



Knowledge and beliefs about lung cancer screening among Black individuals at high risk: a qualitative approach

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Background: Despite its efficacy in reducing lung cancer (LC)-specific mortality by 20%, screening with low-dose computed tomography (LDCT) in eligible groups remains low (5–16%). Black individuals are more commonly affected by LC than other racial/ethnic groups in the United States (U.S.) but less likely to undergo LC screening (LCS). Our study aimed to explore the knowledge and beliefs of Black individuals at high risk regarding LCS.

Methods: Black individuals (n=17) who met the 2021 United States Preventive Services Task Force (USPSTF) LCS eligibility criteria were recruited in upstate New York. In-depth semi-structured interviews were conducted, audio recorded, and transcribed to explore knowledge and beliefs that could influence the uptake of LCS. A qualitative thematic analysis method was used to identify and analyze themes within the data.

Results: We identified principal themes about LC and LCS. Although most participants reported that smoking was the major risk factor for LC, some participants placed more emphasis on other factors as the major risk factors for LC and de-emphasized the role of smoking. Most participants were not aware that screening for LC existed. Several barriers and facilitators for LCS were identified.

Conclusions: Awareness about LCS among Black individuals is low. Addressing barriers may help increase LCS rates among Black individuals, ultimately reducing their LC mortality. The findings from our study have important implications in designing more effective interventions involving community health workers and healthcare clinicians to increase LCS uptake among Black individuals at high risk.

Keywords: Lung cancer screening (LCS); knowledge and beliefs; United States Preventive Services Task Force (USPSTF); low-dose computed tomography (LDCT)

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Introduction

Lung cancer (LC) is the leading cause of cancer mortality in the United States (U.S.) among both men and women (1-3). Black individuals (specifically Black men) are more commonly affected by LC than members of all other racial/ethnic groups in the U.S. (1,3,4). Black individuals tend to develop LC at a higher rate and at younger ages than their White counterparts (5,6). Cigarette smoking is the single most important risk factor for LC, accounting for 80% to 90% of all diagnoses (2). Nevertheless, the difference in LC incidence rates is not fully explained by differences in smoking prevalence according to race/ethnicity. This excess risk may be attributable to the type of cigarettes (i.e., menthol) most often used by Black individuals and additional occupational and environmental exposures (7,8). Black individuals often smoke fewer cigarettes (9,10) and start smoking later in life (11,12), yet they have a greater risk of developing LC than White individuals (13). Moreover, Black individuals have the highest LC mortality rate of any racial/ethnic group in the U.S. (1,14).

Screening with low-dose computed tomography (LDCT) detects LC at its early stages, which results in a 20% reduction of LC-specific mortality compared to screening with chest radiography (15). In 2013, the United States

Preventive Services Task Force (USPSTF) recommended LC screening (LCS) using LDCT scanning for individuals aged 55–80 years with a ≥ 30 -pack-year smoking history and currently smoking or formerly smoked who quit smoking within the past 15 years (16). In 2021, the USPSTF revised its guideline by reducing the minimum age from 55 to 50 years and the smoking pack-years from 30 to 20 (17).

Despite the efficacy of LCS, 5–16% of LCS-eligible individuals complete LCS (18-20). A nationwide population-based study in the U.S. found that Black individuals are 53% less likely to undergo LCS than their White counterparts (21). Previous qualitative studies have identified barriers to LCS uptake: lack of knowledge, low perceived benefit, worry related to false-positive tests, mistrust of clinicians and the healthcare system, fatalistic beliefs, denial of risk, concerns about the procedure, and stigma (22,23). The findings from these studies were based on data from various combinations of racial/ethnic groups, and none separately assessed perceptions and beliefs regarding LC risk factors and prevention methods specific to Black individuals (24,25). Although a study by Tseng *et al.* (26) specifically focused on the knowledge and attitudes of Black individuals towards LCS (using a mixed method), the study participants were restricted to those who underwent LCS and were recruited from an academic medical center. To our knowledge, ours is the first community-based qualitative study to explore the knowledge and beliefs of Black individuals at high risk (aged 50–80 years with a ≥ 20 pack-year smoking history, currently smoking or formerly smoked and quit smoking within the past 15 years) regarding LCS uptake. The study also assessed other factors related to LCS uptake (i.e., LC risk factors, barriers, facilitators, and suggested interventions to increase LCS uptake). We present this article in accordance with the COREQ reporting checklist (available at <https://tldr.amegroups.com/article/view/10.21037/tlcr-24-269/rc>).

Methods

Study design and participants

This study was conducted using a qualitative method. In-depth semi-structured interviews were conducted to explore knowledge and beliefs that could influence the uptake of LCS among high-risk Black individuals who lived within the 27-county catchment area of the Wilmot Cancer Institute (“Wilmot”) at the University of Rochester in upstate New York. Inclusion criteria included Black race, age 50–80 years, fluent in spoken English, currently smoking or had quit

Highlight box

Key findings

- Awareness about lung cancer screening (LCS) among Black individuals at high risk is low.
- Many Black individuals who are eligible for LCS do not perceive themselves at risk.

What is known and what is new?

- Previous studies have documented low levels of knowledge about LCS among various racial/ethnic groups in the United States (U.S.).
- This study explores perceptions and beliefs regarding LCS specific to Black individuals at high risk, who are more commonly affected by lung cancer than members of all other racial/ethnic groups in the U.S.

What is the implication, and what should change now?

- Our study identifies several barriers and suggested interventions to address the barriers to increase LCS uptake among Black individuals at high risk.
- The findings from our study have important implications for community health workers and healthcare clinicians in helping them design more effective interventions for LCS uptake tailored to Black individuals at high risk.

Table 1 Constructs of the interview guide to explore the knowledge and beliefs of high-risk Black individuals regarding LC and LCS uptake

Knowledge and beliefs about	Constructs/themes	Interview questions/prompts
LC	Risk factors	Not all people get LC. Describe factors that can increase the risk of developing LC
	Sources of information about LC	How and where do you get information about LC?
	Perceived risk of developing LC	Do you think you are at risk to develop LC? Why?
LCS	Awareness about LCS	What do you know about LCS?
	Barriers to LCS	What are the barriers that limits LCS?
	Facilitators for LCS	Describe the reasons why some people complete their LCS
	Suggested intervention(s) to improve LCS	What could be done to improve LCS in the Black community?

LC, lung cancer; LCS, lung cancer screening.

smoking within the last 15 years, and able to provide informed consent. The study protocol was approved by the University of Rochester Medical Center's Institutional Review Board (Approval ID: STUDY00006564). The study was conducted in accordance with the Declaration of Helsinki (as revised in 2013).

Recruitment methods and consent process

Study participants were recruited through the Wilmot Cancer Institute Community Outreach and Engagement (COE) Office. The COE team engages community partners to provide feedback on all aspects of research projects, including recruitment of study participants. Community ambassadors, trained by members of the COE team to facilitate community outreach activities, recruited participants using their community networks and at events in partnership with local faith-based community organizations. The community ambassadors promoted the study using recruitment flyers displayed in various locations and at community educational and outreach activities. The community ambassadors identified eligible participants and referred them to the principal investigator (A.T.G.). Once potential participants were referred, the principal investigator assessed the participants' eligibility.

An information sheet was provided to the participants by the interviewer prior to the interview. This sheet described the study goals, procedures, risks, and confidentiality, emphasizing that study participation was voluntary and that individuals could withdraw at any time without negative consequences. Once the interviewee read the information sheet and provided verbal consent, the in-depth interview

was initiated. Following the completion of each interview, the study coordinator mailed a \$35.00 gift card to each study participant.

Study procedures

The semi-structured interviews were conducted remotely over Zoom between April 2022 and September 2022 (n=17) by the first and the second authors (both are PhDs, researchers, males and trained in conducting qualitative studies). Demographic information was collected at the beginning of the semi-structured interview. The interview for each participant lasted between 30 and 45 minutes, was semi-structured using an interview guide, with audio recorded and later transcribed. The interview guide was developed to explore the knowledge and beliefs of interviewees regarding LC and LCS uptake. By the time 17 participants were interviewed, the saturation points of distinct ideas relevant to LC and LCS (i.e., the point at which no new information is emerging from interviews) was reached and data collection was ended. The interview questions aligned with constructs and themes are described in *Table 1*.

Data analysis

Demographic and socioeconomic characteristics of the study participants were described as frequencies and percentages (for categorical variables) as well as means and standard deviations (for continuous variables). A qualitative thematic analysis method was used to identify, analyze, and report themes within the data (27). Guided by grounded theory,

Table 2 Characteristics of the study population (n=17)

Variables	Values
Age (years), mean \pm SD	58.4 \pm 5.2
Sex, n (%)	
Male	7 (41.2)
Female	10 (58.8)
Education, n (%)	
Some high school (grades 9 through 11)	1 (5.9)
High school graduate	8 (47.1)
Some college or technical school	5 (29.4)
College graduate and above	3 (17.6)
Annual income, n (%)	
<\$15,000.00	6 (35.3)
\$15,000.00–\$50,000.00	8 (47.1)
>\$50,000.00	3 (17.6)
Employment, n (%)	
Employed	6 (35.3)
Unemployed	3 (17.6)
Retired	2 (11.8)
Disabled/other	6 (35.3)
Home ownership, n (%)	
Owns home	6 (35.3)
Rents	10 (58.8)
Other arrangement	1 (5.9)
Marital status, n (%)	
Married	2 (11.8)
Divorced/separated/widowed	4 (23.5)
Never married	11 (64.7)
Smoking status/history, n (%)	
Formerly smoked	8 (47.1)
Currently smoking	9 (52.9)

SD, standard deviation.

the coders primarily followed an inductive approach (i.e., using codes/themes that emerged from the data themselves) to develop a codebook. The principal investigator (A.T.G.) prepared the first draft of the codebook by reviewing the transcribed interviews. The draft codebook was revised by two other individuals (L.J.M. and A.P.C.). The final version

of the codebook was adopted after all three individuals (A.T.G., L.J.M., and A.P.C.) reached a consensus. New codes were added as needed.

Two trained independent coders (i.e., the principal investigator (A.T.G.) and one other individual (L.J.M.)) coded the interviews based on the codebook. Subsequently, codes were grouped into themes. A third (A.P.C.) coder joined for in-depth discussions and compared findings to identify similarities and differences with the codes. The third coder (A.P.C.) reconciled any discrepancies between the first two coders. The final version of the codes was accepted by all three individuals, including the first two coders and the third who reconciled discrepancies. The results were described and presented in a text format.

Results

Characteristics of the study participants

The demographic and socioeconomic characteristics of the study participants are depicted in *Table 2*. Participants ranged in age from 51 to 71 years with a mean age of 58.4 years. More than half of the participants were female (58.8%), never married (64.7%), and currently smoking (52.9%). The largest proportion of participants were high school graduates (47.1%); 17.6% were college graduates. Only 17.6% of the participants had a household income greater than \$50,000.00. Just over one-third (35.3%) of the study participants were employed.

Study themes

Multiple themes emerged from the in-depth participant interviews.

Knowledge and beliefs about LC

Principal themes about LC included: (I) knowledge of LC risk factors; (II) perceived risk of developing LC; and (III) source of information about LC.

Knowledge of LC risk factors

(I) Cigarette smoking

The majority (88.2%) of participants described cigarette smoking as a major risk factor for LC.

“I know cigarettes is a good cause. It’s the number-one cause, ...” (man, 56 years old).

“When you smoke, your lungs turn black, and if you don’t stop, your lungs turn black, and you die. ... I know smoking contributes to that [lung cancer]” (woman, 59 years old).

“... it comes from smoking. The risk is higher for smoking cigarettes” (man, 57 years old).

(II) Factors other than cigarette smoking

Some participants believed that hereditary predisposition, second-hand smoking, chemicals, environmental pollution, and certain food types were risk factors for LC. Interestingly, some participants put less emphasis on the link between smoking and LC.

(III) Secondhand smoking

“My uncle died from lung cancer he had from secondhand smoke. He didn’t smoke at all” (man, 57 years old).

(IV) Chemicals/toxins

“Well, if you are in the wrong atmosphere, if you are around a lot of chemicals, they can cause cancer.” (man, 60 years old).

(V) Environmental pollution

“My uncle never smoked a day in his life, and he got it [lung cancer]. Some of the high effects are environmental effects. Sometimes it’s places where you live or where you work. You can get lung cancer from that as well” (woman, 52 years old).

(VI) Nutrition

“From what I hear, certain foods, they cause cancer” (man, 60 years old).

(VII) Hereditary predisposition

“I think a lot of people are not aware of this, but I think—I’m a true believer that it [lung cancer] could be hereditary” (man, 56 years old).

“I know that lung cancer destroys the lungs and it kills people. ... I guess some people just have that gene that they’re born with, how they were explaining when I was watching. I do know that eight of my friends who’ve never smoked a cigarette a day in their life and wasn’t around cigarette smoke, they died from lung cancer” (woman, 69 years old).

Perceived risk of developing LC

(I) No perceived risk of developing LC

Close to half (41.18%) of the participants did not perceive they were at risk of developing LC. Of those, half had quit smoking within the past 15 years. Many believed that once they quit smoking, they would be free from LC risk. For the question “Do you think you are at risk to develop lung cancer?”, participants responded as follows:

“Not now. Because I don’t smoke anymore, and I just came out of the hospital. They tested me for all cancers. I told you they went to top from the bottom” (man, 57 years old).

“I hope not... for one thing, not smoking [currently]” (man, 60 years old).

Some participants perceived that they were not at risk because they knew individuals who smoked in the past and did not get LC.

“I don’t think so. This is why I say. My father was born in 1910. He died in 1999. He used to smoke the Camel cigarettes. Back then when he was—he was smoking since he was 9 years old. They didn’t have filters. They didn’t have anything. Those were powerful cigarettes. My father died smoking, but he did not die from cancer. He died from gangrene...” (woman, 69 years old).

Some participants did not perceive themselves at risk of developing LC because they believed in divine protection:

“I think I was blessed not to get it [lung cancer]. It’s a blessing. ... I’m not at risk” (woman, 58 years old).

“I’m in church. I’m a full believer in God. I do believe he didn’t bring me this far to just leave me” (man, 56 years old).

(II) Everybody is at risk of developing LC (regardless of smoking status)

Several participants believed that everybody is at risk of developing LC.

“Yeah, I mean just anybody that breathe is at risk” (woman, 59 years old).

“... everybody can be at risk for lung cancer...” (woman, 57 years old).

“I believe everyone is at risk of getting a lung cancer. Because we live in an environment that’s very polluted. We eat food that contains things that we don’t know about, how it was cleaned or pesticides, sprays that they spray on trees to keep down pollen or to keep bugs out. All of these things can be harmful, can cause us lung cancer which can cause—could cause us lung cancer. We just don’t know about it, so I believe that the world as a whole can be affected by lung cancer” (women, 52 years old).

(III) Uncertain whether at risk or not

Some participants indicated that they were uncertain whether they are at risk or not. For example, one participant responded as follows:

“I don’t know. I don’t know; I just don’t think so. At least, I hope not” (woman, 56 years old).

(IV) Perceived risk of developing LC because of smoking

Some participants believed they were at risk of developing LC because they had smoked in the past or were currently smoking.

“I’m truly at risk. ... Because I’m still smoking constantly almost every day here, and I just keep on constantly doing all that” (man, 60 years old).

“I’m not exempt, so I can be [at risk]. Because I’m an ex-smoker. That’s one reason” (woman, 54 years old).

Sources of information about LC

When asked “How and where do you get information about lung cancer?”, participants identified several sources of information regarding LC. These sources included their primary care provider, various media outlets (TV, radio,

social media, and printed media such as pamphlets), and word of mouth (family, friends, colleagues, or neighbors). Half (50%) of the participants reported receiving LC information via various media outlets.

(I) TV as a source of information

“I heard it on TV... They were speaking on lung cancer. This is not just the United States but worldwide. It was on BBC News. It’s channel 98 on my cable out of London” (woman, 69 years old).

“Mostly I think it’s some TV when they have the commercials” (woman, 54 years old).

“I saw commercials on TV about lung cancer and about how it could affect your life and your ability to survive it” (woman, 71 years old).

(II) Printed media (e.g., pamphlets) as a source of information (at the doctor’s office)

“... Like I said, they [doctors] gave me pamphlets and everything to read about lung cancer to be updated on it” (man, 57 years old).

“Really, I read some about it [lung cancer]. When I go to the doctor office, I read on it. I took some classes when I was working at this one job. They were talking about cancer and the signs and all that, but that’s pretty much it” (man, 60 years old).

(III) Word of mouth and other sources of information

More than half (58.82%) of the participants reported that they had a relationship with LC patients (i.e., family members, friends, colleagues, or neighbors).

“I had heard it being talked about here and there from several people... Yeah, just friends” (man, 56 years old).

“Well, my coworker died of lung cancer, and she never smoked” (woman, 57 years old).

“I do know a couple of people that have passed from lung cancer. One was my sister’s best friend. I know there was one of my coworkers that died” (woman, 59 years old).

“I heard it through close friends...” (woman, 57 years old).

“I know about lung cancer, and I had a family member who passed away with lung cancer” (women, 52 years old).

Knowledge and beliefs about LCS

Principal themes regarding LCS included: (I) awareness about LCS; (II) barriers to LCS; (III) facilitators for LCS; and (IV) suggested interventions to promote LCS.

Awareness of LCS

Over half of the study participants (58.82%) were not aware that LCS was available. They described it as follows:

“I haven’t heard of lung cancer screenings, ...” (woman, 52 years old).

“I don’t know anything about it [lung cancer screening]” (woman, 69 years old).

“I don’t know about [lung cancer screening]” (man, 60 years old).

Among those who reported that they had heard of LCS, the majority (57.14%) did not have a clear understanding of what it entailed. They were unable to distinguish LCS from other medical exams. Their confusion was expressed as follows:

“Yes, I think I had that ... my doctor gave me that. I think it was for the lung cancer screening...” (man, 56 years old).

“I couldn’t even remember what it was for, but I knew I was in that machine” (man, 63 years old).

When the participants were asked who they should contact or where to go to obtain LCS (or information about it), many participants (29.41%) did not know where a LCS center was located or how to obtain information about it. On the other hand, those who were knowledgeable about the location and the referral process for LCS indicated primary care clinicians (PCPs), patient navigators, and nearby clinics as essential resources that could help them obtain information about LCS. The majority (58.33%) indicated PCPs were the most important resource to learn about LCS.

“I go to my doctor for my regular PCP, my regular primary care physician, and if there’s any concerns or images, then she will refer me, I’m sure, to a pulmonary—... who does lung doctors, a lung doctor or somebody, The primary doctors refer you to the screenings” (woman, 59 years old).

“I would go to my primary doctor to get information. Other than that, I don’t know where I would go” (women, 56 years old).

“If you have a primary doctor, you will go to your primary care” (women, 52 years old).

“What I tell them, start with their doctor, their primary care doctor. ... Or they can start maybe with a social worker. That would be my suggestion” (woman, 71 years old).

Facilitators of LCS

Even though majority of participants had not been screened previously, they identified several factors that would facilitate their willingness to partake in LCS.

(I) Motivation to know the result of screening

“I want to know what the results would be. ... That’s what I would like to know. Like I said, I’ve been smoking a long time, so I would like to know” (man, 63 years old).

(II) Physicians’ recommendations

“I think if people are in touch with their primary care physician on a regular basis, see their doctor every 6 months, at least every six months. They will then guide you and give you the information, If they realize you’re a smoker, I’m absolutely sure your healthcare provider would make certain suggestions”

(woman, 57 years old).

(III) Trust between patients and physicians and the medical system

“In my opinion, there are two things; loyalty and trust. ... When they build loyalty to—for the people, then they will have an easier way to gain the trust of the people” (women, 52 years old).

Barriers to LCS

Study participants identified several barriers to LCS uptake.

(I) A lack of awareness

“Some people are just not aware, uneducated and not aware of the screenings, and don’t know where or how to go about getting the screenings, and don’t even know the screenings exist” (woman, 59 years old).

(II) Fear of a diagnosis (or positive test result) of LC

“Fear prevents you, and fear causes you to get it [lung cancer screening] ... I think it’s fear on both ends... Fear of not knowing or fear of something’s wrong...” (woman, 59 years old).

“A lot of people just don’t wanna know what’s going on. They’re more afraid of what the possibilities are...” (woman, 59 years old).

“They’re scared that the doctor might tell them that they might have lung cancer or anything else” (woman, 58 years old).

(III) Mistrust of doctors and the medical system

“A lot of African American people don’t trust doctors. I don’t trust the doctors as well because I’ve had bad experiences with doctors... I don’t really agree with medical—the medical industry or services. Because they haven’t been very helpful to me. I try to stay away from it” (woman, 52 years old).

“There is an underlying distrust in the black community when it comes onto healthcare. The manner in which a white person goes to the hospital, the manner in which they are treated versus a black person, there’s a distinct difference. You can feel it and you can sense it. You can. I think that is a deterrent for a lot of people that says I am not doing this shit no more. ... Sorry for the expletives” (woman, 57 years old).

(IV) Low perceived risk

“People don’t wanna get involved with the cancer [screening] because they feel that they’re okay and they don’t smoke as much...” (man, 56 years old).

(V) Distance from the LCS center

“Probably locations [from lung cancer screening center], not enough locations in the hood” (man, 57 years old).

(VI) Lack of primary care providers

“I know Black men that don’t even have a doctor and they’re in their 40s and 50s. Some people got insurance and they still don’t have a doctor” (man, 60 years old).

(VII) Lack of doctor’s visit

“... people who don’t even go and get physicals every year. I know

people are scared to go to their doctor. That’s one thing. They don’t like going into doctor. They don’t like getting checkups and all that. ... They don’t go to the doctors when they should” (man, 60 years old).

“Sometimes you’re scared to go to the doctor and get checked out because you think negative sometimes. You know what I mean? All the things that you’ve been through and did, and then sometimes it catches up with you, so you’re kind of scared” (woman, 54 years old).

(VIII) Lack of a physician’s recommendation

“Well, I mean, I go to the doctor like I’m supposed to, and lung cancer screening has never been brought up, brought to my attention to even have a screening for my lungs. That may be one of the reasons. That’s one of the things that we’re not told as far as prevention to have a lung cancer screening..... No, they [Doctors] never suggested that” (woman, 57 years old).

(IX) Fear of stigmatization

“... people less likely to go get it [lung cancer screening] because of the stigma with hospitals and doctors how they’ve been treated, being a guinea pig” (women, 52 years old).

(X) Cost of screening

“They don’t think they can get it [lung cancer screening] because it might be costly or whatever” (man, 56 years old).

(XI) Low perceived benefit (of screening)

“They don’t know and they don’t trust the scientists. Most of them think that it’s a death wish. Most of them don’t know that there have been some people that have survived it” (woman, 71 years old).

Suggested intervention to promote LCS uptake

Participants suggested possible interventions that would promote LCS uptake among high-risk Black individuals. Suggested interventions included community-based education, primary care providers’ recommendations, promotion of LCS via various media outlets (e.g., internet, pamphlets), making the screening center accessible to the users, creating trust and loyalty between patients and their providers/healthcare system, and provision of incentives to the eligible participants.

(I) Awareness creation through community-based education

“I think if we get more awareness, more information out there within the Black community, the danger of cancer, I think that will open up some eyes, that will draw more attention. I think, if we had speakers to come in and have some kind of seminars or whatnot, where people can sit down and get some knowledge, get to know about it, ... get to know the ins and outs about it and the risk of it because a lot of people just think it’s cancer” (man, 56 years old).

“You could talk to a person and tell them that early detection will help...” (woman, 58 years old).

“More awareness, awareness. Like bringing it [lung cancer screening] to their attention” (man, 56 years old).

(II) Annual regular checkups

“I think by encouraging people to just get their regular yearly physicals, that’s how you find out stuff [lung cancer screening]” (woman, 59 years old).

(III) PCPs’ recommendations

“... it’s easier with primary care doctors having more information and giving it to their patients...” (women, 56 years old).

(IV) Building trust between patients and their clinicians

“In my opinion, there is two things; loyalty and trust. ... there’s a lack of relationship between the doctors and the people in the community, African American community” (woman, 52 years old).

(V) Accessible screening centers

“I think one of the biggest things is that a lot of them don’t have transportation. If it was in their communities locally where they wouldn’t have to go—say for instance a close by library or close by facility, rec centers, that type of place. They would be more willing and maybe more likely to go get screened. Most of them don’t have transportation and they don’t have the money to travel. Usually, it’s not near where they live. If it’s something where they have to go outside of their comfort zone, they’re not gonna do it. If it was accessible in their community, in their neighborhood, then they might consider it. Make it easy. Make it available and affordable, and communicate” (woman, 71 years old).

(VI) Provide incentives

“Offer something. ... Black folks gonna come and get the free gift, ... all kind of people down there who probably need the screenings” (man, 57 years old).

Discussion

Our community-based qualitative study identified several themes by exploring their awareness and beliefs about LC and LCS among Black individuals at high risk. The participants reported risk factors for LC, barriers and facilitators to LCS and suggested their preferred mode of intervention to increase LCS in a community-based setting. Participants did not refer to shared decision-making as one step in the LCS program. Participants reported extensive recommendations for future interventions based on their preferred venues to learn about LC and LCS.

Almost all participants were aware that LC existed. Consistent with previous studies (28,29), most participants in our study reported that smoking was the major risk factor

for LC. However, some participants minimized the role of smoking as the primary risk factor for LC. They justified this belief by observing that some individuals who smoke heavily do not develop LC, while some individuals who do not smoke do develop LC. This highlights an opportunity to educate Black communities about the evidence that about 80–90% of LC cases are attributable to smoking (2). In addition, this community wisdom is supported by empiric evidence, as LC in Black Americans is associated with lower smoking history and higher rates of LC in women who never smoked, indicating the need for a more detailed examination of risk factors (30).

Four different views emerged among the participants regarding personal perceived risks of developing LC. The first group reported that they did not perceive that they were at risk of developing LC. These participants cited two reasons as justifications: (I) they trusted in God for His divine protection; and (II) they believed that having quit smoking, they were no longer at risk. The second group of participants believed that everyone was at risk of developing LC regardless of smoking status. This group believed that LC was caused not only by smoking but also by other factors. Consistent with previous studies (29,31), some participants also externalized the cause of LC to other determinants such as environmental factors and genetic predispositions. They placed greater weight on the other factors as the cause of LC. The third group of participants was uncertain whether they were at risk or not. The fourth group consisted of those who acknowledged that they were at risk of developing LC because they were currently smoking or had smoked in the past. Apart from the fourth group, the remaining three groups could benefit from enhanced awareness of the established causal link between smoking and LC. Educational programs and recommendations directly from physicians could counter the lack of information, misinformation, confusion, or denial about the causes and risk factors for LC (22). This lack of accurate information indicates the importance of raising awareness of the established link between smoking and LC that could promote LCS uptake.

Participants indicated various sources through which they obtained information about LC (such as TV, printed media, and word of mouth). These sources could be leveraged to disseminate information in the form of educational campaigns to promote LCS among high-risk individuals. However, at present these sources of information were not sufficient to promote awareness among participants that screening for LC existed (22,32). Interviews also revealed

a lack of awareness about how and where to seek resources that could provide participants with information about LCS.

Among the 17 individuals who participated in the study, all were eligible for LCS; however, only 2 (11%) underwent LCS. Although lack of awareness was the major barrier to LCS, several other barriers were also identified. Based on historical contexts and lived experience of family and friends, Black individuals report higher levels of distrust of medical providers, clinicians, and the healthcare system when compared to other racial/ethnic groups (33,34). The way the healthcare system interacts with people around smoking, lung health, and cancer prevention is not currently sufficient to engage these high-risk communities. Particularly relevant to Black individuals of low socioeconomic status, distance from LCS facilities, lack of transportation, and the associated costs of screening also affect lung LCS uptake (35). Moreover, the recommendation for LCS is relatively new, and it is not yet widely accepted by screening-eligible individuals. The statement “not yet widely accepted” indicates lower participation of eligible individuals in LCS and well documented reservations by PCPs (36). Smoking-related stigma may serve as a barrier to LCS, as it is associated with feelings of shame and self-blame, which negatively impact medical care-seeking behavior (22,37–40). Lack of a PCP recommendation was mentioned by the participants as one of the barriers. Although PCPs are primarily responsible for identifying and referring eligible patients for LCS, they often fail to do so due to competing patient priorities (i.e., shortage of time) (41).

Increasing the uptake of LCS among Black individuals requires addressing the barriers to screening and targeting and prioritizing the most important ones. Although several factors were identified as facilitators of LCS, participants emphasized the need for PCP recommendations to encourage patient acceptance of the screening process. As LCS is a complex multistep process, the involvement of the PCP is helpful, particularly when it comes to identifying eligible patients (42) and invoking insurance coverage (43). However, addressing provider-level barriers alone may not benefit those Black individuals who lack a PCP or who lack a trusting connection with their PCP. A community-based approach may also be required to encourage individuals at high risk to seek medical help and to promote uptake of important health care interventions (including LCS) by the Black community (44). Moreover, the engagement of clergy (houses of worship communities) to raise awareness and encouragement to seek screening might be important as

they are usually highly trusted by their members (45).

Although our study has important findings, it is not without limitations. First, as in any qualitative study, our findings were derived from self-reported data. Secondly, since the study participants were restricted to the Wilmot catchment area in upstate New York, the study lacks geographic diversity, which limits the generalizability of the findings to Black individuals who reside in other geographic areas.

Conclusions

In summary, while limited studies have been conducted among adult individuals who smoke in the U.S. regarding their awareness, access, and beliefs about LCS, our study focuses on Black individuals at high risk in the Wilmot catchment area in upstate New York, where LC incidence and mortality rates are disproportionately high. Overall, awareness about LCS among Black individuals at high risk is low, which could significantly affect their uptake of LCS and reduce the survival of LC patients. Our study identifies several barriers and facilitators associated with LCS. Addressing the barriers may help to increase LCS rates among high-risk individuals, which will ultimately reduce their LC mortality. The findings from our study have important implications for community health workers and healthcare clinicians in helping them design more effective interventions for LCS uptake tailored to Black individuals at high risk.

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Footnote

Reporting Checklist: The authors have completed the COREQ reporting checklist. Available at <https://tlcr.amegroups.com/article/view/10.21037/tlcr-24-269/rc>

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Conflicts of Interest: All authors have completed the ICMJE uniform disclosure form (available at <https://tlcr.amegroups.com/article/view/10.21037/tlcr-24-269/coif>). M.P.R. reports relationships with other organizations (i.e., NIH/NCI, American Board of Internal Medicine, National Lung Cancer Round Table, American Thoracic Society) but not related to the content of this manuscript. The other authors have no conflicts of interest to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. The study was conducted in accordance with the Declaration of Helsinki (as revised in 2013). The study protocol was approved by the University of Rochester Medical Center's Institutional Review Board (Approval ID: STUDY00006564). All interviewees have provided verbal consent.

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