



“Knowledge, recommendation, and beliefs of e-cigarettes among physicians involved in tobacco cessation: A qualitative study”

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ABSTRACT

Physicians are rated the most trustworthy source of information for smokers and thus play an increasing role in disseminating information on e-cigarettes to patients. Therefore, it is important to understand what is currently being communicated about e-cigarettes between physicians and patients. This study explored the knowledge, beliefs, communication, and recommendation of e-cigarettes among physicians of various specialties. Semi-structured interviews were conducted in early 2016 with 35 physicians across five different specialties. Interviews were transcribed and coded for the following deductive themes: (1) tobacco cessation recommendation practices, (2) knowledge of e-cigarettes, (3) communication of e-cigarettes with patients, (4) recommendation of e-cigarettes, and (5) general beliefs about e-cigarettes. Physicians across all specialties reported having conversations with patients about e-cigarettes. Conversations were generally prompted by the patient inquiring about e-cigarettes as a cessation method. Overall, physicians felt there was a lack of information on the efficacy and long term health effects but despite lack of evidence, generally did not discourage patients from trying e-cigarettes as a cessation device. Although physicians did not currently recommend e-cigarettes over traditional cessation methods, they were open to recommending e-cigarettes in the future if adequate data became available suggesting effectiveness. Patients are inquiring about e-cigarettes with physicians across various specialties. Future research should continue to study physicians' perceptions/practices given their potential to impact patient behavior and the possibility that such perceptions may change over time in response to the evidence-base on e-cigarettes.

1. Background

Electronic cigarettes have garnered much attention among the public in recent years due to rising sales and contentious harm-reduction debates. Data suggests that the majority of e-cigarette users are current and former cigarette smokers and use among adult smokers is increasing (Giovenco et al., 2014; Wilson and Yang, 2016). Many smokers perceive these products to be less risky than cigarettes and some use them as an alternative to cigarettes (Tan et al., 2014; Goniewicz et al., 2013; Etter and Bullen, 2014; Wackowski and Delnevo, 2016). However, many smokers also believe that e-cigarettes are not harmless and are interested in safety information (Wackowski et al., 2015). While research on health effects of e-cigarettes is still in its infancy, one recent study found that long term e-cigarette only use was associated with lower levels of carcinogens and toxins when compared

to cigarette only use; however, nicotine intake was roughly similar between the two products (Shahab et al., 2017). Despite limited evidence on safety and efficacy, many smokers have turned to e-cigarettes for quitting smoking, to use in areas where cigarettes are prohibited, and as a healthier alternative to cigarette smoking (Soule et al., 2016; Saddleson et al., 2016; Wackowski et al., 2016) with some finding e-cigarettes more satisfying and helpful in quitting than FDA-approved cessation medications (Steinberg et al., 2014; Rahman et al., 2015; Harrell et al., 2015).

As e-cigarette use proliferates, smokers may increasingly turn to their physicians with questions regarding these products. Physicians have a unique role in smoking cessation as they treat smoking patients on a regular basis over years, amassing medical histories, and establishing provider-patient relationships. Furthermore, physician advice has been recognized as a major determinant in making an attempt to

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quit (Fiore et al., 2000). In the context of health information, research suggests that while individuals reported receiving significant amounts of information from television, internet, and elsewhere, the most widely accessed and trusted source was their physician (Smith, 2011). Similarly, physicians may be an increasingly important source to balance the widely available information regarding e-cigarettes from industry advertising, media reports, and celebrity endorsements, which may not be evidence-based or scientifically accurate. A previous study of smokers found that most would turn to physicians for e-cigarette safety information and rated physicians as the most trustworthy source of such information (Wackowski, 2014).

Although the literature on this topic is limited, initial findings suggest that patients are talking with their physicians about e-cigarettes. Previous studies have found that between 7 and 27% of adult smokers have talked to their physicians about e-cigarettes (Wackowski et al., 2015; Berg et al., 2015; Kollath-Cattano et al., 2016). In a national web-based survey of 158 physicians, nearly two-thirds (65%) of physicians reported being asked about e-cigarettes by their patients and almost a third (30%) reported that they recommended e-cigarettes as a smoking cessation tool (Steinberg et al., 2015). Moreover, patient inquiries about e-cigarettes significantly increased over the course of the study.

The aim of the current study was to explore physicians' knowledge, perceptions, and communications regarding e-cigarettes via semi-structured interviews with physicians from a variety of specialties. To our knowledge, this is the first qualitative study to include physicians of various specialties who may be directly involved in smoking cessation and treating smoking-related conditions.

2. Methods

2.1. Subject recruitment and interview process

Using the market research company GfK, 35 physicians were recruited to participate in semi-structured interviews through the Physicians Consulting Network (PCN). The PCN is a database which includes over 70,000 physicians who have opted in to be contacted with research opportunities. All physicians in the PCN are verified via medical education numbers through the American Medical Association. GfK contacted, screened, and scheduled interviews with all physicians participating in the study. More information on GfK can be found at their website (<http://www.gfk.com/about-gfk/about-gfk/>, n.d.). Certain specialties (i.e., Primary care, Obstetrics/Gynecology (OB/GYN), Pulmonology, Cardiology, and Oncology) were targeted for inclusion based on their regular interaction with smokers as well as their role in tobacco cessation and treating tobacco-related diseases. We included primary care physicians because they are the most common physician specialty and thus a likely group to encounter e-cigarette questions. We also included cardiologists, pulmonologists, oncologists and OB/GYNs because smoking is a particularly important risk factor in the patients seen by these specialists and as such they may have unique attitudes toward e-cigarettes and the issue of tobacco harms reduction. Other eligibility requirements included: (1) provided direct patient care, (2) saw smokers in their clinical practice, and (3) ever heard of e-cigarettes. We set a target sample size of 35 based on previous interview studies conducted by the research team (Wackowski et al., 2016) and published on this topic (El-Shahawy et al., 2016). By the 35th interview, no new major themes or unique responses were emerging (i.e., reaching saturation) and thus we did not expand the sample size. Participants received a \$250–350 gift card for participating in the 20–40 min telephone survey, depending on specialty.

Interviews were semi-structured in nature and followed a guide developed by the research team. Questions were based on review of relevant tobacco control literature, trade sources, and the investigators' knowledge of the e-cigarette industry. The interview guide included questions covering the target themes of (1) tobacco cessation

recommendation practices, (2) knowledge of e-cigarettes, (3) communication of e-cigarettes with patients, (4) recommendation of e-cigarettes, and (5) general beliefs about e-cigarettes. All interviews were audio recorded and transcribed. The interviews were conducted between January and February of 2016 by multiple members of the research team (BS, MBS, MH, and MJL).

2.2. Coding and analysis

Coding was informed using the “framework analysis” method in which themes are developed both from the research questions/interview guide as well as through the responses of research participants (Rabiee, 2004). Two members of the research team (B.S., M.S.) read through the interview transcripts and developed codes based on deductive themes linked to the study's aims, interview guide questions, and inductive themes arising from repeated transcript readings. Transcripts were coded by identifying mentions of major themes as well as highlighting representative quotes. Transcripts were primarily coded by one member of the research team (B.S.) using Atlas.ti qualitative software. A sample of transcripts was reviewed by another team member (M.H.) for agreement in assignment and discrepancies were identified, discussed, and resolved. Coding and analysis was conducted between May–October 2016.

3. Results

3.1. Physician demographics

A total of 35 physicians were interviewed including 10 primary care physicians, 10 OB/GYN, 5 cardiologists, 5 pulmonologists, and 5 oncologists. The mean age of participants was 55.5 years (range, 44–66) and mean years of practice was 25 years (range, 11–36). Additional demographic information is presented in Table 1.

3.2. e-Cigarette knowledge/awareness

Physicians across all specialties reported some basic knowledge of e-cigarettes. Aspects of e-cigarettes commonly reported were: e-cigarettes come in various flavors, contain known and unknown chemicals, contain nicotine, and are federally unregulated (which was still the case during these interviews). In regards to flavors, physicians reported that their likely purpose was to make vaping a “...pleasant experience” (Participant 2, Primary Care) and as a way to appeal to a younger population.

“What's troublesome about that [flavors] is my impression is it's got to be aimed at kids. Kids...they're into flavors.”

(Participant 13, Oncologist)

When asked about the demographics of e-cigarette users, the majority of physicians identified adolescents and young adults as the

Table 1
Demographics.

Variable	Participants
Gender	
Male	27 (77%)
Female	8 (23%)
Race	
White	33 (94%)
African-American	1 (3%)
Asian	1 (3%)
Geographic region	
West	8 (22.9%)
Midwest	10 (28.6%)
Northeast	8 (22.9%)
South	9 (25.6%)

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