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## Race and Lung Cancer Surgery—A Qualitative Analysis of Relevant Beliefs and Management Preferences

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**T**he five-year survival rate for African Americans with stage I or II non-small cell lung cancer is 36% compared with 42% for Caucasians (Farjah et al., 2009). Much of the discrepancy is because fewer African Americans undergo surgical resection than Caucasians (Farjah et al., 2009). Racial differences in resection rates persist independent of age, gender, cancer stage, income, and comorbidities (Farjah et al., 2009). Among patients who do have surgical resection, five-year survival rates are similar for African Americans and Caucasians.

Whether the lower resection rate for African Americans is because surgery is offered less often, because patients are less willing to undergo resection, or both is unclear. At least one study suggested that minority patients receive too few referrals for resection surgery (Lathan, Neville, & Earle, 2006). However, an earlier multicenter survey reported that 14% of African Americans but only 5% of Caucasians said they would reject a physician's recommendation for lung cancer surgery (Margolis et al., 2003). The authors identified that participants' belief that air exposure during surgery caused tumor spread was an important impediment to the adoption of aggressive lung cancer treatment for early-stage disease, especially among African American patients (19%) compared with Caucasians (5%). The racial differences were independent of income, education, gender, and other covariables. That one belief may explain, in part, why African Americans accept lung cancer surgery at lower rates than Caucasians. However, the lower rate of lung cancer resection surgery among African Americans remains poorly understood.

The authors believed that the issue might benefit from further in-depth exploration with qualitative methods. Therefore, the current authors followed the initial survey with focus groups to achieve a more comprehensive understanding of how beliefs and preferences inform health-management behaviors. The authors believed that a focus group methodology

**Purpose/Objectives:** To gain a better understanding of beliefs about the utility of lung cancer resection surgery and preferences for lung cancer management among African American and Caucasian adults.

**Research Approach:** Qualitative.

**Setting:** The Philadelphia Veterans Affairs Medical Center.

**Participants:** 21 participants (9 African Americans and 12 Caucasians; 11 with chronic obstructive pulmonary disease and 10 with lung cancer).

**Methodologic Approach:** Three focus groups were conducted. Transcripts and field notes were coded, grouped into thematic categories, and explored in later focus groups.

**Main Research Variables:** Beliefs about lung cancer resection surgery and management preferences.

**Findings:** African Americans doubted that surgery was needed, questioned its efficacy, and preferred complementary and alternative medicine (CAM). African Americans and Caucasians believed that exposure to air during surgery could cause tumor spread and were skeptical that smoking caused lung cancer. Therefore, they had a sense of treatment futility. Conversely, Caucasians were impatient with forced waiting for surgery. Both groups believed that surgery would be better accepted if current patients met past surgical patients, obtained second opinions, and had trusting patient-provider relationships.

**Conclusions:** Suspicion about surgeons' motives and perceived ineffectiveness of surgery, as well as support for CAM among African Americans, may contribute to key racial disparities in lung cancer care.

**Interpretation:** If providers understand more clearly the beliefs and preferences that impede acceptance of surgical resection, then they can formulate educational interventions directed at overcoming patient resistance. The clinical utility of such individualized interventions could be evaluated in future studies.

offered several advantages. First, in the previous work, qualitative approaches provided invaluable information regarding how patients reached decisions about asthma (George, Birck, Hufford, Jemmott, & Weaver,

2006; George, Campbell, & Rand, 2009; George, Freedman, Norfleet, Feldman, & Apter, 2003) and blindness self-management (Bittner, Edwards, & George, 2010). Second, the method is particularly useful for identifying not only what beliefs are held, but also how and why individuals arrived at the conclusions (Barbour, 2005; Forman, Creswell, Damschroder, Kowalski, & Krein, 2008; Kitzinger, 1995; Morgan, 1998). Third, focus groups collect data about the range of experiences from purposively selected individuals representing widely divergent experiences (Côté-Arsenault & Morrison-Beedy, 2005; Powell & Single, 1996). Finally, the oral nature of data collection and the dynamic nature of group interaction can facilitate trusting relationships between researchers and participants, a requisite before minority populations will risk disclosure (Adderley-Kelly & Green, 2005; Barbour, 2005; Halcomb, Gholizadeh, DiGiacomo, Phillips, & Davidson, 2007; Kitzinger, 1995; Ruff, Alexander, & McKie, 2005). Therefore, the current researchers concluded that focus group methodology offered the best chance to uncover important beliefs influencing African Americans' management decisions regarding lung cancer resection. They believed that such data could enhance providers' understanding of lung cancer management preferences, allowing the providers to tailor patient counseling to the individual, which may diminish resistance to surgical intervention. In this manner, the authors hoped to contribute to the current understanding of how patients' beliefs, as one aspect of self-management, may contribute to unequal treatment. In so doing, the research might help to address a public health priority.

## Methods

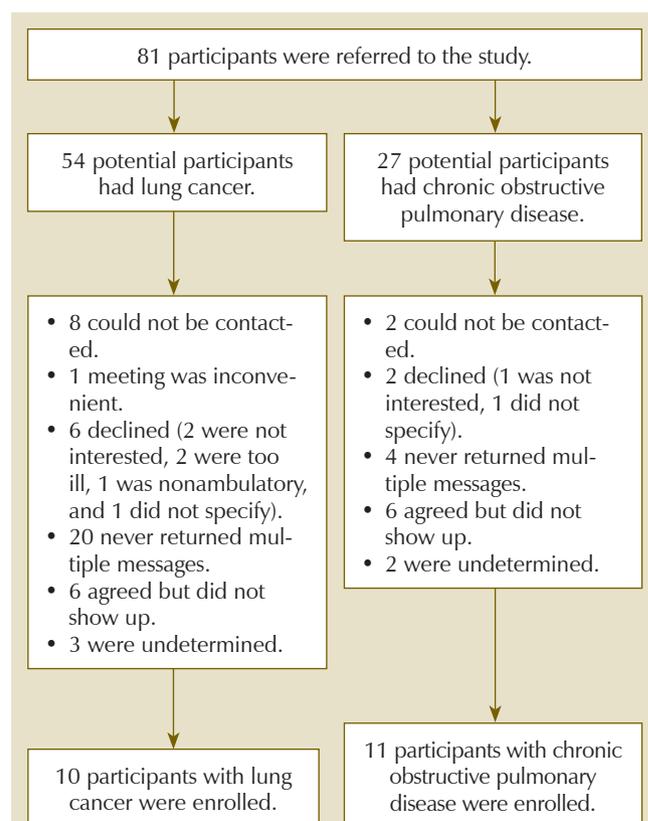
Focus groups served as the descriptive, exploratory, qualitative research tool to elicit beliefs about conventional lung cancer treatment and management preferences. Qualitative research is an inductive method of data collection and analysis that enhances understanding of patients' unique experiences, perspectives, and self-management behaviors. It uses convenience sampling to purposively select a small number of participants who have an array of viewpoints on a shared experience.

## Study Design and Sample

The investigators received pilot funding to conduct a maximum of three focus groups. Participants were recruited from clinics at the Philadelphia Veterans Affairs Medical Center (PVAMC). Inclusion criteria stipulated that all participants have either a diagnosis of smoking-related chronic obstructive pulmonary disease (COPD) or lung cancer. Patients with COPD were invited to participate because of their high risk for developing

lung cancer. Healthcare providers identified eligible participants from their clinic patient lists and invited them to participate. Oncology or pulmonary physicians identified a convenience sample of 81 potential participants (54 with lung cancer and 27 with COPD) in September and October 2005. The researchers placed multiple phone calls to each individual to invite participation; 21 attended, 11 participants being treated for COPD at the pulmonary and 10 being treated for lung cancer at the oncology clinic. Figure 1 describes how the researchers obtained the study sample from the target population.

The focus groups were conducted in November and December of 2005. The first group included only African Americans ( $n = 6$ ), the second group only Caucasians ( $n = 9$ ), and the final group both African Americans and Caucasians ( $n = 3$  African Americans;  $n = 3$  Caucasians). No member participated in more than one focus group. Because of the interactive nature of the group process, typically only three to five groups of 6–10 participants are needed to hold active discussions, to ensure each has a chance to articulate his or her perspective, and to identify all salient themes related to a topic, a point termed data saturation (Morgan, 1998).



*Note.* Reasons for inability to contact included wrong or disconnected phone numbers or no answering machine. Multiple attempts were made during the day, evening, and weekend before someone was classified as "could not be contacted."

**Figure 1. Cohort Diagram**

Participants answered true or false for each statement. All three statements were true.

1. The purpose of the study is to learn about your beliefs and attitudes toward currently available lung cancer treatments.  
True False
2. You are being asked to participate in one focus group.  
True False
3. The approximate amount of time that you will be giving to this study is two hours.  
True False

### Figure 2. Informed Consent Comprehension Quiz

Each session was held in a conference room in the PVAMC and began with each participant signing an informed consent. Participants read the informed consent form independently, and then study investigators verbally reviewed each section to elicit questions. To demonstrate that participants had adequate comprehension of important components of the informed consent, the institutional review board required a quiz (see Figure 2). Each patient was required to answer all three quiz questions correctly to participate; all did. A simple investigator-developed form that included items of pertinent demographic and clinical data was completed prior to commencement of the focus group.

After the participants had signed the informed consent and completed the quiz and data collection forms, the researchers reiterated the purpose of the focus group and made the ground rules explicit for how the focus groups would be conducted. The same moderator led each focus group, and the principal investigator attended, addressed any technical medical questions, and took extensive field notes. The purpose of field notes was threefold: to serve as a backup if audiotaping failed or was of poor quality, to serve as a separate source document of the discussion, and to capture nonverbal communication. Figure 3 outlines the open-ended questions used to guide each session. The PVAMC institutional review board approved the project. Participants received refreshments, parking or transportation assistance, and a check for \$25.

### Data Analysis

Each focus group lasted approximately one hour to one and a half hours, was recorded on audiotape, was

1. What do you think of cancer treatments?
2. What do you think of lung cancer treatments?
3. What do you think of surgery to treat lung cancer, specifically?
4. Is there anything that would make lung cancer surgery a more desirable option?
5. Is there anything else you would like to add to this discussion that we did not ask?

### Figure 3. Interview Questions

transcribed verbatim, and was analyzed with conventional qualitative approaches (Barbour, 2005; Kitzinger, 1995; Morgan, 1998; Ruff et al., 2005). Copious amounts of “word data” were generated from the verbatim transcripts and from field notes. After establishing the accuracy of the transcripts by comparing the transcripts and the field notes to the audiotapes, the researchers performed structured analysis to produce codes and grouped them into thematic categories. They then explored recurring themes in subsequent interviews with new participants. Finally, the researchers grouped together similar codes, retaining relevant data and discarding extraneous information.

Qualitative findings are deemed to be the “truth” if they are credible and relevant. Researchers can establish credibility by having multiple people analyze the data independently. If they arrive at the same conclusion, then credibility is achieved (Morgan, 1998; Ruff et al., 2005). In the current study, one study investigator independently coded the transcripts and the second study investigator independently coded the extensive field notes. Codes were compared for consensus, and no discrepancies were found. Qualitative results are generalized if they are found to be credible and relevant by these methods.

## Results

### Sample

Participants were mostly older single men with lengthy smoking histories (see Table 1). A relatively equal number of Caucasians and African Americans were recruited, most with a high school degree or less. Fourteen participants answered the demographic question about household income; 11 reported income less than \$29,999. This is consistent with the requirements of Title 38 of the U.S. code that establishes a means test threshold amount for veterans accessing free medical care with no copayments. In 2005, the amount was set at less than \$25,842 for veterans with no dependents (Government Money for Everyday People, n.d.).

### Focus Group Themes

**Reasons African American participants cited for refusing resection surgery:** Three themes were unique to African American participants. The first described participants’ beliefs that physicians performed unnecessary surgery for monetary gain or to acquire technical skill. African American participants espoused a strong suspicion that lung cancer resection surgery was unnecessary and that they were being exploited simply for financial or training benefit for surgeons. For example, one participant said,

**Table 1. Demographic Characteristics**

Characteristic	$\bar{X}$	SD	Range
Age (years)	67.9	2	57–80
Pack years (N = 18)	64	39	10–156

Characteristic	n
<b>Gender</b>	
Female	2
Male	19
<b>Race</b>	
African American	9
Caucasian	12
<b>Education (N = 20)</b>	
Less than high school	4
High school or some college	12
College or graduate school	4
<b>Diagnosis</b>	
Chronic obstructive pulmonary disease	11
Lung cancer	10
<b>Marital status (N = 18)</b>	
Married	5
Single	1
Divorced	10
Widowed	2
<b>Household income (\$) (N = 14)</b>	
Less than 10,000	2
10,000–19,999	4
20,000–29,999	5
30,000–49,999	2
50,000–99,999	1

N = 21 unless otherwise noted

I believe that a lot of doctors would like to do the most expensive surgery they can do, because it's a business. And I think they would ask you to do [something that] you really don't need . . . something that wouldn't even help.

"I'm going to get some green tea, eat me a lot of greens" is the second theme and reflects a preference for alternative cancer treatments, including home remedies and diet broadly characterized as complementary and alternative medicine (CAM). Only in the African American focus groups did participants describe a preference for CAM, which included spirituality. Several participants preferred CAM alone (see Table 2).

[They] saw cancer on my right lung and they showed me. So they said, "You want to take chemotherapy or radiation? I told them to wait. I'll let them know because I had been reading a book about this surgeon . . . and he had found out that people in Japan and China and different other countries over in Asia were using the old folk—what we call home remedies. . . . I said, "I'm not going to take chemotherapy. Refused that; understand? I'm a do like the Chinese and Japanese, I'm going to get some green tea, eat me a lot of greens, lettuce, and vegetables, soups and stuff."

"Much after [that], I don't think they should cut you open" is the final theme reflecting African American participants' belief that resection was a viable option only if cancer was detected early and if surgeons were able to "get it all." As one participant said, "If it's caught at a very very early stage, say within 60 days of the cancer [starting]. Much after [that], I don't think they should cut you open."

**Reasons African Americans and Caucasians cited for refusing resection surgery:** Two themes were common to African Americans and Caucasians (see Table 3).

"If the air gets in there, it's going to spread" was the first theme that described concern about air exposure during surgery causing tumor spread. Although both groups raised the belief, it appeared to have more "traction" among African American focus group participants. One African American participant said,

They open you up, and the air gets to it. That would be my fear. It happened to my brother. He had cancer, and they opened him up. . . . It happened to my father and my brother. I feel that once they opened them up, the air hit it, and they were gone. . . . The first one [lung cancer surgery], I had no problems [then metastasis developed]. So that's my own opinion [that air exposure causes tumor spread].

"Making the cancer come alive" describes participants' beliefs that cancer is inevitable and ubiquitous, lying in wait for the time to strike vulnerable individuals. Such beliefs led participants to ascribe futility to treatment. They attributed lung cancer genesis to pollution and chemical exposure and not to cigarette smoking.

When we were kids, I never heard of these cancers. All of sudden they got cancer of everything except the fingernail. How come all of a sudden in the last 40 years all these cancers have been discovered? Didn't they know this before the atomic bomb was dropped? . . . To me, it's something with all these chemicals and all this process that they're doing today that's making this cancer come alive.

**Reasons Caucasians cited for accepting resection surgery:** Only one theme described a desire for resection surgery, and it was exclusively in Caucasians: "I can't wait until they do mine." Participants in the Caucasian focus group felt that greed drove surgeons to perform too many Caesarean sections and cataract removals, but this did not extend to lung cancer surgery. The participants expressed a desire to have lung cancer resection surgery as expediently as possible (see Table 4).

**Ways to enhance acceptance of resection surgery:** When researchers asked participants what healthcare

**Table 2. Reasons African American Participants Cited for Refusing Resection Surgery**

Theme	Definition	Exemplars
"They would ask you to do [something that] you really don't need."	Participants' belief that physicians performed unnecessary surgery	"Look out this parking lot [at] all the [doctors] that drive these Fords—that the doctor you want. The ones that got the Porsches—watch out; he's going to give you a bill!" "Like that one [the surgeon] rush in, 'You next! You next!'" "Surgeons want to experiment on you like guinea pigs." "[Surgeons] will accept the surgery to keep their finances straight."
"I'm going to get some green tea, eat me a lot of greens."	Participants' preference for alternative cancer treatments	"Medicine is a business. Now if everybody in the hospital was cured, doctors wouldn't have as much business . . . and I hear about different remedies in other countries . . . that the United States [would] never accept." "Natural remedies, and maybe some medical stuff—if it's really necessary. . . . But what doctor is like that?" "And I believe in the old home remedies because years ago when I was coming up, you understand, if I had a fever or something, mamma would cut an onion up. . . and put [the onion] in my sock, and the next morning, I'd be okay. That's the way I came up. And every year my father would go . . . and get some soft sassafras tea, make some sassafras tea, and he'd be all right all that winter. And as I was coming up, I made sure that every October each of my three daughters—I'd go out and get honey and make honey and lemon . . . and rub it on their chest. And all of them are alive and kicking—in good shape." "I've got to remember what my parents and grandparents told me. They couldn't go to a hospital. Or the hospital was 50, 70, or 100 miles away from where they lived. So they had to go out into the fields and get these herbs and stuff. You understand? All my uncles lived. All my aunts lived. Ain't nobody going to tell me that the old-time way isn't good. You understand? You can get all the aspirin, Advil, Tylenol that you want, but the old time way is still good."
"Much after [that] I don't think they should cut you open."	Participants' belief that resection was a viable option only if cancer was detected early and if surgeons were able to "get it all"	"If it's caught at a very very early stage, say within 60 days of the cancer [starting] . . . much after [that] I don't think they should cut you open."

professionals could do to lessen their resistance to lung cancer resection surgery, three responses were common to both groups. "Gotta have a doctor you've been around and trust" was the first theme; participants talked about the need for a trusting relationship with a cancer physician. Attributes that foster a trusting relationship included rapport established over time, the experience and age of the physician, and willingness to use CAM and conventional biomedical approaches.

"More than one head is better than one," the second theme, refers to the usefulness of second opinions. Many participants in both groups noted this. African American participants reasoned that a second opinion from an independent physician would diminish their concern that surgery was being done for the surgeon's personal profit or training purposes. For example, one said, "A second and third opinion? There's nothing wrong with that. You know it's like they say, 'More than one head is better than one.'"

"Get a group of them" was the final recommendation, frequently noted by members of both groups to imply that access to former patients could improve acceptance of lung cancer surgery. Table 5 provides additional exemplars.

## Discussion

The current study used African American and Caucasian focus groups comprised of patients with lung cancer or COPD to identify potential race-specific barriers to acceptance of lung cancer resection. African Americans believed that unnecessary surgery may be performed to provide surgeons with training opportunities or financial rewards. African Americans also were more likely to be looking for an integrative approach, in which conventional and CAM therapies were used in concert, and were more likely to reject conventional biomedicine altogether. Finally, African Americans felt less hopeful about the efficacy of lung cancer surgery unless the cancer had been detected early. This contrasted sharply with Caucasian participants who were impatient to have surgery. African Americans and Caucasians doubted that smoking contributed to lung cancer and therefore felt that treatment might be futile. They also believed that exposure to air during surgery could cause tumor spread. Air exposure causing tumor spread was accepted by more African Americans and debated more widely among the Caucasian participants. Furthermore, participants suggested that fostering better relationships with healthcare providers, obtaining

**Table 3. Reasons Participants Cited for Refusing Resection Surgery**

Theme	Definition	Exemplars
"If the air gets in there, it's going to spread."	Participants' belief that air exposure during surgery could cause tumor spread	"I was hoping in the beginning that they could operate to remove the cancer. One half of you were saying, 'Don't let them open you up,' and the other half was saying, 'Get rid of it'. 'Don't do it because it's gonna spread. If you get the air in there, it's going spread.' I heard that if you open it up, it spreads like a worm . . . that as soon as you open it up, air gets in, and that's the problem."
"Making the cancer come alive"	Participants' characterization of cancer as ubiquitous, leading them to believe treatment was futile	"We breathe the worse stuff [than cigarette smoke] out in the street." "Before WWII, there was nothing. After WWII, everything begins."

second opinions, and talking with patients who had undergone lung cancer resection surgery could enhance acceptance of surgical intervention.

The current study strongly implies that several issues may be important to understanding racial disparities in acceptance of lung cancer surgery. For example, African American participants were mistrustful of physicians' motivations for recommending surgery. The results are highly compatible with the Institute of Medicine (IOM) report titled *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care*, which concluded that African Americans prefer less intensive, less conventional, and less invasive treatments (Freeman & Chu, 2005; IOM, 2002). However, patient refusal rates do not explain all of the observed disparities. Other factors that likely contribute to poorer cancer outcomes among racial and ethnic minorities include rural residence and patient navigation obstacles (Phillips & Williams-Brown, 2005), physician bias, discrimination, stereotyping (IOM, 2002), poverty, lack of access to care (Phillips & Williams-Brown, 2005; Ward et al., 2004), and advanced stage of disease at time of diagnosis (Schootman, Jeffe, Gillanders, & Aft, 2009; Virnig, Baxter, Habermann, Feldman, & Bradley, 2009).

Higher smoking rates among African Americans (IOM, 2003), coupled with skepticism about the role of smoking in the origin of lung cancer, are particularly troubling. However, the National Cancer Institute's Health Information National Trends Survey found that inaccurate beliefs about smoking risk were more common among respondents with less than a high school education (Finney Rutten, Augustson, Moser, Beckjord, & Hesse, 2008), suggesting that such beliefs may be more a function of educational attainment than a racial or ethnic orientation to disease causality.

Another interesting finding from the current study was a preference for CAM for cancer treatment among African American participants. The National Center for

Complementary and Alternative Medicine (NCCAM, 2009) defined CAM as practices and products not presently considered part of conventional medicine. As a result of the broad definition, NCCAM considers CAM to encompass a large and extremely diverse group of practices. In the United States, CAM use is widespread, with African Americans having higher CAM use compared to Caucasians and Hispanics (Barnes, Powell-Griner, McFann, & Nahin, 2004). CAM use also is high among patients with breast cancer (Greenlee et al., 2009; Lengacher et al., 2002), lung cancer (Lafferty, Tyree, Devlin, Andersen, & Diehr, 2008; Wells et al., 2007), and prostate cancer (Diefenbach et al., 2003; Jones et al., 2007). In fact, when

CAM was extended to include prayer, 100% of African American men used CAM as part of their prostate cancer treatment (Jones et al., 2007).

Although some providers may characterize CAM as an unscientific approach to cancer management (Bourgeault, 1996), patients find great value in CAM and use it extensively as a holistic therapeutic approach to optimizing health and alleviating distressing cancer symptoms (Canales & Geller, 2003; Tasaki, Maskarinec, Shumay, Tatsumura, & Kakai, 2002). Evidence is emerging that most patients prefer to integrate CAM into a comprehensive disease management plan that includes CAM and conventional therapies (George et al., 2006, 2009). As such, CAM plays a critical role in patients' disease management, even in the absence of endorsement by healthcare professionals. Unfortunately, patients may believe that their healthcare providers would not understand or support their decision to use CAM for cancer (Adler & Fosket, 1999; Tasaki et al., 2002). As a consequence, patients may conceal CAM use from healthcare providers (Eisenberg et al., 2001). Current evidence suggests that, compared with Caucasians and Asians, African Americans are less likely to disclose CAM use to healthcare providers (Collins et al., 2002; Kuo, Hawley, Weiss, Balkrishnan & Volk, 2004). This is

**Table 4. Reasons Caucasian Participants May Have Accepted Resection Surgery**

Theme	Discussion	Exemplars
"I can't wait until they do mine."	Participants' desire to have lung cancer resection surgery as quickly as possible	"You could take me in and do it right now, man. Get it the hell out of there." "When are they ever going to operate on me?" "It's there. It's growing."

**Table 5. Ways to Enhance Acceptance of Resection**

Theme	Definition	Exemplars
"Gotta have a doctor you've been around and trust"	Attributes of a trusted provider	"Some gray hairs OK."
"More than one head is better than one."	Participants described the usefulness of second opinions.	"I would think that he insist on me going to get a second or third opinion. And don't recommend 'You go to Dr. Jones.' Just tell me, 'Well look. Pick a doctor and go get another opinion.'"
"Get a group of them."	Participants' desire to meet patients who have had resection	"Introduce them to people who had the surgery. Get a group of them. Not one—but four or five people that had the same surgery at different time periods."

disappointing for many reasons. First, patient-provider communication about CAM may benefit patients by helping them to identify dangerous CAM practices, as well as facilitating greater rapport and mutual understanding that may lead to greater trust and acceptance of cancer treatment recommendations. Patient-provider communication also may allow for patients' management preferences to be understood from their social or cultural perspectives. Second, healthcare providers may benefit from improved CAM communication by acquiring enhanced cultural competency. Effective patient-provider communication is necessary for providers to develop an accurate understanding of how patients' beliefs inform health behaviors (Cooper, Beach, Johnson, & Inui, 2006). Understanding CAM provides healthcare providers' with a window into patients' explanatory models of disease causality (Caspi, Koithan, & Criddle 2004; Kleinman, 1980) and their unique interpretations of symptoms and preferences for treatment. This may be of particular importance if, as shown in the current study, known causes of lung cancer, such as smoking, are not universally accepted as an explanatory model.

The current study suggests possible effective responses to the barriers affecting acceptance of lung cancer surgery. Clinicians might develop and evaluate tailored educational interventions while evaluating whether the facilitators identified by the participants, such as access to second opinions and previous resection patients in the context of a trusted patient-provider relationship, increase acceptance rates for surgery. One area ripe for further exploration is whether previously resected patients could serve effectively as patient navigators. Emerging evidence has demonstrated clinical and cost-effectiveness with healthcare professionals and lay community members serving in such roles (Percac-Lima et al., 2009; Ramsey et al., 2009; Wells et al., 2008). Postresection patients may contribute a unique perspective and experience that could be particularly helpful in specific cultural contexts (Percac-Lima et al., 2009).

This study also demonstrated that African American and Caucasian participants were accurate in at least one lung cancer belief: that better cancer outcomes can

be achieved in early-stage disease. However, patients defined early-stage disease more emotionally, as in "how many days has it been there?" compared to the technical staging methods used by clinicians. This sets up a potential discrepancy that may unduly influence refusal rates. Furthermore, participants believed in tumor spread as a result of air exposure, denied smoking's role in lung cancer, and questioned whether surgery was necessary or curative. These findings are disappointing considering the evidence in support of aggressive lung cancer treatment.

### Limitations

This study had several limitations. Because physicians identified patients from their own clinics, selection bias may have been possible. Participant self-selection bias also may have occurred because individuals had to be reachable by telephone, as well as healthy and motivated enough to attend. Generalizability is limited in that the researchers drew the sample from one VA system in one large city on the East Coast of the United States—where older, low-income men are overrepresented. Nevertheless, the researchers did categorize reasons for nonparticipation and attempted to recruit female participants, who are underrepresented in the VA system. The risk of the Hawthorne effect (patients answering in a manner they believe the investigators desire) also is present. To minimize this effect, the researchers actively solicited opinions of the taciturn participants and held multiple focus groups. Furthermore, results might have reflected the opinions of a few outspoken participants rather than the diversity of opinions perhaps secured through individual interviews, a phenomenon referred to as "group think" (Côté-Arsenault & Morrison-Beedy, 2005). Group assignment (single race versus mixed) may have encouraged some participants to make or withhold contributions that they would not have made or withheld had they been assigned to a different group. To address this, the researchers offered single-race and mixed-race groups, recognizing the limitations of the approach when conducting only three sessions. In addition, data saturation (identification of all possible

themes) may not have occurred with three focus groups. However, data saturation has been achieved with as few as three focus groups because of the synergism of group interaction (Morgan, 1998). Finally, the relatively small number of study participants constrains the strength of the associations noted. For example, income or education, rather than racial or ethnic background, could offer an alternative explanation for the findings. However, the researchers derived the sample from those receiving VA care; participants likely were all of lower socioeconomic means because of Title 38 mandates described earlier.

## Clinical Implications

The discovery of beliefs about and preferences for lung cancer management may contribute to understanding of health behaviors that contribute, in part, to the racial and ethnic health inequities in lung cancer. Increasing health disparities make for a compelling argument in support of exploration of such behaviors (Ruff et al., 2005). Once beliefs and preferences are

discovered, then tailored educational interventions to enhance adoption of lung cancer treatment can be designed and evaluated. This is a public health priority because the potential to improve rates of acceptance of lung cancer resection surgery in a vulnerable population can improve cancer outcomes and narrow the health disparities gap. Tailored education based on patients' beliefs and preferences might be helpful in decreasing racial disparities related to acceptance of lung cancer surgery.

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