST eligibility criteria, specifically, adults who had ≥30 pack-year smoking history whereas we also included adults with ≤ 29.9 pack-year smoking history. In addition, we used more recent data, 2017,

Table 1.

DEMOGRAPHIC AND CLINICAL CHARACTERISTICS OF STUDY PARTICIPANTS, ADULT CURRENT SMOKERS (AGED 55–74), BRFSS 2017, UNITED STATES

Characteristics	Unweighted sample size, n=2,640	Weighted % (95% CI)
Race/Ethnicity		
Whites	2,135	70.9 (67.3–74.2)
Blacks	280	15.3 (12.3–18.8)
Other	225	13.8 (10.5–17.9)
Age		
55–64	1,629	67.1 (63.2–70.7)
65–74	1,011	32.9 (29.3–36.8)
Gender		
Female	1,455	47.8 (44.2–51.5)
Male	1,185	52.2 (48.5–55.8)
Marital Status		
Not-married	1,632	55.1 (51.2–58.9)
Married	1,008	45.0 (41.1–48.9)
Education		
High-school or less	1,358	59.0 (55.1–62.7)
Attended college	815	29.9 (26.4–33.7)
Graduated college	467	11.1 (9.5–13.0)
Employment		
Employed	920	38.3 (34.4–42.4)
Unemployed	168	7.5 (5.5–10.2)
Retired	983	34.4 (30.7–38.4)
Home maker/student	90	2.5 (1.8–3.5)
Unable to work	479	17.2 (15.0–19.7)
States		
Florida	901	43.4 (41.6–45.2)
Georgia	225	19.6 (18.4–20.8)
Maryland	409	8.0 (7.2–8.5)
Missouri	323	14.0 (13.0–15.0)
Nevada	153	5.9 (5.1–6.6)
Oklahoma	229	6.7 (6.3–7.2)
Vermont	203	1.1 (1.0–1.2)
Wyoming	197	1.3 (1.1–1.2)
Health Insurance		
No	320	12.5 (10.2–15.2)
Yes	2,320	87.5 (84.8–89.8)
Lung cancer screening		
Yes	406	15.9 (13.0–19.3)
No	2,234	84.1 (80.7–86.9)

(*continued on p. 170*)

Table 1. (*continued*)

Characteristics	Unweighted sample size, n=2,640	Weighted % (95% CI)
Smoking History		
Pack-years		
≤ 29.9 pack-year	1,323	53.6 (49.9–57.2)
≥30 pack-year	1,317	46.4 (42.8–50.1)
Quit attempt		
Yes	1,290	48.2 (44.7–51.8)
No	1,350	51.8 (48.2–55.4)
Health Status		
Fair/Poor	869	33.7 (30.0–37.6)
Good	901	36.0 (32.3–39.9)
Excellent/Very good	870	30.3 (27.1–33.7)
Asthma		
Yes	272	10.0 (7.9–12.5)
No	2,368	90.0 (87.5–92.1)
Lung disease[a]		
Yes	718	24.2 (21.2–27.5)
No	1,922	75.8 (72.5–78.8)
Hypertension		
Yes	1,349	48.4 (44.5–52.4)
No	1,291	51.6 (47.6–55.5)
Hearth disease		
Yes	419	12.7 (10.9–14.9)
No	2,221	87.3 (85.1–89.1)
Skin cancer		
Yes	302	10.9 (8.3–14.1)
No	2,338	89.1 (86.0–91.7)
Other than lung cancer		
Yes	280	8.4 (7.0–10.1)
No	2,360	91.6 (90.0–93.0)

Note:
[a]Lung disease include: COPD, emphysema, or chronic bronchitis.

and none of the previous studies adjusted for the same individual-level predictors in the regression model, therefore, the comparison cannot be exact. We found that compared to Whites, Blacks had significantly lower (0.52 times) odds of receiving LDCT scan in the past 12 months after controlling for all individual-level factors, suggesting that racial differences exist in the utilization of LDCT. Japuntich el al. (2018) also found that eligible non-Black patients were 2.8 times more likely to undergo LDCT scan than eligible Black patients.[20] However, we cannot directly compare our findings with those of

Table 2.

SAMPLE CHARACTERISTICS BY RACE/ETHNICITY, ADULT CURRENT SMOKERS (AGED 55–74), BRFSS 2017, UNITED STATES

	Weighted % (95% CI)		
Characteristics	**Whites**	**Blacks**	**Other**
Age			
55–64	65.4 (61.6–69.1)	82.2 (75.8–87.2)	58.9 (44.3–72.0)
65–74	34.6 (31.0–38.4)	17.8 (12.8–24.3)	41.1 (28.0–55.7)
Gender			
Female	50.8 (47.0–54.6)	36.7 (27.7–46.7)	44.8 (30.8–59.8)
Male	49.2 (45.4–53.0)	63.3 (53.3–72.3)	55.2 (40.2–69.3)
Marital Status			
Not-married	53.0 (49.2–56.7)	59.0 (46.7–70.3)	61.4 (50.3–69.3)
Married	47.0 (43.3–50.8)	41.0 (29.6–53.2)	38.5 (30.7–49.7)
Education			
High-school or less	57.8 (54.1–61.3)	61.2 (48.8–72.3)	62.5 (46.5–76.2)
Attended college	30.5 (27.1–34.0)	31.2 (20.9–43.9)	25.7 (13.9–42.6)
Graduated college	11.8 (9.8–14.0)	7.6 (4.7–11.9)	11.8 (6.9–19.5)
Employment			
Employed	38.4 (34.5–42.4)	45.7 (34.5–57.4)	29.9 (19.3–43.2)
Unemployed	6.7 (5.0–9.0)	6.8 (3.7–12.2)	12.2 (4.3–29.9)
Retired	35.4 (31.7–39.2)	21.7 (15.5–29.4)	43.9 (30.4–58.4)
Home maker/student	2.8 (1.9–4.0)	1.4 (.5–3.8)	2.2 (.6–7.2)
Unable to work	16.8 (14.3–19.5)	24.4 (16.9–33.8)	11.8 (7.1–19.0)
States			
Florida	42.5 (39.7–45.2)	35.5 (24.2–48.6)	57.3 (44.4–69.2)
Georgia	17.8 (15.7–19.9)	34.4 (26.4–43.4)	13.0 (7.1–22.5)
Maryland	7.4 (6.6–8.3)	14.2 (10.3–19.1)	3.5 (1.5–7.8)
Missouri	16.6 (15.0–18.3)	9.7 (6.0–15.4)	5.3 (2.8–9.8)
Nevada	5.0 (4.1–6.0)	3.9 (1.7–8.6)	12.4 (7.1–20.5)
Oklahoma	7.6 (6.8–8.4)	2.1 (1.1–3.8)	7.4 (4.8–11.2)
Vermont	1.5 (1.3–1.6)	.1 (.01–.4)	.3 (.1–.6)
Wyoming	1.6 (1.4–1.8)	.1 (.01–.2)	.8 (.4–1.6)
Health Insurance			
No	11.9 (9.8–14.4)	9.7 (5.2–17.4)	18.5 (9.7–32.3)
Yes	88.1 (85.6–90.2)	90.2 (82.5–94.8)	81.4 (67.6–90.2)
Lung cancer screening			
Yes	17.4 (14.3–21.1)	12.1 (7.9–18.1)	12.3 (4.4–30.1)
No	82.6 (78.9–85.7)	87.9 (81.9–92.1)	87.7 (70.0–95.6)

(*continued on p. 172*)

Table 2. (*continued*)

Characteristics	Weighted % (95% CI)		
	Whites	**Blacks**	**Other**
Smoking History			
Pack-years			
≤ 29.9 pack-year	45.0 (41.3–48.7)	80.0 (66.9–88.7)	68.4 (54.8–79.5)
≥30 pack-year	55.0 (51.3–58.7)	20.0 (11.3–33.1)	31.6 (20.5–45.2)
Quit attempt			
Yes	45.8 (41.9–49.7)	75.5 (66.6–82.6)	56.5 (42.0–70.0)
No	54.3 (50.3–58.1)	24.5 (17.4–33.5)	43.5 (30.0–58.0)
Health Status			
Fair/Poor	32.8 (29.2–36.6)	36.4 (26.3–47.8)	35.0 (21.6–51.3)
Good	33.8 (30.2–37.6)	42.6 (32.0–53.9)	40.2 (25.3–57.0)
Excellent/Very good	33.4 (29.8–37.2)	21.0 (14.6–29.4)	24.8 (15.5–37.3)
Asthma			
Yes	10.7 (8.7–13.2)	6.0 (2.5–13.7)	10.4 (3.7–25.9)
No	89.3 (86.8–91.3)	94.0 (86.3–97.5)	89.6 (74.2–96.3)
Lung disease[a]			
Yes	28.0 (24.5–31.7)	11.1 (7.0–17.2)	19.5 (10.7–32.6)
No	72.0 (68.3–75.5)	88.9 (82.7–93.0)	80.5 (67.3–89.2)
Hypertension			
Yes	54.4 (50.4–58.3)	60.1 (46.9–72.0)	49.8 (36.0–63.6)
No	45.7 (41.7–49.6)	39.9 (28.0–53.1)	50.2 (36.5–64.0)
Hearth disease			
Yes	15.2 (12.7–18.0)	7.1 (4.2–11.7)	6.5 (3.8–11.0)
No	84.8 (82.0–87.3)	92.9 (88.3–95.8)	93.5 (89.0–96.2)
Skin cancer			
Yes	13.0 (10.5–16.1)	1.1 (.2–5.9)	10.6 (2.6–33.8)
No	87.0 (83.9–89.5)	98.9 (94.0–99.7)	89.4 (66.1–97.3)
Other than lung cancer			
Yes	9.9 (8.0–12.1)	6.2 (3.7–10.2)	3.6 (2.0–6.5)
No	90.2 (87.9–92.0)	93.8 (89.8–96.3)	96.4 (93.5–98.0)

Note:
[a]Lung disease include: COPD, emphysema, or chronic bronchitis.

Japuntich et al. (2018) because of the previously noted differences in study populations.[20] Still, research suggests that the current eligibility criteria for receiving LDCT scan for lung cancer is problematic.[21,22] Based on current guidelines, larger proportion of White smokers are eligible for screening compared to Black smokers.[23] Differences in smoking history such as later onset of smoking between Blacks and Whites make it more difficult for Blacks to meet the current, ≥30 pack-year smoking history criterion, which may lead to lower rates of LDCT scan among Blacks.[24] In our study, more Whites (55%) had ≥30

Table 3.

ADJUSTED ODDS RATIOS (AOR) FOR THE RELATIONSHIP BETWEEN LDCT USE AND INDIVIDUAL-LEVEL PREDICTORS AMONG ADULT (AGED 55–74) CURRENT SMOKERS, BRFSS 2017. UNITED STATES

	Lung cancer screening yes vs. no	
Characteristics	**AOR (95% CI)**	**p-value**
Race/Ethnicity		
Whites	1	
Blacks	.52 (.28–.96)	.03
Other	.54 (.21–1.36)	.19
Age		
55–64	1	
65–74	1.04 (.64–1.69)	.89
Gender		
Female	1	
Male	1.74 (1.11–2.73)	.01
Marital Status		
Not-married	1	
Married	.78 (.50–1.21)	.27
Education		
High-school or less	1	
Attended college	1.84 (1.07–3.15)	.02
Graduated college	1.89 (.99–3.60)	.05
Employment		
Employed	1	
Unemployed	1.01 (.32–3.19)	.98
Retired	1.56 (.91–2.67)	.11
Home maker/student	1.33 (.48–3.69)	.59
Unable to work	1.68 (.90–3.12)	.10
States		
Florida	1	
Georgia	.75 (.42–1.34)	.33
Maryland	.67 (.39–1.15)	.15
Missouri	.75 (.42–1.33)	.33
Nevada	.38 (.17–.87)	.02
Oklahoma	.51 (.27–.97)	.04
Vermont	.63 (.31–1.32)	.22
Wyoming	.29 (.13–.65)	.00
Health Insurance		
No	1	
Yes	3.96 (1.59–9.89)	<.001

(*continued on p. 174*)

Table 3. (*continued*)

Characteristics	Lung cancer screening yes vs. no AOR (95% CI)	p-value
Smoking History		
Pack-years		
≤ 29.9 pack-year	1	
≥30 pack-year	.77 (.50–1.19)	.24
Quit attempt		
No	1	
Yes	1.77 (1.17–2.67)	<.001
Health Status		
Fair/Poor	1	
Good	.73 (.43–1.23)	.24
Excellent/Very good	.44 (.22–.87)	.01
Asthma		
No	1	
Yes	1.00 (.57–1.75)	.99
Lung disease[a]		
No	1	
Yes	3.33 (2.05–5.40)	<.001
Hypertension		
No	1	
Yes	1.69 (1.12–2.55)	.01
Hearth disease		
No	1	
Yes	.60 (.38–.95)	.03
Skin cancer		
No	1	
Yes	.86 (.45–1.63)	.63
Other cancer		
No	1	
Yes	2.24 (1.38–3.64)	<.001

Note:
AOR = Adjusted Odds Ratio
CI = Confidence Interval.
[a]Lung disease include: COPD, emphysema, or chronic bronchitis.

pack-years smoking history than Blacks (20%) and those of other races (31.5%), which is consistent with previously reported data.[21] Also, larger proportion of Black smokers do not meet the minimum age, 55 years old, requirement for screening. Compared to White smokers, Black smokers are more likely to be diagnosed with lung cancer at an earlier age than the required minimum age screening criteria.[23,25] This is a serious

potential cause of racial differences in the management and treatment of lung cancer. Fine-tuning the eligibility criteria might make LDCT scan more widely accessible for screening amongst minority populations. There are about 7 million adults with ≥30 pack-years smoking history eligible for LDCT scan and an additional 1.6 million adults with 20–29 pack-years smoking history that could benefit from LDCT scan immensely.[9,25] Thus, lowering the pack-year smoking history and age criteria for LCS would help more Black adults who are at increased risk of dying from lung cancer get screened for the disease. Future studies with large and diverse sample that is more generalizable are warranted to understand and determine the appropriateness of current guidelines for different patient populations. In addition, research shows that risk-prediction methods would better identify high-risk individuals most likely to benefit from LDCT scan than the NLST eligibility criteria.[26] Thus, additional and more rigorous training about LDCT scan use are needed for health care providers, so they can discuss the potential use of LDCT scan with those who are more likely to benefit from it.

Our results also showed significantly higher odds of receiving LDCT scan in the past 12 months among adult current smokers who were male, had higher levels of education, who had health insurance coverage, who tried to quit smoking in the past 12 months and who had comorbid conditions (lung disease, HTN, and cancers other than skin or lung). These findings are also in line with those reported in previous studies.[9,27] Thus, health care providers should take into account patients' race and these individual-level factors when discussing the potential use of LDCT scan with their patients. The odds of receiving LDCT scan were lower among adult current smokers who had excellent/very good general health status, a history of heart disease and among those living in Wyoming, Oklahoma, or Nevada compared to respondents living in Florida. Smoking pack-year history was not significantly associated with receiving LDCT scan for lung cancer in the past 12 months, which is surprising given the recommendation for screening specifies screening only for those with 30 pack-years smoking history. Since, the pack-year smoking history cut-off point of 30 eliminates many individuals to be eligible for LDCT scan, there is a need to make an adjustment in current lung cancer screening guideline so that Blacks who are most likely to benefit from LDCT scan become eligible for LDCT scan. While all high-risk adults need to get the required LDCT scan; however, clinicians need to be particularly vigilant for those adults from groups that tend to receive less LDCT scan.

Limitations. The present study has several limitations. The primary outcome, LDCT, and current smoking status were both self-reported, which could lead to under- or over-reporting among participants. Biochemical verification of smoking status is recommended in tobacco-related studies to minimize the risk of underreporting of smoking behavior.[28] The BRFSS is a computer-assisted telephone survey so all individual-level predictors included in this study were self-reported. Participants are only from eight US states and thus the findings are not necessarily generalizable to the entire U.S. Despite these limitations, this study is strengthened by using a large, diverse, population-based dataset that provides unique information on racial differences in the utilization of LDCT scan.

Conclusion. Our study findings indicate racial differences in lung cancer screening. Compared to Blacks, Whites appear more likely to meet LDCT screening eligibility

criteria and appear more likely to receive an LDCT scan. Such differences could be contributing to racial/ethnic differences in lung cancer outcomes. Further research on the utilization of LDCT scan is needed especially amongst disadvantaged populations as we strive to reduce lung cancer-related deaths.

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