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Electronic cigarette use among patients with cancer: Reasons for use, beliefs, and patient-provider communication

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Abstract

Objective—Smoking tobacco cigarettes after a cancer diagnosis increases risk for several serious adverse outcomes. Thus, patients can significantly benefit from quitting smoking. Electronic cigarettes are an increasingly popular cessation method. Providers routinely ask about combustible cigarette use, yet little is known about use and communication surrounding e-cigarettes among patients with cancer. This study aims to describe patterns, beliefs, and communication with oncology providers about e-cigarette use of patients with cancer.

Methods—Patients with cancer ($N = 121$) who currently used e-cigarettes were surveyed in a cross-sectional study about their patterns and reasons for use, beliefs, and perceptions of risk for e-cigarettes, combustible cigarettes, and nicotine replacement therapies. Patient perspectives on provider communication regarding e-cigarettes were also assessed.

Results—Most participants identified smoking cessation as the reason for initiating (81%) and continuing (60%) e-cigarette use. However, 51% of patients reported current dual use of combustible cigarettes and e-cigarettes, and most patients reported never having discussed their use of e-cigarettes with their oncology provider (72%). Patients characterized e-cigarettes as less addictive, less expensive, less stigmatizing, and less likely to impact cancer treatment than combustible cigarettes ($P < .05$), and more satisfying, more useful for quitting smoking, and more effective at reducing cancer-related stress than nicotine replacement therapies ($P < .05$).

Conclusions—Patients with cancer who use e-cigarettes have positive attitudes toward these devices and use them to aid in smoking cessation. This study also highlights the need for improved patient-provider communication on the safety and efficacy of e-cigarettes for smoking cessation.

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CONFLICT OF INTEREST

Thomas H. Brandon has received research support from Pfizer, Inc. All other coauthors report no conflict of interest.

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Keywords

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1 | BACKGROUND

Individuals who continue to smoke combustible cigarettes (hereafter referred to as cigarettes) after receiving a cancer diagnosis are at increased risk for adverse outcomes. The Surgeon General's Report¹ found sufficient evidence for a causal relationship between continued smoking and all-cause mortality, cancer-specific mortality, and increased risk of second primary cancers. Continued smoking is also associated with an increased risk of cancer recurrence, poorer treatment response, and treatment side effects.² Thus, quitting smoking is imperative for patients with cancer, yet a recent national study found that 65% of patients with cancer who smoke continue to do so after diagnosis.³

There are several pharmacotherapies, including nicotine replacement therapies (NRT), that are effective at promoting smoking cessation and are approved by the US Food and Drug Administration. However, the emergence of electronic cigarettes (ECIGS) has resulted in smokers more frequently reporting using ECIGS than NRT for smoking cessation.⁴ Given the rising popularity of ECIGS, it is not surprising that ECIG use is also increasing among patients with cancer; a 2014 study found that nearly 40% of patients with cancer who smoked reported ECIG use.⁵ Relatively little is known about the use of ECIGS by patients with cancer. Thus, the American Association for Cancer Research and the American Society of Clinical Oncology have called for a better understanding of patient perceptions of ECIGS, patterns of ECIG use, and promoters of dual use of ECIGS and cigarettes.⁶ Both organizations also advise oncology providers to discuss ECIG use with their patients.⁶

A greater awareness of how patients with cancer perceive ECIGS can elucidate both positive and negative beliefs about ECIGS and motivators of use within this population. Beliefs (or expectancies) about smoking and its anticipated consequences have been shown to significantly predict initiation of, increases in, and cessation of cigarette use.⁷⁻⁹ Similarly, beliefs about ECIGS predict initiation and maintenance of ECIG use.¹⁰ Therefore, the primary aims of this study were to assess patterns of ECIG use among patients with cancer and compare beliefs and risk perceptions of ECIGS, NRTs, and cigarettes. Because many ECIG users continue to smoke cigarettes,⁵ we were also interested in evaluating dual use of cigarettes and ECIGS. Finally, although up to 90% of oncology providers ask patients about tobacco use,^{11,12} it is unclear how frequently providers discuss ECIGS with their patients. Thus, we also sought to examine patient perspectives on provider communication regarding ECIGS.

2 | METHOD**2.1 | Participants and procedure**

Participants were recruited from the H. Lee Moffitt Cancer Center in Tampa, FL, from July 2016 to March 2017. Eligibility criteria included 18 years old, read and speak fluent

English, have a cancer diagnosis of any type (except basal cell carcinoma) that is being actively treated, smoked 100 lifetime cigarettes, and used an ECIG in the past 30 days.

Initial eligibility screening (age, smoking history, cancer diagnosis, and English speaker) was extracted from medical records. Participants passing the initial screening were contacted to assess current ECIG use and interest in participating. Qualified and interested patients were met during a scheduled medical appointment, provided written informed consent, and completed a 20-minute electronic survey. Participants received \$25 upon survey completion. This study was approved by the Chesapeake Institutional Review Board (00000790).

2.2 | Measures

2.2.1 | Demographics, patterns of and reasons for use, and intentions—

Participants reported demographic information, ever-use, and past- 30-day use of cigarettes, ECIGS, and NRT. Participants also reported duration and frequency of ECIG use, reasons for initiation and continued use of ECIGS, intentions regarding continuing ECIG use, source of information regarding ECIGS, and device characteristics. Intention to quit smoking among current smokers was assessed using the Contemplation Ladder¹³ (0 = I have no thought of quitting to 10 = Taking action to quit smoking cigarettes). Confidence to quit smoking was assessed using a 1-item question (7-point Likert scale; “not at all confident” to “extremely confident”).

2.2.2 | Beliefs and perceptions of risk—Similar to previous studies,¹⁴ beliefs about outcomes of using cigarettes, ECIGS, and NRT were collected by adapting one 7-point Likert scale item from each factor of the Smoking Consequences Questionnaire-Adult¹⁶ resulting in 16 items for each product. We assessed the extent to which participants endorsed both positive (eg, helps me deal with anxiety or worry, energizes me) and negative (eg, people think less of me, irritates my mouth and throat) beliefs for these products. Twelve 7-point Likert scale items separately evaluated beliefs about ECIGS and NRT by assessing whether participants believed the products were useful for quitting smoking, healthy alternatives to cigarettes, less addictive than cigarettes, recommended by their oncology provider, likely to negatively impact their cancer treatment, and able to relieve stress related to their cancer diagnosis. Finally, perceived risk of continued use of cigarettes and ECIGS for patients with cancer was assessed with items adapted from an existing measure¹⁷ on a 4-point Likert scale.

2.2.3 | Patient-provider communication—Three items were adapted from a previous study¹⁸ to assess patient-provider communication regarding ECIGS. Participants rated their comfort level discussing ECIGS with their oncologist, interest in learning more about ECIGS, and opinion on the importance of such discussions using a 4-point Likert scale. Additional yes/no questions asked if patients discussed their ECIG use, were advised to quit ECIGS, and if they were offered assistance to quit ECIGS from their oncology and primary care providers.

2.3 | Data analytic plan

Analyses were conducted using SPSS version 24. Chi-squared analyses and independent samples *t*-tests were conducted to evaluate differences in variables of interest between dual users and exclusive e-cigarette users. For comparisons between cigarettes, ECIGS, and NRT, paired samples *t*-tests evaluated within-subject differences in outcome beliefs, risk perceptions, and efficacy beliefs,^{14,15} and Cohen's *d* was calculated for each comparison.¹⁹

3 | RESULTS

3.1 | Participant characteristics

A total of 3415 medical records were reviewed for eligibility, of which 2587 patients passed initial screening and 1801 were reached to assess ECIG use within the past 30 days. Of this group, 376 (21%) reported ever-use of ECIGS, 221 (12%) reported current use of ECIGS, and 123 of these (56%) consented to the study. Data from 121 completed surveys were analyzed (1 withdrew, 1 deemed ineligible after consenting). Only 1.1% of data were missing (see tables for *n*'s).

On average, participants were 55.6 years old (*SD* = 9.9), and the sample was 56.2% female and 88.4% Caucasian. Over half of participants (59.8%) reported being married/cohabitating. About half of participants (48.8%) reported an annual household income below \$40,000, and 37.2% had an Associate's degree or higher. With regards to smoking status, participants smoked an average of 34.4 years (*SD* = 12.0), and 51% of participants were dual users of cigarettes and e-cigarettes. Among dual users, intention to quit smoking was high (Contemplation Ladder *M* = 7.8, *SD* = 2.1) while confidence in quitting was moderate (*M* = 3.8, *SD* = 1.6). Finally, 76% of dual users had plans to quit smoking in the next 30 days, and 89% indicated planning to quit in the next 6 months. Most (75%) participants had tried NRT, and 19% reported using NRT within the past month. No significant demographic differences emerged between exclusive ECIG users and dual users.

3.2 | ECIG use patterns, intentions, and reasons for use

As seen in Table 1, most participants (72%) reported using ECIGS daily 5 times per day and reported no plans to stop using ECIGS within the next year. Most participants (68%) reported using refillable, tank-based ECIG devices, and tobacco was the most common flavor preference. Exclusive ECIG users were more likely to use ECIGS more times per day than dual users ($\chi^2(3) = 9.467, P = .024$). Although a third of participants had no intentions of quitting ECIGS, a third had plans to quit within the next 6 months. There was no significant difference between dual users and exclusive ECIG users in plans for quitting ECIGS. The most common source of information about ECIGS was from friends/family (*N* = 50; 41%), whereas only 2 participants (1.6%) reported receiving information from healthcare providers. As seen in Table 2, smoking cessation was the most frequently endorsed reason for initiating (81%) and maintaining (60%) ECIG use. Forty-two percent of the sample initiated ECIG use after their cancer diagnosis, and 21% initiated ECIGS because of health concerns related to their cancer diagnosis.

3.3 | ECIGS versus combustible cigarettes

Table 3 shows that participants rated cigarettes as more addictive (eg, stronger withdrawal and cravings) and less practical to use (less convenient, more expensive), yet better at providing psychological reinforcement (reducing stress and negative affect and controlling weight/appetite) than ECIGS.

Participants viewed ECIGS as less likely to make their cancer treatment ineffective ($M = 2.08$, $SD = 0.97$) than cigarettes ($M = 2.89$, $SD = 0.95$); $t(116) = 9.108$, $P < .001$; Cohen's $d = .60$, and less likely to increase risk of treatment-related problems, such as fatigue or shortness of breath ($M = 2.16$, $SD = 0.96$) than cigarettes ($M = 3.31$, $SD = 0.74$); $t(115) = 11.774$, $P < .001$; Cohen's $d = .96$.

3.4 | ECIGS versus NRT

As seen in Table 3, although NRT was rated as less addictive, less likely to generate cravings, less likely to result in negative social impressions, and more likely to be recommended by their oncology provider, participants viewed ECIGS as less expensive, less irritating, more satisfying, and more convenient. Participants also viewed ECIGS as more useful for smoking cessation, better at relieving cancer-related stress, and less addictive than tobacco cigarettes when compared to NRT.

3.5 | Patient-oncology provider communication

As seen in Table 4, participants felt comfortable discussing ECIGS with their oncology provider and believed it was important to do so. However, the vast majority of participants reported not knowing their provider's stance on ECIGS because it was never discussed. Less than half told their providers about their ECIG use, and only 24% reported being asked about ECIG use. Despite participants' perceptions of ECIGS as more favorable than NRT, participants reported that oncology providers were more likely to recommend NRTs ($M = 2.81$, $SD = 2.33$) than ECIGS ($M = 1.69$, $SD = 1.50$, $t(115) = -5.014$, $P < .001$).

4 | DISCUSSION

Approximately one in 5 patients with cancer who were current or former smokers reported trying ECIGS, somewhat lower than previously reported.⁵ Consistent with studies of the general population,^{20,21} many patients reported initiating ECIGS to quit smoking. Furthermore, 42% of participants initiated ECIG use after their cancer diagnosis, and 21% of the sample endorsed "health concerns due to their cancer diagnosis" as a reason for initiating ECIGs. These findings reflect unique motivators of ECIG use within this population that could inform provider communication to patients about the relationship between ECIG use, smoking cessation, and cancer care.

To our knowledge, our study is the first to evaluate beliefs for ECIGS, NRTs, and cigarettes of patients with cancer. Compared to cigarettes, ECIGS were considered to be less addictive, more practical to use, better tasting, less stigmatizing, less likely to cause negative physical feelings, and less likely to be associated with health risks. ECIGS were also noted to be less expensive—an important consideration as the policy landscape surrounding ECIGS evolves

(ie, ECIG taxation). These findings are consistent with previous studies evaluating such beliefs within the general population of ECIG users.^{14,22} Additionally, patients perceived ECIGS as less detrimental to their cancer treatment effectiveness and less likely to increase the risk of cancer treatment-related problems. In contrast, cigarettes were viewed as more effective for managing negative mood and reducing stress. Affect modulation is a robust motivator for initiation and maintenance of smoking.²³ Given elevated stress and mood changes that occur after a cancer diagnosis, this finding may help explain why many patients with cancer cannot quit smoking despite the motivation to do so, as well as why they choose ECIGS as a cessation aid.

A smoker's decision regarding the type of cessation aid to use may be influenced in part by beliefs about the relative benefits and risks of each product.²⁴ NRTs were perceived as less addictive, less craving-inducing, and less socially stigmatizing than ECIGS. However, patients also perceived several key advantages of ECIGS over NRT related to cost, physical irritation, and convenience. Effect sizes suggest that the largest perceived advantages of ECIGS were in taste, craving reduction, and relief of negative affect and stress, including cancer-related stress. Because stress and negative affect are often cited causes of smoking relapse in the general²³ and patient with cancer populations,²⁵ these latter perceived advantages may be especially helpful for maintaining smoking abstinence. It is notable that participants believed that ECIGS are more useful for smoking cessation than NRT, and given that three-fourths of participants in our sample had used NRT, their beliefs were likely based on dissatisfying prior experiences with NRT.

Patients with cancer often look to their physicians for support and advice,²⁶ and provider advice can facilitate smoking cessation.²⁷ Our findings indicate that, despite feeling comfortable discussing ECIGS with their oncology providers, many patients reported not being asked about ECIGS and stated their oncologists were neither aware of their ECIG use nor a source of information about ECIGs. Patients reported that their oncology providers were more likely to recommend NRT, consistent with policy statements from the National Cancer Control Network²⁸ and the International Association for the Study of Lung Cancer.²⁹ However, British public health organizations have taken a more encouraging stance on ECIGS as a harm reduction innovation that should be promoted for smoking cessation³⁰; consequently, the majority of British practitioners ask patients about ECIG use.³¹ Given the more conservative approach in the USA, it is possible that oncology providers fear that discussing ECIGS may implicitly encourage use of ECIGS.³²

Because smoking can cause adverse cancer outcomes, it is critical for oncologists to assist their patients with smoking cessation and to educate patients about the risks and benefits of using ECIGS. Consistent with our participants' perceptions, a recent report from the National Academies of Sciences, Engineering, and Medicine concluded that ECIGS are far less harmful than cigarettes.³³ A recent meta-analysis found that ECIGS may indeed increase smoking cessation³⁴ and is consistent with national survey findings,³⁵ yet the National Academies report concluded that there was "insufficient evidence" from randomized controlled trials that e-cigarettes can help people quit smoking. Of note, approximately half of our sample successfully quit smoking using ECIGS. Those who had successfully quit smoking were more like to vape frequently and to use a tank system, most

likely because of more efficient nicotine delivery. Future longitudinal research is needed to further examine use characteristics that predict successful cessation in this population.

4.1 | Study limitations

The implications of this cross-sectional study should be considered within the context of its limitations. Our study included patient report of physician communication. Research suggests that providers report higher rates of counseling than patients.³⁶ We did not assess ECIG beliefs among those who tried but discontinued ECIGS or those who never tried ECIGS. Future research with these groups would provide a more comprehensive perspective on patients' beliefs of ECIGS.

4.2 | Clinical implications

Overall, our findings suggest that although ECIGS are not viewed as a completely satisfying alternative to tobacco cigarettes, they are perceived by patients with cancer to be a more appealing option for nicotine replacement than NRT. There is emerging evidence that ECIGS may be an effective smoking cessation aid,^{35,37,38} perhaps more so than NRT,³⁹ yet there are insufficient data on their efficacy with patients with cancer. Patients with cancer are, however, increasingly turning to ECIGS, often without their provider's awareness or input. This study highlights the high prevalence of ECIG use among patients with cancer, reasons and beliefs underlying their ECIG use, and improvements oncologists can make in discussing ECIG use with their patients. Our data show that many patients with cancer initiate ECIG use after diagnosis and do so for the purpose of smoking cessation. Cancer diagnosis has been described as a "teachable moment" during which patients are highly motivated to quit smoking, and providers can capitalize on this window of opportunity.⁴⁰ As research about ECIGS continues to emerge, it is critical for oncology providers to be knowledgeable about ECIGS, to discuss benefits of harm reduction, and to communicate that the long-term health consequences of continued ECIG use are not yet fully known.³³

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TABLE 1

Electronic cigarette use patterns

	Total Sample N = 121 N (%)	Dual Users N = 62 N (%)	ECIG Only N = 59 N (%)	P
Time since ECIG initiation (months)				.243
<1	7 (5.8)	3 (4.8)	4 (6.8)	
1-6	26 (21.5)	16 (25.8)	10 (16.9)	
7-12	23 (19.0)	10 (16.1)	13 (22.0)	
13-24	28 (23.14)	18 (29.0)	10 (16.9)	
25	37 (30.6)	15 (24.2)	22 (37.3)	
Frequency of ECIG use (days/week)				.094
<Once per week	13 (10.7)	6 (9.7)	7 (11.9)	
1-2	11 (9.1)	7 (11.3)	4 (6.8)	
3-6	17 (14.0)	13 (21.0)	4 (6.8)	
7	80 (66.1)	36 (58.1)	44 (74.6)	
Frequency of ECIG use (times/day)				.024
1-4	34 (28.0)	14 (22.6)	20 (33.9)	
5-9	27 (22.3)	20 (32.3)	7 (11.9)	
10-20	35 (28.9)	19 (30.6)	16 (27.1)	
21 or more	25 (20.7)	9 (14.5)	16 (27.1)	
Type of ECIG used				
Disposable/"cigalikes"	17 (14.1)	12 (19.4)	5 (8.5)	.085
Cartridge system	27 (22.3)	14 (22.6)	13 (22.0)	.942
Refillable tank system	82 (67.8)	37 (59.7)	45 (76.3)	.051
Flavor used most often				.850
Tobacco	46 (38.0)	26 (41.9)	20 (33.9)	
Menthol	26 (21.3)	12 (19.4)	14 (23.7)	
Fruit	26 (21.3)	13 (21.0)	13 (22.0)	
Other (eg, herbal, beverages)	16 (13.2)	8 (12.9)	8 (13.6)	
Missing	7	3	4	
Nicotine content of e-juice (mg/mL)				.273
0	12 (10.0)	3 (4.8)	9 (15.3)	
1-3	17 (14.1)	9 (14.5)	8 (13.6)	
4-8	16 (13.2)	7 (11.3)	9 (15.3)	
9-16	21 (17.4)	12 (19.4)	9 (15.3)	
16-24	22 (18.2)	15 (24.2)	7 (11.9)	
>24	1 (0.8)	1 (1.6)	0 (0.0)	
Don't know	29 (24.0)	14 (22.6)	15 (25.4)	
Missing	3	1	2	

	Total Sample N = 121 N (%)	Dual Users N = 62 N (%)	ECIG Only N = 59 N (%)	P
Plans for stopping ECIG use				.174
No plans to stop	30 (24.8)	13 (21.0)	17 (28.8)	
No plans to stop, but plan to reduce	14 (11.6)	8 (12.9)	6 (10.2)	
Plans to stop, but not in next year	18 (14.9)	12 (19.4)	6 (10.2)	
Plan to stop in next year	17 (14.0)	9 (14.5)	8 (13.6)	
In next 6 months	20 (16.5)	14 (22.6)	6 (10.2)	
In next 30 days	18 (14.9)	6 (9.7)	12 (20.3)	
Missing	4	0	4	

TABLE 2

Reasons for electronic cigarette use

	Initiation N (%)	Maintenance N (%)
To help me quit smoking	98 (81.0)	73 (60.3)
To help me reduce smoking	38 (31.4)	34 (28.1)
Health concerns associated with cigarettes	36 (29.8)	24 (19.8)
To help control cigarette cravings	35 (28.9)	33 (27.3)
Health concerns due to cancer diagnosis	25 (20.7)	20 (16.5)
To use them when I can't smoke	25 (20.7)	19 (15.7)
Recommendations from family/friends	24 (19.8)	0
Deal with stress/control mood	20 (16.5)	25 (20.7)
Curiosity	13 (10.7)	0
Recommendations from oncologist	7 (5.8)	0
Enjoy the taste of ECIGs	0	13 (10.7)
Other	5 (4.1)	6 (5.0)

TABLE 3

Comparisons of beliefs and risk perceptions of combustible cigarettes versus electronic cigarettes

Items ^b	All Users Mean (SD), N = 121			E-Cig vs. Cigarette		E-Cig vs. NRT	
	Cigarette	E-Cig	NRT	Cohen's <i>d</i> (N missing)	Cohen's <i>d</i> (N missing)	Cohen's <i>d</i> (N missing)	Cohen's <i>d</i> (N missing)
Satisfaction	5.20 (2.04)	5.14 (1.74)	3.43 (1.98)	0.02 (2)		0.72 ^a (5)	
Craving reduction	5.75 (2.02)	5.27 (2.00)	3.82 (2.05)	0.18 ^a (1)		0.55 ^a (1)	
Taste	3.97 (2.26)	5.12 (1.82)	2.74 (1.71)	0.45 ^a (1)		0.93 ^a (6)	
Weight control	3.84 (2.16)	2.57 (1.89)	2.71 (1.75)	0.62 ^a (1)		0.05 (5)	
Social facilitation	2.88 (2.02)	2.78 (2.08)	2.74 (1.79)	0.07 (1)		0.04 (6)	
Stress reduction	5.47 (1.97)	4.59 (2.12)	3.46 (1.95)	0.40 ^a (1)		0.52 ^a (5)	
Negative affect reduction	5.80 (1.85)	4.50 (2.10)	3.24 (1.89)	0.57 ^a (1)		0.55 ^a (5)	
Stimulation	3.44 (2.20)	2.35 (1.65)	2.53 (1.73)	0.52 ^a (1)		0.10 (7)	
Convenience	4.79 (2.17)	5.91 (1.72)	4.87 (1.99)	0.44 ^a (1)		0.47 ^a (5)	
Health risks	6.83 (0.70)	3.67 (1.86)	3.78 (1.77)	1.78 ^a (1)		0.04 (5)	
Negative physical feelings	3.64 (2.29)	2.59 (2.00)	3.09 (2.13)	0.45 ^a (2)		0.22 ^a (6)	
Negative social impression	4.83 (2.03)	2.87 (1.64)	2.54 (1.67)	0.89 ^a (4)		0.20 ^a (8)	
Addiction	6.61 (1.23)	3.81 (2.01)	2.94 (1.83)	1.26 ^a (1)		0.37 ^a (5)	
Craving	5.28 (2.01)	3.46 (2.09)	2.40 (1.69)	0.60 ^a (1)		0.44 ^a (5)	
Withdrawal	3.74 (2.18)	2.67 (1.93)	2.84 (1.92)	0.43 ^a (1)		0.09 (5)	
Cost	6.56 (1.18)	3.73 (2.07)	5.12 (1.93)	1.31 ^a (1)		0.53 ^a (5)	

Items ^b	All Users Mean (SD), N = 121			E-Cig vs. Cigarette		E-Cig vs. NRT	
	Cigarette	E-Cig	NRT	Cohen's <i>d</i> (N missing)	Cohen's <i>d</i> (N missing)	Cohen's <i>d</i> (N missing)	Cohen's <i>d</i> (N missing)
Efficacy beliefs ^b							
Useful for quitting smoking		5.80 (1.65)	4.37 (1.99)			0.55 ^a (5)	
Less addictive than cigarettes		5.24 (2.05)	4.75 (1.88)			0.23 ^a (4)	
Recommended by oncologist		1.71 (1.51)	2.81 (2.33)			0.48 ^a (4)	
Relieve cancer-related stress		4.25 (2.25)	3.32 (1.79)			0.46 ^a (5)	

Notes: Cohen's suggested reference values are 0.2, 0.5, and 0.8 for small, medium, and large effect sizes.

^aSignificant difference between ECIG and cigarette/NRT ratings ($P < .05$).

^bLikert scale ranging from 1—strongly disagree to 7—strongly agree.

TABLE 4

Patient-provider communication on electronic cigarettes

	Total Sample N = 121 (%)	N Missing
Oncology provider awareness of ECIG use		1
Yes, they asked me	12 (9.9)	
Yes, I told him/her	53 (43.8)	
No, it never came up	44 (36.4)	
No, I never told him/her	11 (9.1)	
Oncology provider opinions on using ECIGs to quit smoking		2
Does not support	13 (10.7)	
Supports completely	3 (2.5)	
Okay with use, but provided alternatives	16 (13.2)	
I don't know, it was never discussed	87 (71.9)	
Did your oncology provider...		
Ask whether you used ECIGs?	29 (24.0)	1
Advise you to quit using ECIGs?	20 (16.5)	3
Ask if you wanted to try to quit ECIGs?	15 (12.4)	2
Did your primary care provider...		
Ask whether you used ECIGs?	39 (32.2)	2
Advise you to quit using ECIGs?	27 (22.3)	2
Ask if you wanted to try to quit ECIGs?	23 (19.0)	3
Mean (SD) (scale 1-4)		
Comfort talking with oncology provider about ECIGs	3.49 (0.90)	2
Interest in learning more about ECIGs from oncology provider	2.82 (1.17)	2
Importance of discussing ECIGs with oncology provider	3.08 (1.01)	3