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## Patient-Provider Communication and Perspectives on Smoking Cessation and Relapse in the Oncology Setting

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### Abstract

**Objective**—To fill a gap in research by examining cancer patient-provider communication regarding tobacco use and patients' perspectives regarding their experiences with smoking cessation and relapse.

**Methods**—In-depth interviews were conducted with 20 lung and head and neck cancer patients and 11 health care providers.

**Results**—Qualitative analyses revealed that cancer patients express high levels of motivation to quit smoking; however patients do not ask providers for assistance with quitting and maintaining abstinence and relapsed patients are reluctant to disclose smoking behavior due to stigma and guilt. Health care providers vary in the advice and type of assistance they supply, and their awareness and sensitivity to relapsed patients' feelings. Whereas providers emphasized long-term risks of continued smoking in their interactions with patients and recommendations for intervention content, patients expressed a preference for a balance between risks and benefits.

**Conclusion**—Findings underscore the need for increased awareness, emphasis, and communication about the immediate risks of continued smoking and the benefits of continued abstinence specifically for cancer patients.

**Practice Implications**—Our findings demonstrate the potential to affect cancer outcomes by improved training in conducting smoking cessation and relapse prevention interventions. Additional training could be given to health care providers to increase adherence to clinical practice guidelines (5 A's), to learn ways to enhance patients' motivation to maintain abstinence, and to deliver smoking messages in a non-threatening manner.

### Keywords

Smoking Cessation and Relapse; Cancer Patients; Health Care Providers; Qualitative Research

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## 1. Introduction

Continued cigarette smoking *after* being diagnosed with cancer increases the risk of developing other smoking related illnesses (e.g. coronary heart disease) and second primary tumors [1]. Moreover, research suggests that continuing to smoke can also impact cancer treatment efficacy. For example, Browman and colleagues [2] found that patients who continued to smoke during radiation therapy had a lower rate of complete treatment response (45% vs. 75%). Recent research suggests that nicotine may interfere with chemotherapy [3] and that smoking contributes to an increased occurrence of treatment complications such as infection, poorer wound healing, and exacerbated treatment side effects (e.g. extended mucositis) [4–6]. Additionally, increased cancer recurrence rates [7] and mortality [2] have been consistently associated with continued smoking post-cancer diagnosis.

Many cancer patients spontaneously quit smoking at the time of diagnosis [8], but relapse has been a largely ignored issue. Several important reasons exist for conducting more research on smoking relapse in cancer patients. First, given the large number of cancer patients making a quit attempt, this population offers a unique opportunity to provide a relapse-prevention intervention. However, to date, no smoking relapse prevention interventions exist that are designed specifically for the unique needs of cancer patients. Second, smokers with tobacco-related malignancies are a highly nicotine-dependent group [9] for whom intensive smoking cessation treatments that place importance on relapse prevention is warranted. Third, because of high cure rates among Stage I and II lung cancer patients (40–60%) and head and neck cancer patients (50–67%), efforts aimed at maintaining tobacco abstinence could have dramatic public health implications.

Health care providers can play a critical role in assisting their patients in quitting smoking and maintaining their abstinence. Indeed, clinical practice guidelines, updated in May 2008, highlight the role that providers can play in effectively promoting smoking cessation and preventing relapse [10]. The impact of the patient-provider interaction can be particularly potent in an oncologic setting because it represents a time during which patients are looking to their providers for support [11]. Moreover, research suggests that after a patient is diagnosed with cancer, motivation and interest in smoking cessation significantly increases, thus a window of opportunity opens and remains open into the period of survivorship for providers to intervene and assist in the quitting process [12].

Gathering formative data regarding communication between the provider and patient can be useful in determining where knowledge gaps lie, in informing the development of effective interventions in these settings, and in providing improved cancer care. To our knowledge, this is the first study to examine the manner in which patients and providers communicate with each other about smoking cessation and relapse in an oncology setting. The aim of this current qualitative study was to: (1) fill a gap in research by examining cancer patient-provider communication regarding tobacco use, cessation, and relapse and (2) place this communication in context by examining more broadly patients' perspectives regarding their experiences with smoking cessation and relapse.

## 2. Methods

### 2.1. Participants

A purposive sampling strategy was employed to ensure that interviews were completed with both head and neck cancer and lung cancer patients because these cancer types are strongly associated with tobacco use. Additionally, equal numbers of patients who had resumed smoking and who had remained abstinent were recruited to examine potential differences in patient-provider interactions between these two groups. A diverse group of healthcare

providers were also approached for the interviews (e.g., oncology nurses, head/neck and thoracic surgeons, nurse practitioners, physician assistants). Study participants were 20 cancer patients (10 head and neck, 10 thoracic) and 11 health care providers from a large NCI designated comprehensive cancer center in the Southeast. Eligible patients had: a diagnosis of stage I or II Lung Cancer or Head and Neck cancer; a recent surgical treatment for their head, neck, or lung cancer;  $\geq 18$  years of age; a history of smoking at least 10 cigarettes per day for at least one year prior to cancer diagnosis; the ability to read and write English; and made a quit attempt since cancer diagnosis.

## 2.2. Procedures

Potential patient participants were identified via medical records and consultation with hospital staff. During their follow-up post-operative medical visit, potential participants were approached and screened for eligibility criteria by the investigators (VNS) and (EBL) who have been trained to conduct qualitative in-person and telephone interviews. Eligible patients were asked if they would like to participate in an interview about tobacco use by cancer patients. An estimated 95% of patients were interested in participating in the interviews. Interested patients were asked to review a consent form and provided the opportunity to ask questions. The interview was conducted before or after their medical appointment in an adjacent consult room. Four patients were interviewed by telephone at a time of their choosing due to time and distance constraints. Patients were paid \$25 for the interviews, which lasted approximately 30–45 minutes.

Health care professionals who work directly with lung and head and neck cancer patients (e.g. oncologists, oncology nurses) were approached in person or contacted by phone to participate in an in-depth interview. Providers interested in participating were scheduled for 20–30 minute in-person interviews and were not paid for their time. Interim analyses were conducted after 15 interviews. Key themes were identified that became the structure for the final analysis. Interviews conducted after the interim were examined for additional key themes. However, no new themes were present and because we were no longer getting new information we felt certain that theoretical saturation had occurred, indicating there was no need for additional data collection.

## 2.3. Measures

**2.3.1. Demographic questionnaire**—Patients and providers completed a brief demographic questionnaire assessing information such as age, gender, level of education, and race. Data regarding the number of years working with the head and neck or thoracic patient population was collected from providers.

**2.3.2. Smoking history**—Patients were asked about the age of smoking initiation, number of years smoked, average number of cigarettes smoked, maximum smoking rate, whether they use other tobacco products, and the date of their last cigarette.

**2.3.3. In-depth interviews**—Individual, semi-structured, in-depth interviews were conducted with patients and providers. In-depth interviews were chosen as the ideal method for lung cancer patients as they tend to avoid group meetings and settings, making focus groups unfeasible with this patient population [13,14]. Furthermore, previous research has indicated that cancer patients are most comfortable discussing smoking individually given the stigma associated with smoking in cancer patients [15]. A semi-structured interview guide to stimulate a discussion was developed for patients and providers. Utilizing an in-depth interview format, we were able to probe the respondent to elaborate as needed.

To gain a better understanding of issues patients face in maintaining smoking abstinence, patients were asked about: motivation, reasons, and support received for quitting; perceptions of providers' involvement in assisting with cessation and relapse prevention; comfort in discussing smoking with providers; and intervention preferences. Health care professionals were asked questions within the following thematic categories: perceptions of *patients'* desires for cessation assistance and comfort discussing smoking behavior, personal involvement and comfort talking with patients about their smoking, and smoking communication content and style.

#### 2.4. Analysis of interview data

Interview transcripts were analyzed using a combination of hand coding and ATLAS.ti. An a priori code list was constructed based on the interview guide and the broad categories pre-identified as essential to patient and provider perceptions and the communication process. Next, members of the study team (EBL and RDP) identified key themes as they read through the interview transcripts. A coding manual was developed to assist with and facilitate the coding of themes. Content analysis via hand coding was conducted using an "intuitive" or "immersion/crystallizing" analysis plan whereby the data was carefully read and examined in detail to identify patterns and meaningful themes that emerged from the data [16]. With an initial agreement of 87% between the coders, codes were continually refined and defined until consensus was established among the PI and the study team. Additionally, transcripts were coded for independent comments offered by participants for each of the stimulus questions. Comments were analyzed for frequency (how often the topic was mentioned) and extensivity (how many participants referred to the topic). Following the hand coding, verbatim transcripts and the codes were entered into ATLAS.ti. Each interview transcript was entered as an individual unit and responses were segmented, by interview questions, to allow for the extraction of themes and a comparison of participants. The process of using both hand-coding and qualitative software is recommended in smaller studies as opportunity for triangulation of the data and reduction of coder bias [17].

### 3. Results

#### 3.1. Patient and Provider Characteristics

Respondents (N = 20) had an average age of 61.9 (SD = 8.9, range 45–81) and were mostly male (70%) and Caucasian (95%). They smoked a mean of 20.7 cigarettes per day (SD = 16.8) for 41.9 years (SD = 11.6). Equal numbers of abstinent (N = 10) and relapsed (N = 10) patients were recruited deliberately to obtain a variety of perspectives. Additional demographic and smoking history variables can be found in Table 1. The provider sample had a mean age of 42.4 (SD = 7.6, range 45–81), and were 54% female and 91% Caucasian.

#### 3.2. Abstinent vs. Relapsed Patients

**3.2.1. Motivation, Reasons, and Support for Quitting**—The majority of abstinent patients expressed a strong, unwavering internal motivation and desire to quit, driven by fear and shock related to their cancer diagnosis; whereas several relapsed patients attributed their quit attempts primarily to external factors:

"I was very motivated, it was a life or death decision. If doctors are going to fight for me, I'm going to fight for me." (abstinent patient)

"Let me put it to you this way. I have 5 grandchildren, 3 that live here in [state] and 2 that live in [state] and when you look at them you say to yourself I want to see them later in their life. That is a lot motivation." (abstinent patient)

“I had no access to cigarettes [in the hospital] so I thought it would be a good time to quit.” (relapsed patient)

“Actually I didn’t want to stop but it was my wife [who pressured me] and so I didn’t smoke for a couple of days. And I guess I was just kind of on edge a lot, she finally said just go have a cigarette.” (relapsed patient)

Additionally, some patients expressed that maintaining motivation did (i.e., relapsed) or would (i.e., abstinent) prove more difficult once they were physically able to smoke again (i.e., after recovery from surgery) and death was no longer an imminent risk:

“Well, here again you are looking at a man who almost died a week and a half ago, but what I’m telling you is coming out of my heart. It scared the hell out of me, I thought I was going to die right there. That scared me, and in my head I said ‘I’m not smoking, pull me through this one, Lord.’ Now that does not mean that your body and your brain and everything else changes... I’m not going to sit here and tell you it scared me bad enough that 5 years from now I might not sit down and grab one cigarette again.” (abstinent patient)

“Immediately after diagnosis my motivation was 100. Now it’s 75 on a scale of 0–100. It should be 100, I won’t lie. It dropped from 100 to 75 after surgery because the shock of diagnosis had worn off and shortly after surgery I found out I wasn’t going to die.” (relapsed patient)

Indeed, three relapsed patients attributed their relapses to feeling better physically (e.g., “reward for surviving surgery”). Other reasons for relapse included: being around other smokers; general negative affect, which was described in various ways such as “nerves,” “getting all snappy,” and “anxiety related to my current relationship;” and negative affect associated with cancer surgery complications and cancer recurrence.

Finally, abstinent and relapsed patients also differed in how much they were supported in their quit attempts:

“I was the only smoker in the family, everybody had already quit. My wife never smoked and I have a very supportive family.” (abstinent patient)

“No, all of my girls smoke. I was not supported.” (relapsed patient)

**3.2.2. Receptivity to and Use of Cessation Treatments**—Eight patients (5 relapsed, 3 abstinent) stated that a provider recommended or directly offered a smoking cessation treatment (e.g., pharmacotherapy). Whereas two of the abstinent patients in this group obtained and used pharmacotherapy, four of the five relapsed patients did not:

“That’s when he sent me over here to see Dr. [name]. And then I started to take the Chantix and three days later I quit.” (abstinent patient)

“After I was diagnosed with cancer my doctor recommended that I go to another doctor and get a prescription for Chantix. I haven’t done that yet. After surgery I quit cold turkey... The ball’s in my court now, I just have to do it [get the prescription for Chantix].” (relapsed patient).

**3.2.3. Stigma and Guilt—Patient and Provider Perspectives**—Abstinent patients felt comfortable discussing smoking with providers, as long as providers did not seem “judgmental” or give them a “sermon” or “steady diatribe.” In contrast, half of relapsed patients were not comfortable discussing smoking with providers. Fears that they would be judged harshly and feelings of shame and guilt were mentioned frequently:

“I feel like I’m cheating them and I feel like I’m cheating myself. I feel uncomfortable talking with my doctors. I will find myself sometimes fibbing a little bit... why haven’t I learned? I feel like I’ve robbed a bank and I’m going into the sheriff’s.” (relapsed patient)

Providers were also asked about their degree of comfort in discussing smoking with patients, as well as their perceptions of patients’ comfort level. Although most providers felt comfortable discussing smoking with patients and prided themselves on communicating smoking-related information with confidence and candor, there was wide variation in their awareness and sensitivity to relapsed patients’ feelings:

“They [patients] don’t want to tell the truth because they are scared they won’t get the surgery. Patients get shy and when asked if they smoke those who remain abstinent/smoke-free are proud of it, while those that relapsed/started again don’t look you in the eye. They are like a teenage kid who knows they are wrong.” (physician assistant)

“...I try to be very open-minded and non-judgmental. My perspective is to be helpful. Some surgeons say “if you don’t stop we won’t do the surgery.” They don’t realize that doesn’t work for all patients. Some patients want to quit but don’t have the resources. Patients are guilt-ridden. They know smoking caused the cancer, but some fear if they admit smoking their treatment will be stopped.” (nurse)

“If they are smoking after surgery, I say ‘why are you throwing a can of oil on my Picasso? I did all my work; what are you doing to take responsibility?’” (surgeon)

“I don’t beat them over the head with it or say you got what you deserve. However, I give them the facts.” (surgeon)

### 3.3. Barriers to Communication Regarding Relapse Prevention

**3.3.1. Providers’ Involvement in Assisting with Cessation vs. Relapse Prevention**—All providers indicated that they ask about current smoking status at patients’ initial visit, generally via a questionnaire combined with verbal follow-up, and advise patients to quit. However, patients expressed that they did not perceive the message to quit as particularly strong or helpful:

“My doctor advised me to quit but it was not too strong of a message. He said it gently. I don’t want to be pressured. It doesn’t make me feel like I’m doing something wrong. He said ‘And how are we doing with smoking?’” (relapsed patient)

“My doctor did not give me a strong message; he just said ‘at your age, you need to quit.’” (abstinent patient)

Regarding providers’ involvement in direct cessation and relapse prevention assistance, both patients and providers viewed it as limited. Most providers reported referring patients to their primary care physician and agencies such as the American Cancer Society for prescriptions and additional assistance. Surgeons expressed that they were particularly likely to refer because they “don’t follow [patients] long-term” and feel unprepared to take on this responsibility:

“I don’t want to inherit that baggage, it’s not my bag. It’s for a non-specialist more than a specialist.” (surgeon)

Consistent with providers’ reports, half of patients who reported that a provider recommended pharmacotherapy were referred elsewhere. Furthermore, several patients indicated that they were not offered any cessation assistance from providers:

“I would like help. I heard there were shots, I asked my doctor – he said he didn’t know of anything like that. I heard of acupuncture, but you need money. I heard of cold turkey. I had no options from my physicians or oncologists.” (relapsed patient)

After patients’ initial visit, most providers indicated that they generally only discuss tobacco use again at follow-up appointments if they have a reason to believe or “suspect” that a patient is still smoking:

“Also, I can tell if patients are smoking by their smell, [because their] paperwork smells. At follow-up I only ask about smoking if it appears that the patient is smoking, for example smell or wound and healing problems.” (nurse)

Furthermore, providers indicated and patients confirmed that providers do not offer much additional advice for relapse prevention:

“They ask me and I do tell them this: I don’t smoke anymore. And it doesn’t go much farther than that.” (abstinent patient)

### **3.3.2. Providers’ vs. Patients’ Communication Style and Intervention Content Preferences**

—Providers reported that patients do not typically initiate conversations with them about smoking. Nevertheless, in addition to advising cessation, the majority of providers said they give patients general information and quitting tips such as avoiding other smokers and using distraction techniques. Most providers emphasized the risk of cancer reoccurrence and other health problems, in both their advice to patients and their recommendations for intervention content:

“Risks of cancer reoccurrence and risks of other cancers increase too. You need people to know that smoking causes other things too... can contribute to cardiovascular effects like heart disease, blocked arteries, strokes, etc. Include pictures of black lungs. You need a shock value, [although it] can be harsh.” (nurse).

Surprisingly, only a minority of providers mentioned the risk that smoking could interfere with cancer treatment:

“They don’t ask, but I share anyway. I tell them if they smoke their chance for cancer reoccurrence is significantly high. Also, they won’t get the full benefit from radiation therapy – it’s an oxygen issue. I tell them ‘why would you want to decrease your chances of being cured?’” (nurse)

While a few patients appreciated and favored this focus on risks, most patients expressed a preference for a more balanced style in providers’ communication and in intervention content that would acknowledge the risks of smoking but would emphasize the benefits of cessation:

“You know you have cancer, so you can’t scare us with ‘you are going to get cancer.’ You need to be positive and frame it in a positive way.” (abstinent patient)

“[Reading material] should show graphic pictures, statistics, and also positives. It should show pictures of twins, one who smoked and one who didn’t so you can see the differences in their skin, taste/smell, and wrinkles. It should also show how good you will feel, and how much lung capacity you will gain.” (relapsed patient)

## **4. Discussion and conclusion**

### **4.1. Discussion**

Once a smoker has been diagnosed with cancer, immediate cessation is medically warranted because continued smoking is associated with adverse health outcomes. Given that many cancer patients make a quit attempt around the time of diagnosis, oncologic health care

professionals can play a critical role in assisting these patients in maintaining tobacco abstinence. A future relapse prevention intervention in the cancer setting would likely involve these providers, either in the role of delivering the intervention or alerting patients to its availability, thus it is essential to ascertain patient and provider perspectives on how messages about smoking cessation and relapse are currently delivered and received.

Whereas all providers reported that they do assess for smoking and ask patients to quit, many patients reported that they were not asked to quit, did not receive a strong message to quit, and/or did not receive any assistance in quitting. Importantly, results from both patient and provider interviews suggest that patients do not ask for assistance in maintaining their tobacco abstinence and relapsed patients in particular are reluctant even to disclose smoking due to feelings of stigma and guilt. These findings are consistent with a recent Danish study indicating that patients are reluctant to engage in a discussion of smoking cessation with their general practitioner [18]. Other studies have also reported that patients fear they will be blamed for their cancer or that their smoking status will impact the quality of their treatment [15]. A novel finding in the current study is that providers may vary in their awareness, sensitivity, and skill in adapting their communication to consider stigma as a barrier to communicating about smoking. Moreover, it appears as though once patients report they have quit smoking, discussion of smoking ceases. The failure to engage in continued conversations about smoking is an important additional impediment to achieving long-term abstinence.

Our findings suggest that patients and providers may need additional education about the immediate risks of continued smoking and the benefits of continued abstinence for cancer patients, with an emphasis on benefits. Providers rarely mentioned benefits when counseling/interacting with patients, and few patients were aware of the potential benefits. Yet, patients expressed a preference for smoking messages to be delivered by providers in a positive way that focuses on both benefits *and* risks. Importantly, neither patients nor providers placed much emphasis on the potential impact of continued smoking on current cancer treatment; rather the focus was on longer-term risks (e.g., cancer recurrence). However, behavior is more likely to be affected by immediate, rather than distant, consequences. With recent research highlighting the negative impact of nicotine in the chemotherapy process, future research is needed to determine the effectiveness of incorporating this information into cessation messages in the cancer setting [19]. Another interesting aspect that could impact a patient's preference for communication is whether they believe that smoking is an addiction and therefore out of their control. This should be examined in future research.

The limitations of the study must be acknowledged. As with all qualitative studies, results are not necessarily generalizable to other patient and provider populations. With respect to our interview guide, participants' interpretation of the questions may have varied. For example, although patients were asked to describe the cessation advice and assistance they were offered from providers in the oncological setting, it was unclear in some cases whether the provider referred to was in fact an oncologic provider or another provider. Finally, with regards to the distinction between abstainers and relapsers it is important to note these groups are not necessarily stable because individuals typically make several quit attempts before achieving permanent abstinence; the groups represent a "slice in time."

## 4.2. Conclusion

Our finding that smokers are highly motivated to quit smoking is consistent with prior work with cancer patients [20,21] and underscores the potential impact that relapse prevention interventions can have in the cancer setting and the significance of patient-provider communication. However, patients often do not ask providers for assistance with cessation and providers vary in the advice and type of assistance they are willing to supply. Awareness and discussion of risks/benefits seemed to focus on delayed as opposed to immediate risk/benefits.



Stigma and guilt experienced by relapsed patients is a significant barrier to honest and effective communication regarding relapse prevention. As the first study to examine cancer patient-provider communication in the oncologic setting with regard to smoking cessation and relapse, this study illuminates areas for future interventions and research.

### 4.3. Practice implications

Clinical practice treatment guidelines recommend implementing the “5A’s” to treat tobacco use and dependence [13]. These include: **A**sk about tobacco use, **A**dvice to quit, **A**ssess willingness to make a quit attempt, **A**ssist in quit attempt, and **A**rrange follow-up. Research suggests that providing physicians with instruction on conducting smoking cessation and relapse prevention interventions may increase adherence to the 5A’s model [10]. Data from our interviews suggest that providers could benefit from additional training on how to enhance the impact of their messages to patients by emphasizing the benefits of quitting smoking and the risks of continued smoking *specifically for the cancer patient* and by increasing patient awareness about the *immediate* benefits/risks. Finally, due to the stigma experienced by patients, training should be provided about how to deliver messages in an empathic and nonjudgmental manner that will elicit honest responses. With a growing body of evidence regarding the negative effects of smoking on social, medical, and psychological outcomes for cancer patients, our findings reveal several areas to improve cancer outcomes by improving patient-provider communication in regards to smoking.

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## References

1. Kawahara M, Ushijima S, Kamimori T, Kodama N, Ogawara M, Matsui K, Masuda N, Takada M, Sobue T, Furuse K. Second primary tumors in more than 2-year disease-free survivors of small-cell lung cancer in Japan: the role of smoking cessation. *Br J Cancer* 1998;78:409–12. [PubMed: 9703291]
2. Browman GP, Wong G, Hodson I, Sathya J, Russell R, McAlpine L, et al. Influence of cigarette smoking on the efficacy of radiation therapy in head and neck cancer. *N Engl J Med* 1993;328:159–63. [PubMed: 8417381]
3. Dasgupta P, Kinkade R, Bharat J, DeCook C, Haura E, Chellappan S. Nicotine inhibits apoptosis induced by chemotherapeutic drugs by up-regulating XIAP and survivin. *Proceedings of the national academy of sciences of the United States of America*. *Proc Natl Acad Sci U S A* 2006;103:6332–7. [PubMed: 16601104]
4. Arcavi L, Benowitz NL. Cigarette Smoking and Infection. *Arch Intern Med* 2004;164:2206–16. [PubMed: 15534156]
5. Møller AM, Pedersen T, Villebro N, Schnaberich A, Haas M, Tønnesen R. A study of the impact of long-term tobacco smoking on postoperative intensive care admission. *Anaesthesia* 2003;58:55–9. [PubMed: 12523325]
6. Gritz, ER.; Vidrine, DJ.; Lazev, AB. Smoking cessation in cancer patients: never too late to quit. In: Green, CW.; Given, B.; Champion, VL.; Kozachik, S.; Devoss, DN., editors. *Evidence-based cancer care and prevention: behavioral interventions*. New York City: Springer; 2003. p. 107-40.
7. Stevens MH, Gardner JW, Parkin JL, Johnson LP. Head and neck cancer survival and life-style change. *Arch Otolaryngol* 1983;109:746–9. [PubMed: 6639443]
8. Cox LS, Africano NL, Tercyak KP, Taylor KL. Nicotine dependence treatment for patients with cancer. *Cancer* 2003;98:632–44. [PubMed: 12879483]
9. Schnoll RA, Zhang B, Rue M, Krook JE, Spears WT, Marcus AC, et al. Brief physician-initiated quit-smoking strategies for clinical oncology settings: A trial coordinated by the eastern cooperative oncology group. *J Clin Oncol* 2003;21:355–65. [PubMed: 12525530]

10. Fiore, MC.; Jaen, CR.; Baker, TB., et al. Clinical Practice Guideline. Rockville, MD: US Department of Health and Human Services. Public Health Service; Treating Tobacco Use and Dependence: 2008 Update.
11. Arora NK. Interacting with cancer patients: the significance of physicians' communication behavior. *Soc Sci Med* 2003;57:791–806. [PubMed: 12850107]
12. Gritz ER, Dresler C, Sarna L. Smoking, the missing drug interaction in clinical trials: ignoring the obvious. *Cancer Epidemiol Biomarkers Prev* 2005;14:2287–93. [PubMed: 16214906]
13. Paltiel O, Avitzour M, Peretz T, Cherny N, Kaduri L, Pfeffer RM, Wagner N, Soskolne V. Determinants of the Use of Complementary Therapies by Patients with Cancer. *J Clin Oncol* 2001;19:2439–48. [PubMed: 11331323]
14. Wyatt GK, Friedman LL, Given CW, Given BA, Beckrow KC. Complementary therapy use among older cancer patients. *Cancer Practice* 1999;7:136–44. [PubMed: 10352076]
15. Chapple A, Ziebland S, McPherson A. Stigma, shame, and blame experienced by patients with lung cancer: qualitative study. *Brit Med J* 2004;328:1470. [PubMed: 15194599]
16. Aita V, McIlvain H, Susman J, Crabtree B. Using Metaphor as a Qualitative Analytic Approach to Understand Complexity in Primary Care Research. *Qual Health Res* 2003;13:1419–31. [PubMed: 14658355]
17. Coffey, A.; Holbrook, B.; Atkinson, P. Qualitative Data Analysis: Technologies and Representations. *Sociological Research Online*. 1996. <http://www.socresonline.org.uk/socresonline/1/1/4.html>
18. Guassora AD, Tulinius AC. Keeping morality out and the GP in Consultations in Danish general practice as a context for smoking cessation advice. *Patient Educ Couns* 2008;73:28–35. [PubMed: 18406099]
19. Tucker MA, Murray N, Shaw EG, Ettinger DS, Mabry M, Huber MH, Feld R, Shepherd FA, Johnson DH, Grant SC, Aisner J, Johnson BE. Second primary cancers related to smoking and treatment of small-cell lung cancer. *Lung Cancer Working Cadre. J Natl Cancer Inst* 1997;89:1782–8. [PubMed: 9392619]
20. Gritz ER. Smoking and smoking cessation in cancer patients. *Br J Addict* 1991;86:549–54. [PubMed: 1859917]
21. Gritz ER, Carr CR, Rapkin D, Abemayor E, Chang LC, Wong W, et al. Predictors of long-term smoking cessation in head and neck cancer patients. *Cancer Epidemiol Biomarkers Prev* 1993;2:261–70. [PubMed: 8318879]

**Table 1**

## Patient Demographics and Smoking History

Characteristic	Patients (n = 20)
<b>Demographics</b>	
Age ( <i>M, SD</i> )	61.9 (8.9)
Gender	
Male	14
Female	6
Marital Status	
Single	
Married	10
Separated	
Divorced	6
Widowed	4
Race	
American Indian/Alaska Native	
Asian	
Native Hawaiian or Other Pacific Islander	
Black or African American	1
White	19
Other	
Education	
Did not graduate high school	5
High school graduate	3
Some college	5
Technical school/Associates degree	4
4-year college degree	2
Some school beyond 4-year college degree	
Professional degree (e.g., MD, JD, PhD)	
<b>Smoking History</b>	
Years Smoking	41.85 (11.55)
Age of Smoking Initiation ( <i>M, SD</i> )	18.00 (5.29)
Cigarettes/day ( <i>M, SD</i> )	20.73 (16.75)
Maximum Smoking Rate ( <i>M, SD</i> )	30.00 (14.51)