

E-cigarettes and the clinical encounter: Physician perspectives on e-cigarette safety, effectiveness, and patient educational needs

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Funding information

Greenville Health System Transformative Seed Grant

Abstract

Rationale, aims, and objectives: There is limited research on how health care providers approach the topic of e-cigarettes in clinical encounters, especially in conjunction with other best-practice recommendations for smoking cessation. This qualitative study explored physician perceptions and recommendations involving e-cigarettes in the context of smoking cessation counselling, including their opinions about the implementation and content of patient educational materials that focus on e-cigarettes.

Methods: Semistructured interviews were conducted with 15 physicians from family medicine, internal medicine, and obstetrics/gynaecology (OB/GYN).

Results: Physicians did not routinely assess e-cigarette use among patients and reported that discussions were often initiated by patients. Only a minority of participants discussed e-cigarettes in conjunction with other best-practice recommendations for smoking cessation. Most others were more ambivalent about e-cigarette safety and effectiveness for cessation and did not address the topic, unless patients were already using e-cigarettes. Almost all, however, agreed that more research on e-cigarettes was needed. Physicians expressed an interest in having enhanced discussions about e-cigarettes with their patients and in using patient educational materials to accomplish this. Physicians recommended that these materials not actively promote e-cigarettes and be tailored to patients based on their demographics and motivation to quit.

Conclusions: Physicians were open to improving their smoking cessation counselling and to integrating new patient educational materials that addressed e-cigarettes. Patient educational materials that provide tailored information about e-cigarettes could potentially be used to initiate e-cigarette discussions and inform smokers about what is known vs unknown about e-cigarettes.

KEYWORDS

patient-centred care, public health

1 | INTRODUCTION

In 2016, about 15.5% of US adults were current smokers.¹ Although this represents a continued decline in smoking over the past several decades, tobacco use is still the leading cause of preventable death, contributing to 480 000 deaths annually.² Electronic cigarette or e-cigarette use, however, has been increasing rapidly since they were first introduced in the United States in 2006, most prominently among smokers, with 15.3% reporting trying them in 2016.³ E-cigarette use is still most heavily concentrated among current and former smokers,⁴ and physicians increasingly report having to address e-cigarettes with their patients who smoke.⁵ The current study aimed to better understand physician perceptions and practices regarding e-cigarettes in the context of smoking cessation practices, their views on patient needs, and their desires for enhanced communication with patients about e-cigarettes.

The health risks from smoking regular cigarettes are well documented,² but additional research is still needed to determine the long-term health effects of e-cigarettes.⁶ While leading health organizations such as the Centers for Disease Control (CDC) suggest that e-cigarettes are less harmful than regular cigarettes, they acknowledge that e-cigarettes are not completely safe, as they contain harmful substances and can cause unintended injuries.⁷ Furthermore, despite many smokers reporting using e-cigarettes for smoking cessation,^{8,9} evidence for their effectiveness is limited.¹⁰⁻¹² In addition, the US Preventive Services Task Force¹³ and some other regulatory and medical organizations^{14,15} have not found sufficient evidence to recommend their use for cessation. This approach contrasts with that of the Royal College of Physicians and Public Health England, which advocate for physicians to promote e-cigarettes for both harm reduction and smoking cessation among their patients who smoke.¹⁶

Since at least 70% of smokers visit their physician annually, clinical encounters present an opportunity to assess e-cigarette use among smokers and provide them with evidence-based information about e-cigarettes, in addition to following clinical practice guidelines for treating tobacco use and dependence.¹⁷ A large body of research has assessed physician compliance with the US Public Health Service (USPHS) tobacco cessation clinical practice guidelines¹⁸⁻²² and approaches to smoking cessation counselling more generally^{23,24}; however, research on physicians' approaches to discussing e-cigarettes with their patients is limited. Indeed, the USPHS provides clinical practice guidelines for treating tobacco use and dependence,¹⁷ but it does not include guidelines on providing information about e-cigarettes. To our knowledge, only the American College of Obstetricians and the American Academy of Pediatrics, have officially recommended that practitioners assess e-cigarette use in addition to tobacco use.^{25,26}

Several studies have examined e-cigarette-related knowledge, attitudes, and practices among US physicians from a variety of specialties. Most studies have surveyed physicians^{5,27-31} and indicate significant variation in clinical practice, likely because of the lack of established guidelines and the larger debate about the safety and effectiveness of e-cigarettes for cessation.²⁷ Studies suggest that many physicians feel uninformed about e-cigarettes and want more scientific evidence on their safety.^{25-27,29,30} Despite this, some research also indicates that a considerable proportion of physicians

report recommending e-cigarettes for smoking cessation, with percentages ranging^{5,27-31} from 18% to 37.9%. It is unclear, however, how discussions about e-cigarettes emerge in clinical encounters and whether e-cigarettes are discussed alone or in conjunction with best-practice recommendations for smoking cessation.

The few studies that have assessed e-cigarette screening have found mixed results. For example, one qualitative study of 15 physicians found that most reported not routinely asking about e-cigarette use,³² while another quantitative study reported that 58.4% of physicians (n = 561) ask their patients about e-cigarettes at least some of the time.⁵ Conversely, several survey-based studies have found that most physicians report that their patients ask about e-cigarettes.^{5,27-31} Studies from the patient perspective, however, have shown that only a relatively small proportion of smokers discuss e-cigarettes with their physicians, with percentages ranging³³⁻³⁵ from 6.8% to 27%, suggesting that there could be missed opportunities for discussing e-cigarettes in clinical encounters.

Evidence suggests that many e-cigarette users want their physician to talk with them about e-cigarettes³⁶ and the majority of smokers believe that physicians are the most trustworthy source of information about e-cigarette safety.³⁵ However, it remains unclear whether physicians desire to have enhanced e-cigarette discussions with patients or how the topic of e-cigarettes fits in with their current practices regarding smoking cessation counselling. Two qualitative studies have examined physician beliefs and practices around e-cigarettes,^{32,37} but these studies did not provide a contextual understanding of how physicians approach smoking cessation counselling in general and how or if they incorporate e-cigarettes into this approach.

The current qualitative study aimed to address existing research gaps around whether and how physicians address e-cigarettes in the context of their current smoking cessation practices. Furthermore, this is the first study of which we are aware to elicit physician suggestions on how to improve smoking cessation counselling in the context of increasing use of e-cigarettes among smokers. More specifically, this study assessed physician needs related to the content and format of patient educational materials that could be utilized during smoking cessation counselling. As such, this study aimed to aid in the development of clinical tools to enhance discussions of e-cigarettes in conjunction with other best-practice recommendations for smoking cessation.

2 | METHODS

2.1 | Sample

The sample included practising (non-resident) physicians from South Carolina's largest private non-profit health care system (Greenville Health System), with participants recruited from practice settings in both rural and urban areas that span a large portion of the south-western part of the state. Physicians were recruited from family medicine (FM), internal medicine (IM), and obstetrics/gynaecology (OB/GYN) to ensure that physicians came from diverse backgrounds and treated a heterogeneous patient population. Two members of the research team are from the departments of family and IM (A.A. and M.J.,

respectively) and sent out a recruitment email to all physicians in their specialties, requesting participation in one semistructured interview. A recruitment email was also sent through the OB/GYN listserv, and an additional follow-up email was sent out through each of the three department email listservs. Interested physicians responded with their contact information, which was provided to the research assistant for interview scheduling. Of the 18 physicians who expressed interest, 14 completed interviews (78%). All interviews were conducted over the phone, and interview length ranged from about 30 to 60 minutes. Participants received a \$75 gift card for their time. After transcribing and coding the first 14 interviews, it was found that data saturation had been reached, and therefore, additional participants were not needed. This study was reviewed by the University of South Carolina and Greenville Health System Institutional Review Boards and granted exempt status.

2.2 | Procedure

After providing verbal consent to participate and record the interview, the interviewer followed a semistructured interview guide, which included a list of both closed- and open-ended questions, but allowed flexibility for the interviewers to add or change questions as needed.³⁸ Initial interview questions were close ended and elicited information about the participant's practice environment, such as years in practice, patient demographics, and characteristics of the practice setting itself. The next series of questions were more open ended and included questions about (1) current tobacco use screening and cessation counselling practices, including any types of patient education tools used; (2) current e-cigarette use screening and recommendation practices; (3) general views about e-cigarette safety and effectiveness; and (4) perceived needs for smoking cessation educational materials that include an in-depth focus on e-cigarettes. Questions related to physician opinions on the need for better educational materials were guided by Diffusion of Innovations Theory³⁹ and another study that applied this theory to evaluate practice nurses' needs for Web-based support for smoking cessation guideline adherence.⁴⁰ These questions assessed physicians' views on the relative advantage, compatibility, complexity, trialability, and observability of new materials. These questions also elicited physicians' opinions about the ideal content and format for these materials.

2.3 | Data analysis

Interviews were recorded and transcribed verbatim. Content analysis, using both inductive and deductive approaches, was employed to examine the transcripts.⁴¹ Initially, codes were created using question topics from the semistructured interview guide and entered into a codebook. Then two coders independently coded three transcriptions to apply the codes and identify additional themes that emerged from the text. Interview coders and a member of the research team (C.K.C.) met to discuss themes, resolve discrepancies, and add any additional codes to the codebook. Before coding the remaining transcripts, two members of the research team (C.K.C. and T.D.) read through them to assess whether all themes were adequately captured

by the codebook, discussed findings, and revised the codebook where necessary. Then these same team members independently coded all of the remaining 11 transcripts, meeting throughout the process to discuss and resolve discrepancies and arrive at consensus. This became the final data set. Qualitative data management software NVivo was used for coding and to assist with data analysis.

3 | RESULTS

The final sample came from diverse practice settings and included five physicians from IM, six from FM, and three from OB/GYN. Their years in practice ranged from 3 months to 42 years, with an average of 12 years (excluding residency training). Participants practiced in a variety of settings, from seeing mainly middle class, insured patients to working in an "underserved Medicaid/Medicare clinic." One physician practiced in three different clinics, spending one-third of the time at a free clinic. The majority of physicians characterized their practice site as "suburban." Participants reported they saw an average of 20 patients per day and spent 15 to 20 minutes with each patient, although two participants reported they saw less than 10 patients per day, while another three reported seeing upwards of 30 patients per day.

3.1 | Smoking cessation counselling

One objective of the study was to explore current smoking cessation counselling practices, including how physicians approach the topic of e-cigarettes in general and in relation to cessation counselling. Several factors were found to affect smoking cessation counselling length and content, including patient motivation to quit and perceptions about patient educational needs. The factors that shaped physician beliefs and practices related to e-cigarettes included the scientific uncertainty of e-cigarettes and their experience with patients who have used e-cigarettes.

3.1.1 | Factors affecting counselling length and content

When asked to estimate what percentage of their patients are smokers, which is documented in patient medical records, physician estimates varied widely and tended to coincide with their practice setting. For example, physicians who primarily practiced in underserved clinics reported higher percentages of smoking among patients. The majority estimated that about 20% of their patients smoke, while four physicians reported that about 30% to 40% of their patients were smokers. Therefore, participants had numerous opportunities to engage in smoking cessation counselling.

3.1.2 | Patient quit motivation

Although most physicians reported they initiated discussions about smoking cessation more often than patients, especially for patients with chronic health issues, patient readiness to quit was one of the major deciding factors in time spent on cessation counselling. For example, one physician stated that the first question they ask is "Are

you ready to quit?" Then if the patient responded negatively, the physician reported saying to the patient, "When you're ready let me know, and I'll teach you some ways to quit" (FM5). Another physician echoed this sentiment, stating that "pretty much anybody who smokes I ask if they're ready to quit. And that will open or close the door" (FM2). Although a patient's expressed lack of motivation to quit on a particular visit may shut down a conversation about quitting, several physicians described smoking cessation counselling as an "ongoing" or "long-term" conversation that should be brought up at every visit. Overall, physicians structured their counselling based on perceived patient needs and preferences or how as one physician (FM6) described it, "cues, the way [patients] present themselves," to guide how much time they dedicated to the topic.

3.1.3 | Perceived patient educational needs

Perceived patient preferences and views of patient educational needs also shaped the content of the smoking cessation counselling that physicians provided. Generally, participants felt their patients were informed about the health risks of smoking, with only two physicians characterizing their patients as "blank slates." Therefore, physicians did not emphasize reviewing health risks of smoking as a crucial component of their counselling practice, especially when the patient was unmotivated to quit. For patients interested in quitting, physicians spent more time reviewing different options for smoking cessation.

Almost all physicians stated that they reviewed all of the options for smoking cessation and then proceeded to list them out. The recommended options were most commonly different types of nicotine replacement therapy and prescription medications; however, two FM physicians mentioned providing information about "hypnosis" and an IM physician reviewed "lifestyle strategies." In relation to e-cigarettes, only two physicians described integrating a discussion about e-cigarettes as part of regular cessation counselling. One physician reported that after reviewing all of the best-practice recommendations, "then I usually touch on e-cigarettes and vaping as well" (FM5). Another physician characterized e-cigarettes as not their "first go to" but described mentioning it as an option to patients:

And some people will say, well I have already tried patches, I have already tried this, and it did not work for me. And those are the people we talk about e-cigarettes with at that point. (IM1)

Both physicians who included e-cigarettes as one of the viable strategies for smoking cessation did not recommend them in lieu of best-practice recommendations.

3.2 | E-cigarette beliefs and practices

In contrast to several high estimations of the percentage of patients who smoke, the majority of physicians perceived the percentage of patients who use e-cigarettes as low (between 1% and 5%). One physician noted that "it seems like e-cigarettes were a big deal about a year ago, but it seems like it's really decreased" (FM1). For most physicians, when the topic of e-cigarettes did emerge, it was initiated

by the patient, mostly to say they were using e-cigarettes to quit smoking. Only one physician (IM1) noted that "people will usually ask me before they do something," so most perceived their conversations with smokers to have occurred before they initiated e-cigarette use.

3.2.1 | Scientific uncertainty of e-cigarettes

Almost all physicians emphasized the lack of scientific evidence on the safety of e-cigarettes, regardless of whether they had recommended or accepted their use by patients. This overarching theme shaped how physicians perceived and discussed e-cigarettes in patient encounters. For example, one physician asserted, "unless you show me some real evidence and the United States Preventative Task Force recommends it, I'm probably not going to [recommend e-cigarettes]" (FM1). Another physician echoed this sentiment when stating they would recommend e-cigarettes only "if it was proven as a healthier alternative and that they're a good smoking cessation technique" (OB/GYN3). Several physicians felt it was important to communicate the lack of scientific evidence to patients. As one physician explained:

I would just be honest with them. And I think I have done this in the past—I would tell them that we are really not sure what's in these ... the e-juice that's placed in these e-cigarettes and studies are still being done to know what the harmful effects are. (FM3)

Another physician echoed this practice in saying "usually when I discuss it with my patients I say that it hasn't been full explored, but we believe that it could have negative consequences to your health just like regular cigarettes" (IM5). When participants were asked their views on the harm of e-cigarettes compared with conventional cigarettes, one physician summed up many of the responses in stating "how lesser of an evil [are e-cigarettes]—that's the question" (FM6). Participants generally felt that e-cigarettes were less harmful than conventional cigarettes but stressed, as one physician expressed, "to say that they're safe is an overestimate" (OB/GYN1). Additionally, several physicians hedged their statements on relative e-cigarette safety in stating they were "probably" safer than conventional cigarettes, which still communicated uncertainty. In fact, one physician specifically stated they felt "there's not adequate evidence to make a determination [whether e-cigarettes are more, less, or equally as harmful as conventional cigarettes]" (IM2).

3.2.2 | Experiences with patients who use e-cigarettes

Besides reflecting on the uncertainty surrounding the safety of e-cigarettes and their potential for harm, nearly half the sample (six physicians) held the belief that even if smokers did use e-cigarettes successfully for smoking cessation, they were trading one addiction for another. For example, one physician characterized using e-cigarettes as "a crutch" and "addiction" and felt that e-cigarettes were "probably not the best way to stop as far as we know" (FM1). One physician saw a theoretical role for e-cigarettes in smoking cessation but added that patients would "ultimately need a way to get off both" (FM6). Experiences with patients also shaped

this belief. As an example, one physician reported they had patients “just vape forever ... they never really quit” (IM4). Ultimately, this belief created some hesitance in recommending e-cigarettes.

Overall practices related to recommending e-cigarettes for smoking cessation were varied, although the majority reported they would not recommend them. There were physicians on either end of the spectrum, with some who would actively advise against e-cigarettes and others who incorporate e-cigarettes as part of routine smoking cessation counselling, while many others were in-between these opposing viewpoints. Two physicians who were against e-cigarettes, one of whom reported they had never seen patients successfully use them to quit, stated that they would recommend cessation of e-cigarette use to current users. Conversely, the two physicians who regularly include e-cigarettes as an option for smoking cessation reported frequent smoking cessation success with patients who used e-cigarettes. The remaining physicians were more ambivalent about e-cigarettes, with a few suggesting, as stated by one physician, “I would never, quote, encourage them to try it. But if they were using it as a means to try to come off [conventional cigarettes] then I would not discourage that” (IM3). These physicians were open to using any method that would help their patient quit smoking.

3.3 | Improving patient education on smoking cessation and e-cigarettes: input from physicians

The second objective of this study was to assess physician needs related to the content and format of patient educational materials related to smoking cessation, which also included an in-depth focus on e-cigarettes. The proposed materials could function not only as take-home educational materials (eg, pamphlets, websites, and tailored self-management handouts) but also as materials that patients could review before the clinical encounter. Physicians were mostly satisfied with their current practices and provided recommendations for implementation of and content for new materials.

3.3.1 | Satisfaction with current practices

In order to explore the relative advantage of new patient educational materials, physicians were asked to comment on satisfaction with their current smoking cessation counselling, including current patient educational tools. Most physicians believed their smoking cessation counselling abilities were adequate, but almost all added that there was room for improvement. This was exemplified by one physician in the following statement:

I feel like, generally, like I do not feel totally inept at [counselling]. I feel like it goes pretty well, but I am certain that I could get better at it. (IM5)

However, there was one physician who was more confident with current practices, “[y]ou know I feel pretty confident in my ability to just counsel patients verbally” (IM3), and did not need any educational materials. On the contrary, many other physicians supplemented their smoking cessation counselling by providing their patients with take-home educational materials in the form of premade pamphlets or computer printouts. Many physicians reported always referring their

patients who smoke to the national quitline and a couple of physicians mentioned referring their patients to websites such as stopsmoking.com. Still, one physician lamented, “a lot of patients seem like they don't usually pursue that on their own” (IM4). One physician expressed the desire to have “materials available out there for us other than just pamphlets” (FM3), and another wanted to provide “educational content that has been researched and validated” (FM4). Furthermore, one physician described creating educational materials because of dissatisfaction with available materials. Almost all physicians, except for the one that was already confident in their abilities to counsel patients, were open or “possibly” open to using new educational materials that included information about e-cigarettes, although some said they would have to review and deem them “appropriate” first.

3.3.2 | Physician recommendations

In order to implement new materials related to smoking cessation counselling, physicians emphasized the need for compatibility with existing practices and ease of use (low complexity). Time was perceived as a primary barrier in providing ideal counselling services; therefore, as one physician commented, materials should be “short and focused” (IM2). Since it was proposed that patients would review the materials before the clinical encounter in order to prompt conversations about smoking cessation, participants were divided as to whether patients should be prompted to review the materials when they first arrive at the waiting room or during the rooming process. One physician who suggested the waiting room explained, “I'd start it as soon as you can, because if you wait till the rooming time, what if the flow is going well and there's not enough time?” (OB/GYN2), while others suggested the rooming process would be better since patients were already “bombarded” with paperwork in the waiting room and “you've got [patients'] attention in time” (FM5). When participants were asked their preference on material format (paper handout vs electronic [app and website]), the majority thought it would be best to have different options, but eight explicitly stated they desired to have a hard copy to send home with patients, whether it was just a hard copy or a paper version of material that was also available electronically. The main rationale for having a hard copy included the perception that patients would never look at something they accessed electronically during their visit because they “don't have access to electronics” or the internet in everyday life (low trialability). The remaining physicians were open to only having electronic versions, and one OB/GYN physician justified this preference by saying, “I mean it maybe get the point across better if you had an electronic one, because all of our patients are young because they're all pregnant” (OB/GYN1).

Despite many physicians expressing the need for hard copies of materials, they also desired information that was tailored to patients, which would be easier to deliver electronically. Specifically, physicians suggested having content tailored to age such as “age-specific stuff telling them the bad parts of smoking that they might not realize Like, so for teenagers—hair smelling, bad breath, all that kind of stuff” (FM2), and more importantly to have information tailored based on quit motivation. For example, one physician (FM4) suggested having

the ability for patients to answer upfront “Are you ready to quit?” and then receiving different information based on the response. Physicians were generally open to including information about e-cigarettes; however, several, including those who actively advise against e-cigarettes, suggested using caution in how e-cigarettes are discussed in the material. These physicians were somewhat hesitant to include any information that could potentially portray e-cigarettes as a “viable alternative” for smoking cessation. For example, one physician (IM4) insisted it would be important to highlight that “ACP and the AMA don't recommend [e-cigarettes] and it's not FDA approved” (IM4), while others went further in stating the educational materials should specify e-cigarettes are “not a safe alternative” (FM6) or include a section entitled “This is why e-cigarettes are bad” (IM2). Two other physicians (FM2 and OB/GYN1) mentioned that if images are used, they should not create a “commercial” for e-cigarettes.

4 | DISCUSSION

Our study found that the physicians we interviewed reported that smoking was prevalent among their patients, which provided ample opportunities to engage patients in smoking cessation counselling. However, patient motivation to quit was a major factor in determining length and educational content of counselling, with those interested in quitting receiving lengthier sessions and recommendations for smoking cessation options. Since e-cigarette use was not routinely assessed, as has been found previously,^{26,32,37} physicians estimated a low prevalence of use among patients, indicating e-cigarettes were not regularly discussed, except among the minority of physicians who had integrated a discussion of e-cigarettes into their smoking cessation counselling. Instead, many physicians approached the topic of e-cigarette use with more hesitation, noting concerns about their safety and efficacy for smoking cessation, mainly because of the lack of scientific research. Therefore, the majority of physicians were ambivalent about recommending e-cigarettes to patients who smoke. This contradicts findings from several survey-based studies, which found that physician recommendations for e-cigarettes were prevalent.^{28,31} Regardless of their perceptions of e-cigarettes, almost all physicians felt that their smoking cessation counselling could be improved and were open to the idea of integrating patient educational materials that included information about e-cigarettes into their practice. In particular, physicians recommended developing materials that could be tailored based on motivation to quit and patient demographics, did not take too much time to review, and did not actively promote e-cigarettes.

Prior studies assessing provider adherence to the USPHS tobacco cessation clinical practice guidelines found that many health care providers do not adhere to all recommendations,¹⁹⁻²² especially for patients who indicate they are not ready to quit smoking.¹⁸ This is similar to what we found, as physicians generally did not provide cessation counselling for patients who indicated they were not ready to quit. For these patients, USPHS guidelines call for the use of motivational interviewing to explore patient ambivalence regarding continued smoking. This technique can include reviewing and personalizing risks from continued tobacco use, discussing the benefits and

barriers of smoking cessation, and discussing other strategies designed to enhance patient commitment to change. Physicians in our study cited patients' lack of quit motivation as a major barrier to providing counselling and often discontinued the discussion after providing advice to quit, which is also inconsistent with practice guideline recommendations.

Physicians indicated they spent more time on smoking cessation counselling with patients who are motivated to quit, with the most time dedicated to reviewing options for cessation. Although the topic of e-cigarettes did emerge in these discussions, it was patients who generally introduced it. Similar to findings from other qualitative studies, the majority of physicians in our sample did not bring up the topic of e-cigarettes because use was not routinely assessed, and they did not proactively recommend e-cigarettes.^{26,32,37} Despite evidence from earlier survey-based studies suggesting that physician recommendations for e-cigarettes were prevalent (ie, 35% in one study²⁸ and 30% in another study³¹), more recent studies have found slightly smaller portions of physicians recommending e-cigarettes (ie, 18%),^{27,29} which could relate to a difference in study methodologies or changing views about e-cigarettes over time. One study on trends in harm perceptions on e-cigarettes among adults demonstrated that harm perceptions have been increasing over time,⁴² giving credence to the latter. Qualitative studies, including ours, provide a more nuanced perspective and reveal that many physicians are only “recommending” e-cigarettes by not discouraging their use among their patients who already use them.^{32,37} Some see e-cigarettes as a potential opportunity to motivate previously unmotivated patients to quit. Yet only a small minority of physicians in this study saw the potential for e-cigarettes as a harm reduction strategy for those unmotivated to quit smoking, which contradicts findings from survey-based studies showing a larger proportion of physicians viewing e-cigarettes as a harm reduction tool.^{27,31} This is also contrary to the approach of the Royal College of Physicians and Public Health England, which advocate for physicians to promote e-cigarettes for harm reduction.¹⁶

Physicians did not have an overly positive view of e-cigarettes, and many perceived them to be another “bad habit.” Still, almost all physicians described e-cigarettes as less harmful than traditional cigarettes, which has been highlighted in prior research.^{28,30} Several of the physicians in this sample, however, were less confident in this belief and, because of the lack of concrete evidence, emphasized that they were “probably” safer. Concern about the lack of evidence on the long-term safety of e-cigarettes among physicians has been cited in prior research.^{27,29} Most physicians did feel, however, that patient educational materials that included information on e-cigarettes would be useful, especially if they communicated this uncertainty.

4.1 | Limitations

As has been pointed out in other research on e-cigarettes,³² the rapidly evolving marketing, perceptions, use trends, and research on e-cigarettes present challenges to communications within clinical practice. Indeed, data collection for this study occurred from August 2017 to November 2017 and should be interpreted in this context.

Although perceptions and practices regarding e-cigarettes may be constantly shifting, this research can provide insight into changes over time. Furthermore, the sample size for this study was small ($n = 14$) and was limited to one geographic area of South Carolina. Still, attempts were made to increase the diversity of perspectives by recruiting from diverse practice settings and across different clinical specialties. Additionally, this sample size is consistent with similar qualitative research,^{24,32} and our data analysis indicated that we had reached data saturation (ie, additional interviews were unlikely to provide new information). Despite attempts to include a diverse sample of physicians, our sample may not be representative because of response bias. This self-selected group may provide an overrepresentation of physicians who routinely engage in smoking cessation and discussions about e-cigarettes and have interest in improving their counselling techniques. Hence, our results may not adequately represent the perspectives of physicians who are less engaged with smoking cessation. Future research should include more representative samples to assess whether this is the case, as well as whether there are any differences between specialties and if physician socio-demographic characteristics affect views and practices regarding e-cigarettes.

5 | CONCLUSIONS

Despite these limitations, this study adds to the limited body of research on how health care providers approach the topic of e-cigarettes in clinical encounters and how this is interconnected with corresponding beliefs about them. This study revealed that the majority of physicians are not actively recommended e-cigarettes for smoking cessation; however, they are not necessarily discouraging their use either. This study also highlighted many opportunities to enhance smoking cessation counselling, which almost all physicians agreed could be improved. Physicians did not often initiate conversations about e-cigarettes, and prior studies have found that the majority of smokers do not discuss e-cigarettes with their physicians, even if they have tried using them.³³⁻³⁵ This suggests that there are missed opportunities to inform smokers about what is known vs unknown about e-cigarettes. Patient educational materials that provide tailored information about e-cigarettes could potentially be used to fill this knowledge gap. Furthermore, educational strategies that are flexible enough to integrate findings from the rapidly evolving science of e-cigarettes could better inform both patients and physicians, so that their discussions about e-cigarettes are most likely to benefit public health.

CONFLICT OF INTERESTS

The authors declare no conflict of interest.

FUNDING INFORMATION

This work was supported by a Greenville Health System Transformative Seed Grant.

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How to cite this article: Kollath-Cattano C, Dorman T, Albano AW Jr, Jindal M, Strayer SM, Thrasher JF. E-cigarettes and the clinical encounter: Physician perspectives on e-cigarette safety, effectiveness, and patient educational needs. *J Eval Clin Pract*. 2019. <https://doi.org/10.1111/jep.13111>