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Smoke and Vapor: Exploring the Terminology Landscape among Electronic Cigarette Users

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Abstract

Objective—We explored the terminology of adult e-cigarette users in describing e-cigarette products and their use. We report how users discuss and differentiate these products and the language and culture surrounding them.

Methods—Focus groups (N = 12) were held in 5 locations in the United States between March and May, 2014. Participants (N = 99) included young adults or adults who were either exclusive or nonexclusive e-cigarette users. We gathered data on how users identify various types of e-cigarettes and how users understand and describe specific terms.

Results—Participants were familiar with the attributes of e-cigarettes in general but confused by the variety of products and unable to describe differences between product types. They were familiar with the term "vaping" even when they used "smoking" more frequently, and were clear that e-cigarettes do not produce traditional cigarette smoke. They had varied opinions about what to call regular users of e-cigarettes.

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Human Subjects Statement

This research was approved by Institutional Review Boards at RTI International and the US Food and Drug Administration, and by the Office of Management and Budget.

Conclusions—Findings highlight that conceptual clarity, including using specific and familiar terminology and product descriptions for users and nonusers alike, is challenging and crucial. It is important that surveillance efforts, policy development, messaging, and future research reflect the language understood and used by consumers to enable widespread comprehension.

Keywords

e-cigarettes; electronic cigarettes; terminology; qualitative research

Electronic cigarettes, also known as e-cigarettes, are electronic nicotine delivery systems that rely on battery power and use a heating element to atomize liquid containing nicotine to produce an aerosol. Consumers often view these products as a less harmful alternative to traditional combustible cigarettes¹ and an effective method to reduce or quit smoking.² Although these devices constitute only a small proportion of the overall tobacco market in the United States (US), sales doubled every year between 2008 and 2014. In 2014, sales reached \$2.5 billion.^{3,4}

The growth in the number and variety of e-cigarette products has had a parallel surge. Between August 2012 and January 2014 more than 460 different brands of e-cigarettes and almost 7800 different flavored e-cigarette liquids were available for sale online; an average of 10.5 brands and 242 flavors were introduced each month.⁵ As demand for these products increases, the varieties have expanded from the first generation of products that look like traditional cigarettes (ie, cigalikes) to later generation products that include vape pens, e-hookahs, hookah pens, vape pipes, personal vaporizers, mods, e-cigars, and e-gos.^{6–8}

This increase in new varieties coincides with a surge in awareness and ever-use of e-cigarette products. ⁹ From 2010 to 2013, awareness of e-cigarettes increased from 40.9% to 79.7%, and ever-use of e-cigarettes increased from 3.3% to 8.5% among US adults.⁹ In 2014, 12.6% of adults reported ever having used an e-cigarette.¹⁰

The increased use and proliferation of these novel products requires understanding how consumers discuss and differentiate these products and the language and culture surrounding them. Surveillance efforts, policy development, health communication messaging, and future research will need to keep pace with a changing landscape of terminology, and reflect the appropriate use of language as understood by consumers.

A number of studies have examined e-cigarettes using qualitative methods; however, the majority of these have examined consumers' attitudes and beliefs about the products.^{11–13} In contrast, limited qualitative research exists on the terminology used by consumers to discuss these products and their use.¹⁴ This study explores the terminology that adult e-cigarette users employ. The study was guided by 2 main research questions: (1) How do adult e-cigarette users identify various types of e-cigarette products? and (2) How do e-cigarette users understand and describe terminology and language specific to e-cigarettes?

METHODS

Participants

We conducted a series of focus group discussions (FGDs) with adult e-cigarette users between March and May of 2014. Participants were recruited as part of a broader qualitative study focusing on language, beliefs, and behaviors related to "other tobacco products," namely, e-cigarettes, hookahs, and cigars. The present study, which aimed to explore terminology of e-cigarette products and behavior among adult users of the product, analyzed data from the e-cigarette FGDs. Participants were segmented into 2 age groups: young adults aged 18 to 29 and adults aged 30 or older. We also segmented participants into groups by ecigarette use —exclusive e-cigarette use and nonexclusive e-cigarette use— asking them about use of "electronic or e-cigarettes" and use of other tobacco products (eg, cigarettes, smokeless tobacco, cigars, hookah) in the past 30 days. All participants in the e-cigarette FGDs were considered to be current e-cigarette users (ie, had used an e-cigarette product in the past 30 days). Participants were further classified as either exclusive e-cigarette users (ie, had used only e-cigarettes in the past 30 days) or nonexclusive users (ie, had used ecigarettes and at least one other tobacco product in the past 30 days). Across all FGDs, participants represented a mix of sex, race/ethnicity, and educational levels.

Local market research companies provided recruitment services and facilities for FGDs, which were conducted in 5 US cities: Los Angeles, California; Orlando, Florida; Providence, Rhode Island; Richmond, Virginia; and Washington, DC. Study site selection was based on a combination of available national prevalence data as well as market scanner data to determine locations where use was likely to be high across all 3 products of interest (e-cigarettes, hookahs, and cigars) in the broader study.

We conducted a total of 12 FGDs with 99 participants in March through May 2014. FGDs included between 7 and 10 participants. The groups were split evenly according to e-cigarette use status: exclusive use versus nonexclusive use. We conducted 4 FGDs (33%) with adults and 8 FGDs (67%) with young adults. Table 1 lists the number and segmentation of FGDs by city.

Using convenience sampling, the market research companies recruited study participants from their databases who met the inclusion requirements for the specific study segments based on a screener that we developed. Further, to be eligible to participate in FGDs, participants had to be able to read, understand, and speak English. Individuals were ineligible to participate if they had other characteristics that could potentially bias responses —such as participant or family employed by the tobacco industry, employed by the federal government, or employed in the public health, advertising, or marketing industries—or if they had participated in paid market research within the past 6 months.

Procedures

On arrival at the facility where the FGD was conducted, participants read and signed an informed consent and were rescreened to confirm eligibility. Experienced moderators conducted FGDs using a semi-structured moderator guide that covered a broad range of

topics such as attitudes about e-cigarettes, knowledge about the ingredients, and beliefs about the health risks associated with e-cigarettes.

Relevant to the present study, the moderator guide included specific items to assess terminology used by e-cigarette users, as well as the meaning that the participants attributed to that terminology. Specifically, we asked participants what words they use to identify the act of using an e-cigarette and the substance that is released by an e-cigarette. The guide also included items to assess the awareness of and perceived differences among several specific device types: vape pen, e-hookah, electronic nicotine delivery device, and e-pen. Finally, we asked participants what they call people who use e-cigarettes regularly, how they define "regular use," and whether they consider e-cigarette users to be smokers. Table 2 presents the relevant moderator guide questions mapped to the research questions.

Each FGD lasted approximately one hour and was audio-recorded and professionally transcribed. Trained study staff took notes during FGDs. At the end of each FGD, participants received payment of \$75 in cash, check, or gift card (the method of payment varied by market research facility) for their time and travel costs.

Analysis

The note-taker for each FGD entered notes directly into a standardized spreadsheet matrix. After the conclusion of all FGDs, the lead author and a note-taker used the notes to review the audio files and transcripts for accuracy. We reviewed FGD data for themes, frequency and correlations, and types of causal and logical statements expressed by the participants, with the goal of noting regularities, patterns, explanations, possible configurations, causal flows, and propositions contained in the data.¹⁵ We then coded the verbatim transcripts and organized them using QSR International's NVivo 10 qualitative data analysis software.¹⁶ We created a set of codes and subtopics using the data corresponding to each topic of interest for this study, including attributes and types of e-cigarette devices, terminology for e-cigarette use and users, and reasons for the use of those terms. We gave all codes in the dictionary operational definitions to enhance reliability and validity and to aid the coding process. The investigators discussed initial codes as well as changes, additions, and iterations to both the codes and coding dictionary to strengthen the reliability of the coding process. The primary investigator completed all coding of FGD transcripts and a second investigator then reviewed the coding in a random sample of the transcripts to verify that they were coded according to the agreed upon operational definitions. Any challenges or disagreements were discussed until reaching consensus. We examined the results across all FGDs and by age group (young adults vs adults) and by e-cigarette use status (exclusive use vs nonexclusive use).

RESULTS

We conducted 12 FGDs to examine terminology used by exclusive and nonexclusive adult users of e-cigarette products. Differences between the exclusive and nonexclusive segments of participants were minor; we observed more notable differences between the adult and young adult segments.

Participant Characteristics

Demographic and e-cigarette use status of FGD participants, overall and by city, are presented in Table 3. Overall, participants had an average age of 31.6 years (SD=10.9, range 18–64), and the proportion of female (49%) and male (51%) participants was almost evenly split. Most participants had some college experience or a 2-year degree (47%), a college degree (28%), or a postgraduate degree (10%). The majority of participants identified as white (65%), whereas 15% identified as black, 11% as Hispanic, 6% as Asian, 2% as other, and 1% as American Indian/Native Alaskan.

The findings for each research question are presented below and organized by theme. Differences are presented by segment (age; exclusive use vs nonexclusive use). Throughout the presentation of the findings, participants' comments are included to provide additional context. For each participant comment, the age segment and the e-cigarette use status is specified. These comments are provided to illustrate themes but are not representative of all participants' opinions or experiences.

Research Question 1: How Do Adult E-cigarette Users Identify Various E-cigarette Products?

Unfamiliarity and confusion with product names—Overall, FGD participants were confused by the variety of product names and terms and were typically unable to describe the differences among them. As one participant said:

"They all seem to be somewhat interchangeable and everything seems to be referred to as an e-cigarette."

Young adult, exclusive user

Some participants said that the term "e-cigarette" referred solely to the products designed to look like traditional cigarettes, but these participants also used the term "e-cigarettes" to refer to the universe of related products.

We asked participants about their familiarity with specific product names, such as vape pens, electronic nicotine delivery devices, e-hookahs, and e-pens. When asked to discuss and describe these different product terms, many participants, including exclusive users, expressed limited knowledge and confusion. Participants in the majority of FGDs had heard the term "vape pen," but only a small number of participants across FGDs could describe a vape pen, the differences between vape pens and e-cigarettes, or whether vape pens differed from e-cigarettes. When participants described vape pens, they said that the primary characteristics were that they looked less like traditional cigarettes (and e-cigarettes) and more like pens, and that they were customizable. These participants described vape pens as larger than e-cigarettes, refillable, rechargeable, and customizable. One participant noted that

"the e-cigarette looks like an actual cigarette and the pen is actually, the vape pen is like kind of thicker and you can just buy yourself the cartridges and, you know, whatever flavor you want. So, it's a little bit more customizable."

Adult, nonexclusive user

In some FGDs, participants with a self-reported high level of knowledge or enthusiasm about e-cigarette products (or both) spoke spontaneously about the modifications they made to their vape pens to increase the battery, voltage, or atomizer. "E-pen" was a less well-known term, and some participants guessed that it was another name for a vape pen. Participants in a few of the FGDs commented that e-pens are also known as "g-pens" and are used primarily with hash oil rather than liquid, with or without nicotine.

Participants were universally unfamiliar with the phrase "electronic nicotine delivery device." One participant said

"that's like an inertia-stopping harness,"

Adult, nonexclusive user

jokingly referring to an overly technical term for a seat belt; another adult nonexclusive user said that the phrase would likely only be used by lawyers. "E-hookah" was a more familiar term across FGDs. Young adults were more familiar with the term "e-hookah" than adults. Many young adults reported having used one. According to one participant:

"I love hookah, so I'm like, okay, it's kind of like a portable one, on the go."

Young adult, nonexclusive user

In describing the differences between an e-hookah and an e-cigarette, some participants said that, unlike an e-cigarette, an e-hookah did not contain nicotine, only flavorings.

Across FGDs, participants maintained that all of the disparate devices were basically similar, as they were somewhat unclear how each differed from an e-cigarette. One participant commented:

"I thought vapes, e-pens, e-cigs, e-hookah, I thought they were like all the same thing."

Young adult, exclusive user

Another participant said that

"there's just so many different styles that people call certain ones that they see that look and remind them of certain things, 'Oh, that looks more like a hookah,' you know, 'I'll call it a hookah pen.'"

Young adult, exclusive user

High familiarity with attributes and brand names—Overall, participants were more familiar with the attributes of e-cigarettes, such as the abilities to refill and recharge. Participants were clear that products, regardless of the type, are either disposable, with a finite number of "puffs," or refillable. Participants used both the terms "juice" and "liquid" to refer to the refillable part of the e-cigarette; a few participants noted that the filter could be replaced as well. Most, although not all participants were aware that this liquid could contain nicotine. Across FGDs, participants mentioned various e-cigarette brand names; the 2 mentioned most often were blu and NJOY. Other brand names mentioned less often

Research Question 2: How Do Adult E-cigarette Users Understand and Describe Terminology and Language Specific to E-cigarettes?

Vaping versus smoking—Participants were asked what they called the act of using an e-cigarette. In most FGDs, participants mentioned both "vaping" and "smoking." Two young adult FGDs mentioned only vaping. Overall, participants were familiar with the term "vaping" even when they more frequently use "smoking" to refer to their use of e-cigarettes. Some participants, however, added caveats to differentiate use of e-cigarettes from traditional cigarettes. For instance:

"[It's] like smoking but like healthy smoking, healthier smoking."

Young adult, exclusive user

and

"Smoking, but you identify it as an e-cigarette instead of smoking a cigarette."

Young adult, exclusive user

Some of the exclusive users gave specific reasons for using one term over the other:

"I say vaping because it technically is vaporizing. You're not actually smoking anything. There's no combustion going on, so there's no smoking."

Young adult, exclusive user

Vapor versus smoke—Overall, participants clearly understood that e-cigarettes do not produce traditional cigarette smoke. As one participant said,

"When you compare the smell of like cigar smoke, cigarette smoke, to the vapor or whatever it is, I mean, it's night and day."

Young adult, nonexclusive user

Despite this, "smoke" remained a term used by participants across the FGDs to describe ecigarette emissions. Participants often used both "smoke" and "vapor," in some cases interchangeably. In 2 of the FGDs, both with young adult participants, participants used only the term "vapor." A few participants expressed strong feelings that the emission from an ecigarette is decidedly not smoke; several said that they did not consider it smoke. Less common participant responses included "mist," "steam" and "water."

Regular use of e-cigarettes—When asked participants to define "regular" use of ecigarettes, participants considered a number of factors, presented here in order of frequency of mention: quantification of how many days per week that e-cigarettes are used; frequency of use throughout the day; whether the user purchased the e-cigarette; the relationship between the use of e-cigarettes and the use of traditional cigarettes; and the setting of ecigarette use. Across most of the FGDs, participants agreed that regular use could be defined as use every day or as use throughout the day (or both).

In some cases, mostly among young adult participants, regular e-cigarette users were described as people who purchased or owned their own e-cigarette, rather than using one that belonged to a friend. Among the comments were the following:

"It'd be like if I go out and purchase them as opposed to sharing friends' or using friends'" *and* "I feel like if you're a regular user then you would actually have one, but other than that you just kind of use it recreationally."

Both young adult, exclusive users

This definition corresponded to answers from some young adults who, when asked if they considered themselves to be regular users, related that they do not because they use (or "bum") a friend's e-cigarette in social situations and have not purchased one themselves.

Several participants drew a parallel between e-cigarette use and traditional cigarette use. In their opinion, a regular e-cigarette user would be a former traditional cigarette smoker who uses the e-cigarette in place of and as often as a traditional cigarette. Participants expressed this in a variety of ways:

"I would think anyone who replaces their cigarette with it would, you know, that for them that would be regular."

Adult, nonexclusive user

"The same rituals I had with my regular cigarettes, the car, when I have coffee."

Adult, nonexclusive user

"I feel like cigarette smokers smoke like every day pretty much, so if you're doing the same thing with the e-cigarette then I feel like that's when you're a smoker."

Young adult, exclusive user

A small number of participants said that a regular e-cigarette user was someone who used the product when they were by themselves, instead of only in social settings.

Views on what it means to be an e-cigarette user or smoker—There was little agreement among participants about what words describe a regular user of e-cigarettes. Participants in less than half of FGDs mentioned the term "vapers." Even within FGDs, the term was not universally well known. Although participants may see the act of using an e-cigarette as "smoking," they were divided on whether to call those who use e-cigarettes "smokers." Most often, that term was tied to traditional cigarette use, with e-cigarettes being used in addition to or to take the place of traditional cigarettes.

In a number of instances, participants said that a smoker is someone who currently uses or has used traditional cigarettes, whether they supplement that use with e-cigarettes or not. Others said that someone who completely or mostly replaced cigarette use with e-cigarette use was still a smoker. Those who have used e-cigarettes exclusively (and have never smoked traditional cigarettes) would *not* be smokers. As one participant said:

"If somebody had never smoked a cigarette in their life and then I saw them smoking an e-cigarette, I wouldn't call them a smoker."

Adult, nonexclusive user

Participants did not agree on what term applied to someone who was an e-cigarette user but had never used traditional cigarettes. Still other participants referred to e-cigarette users as "ex-smokers" or "quitters" because they were assumed to have quit using traditional cigarettes and were only using e-cigarettes. Calling an e-cigarette user a smoker was seen as having a negative connotation and participants across FGDs discussed the stigma associated with traditional cigarette use:

"Someone might take offense to that, if they don't really smoke cigarettes."

Young adult, exclusive user

"Yeah, it looks like smoke but you got to correct them if it's in like a public environment, just so that it's clarified that it's vapor."

Young adult, exclusive user

DISCUSSION

Our research highlighted few differences between the terminology used by exclusive and nonexclusive users. Some terms are well known, whereas others have not yet been universally adopted. We observed confusion among users, even exclusive users, about the types of e-cigarette products and devices and the differences among them. Our findings support other studies that indicate confusion and a general and pervasive lack of knowledge around e-cigarettes, including among exclusive users.^{17–19}

Focus group participants understood the umbrella term "e-cigarettes" to refer to a variety of device types discussed during FGDs. Vape pens, refillable, rechargeable products that are the size of a large pen, are a product that many have heard of, seen, or used; however, describing them was difficult. E-hookah is a familiar term to young adults in particular, perhaps because of the popularity of hookah use among this age group.^{20,21} Despite this familiarity, users in this study again had difficulty describing the differences between an e-hookah (generally disposable and flavored) and an e-cigarette. We also found no unanimity when describing the refillable part of an e-cigarette; participants used both "liquid" and "juice."

Being called a "smoker" is fraught with the stigma associated with society's negative views on traditional cigarette use; indeed, even cigarette users stigmatize cigarette smoking.²² E-cigarette users in this study have complicated relationships with the term "smoker"; they suggested the term applies more to use of traditional cigarettes than to e-cigarette use.

Although some participants knew the term "vaper," at the time of our research, it was not widely used across FGDs and participant segments. Participants were unsure what term applied to someone who was an e-cigarette user but had never used traditional cigarettes. Increasing acceptance of the term "vaper" among e-cigarette users, however, may reflect the issues of confusion and stigma inherent in the use of the term "smoker" to describe a regular e-cigarette user. To date, evidence suggests the prevalence of current e-cigarette use is highest among recent former smokers or current cigarette smokers.^{23,24} Moreover, e-cigarette advertising often targets smokers by highlighting the advantages of e-cigarette use

over smoking (eg, use in places where smoking is not allowed).^{25,26} Still, there is a subset of adult e-cigarette users without prior smoking history. It is unclear how these population patterns of use—along with marketing efforts—will shape the evolving product terminology and whether, for instance, different segments of the user population will adopt different nomenclature.

With respect to the emissions from an e-cigarette, the term "vapor" was generally wellknown overall, though young adults in this study were more likely to use it rather than "smoke" in comparison to older adults. This acceptance and familiarity with the term may be related to targeted advertising emphasizing that e-cigarettes release "vapor" rather than smoke.^{27,28}

Limitations

Study findings should be interpreted in light of several limitations. First, due to its qualitative nature, these study findings are not generalizable to all e-cigarette users. For instance, whereas all participants reported using an e-cigarette at least once in the last 30 days, there was likely a range in e-cigarette use in the groups (eg, those who have recently experimented vs those who use the product regularly). Despite this, the study was designed to reach a geographically diverse cross-section of adult users in 5 US cities. Next, study participants constituted a nonrandom convenience sample of adult e-cigarette users in the cities selected for data collection, and primarily represented college-educated adults.

Terminology, the focus of this study, also presented challenges. Given the variety of names and device types, it was sometimes impossible to ascertain whether a participant's reference to an e-cigarette, for example, referred to the specific e-cigarette device type or to the class of products more generally. Additionally, this study was intended to capture a particular moment in time and as more device types and products are introduced, language and terminology will continue to evolve. Future research could add additional insight to this ongoing evolution.

Conclusions

The availability of e-cigarette products, regulations affecting e-cigarette use, marketing claims, and expected research findings on health effects reflect a rapidly changing landscape for these products. Findings from this research show that conceptual clarity, including using specific and familiar terminology and descriptions of products for users and nonusers alike, is crucial. For example, researchers should consider using clear terminology and include definitions, where appropriate, to avoid confusion. For instance, this study indicates that "Electronic nicotine delivery device," although an appropriate term for use in the scientific and research communities, may not be familiar to e-cigarette users. To ensure comprehension among research subjects (and for audiences for that research), investigators should define the terms they use, to ensure, for example, that use of the term "e-cigarette" to describe an entire class of products is understood to apply to all products, not just those designed to look like cigarettes. As this product marketplace continues to evolve, surveillance efforts must balance the need for consistency in measurement—required to assess trends in prevalence of use over time—with the need to stay current with the evolving

language of consumers. Future research will address further changes in user understanding and use of terminology as the landscape continues to expand and evolve.

IMPLICATIONS FOR TOBACCO REGULATION

Information about consumers' use and understanding of product terminology enables the design of research instruments that can ascertain more detailed information about perceptions, knowledge, and behaviors related to the range of distinct e-cigarette device types. The proliferation of e-cigarette device types, as well as increase in their use, points to the need for ongoing research to ensure that surveillance systems and health communications keep pace with the changing product landscape, and that these systems use specific and familiar terminology and product descriptions. Until this study, however, relatively limited research had been completed that examined how users talk about and differentiate among e-cigarette products. Findings from this study as well as future research aimed at exploring terminology will facilitate refinement of existing surveillance systems and inform the development of effective policies, regulations, and communications with respect to e-cigarettes.

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Table 1

Focus Group Discussions (FGDs) (N = 12) Segmentation, by City

City	Segmentation
Orlando, FL (N = 2)	1 adult FGD: nonexclusive use 1 young adult FGD: nonexclusive use
Los Angeles, CA (N = 4)	4 young adult FGDs: 3 exclusive use, 1 nonexclusive use
Providence, RI (N = 2)	1 adult FGD: nonexclusive use 1 young adult FGD: exclusive use
Richmond, VA (N = 3)	1 adult FGD: nonexclusive use 2 young adult FGDs: exclusive use
Washington, DC (N = 1)	1 adult FGD: nonexclusive use

Table 2

Moderator Guide Questions Mapped to Research Questions

Moderator Guide Qu	lestion
•	Have you ever heard of a [type]? What are they? How are they different?:
•	Vape pen
•	E-hookah
•	Electronic nicotine delivery device
•	E-pen
	 What do you call the act of using an e-cigarette? What do you call the "smoke" that comes out when you use an e-cig? What do you call people who use e-cigarettes regularly? Is there a name for them? Do you consider yourself a [person who uses e-cigarettes regularly]? What would you consider "regular use" of e-cigarettes? How much? How often? Do you consider people who use e-cigarettes "smokers"? Why or why not?
	Moderator Guide Qu

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Table 3

Participant Characteristics, Overall and by City

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Richmond, VA

Providence, RI

Orlando, FL

%

Z

%

 \mathbf{Z}

%

 \mathbf{Z}

67% (13.0)

31.3

(11.9)

32.7

(7.3)

29.7

52% 48%

14 13

57% 43%

 ∞

35% 65%

11 6

9

85% 15%

23

100%

4

82% 18%

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4

33%

9 18

71% 29%

10

47% 53%

8 6

4

27%

27

14%

4

17%

17

	Ove	rall	Washing	gton, DC	Los Ang	eles, CA
	z	%	Z	%	Z	%
City						
Total	66		6	%6	32	32%
Age Group						
Adult (30+)	36	36%	6	100%	0	%0
Young Adult (18–29)	63	64%	0	%0	32	100%
Average Age (SD)	31.6	(10.9)	26.8	(11.4)	24.8	(3.1)
Sex						
Women	49	49%	S	56%	16	50%
Men	50	51%	4	44%	16	50%
Hispanic						
No	84	85%	7	78%	26	81%
Yes	15	15%	2	22%	9	19%
Race/ethnicity						
American Indian/Native Alaskan	-	1%	0	0%	0	%0
Asian	9	6%	0	%0	3	6%
Black or African American	15	15%	3	33%	2	6%
Hispanic	11	11%	0	%0	4	13%
Other	7	2%	0	%0	7	6%
White	64	65%	9	67%	21	%99
Education						
Less than high school	5	2%	0	%0	1	3%

Tob Regul Sci. Author manuscript; available in PMC 2016 July 14.

4%

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0

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High school or GED	12	12%	0	%0	-	3%	2	12%	S	36%	4	15%
Some college or 2-year degree	47	47%	2	22%	6	28%	13	76%	9	43%	17	63%
College degree	28	28%	4	44%	16	50%	2	12%	2	14%	4	15%
Postgraduate degree	10	10%	б	33%	5	16%	0	%0	1	7%	1	4%
Exclusive/Nonexclusive e-cigarette use												
Exclusive (only e-cigarette use in past 30 days)	47	47%	0	%0	25	78%	0	%0	4	29%	18	67%
Nonexclusive (use of e-cigarettes and at least one of the following in the past 30 days: cigarettes, smokeless tobacco, cigars, hookah)	52	53%	6	100%	7	22%	17	100%	10	71%	6	33%