E-cigarette Regulatory Attitudes in Groups with Low Policy Support

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Objective: The objective of this study was to assess which types of e-cigarette regulations are supported by California residents who are generally not supportive of government regulations. **Methods:** We conducted 4 focus groups (6 – 11 per group) in three geographic areas in 2016 to examine opinions about e-cigarette regulations among demographic groups with lower support for these regulations. **Results:** Most participants agreed that youth should not use e-cigarettes. Opinions varied about how to prevent youth access without infringing on vapers' rights. Most participants favored restrictions on vaping indoors but also believed that businesses should make their own rules about vaping. They supported taxes on e-cigarettes if the revenue would fund health education, research, and health services. Participants wanted accurate warning labels and supported retailer licensing to prevent sales to minors and counterfeiting. They opposed the marketing of flavors to youth but wanted a variety of flavors available to adults. They expressed low trust in the regulatory actions of the FDA and public health agencies. **Conclusions:** Participants supported some degree of e-cigarette regulation to protect youth, standardize products, and inform the public. Policymakers could garner support for e-cigarette regulations by proposing policies that achieve those goals.

Key words: e-cigarettes; health policy; tobacco policy; e-cigarette regulation
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Electronic cigarettes (e-cigarettes) have gained worldwide popularity in less than a decade,[1] but regulation of these products has lagged behind the dramatic increases in their use. Currently, there is substantial variation across and within countries regarding e-cigarette regulations,[2,3] ranging from no direct regulation to complete bans on sales and advertising. In the United States (US), the Food and Drug Administration (FDA) did not put e-cigarettes under its tobacco control authorities until August 2016.[2] Prior to that time, however, some individual states and local municipalities began to prohibit e-cigarette sales to minors, extend smoke-free air laws to include e-cigarettes, require childproof packaging, and tax e-cigarette sales.[4,5] For example, in May 2016, California passed state laws prohibiting e-cigarette and other tobacco product sales to people under 21 years of age and prohibiting e-cigarette use in all indoor and outdoor areas where cigarette smoking is not allowed.

Regulating e-cigarettes effectively to protect (and possibly promote) the public health is complex. The long-term health effects of e-cigarette use are not fully understood. It is possible that switching smokers to e-cigarette use could improve public health. It is also possible that smokers might switch to e-cigarettes instead of quitting all tobacco/nicotine use, that dual use will prevent or delay smoking ces-

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sation, and that e-cigarettes could lure youth and others who otherwise would never use any tobacco or nicotine product into using e-cigarettes and progressing to combustible tobacco use.[6] Thus, in contrast to combustible cigarettes, where eliminating all smoking is clearly the appropriate regulatory goal, it is unclear whether policies should aim to minimize all e-cigarette use, or, alternatively, to encourage their use only by those smokers of cigarettes or other combustible tobacco products who would otherwise be unable or unwilling to quit smoking.[7]

To optimize health at the population level, one potential approach is to develop policies that will make e-cigarettes more attractive and accessible than cigarettes to current smokers, while simultaneously making them less attractive and less accessible to people who do not currently use nicotine.[8] Various political, philosophical, and ethical considerations are relevant, including protecting children and nonsmokers from harm, protecting adults' autonomy and self-determination, the desirable level of government regulation of business, and the extent to which governments should protect their citizens from harm.[9,10] Moreover, to gain support within the current US government –with its anti-regulation, anti-big-government, and pro-business approach to federal policymaking – FDA regulation of e-cigarettes and other tobacco products might need to show that it not only protects public health but also respects individual autonomy and self-determination, and relies largely on market mechanisms rather than government restrictions on business.

There are compelling arguments for and against most proposed e-cigarette regulations.[11] Banning e-cigarette sales to minors could prevent youth from experimenting with e-cigarettes and becoming nicotine-dependent. FDA regulation now prohibits e-cigarette sales to people under the age of 18 nationwide, and some states have increased the minimum age to 21. Opponents of youth access policies have asserted that the e-cigarette industry is effectively policing itself by refusing to sell e-cigarettes to minors, but some studies[12] have found that the vast majority of online retailers are allowing minors to buy e-liquids. Taxing e-cigarettes could have the beneficial effect of deterring youth and nonsmokers from trying e-cigarettes, but if taxes make e-cigarettes more expensive than combustible cigarettes, the high price of e-cigarettes might drive users to choose combustibles instead.[13,14] Increasing taxes on combustible cigarettes could mitigate this effect. Other potential policy approaches include banning youth-oriented advertisements and flavorings or prohibiting the marketing and/or sale of e-cigarettes to anyone who does not self-identify as a current smoker or former smoker who has switched to e-cigarettes.

Population-based surveys of adults in various US cities and states have shown general support for regulating e-cigarettes. Support has been highest for policies to protect youth, such as banning e-cigarette sales to minors.[15,16] Support is also generally high for accurate warning labels and ingredient lists.[15] Support for smoke-free air policies restricting e-cigarette use in public places has been increasing as the public has become aware that e-cigarette aerosol contains nicotine and potentially toxic chemicals.[15-17] Although some studies have identified toxic chemicals in e-liquid flavorings[18] and documented that flavorings attract youth,[19] public support for bans on flavorings remains lower than support for other policies, perhaps because many flavors are also attractive to adult e-cigarette users.[15,16]

We previously reported that most California voters support policies to regulate e-cigarette use and sales, including banning e-cigarette use where cigarette smoking is banned (70%), taxing e-cigarette sales (74%), and requiring stores to be licensed to sell e-cigarettes (74%).[16] Although still a clear majority, support for restrictions on e-liquid flavorings was lower (57%). Although the majority of California voters supported these policies, certain demographic groups opposed these policies or were undecided. These groups included political conservatives, low-income individuals, individuals with some college education but not a college degree, and smokers. It is important to understand the opinions of those who oppose or are undecided about certain regulatory proposals, as well as the majority who support regulation. A more comprehensive understanding of which types of e-cigarette regulations are supported by those with anti-regulatory, anti-big-government, and pro-business views can provide guidance about which regulations are most likely to be supported by the anti-regulatory, anti-big-government, and pro-business leadership in the current US government. We con-

ducted focus groups with California residents in the demographic categories that had lower levels of policy support in our quantitative study. The topics explored were tobacco sales to minors, indoor and outdoor vaping bans, e-cigarette taxes, retailer licensing, and warning labels.

METHODS

We conducted 4 focus groups between March 8 and May 19, 2016 in Los Angeles, Orange County, and Bakersfield, California – communities where support for tobacco regulation has been low compared with northern and coastal areas of California.[16] The number of participants per group ranged from 6 to 11. The qualitative focus group approach was selected because this research was hypothesis-generating; we wanted to identify new insights about the nuances of e-cigarette regulation that had not been documented previously.

Recruitment

Our previous quantitative survey[16] revealed that the groups with low support for e-cigarette regulation included political conservatives, low-income individuals, those with some college education but not a college degree, and smokers. Based on this finding, we recruited participants through venues where these groups were likely to congregate (Republican and Libertarian clubs at community colleges to recruit politically conservative young adults with less than a college education, a meeting to support a conservative political candidate to recruit conservative young adults, the community center of a low-income housing complex to recruit low-SES smokers). We did not focus on adults with higher education because our previous study[16] found relatively low levels of policy support in the "some college" group, compared with those with higher levels of education. Participants were recruited through flyers posted in central locations, direct contact with stakeholders, and social media outreach to conservative political groups. People who were interested in participating in focus groups contacted the project manager, who explained the study and scheduled the groups according to participants' availability. Individuals were eligible to participate if they were at least 18 years of age and provided written informed consent.

Procedures

A trained and human subjects-certified focus group facilitator explained the study and obtained written informed consent. Participants were informed that their participation was voluntary and that their responses would be audio-recorded but their names would not appear on the written transcripts. Participants completed a brief survey assessing demographics and tobacco use. After the facilitator and participants introduced themselves and discussed the focus group procedures, the facilitator posed questions to the group from an open-ended interview guide.

Measures

The focus group guide was developed based on discussions with statewide tobacco stakeholders about which policies might be proposed in various municipalities in the near future. Open-ended questions asked about knowledge and beliefs about vaping and e-cigarettes (eg, how do you think vaping affects a person's health?), personal beliefs about the use of e-cigarettes in the community (eg, are there any places where you think vaping should not be allowed?), taxation (eg, should e-cigarettes be taxed by the state of California?), licensing (eg, should stores that sell e-cigarettes be required to have a license?), flavors (eg, are there any particular flavors that should not be allowed?), and labeling (eg, do you think there should be warning labels on e-cigs and/or e-liquids?).

Analysis

Audio recordings were transcribed and checked for accuracy. Data were analyzed thematically, using open and axial coding.[20] The stages of analysis involved immersion in transcripts, identification and refinement of themes through open coding, developing a coding scheme, coding the data, and amalgamating the extracts from individual transcripts with other examples on the same theme.[20] NVIVO software was used for coding and data management.

RESULTS

There were 35 participants across the 4 focus groups. Their mean age was 35.8 years (SD = 11.1 years, range = 18 to 57 years); 54% were female,

Table 1
Themes Expressed in Focus Groups

Youth should not vape.
Vaping should be banned in certain locations (eg, indoors, around children, around food).
Vaping could be allowed in locations where children do not go.
Businesses can make responsible decisions about whether to allow vaping.
Vapers can police themselves by being respectful of others.
E-cigarettes should be taxed because cigarettes and other products are taxed.
Using taxes to legislate morality is not an ideal strategy.
E-cigarette taxes should pay for health education, health research, and health programs, but not for general government operations.
E-liquids could be taxed based on their nicotine content, or all liquids could be taxed equally.
Stores that sell e-cigarettes should be required to have a license, to prevent youth access and counterfeiting.
Flavorings should not be attractive to youth, but a variety of flavors should be available to adults.
E-liquids and vaping devices should have warning labels.
The government is regulating e-cigarettes before they have evidence of the health effects.
The FDA and other public health agencies have low credibility.

71% were white, 9% were Asian, 6% were Hispanic, and 14% were other/multiethnic. Nearly all (97%) had earned a high school diploma or GED; 39% had completed some college but had not earned a college degree, and 30% had earned an associate's, bachelors, or master's degree. Their political party affiliations included Libertarian (24%), Democratic (18%), American Independent Party (15%), Republican (12%), Peace and Freedom Party (9%), and none of the above (24%); 43% planned to vote in the next election. Half (50%) had smoked at least 100 cigarettes in their lifetimes, and 27% currently smoked cigarettes every day or on some days. Over half (56%) had tried e-cigarettes, and 15% currently used e-cigarettes every day or on some days. Findings below are organized by theme (Table 1).

Youth Should Not Vape

Participants overwhelmingly agreed that youth should not use e-cigarettes (because youth should refrain from putting any unnecessary chemicals into their bodies, not because of specific health concerns unique to e-cigarettes). They believed that some combination of regulation and personal responsibility was necessary to prevent youth from vaping. They acknowledged that e-cigarettes are attractive to youth, and some were personally unwilling to give e-cigarettes to youth:

"It's not preferable for some kid to pick up a vape. I prefer he does not, you know. If this product is gonna be around, there's going to be underage people wanting it. Just like 14 years olds that want a driver's license and 19 year-olds who wanna drink. Um, until those things are gone, they're still gonna want them."

"If you give a kid a choice between a cigarette and a vape, I'm pretty sure they'll probably pick the vape but I'd rather they have neither. You know, we don't want our kids to be addicted to anything."

"There was one time when I was at a park, working in a snack shop…..I was working with high school students. And I went out for my break and they saw me pull my vape out and they asked 'Oh hey, can I try that?' and I was like 'Well, I don't know how I feel about that. Are you 18?' That was like the first question I asked and she told me that she was but I didn't quite believe her so I didn't feel comfortable with it and…I ended up walking away from them. I didn't want to be that influence. …. if they're going do it, they can do it on their own."

Although most participants agreed that children should not use e-cigarettes, some reacted negatively to California's recent law raising the smoking age to 21:

"If the government views a behavior as unhealthy, their way of stopping adults from consuming a product is by turning adults back into children and…. it's funny how you turn 18, you can't drink, you can't smoke, apparently, maybe, maybe not use an e-cigarette. But you can vote, go off to war, you can even legally act in a porn movie but you couldn't go buy a pack of cigarettes or a bottle of beer. It's weird, it's like from 18 up to your 21st birthday it's like you're a second class citizen. I mean, what's the point? Let's just make everything 21 and say you're not an adult until you're 21 now. If we're gonna continue on this path, what's the point?"

"I can put my life on the line for my country, I can partake in my constitutional right to vote, I can partake in these other actions that could be detrimental to my health or beneficial but I can't do something as simple as buy alcohol or tobacco."

Vaping Should be Banned in Certain Locations

Participants generally agreed that vaping should not be allowed in places where children or sick people are likely to inhale the aerosol, including schools, daycares, hospitals, doctors' offices, and playgrounds. Although they did not list specific health concerns, there was general agreement that these vulnerable populations should breathe clean air whenever possible. Some participants also raised concerns about vaping in places where the aerosol could settle on food, such as grocery stores:

"It's kind of how I feel about having animals in a grocery store, there's a dog shedding all over my food, and that makes me mad. If you're in a grocery store and you're vaping and I walk by and I'm reaching and grabbing my produce and you blow a big old thing of smoke, I'm going to be irritated."

"Open food, open containers, you don't know what you're blowing onto things. You don't want to buy an apple and find that the outer layer tastes like bubble gum."

Some participants believed that vaping should be banned in all places where cigarette smoking is banned:

"I think they should be regulated just as much as you would regulate smoking."

"I would say it's just like tobacco. If you can't smoke a cigarette there, you shouldn't be allowed to vape."

"As a smoker, I think it's only fair. Like in a bar, you can't smoke a cigarette in a bar, then you shouldn't vape."

Others believed that vaping should be banned indoors but allowed outdoors, based on a general perception that indoor air should be clean but outdoor air quality is uncontrollable or already polluted:

"If it's indoors, I think it's kinda rude because whatever flavor your vape is, some people might not like it so I just think it's a little rude. But if you're like at a park or like, in like the open outdoor area of a restaurant, like that doesn't really matter cause you know the air just kinda blows it away. But like indoors it's just super rude. Just don't do it indoors."

"Indoors and public buildings. Like you wouldn't wanna….vape in a library or vape in a museum, like can you imagine vaping in a museum?"

"The idea that they wanted to ban smoking outside on the streets, like as you stand next to traffic in LA you're gonna start telling me how concerned you are about [vaping]?"

Vaping Could be Allowed in Locations Where Children Do Not Go

Although participants supported vaping bans in places where e-cigarette aerosol could affect vulnerable populations such as children, they also listed specific locations where vaping could be permitted because the people in those locations would be adults who had voluntarily entered those spaces. Participants felt that adults should be able to make

their own decisions about whether to subject themselves to secondhand or thirdhand e-cigarette aerosol, even if doing so would be dangerous to their health. These locations included bars, smoke shops, and vape shops:

"If you're in a bar then why not?"

"If you're at a bar you know there's not gonna be any kids in there unless they got fake IDs."

In addition, participants believed that vaping should be allowed in tobacco-related businesses, such as vape shops, cigarette shops, and hookah bars:

"If I worked in a vape shop, one of the big things is, like, demonstrating this product, describing it to people, letting them taste it before they invest 20 bucks."

"You don't smoke indoors in a public access area unless they state otherwise. Like let's say it's a cigarette shop or something like that or like a hookah bar- why would you not smoke? That doesn't make sense."

There also was support for having designated smoking and vaping areas on college campuses:

"I think it's kind of terrible that they completely ban products from the campuses. I think they should have smoking – like a smoker's quad or something where all the smoking students can go in the middle of their classes, afterwards or before. But the idea of like somebody vaping in my classroom while I'm sitting next to 'em…. without asking me if I want to be exposed …"

Businesses Can Make Responsible Decisions About Whether to Allow Vaping

Instead of imposing bans at the local or statewide level, some participants thought that businesses should set their own policies about vaping. However, their comments focused on the business owners' autonomy, and they did not consider the potential effects of involuntary e-cigarette aerosol exposure on employees working in those locations:

"I think restaurants can make that decision. I think any private business can make that decision."

"If private places wanna ban it, they can…..I don't think there should be like an overarching law that prohibits it."

"I do kinda lean more towards individual places taking it upon themselves to, you know, ban what they see fit. Like I've been to numerous places that didn't have to have the government tell them, you know, 'No smoking by the front door'. They put the sign up there themselves. I really like the fact that in America you can decide – like if your bar is vape friendly or not."

Vapers Can Police Themselves by Being Respectful of Others

Many participants believed that vaping bans were unnecessary because vapers are respectful enough to avoid exposing others to their aerosol. Some had adopted personal strategies to reduce other people's exposure to their aerosol, such as exhaling away from other people or voluntarily refraining from vaping near children or in cars, and they believed that these voluntary actions were sufficient to protect others. They did not discuss how non-users could protect themselves from less considerate vapers who did not follow these voluntary rules. They were reluctant to admit that exposing others to secondhand or thirdhand e-cigarette aerosol could be harmful and seemed to be unaware of research showing that e-cigarette aerosol includes harmful ingredients and that nearby nonusers can be exposed to those harmful ingredients.[18] Instead, they preferred to frame the issue as a matter of respect and politeness to people who might not enjoy the smell:

"I don't blow into people's faces. I blow it down at the ground."

"I don't smoke in front of kids, like as a personal choice, I hide it whenever I see kids."

"I drive for Uber 2 days a week, and when I'm in my car I don't vape. And it's not because I think it's gonna harm them….it's just common decency."

"Honestly, when I just vaped, I went outside….. because I felt like I was still smoking. Even if it is water, chemicals, whatever, I went outside."

E-Cigarettes Should be Taxed because Cigarettes and Other Products are Taxed

Some participants noted that most products, except for food, are already taxed. Therefore, taxing e-cigarettes was acceptable to them as well. Respondents discussed taxation in general and did not make distinctions about sales taxes versus excise taxes. They also did not make distinctions about whether less harmful products should be taxed less than more harmful products.

"Well, they tax everything else, might as well tax them too. I mean, that was bad, but I pay when I buy a pack of cigarettes. I smoke Marlboro Reds, I'm paying $1.50 in taxes, at least. So, if I'm going to go buy a 20 mL thing of that e-juice, I'm going to expect to pay that $1.50 tax, just like tobacco."

"They say the reason they have such a high tax on cigarettes is to deter people from doing it. So, if you're going to tax people to deter them from doing that, why wouldn't you want to deter [people] from smoking e-cigarettes?"

"They're not food. The only thing that's not taxed is food."

"I just think they should be taxed 'cause everything else is."

"I think the e-cigs and everything are the same as cigarettes, so I believe they should be taxed exactly the same."

Using Taxes to Legislate Morality is Not an Ideal Strategy

There were also strong opinions against taxing e-cigarettes. Some respondents were opposed to the idea of using a "sin tax" to legislate morality, punish people for their lifestyle choices, or pay for the costs of the product to society:

"That kind of tax is often sold as trying to change behavior. And I kinda lump that under a general category that the large segment of the population that wants to legislate morality, and um, you know, personally, I don't think that's the government's proper role and so, you know, I'm generally against those kind of taxes that target specific things like that."

"It's almost a tax to dissuade the action, it's really what it is...so if we want people to not do something, we just tax it more. The same could be carried over to additional taxes on alcohol, or additional taxes on one that affects us all every day – gasoline. Want people to drive less? Tax the gas more. Want people to smoke less? Tax cigarettes more. I don't think that's the proper way to guide good behavior, good decisions by taxing people punitively for it."

E-Cigarette Taxes Should Pay for Health Education, Health Research, and Health Programs, but not for General Government Operations

If e-cigarettes were taxed, participants believed that the money should be used for health education, research on the consequences of e-cigarette use, and health services such as smoking cessation programs. Comments about education included the following:

"Education….against vaping and smoking. They should make that money go towards a spot [public service announcement] where they'll use it to warn people."

"It should go into the education of it. Learn why you shouldn't be doing it. If you don't want people to smoke, you should be in an 8th grade class, and then in a freshman class, and keep it going through high school. That way they're seeing what cigarettes do to your lungs."

Research on the health effects of e-cigarettes also was a high priority:

"If they taxed it, we could put more money into figuring out how safe these are, if they're safe for use, or if you know, they're like regular cigarettes

or even worse than regular cigarettes. I wouldn't be like 'Oh just throw it into the general fund'. Never see it again. But if it's being used for research into what we're taxing, I'm okay with that."

"They say the tax is supposed to go to research to help the people that get cancer, or whatever, from the product. I think it should apply across the board."

"Cancer research….it would be nice to know what it actually does to your lungs."

"I think they should be [taxed] so that you know what you're doing, you know what you're getting. Cause the cigarettes they've researched that they know what they're gonna do to you. The e-cigarettes you have no idea."

Several participants also suggested that the tax money should pay for smoking cessation or rehabilitation programs for drug and alcohol users:

"It should go towards funding the medical side of it. Like if somebody is having trouble with quitting smoking."

"It could even go into like some sort of addiction rehabilitation project. Not even for cigarettes or nicotine. But to fund alcoholism, or drug use."

However, the use of money from an e-cigarette tax to repair damage caused by cigarette smoking seemed unfair to some, because their tax money would be used to address pre-existing problems:

"It kinda stinks that a product like ours is gonna have to pay into decades of damage that tobacco caused and that's what these taxes are about. They're about lawsuits that the states are still filing, things like that. That's where a lot of this tax money goes. … the reason why cigarettes are taxed the way they are, is because we need to fund these tobacco prevention acts. We need to do all this stuff. But they're forcing people like me to pay into things that they've done. So it's a little unfair, we'd rather start off new than just lump us in the same."

Some participants were skeptical that the money would actually be used for education, research, and health programs. They worried that the tax money would be diverted into general government operations:

"The government is not about doing all the research for us. That's not what they're gonna do. So if they did tax it, it's gonna go to things like the office of management and budgets, things like that."

"It's the same thing with most regulation – it costs more and the cost is passed on to the consumer, unfortunately."

"It's the same thing with the schools- they keep increasing the taxes and yet every year they need more money. We don't see it anymore."

E-liquids Could be Taxed Based on Their Nicotine Content, or All Liquids Could be Taxed Equally

Participants considered whether all e-liquids should be taxed equally, or whether the tax should be dependent on the amount of nicotine. Opinions varied:

"Same as a pack of cigarettes."

"Just a flat tax on all of it, the same, should be fine. I mean, if you go buy some Camel Lights it's the same price as Camel Filters."

"Just try to figure out what is in a pack of cigarettes compared to what would be in….a bottle of juice."

"Tax it based on the level of nicotine…by the milligram."

"If it has more nicotine they should tax it more."

"A pack of 20 [cigarettes] is 87 cents so a 15-ounce jar is gonna be 60 cents or whatever and a 5-ounce jar is gonna be 20 cents. It would be pretty easy to figure that out mathematically, I would think."

There was some disagreement about whether e-liquids without nicotine should be taxed:

"If it has the nicotine, otherwise I don't think it should be taxed any more than sales tax."

"I personally think that the juices that don't have the nicotine in them are exactly the same as the ones that do have nicotine in them, in my opinion."

"They're the same bottle, same label, same design, same flavor."

"And if they're [e-liquids with and without nicotine] all made in the same place and in the same factories, how do we know they don't have nicotine in them?"

Stores that Sell E-cigarettes Should be Required to Have a License to Prevent Youth Access and Counterfeiting

Most participants agreed that licensing e-cigarette retailers would prevent sales to minors:

"The license is just insurance that if you sell to minors, we revoke your license; you're out of business."

"Anytime you're selling something where there's an age restriction, there's an apparent concern. So I think that you should verify that business."

"So that they don't sell them to underage people."

"Cause if the store doesn't have a license and they sell it to youth and stuff then how are we helping them at all? We're just ruining our kids and making them have the habits that we've had."

"If you license them like cigarettes, then to purchase them you're going to have to show ID. So, if you don't license these, my 14-year-old can go into the store and buy it."

"You wouldn't sell a pack of cigarettes to a minor, I would hope not. I've been busted in one of those stings. I had to pay a $1500 fine, I almost lost my job and this lady was 4 days from being 18 when she came in. I could have done time over it. I just feel it should be exactly the same…exactly the same."

"Because otherwise they would be selling to everybody and little kids and everybody and that's ridiculous."

Participants also noted that retailer licensing would prevent retailers from selling fraudulent or adulterated products:

"You should be able to guarantee the product. Anytime you're buying something, you know, if I buy a bottle of water I need to know that it wasn't filled up in the LA River."

"To make sure you're not buying tobacco from a cartel or something like that."

"Counterfeiting. What's to stop them from taking 5 of those bottles and diluting them or adding more chemical to them? It's just like street drugs, the difference between really good cocaine and crack is what's been done to it. If they end up doing that, they can sell it for cheaper, more quantity and cheaper. But if they're licensed and….regulated, whether the State comes in and checks on them and things like that, then it's more apt not to happen."

"Help control all the counterfeit products, 'cause you can go down to Mexico and pick up a carton of Marlboro Reds for 20 bucks, bring them back here, sell them for 5 bucks a piece. Who is to say that they're not importing them from China and you're just going and picking them up off the harbor. Picking them up cases at a time for 100 bucks."

"You want to make sure that you're getting actual product and not something fake that you're paying full price for."

Some participants also noted that retailers must be licensed to sell other products, including food,

alcohol, or cigarettes, so it seems reasonable to require e-cigarette retailers to be licensed. These participants drew a parallel between tobacco retailer licenses and other types of specific business licenses:

"Anybody who sells food has to have a license to do so."

"It's just like alcohol sales; you have to have an alcohol license in order to sell alcohol."

"When a new store opens and they want to sell tobacco or alcohol, they have to apply for a license. It should be the same with [e-cigarettes] because it should be regulated the same."

"It's like all the breweries. Budweiser, they're licensed. Marlboro Red, they're licensed. You can't really run a legit business without being licensed and bonded."

"If you're required to be licensed to sell a pack of cigarettes, then you definitely should be forced to be licensed to sell a vial of liquid or refillable cartridge."

However, expensive licensing requirements also could be a barrier to small businesses:

"I'm just worried that it becomes so restrictive, like alcohol license. I don't know if anyone's worked at a bar tried to acquire one of those. It's just – it's for people who have a lot of money, and a lot of pull, and it just puts everybody else out of business."

"If a license costs $10,000 to process, that a barrier to entry for a business."

Flavorings Should not be Attractive to Youth, but a Variety of Flavors Should be Available to Adults

Participants generally agreed that flavors that are obviously designed to appeal to youth should be banned. The idea that flavors attracted youth was troubling to them. However, as described below, they were most bothered by the attractiveness to youth, not by the existence of flavors in general.

"The candy flavors, the ones that I feel that are designed to draw in kids."

"Anything with the name of candy, like Sour Patch Kids, anything like that should not be allowed period."

"They have a flavor called cereal milk. Like it tastes like it would taste after you eat your cereal and drink the milk."

"Some type of candy flavor like a pop tart, something that a lot of teenagers have…..fruit loops or pop tarts or something that's very fruity or tastes kind of like candy. Something that they eat a lot, that they like."

E-liquid packaging also could attract youth:

"I've noticed that there are certain bottling methods that are very appealing to children. Like I remember a flavor that was sort of like milk or a crème flavor and…the bottle came in a little carton of milk."

"There was like another brand that had these little….it was like an Alice in Wonderland themed juice and it had these little charms around the neck of the bottle."

In addition, flavors that mimic or contain marijuana, other drugs, herbs, or energy drinks should be banned:

"The ones that taste like marijuana products, like the Kush, or the hemp."

"You wouldn't allow your kid to smoke weed, why would you let your kids smoke something that tastes like weed?"

"They even have some that are similar to energy drinks. A friend of mine actually wanted me to try one that was basically Monster. I didn't like it. It didn't taste like Monster. But they fully believed that it tastes like a Monster and I think that since kids or more teenagers in high school are more

toward the energy drinks too that they would be more willing to try those ones too. Like anything related to energy drinks."

"Well, there's this container that I had. It was called Kush Relax. I read the back of it. Has melatonin in it. I would smoke that one and this was before I had one with nicotine and it was a fruit punch, I had that melatonin one. I'd smoke that one when I was going to sleep and it would put me to sleep like in a couple minutes I was asleep, but I honestly think that one should be taken off the market completely because it just didn't make me feel too good."

Some respondents had heard about links between e-liquid ingredients and disease:

"I don't know much about this but I heard that there is like the buttery flavors. They cause a disease after extended use called popcorn lung."

"There's a compound called diacetyl. It's a diketone. And acetyl propionyl is also a diketone. So most flavor companies switched from using the diacetyl flavor molecules and things like that to create butter tones, more natural fruit flavors. They switched to acetyl propionyl.…They're really similar. And you're not supposed to get a whole lot of them if you're a worker….you do want to avoid liquids with diacetyl, acetyl propionyl, but just about all of 'em have it in there. So like e-liquid isn't 100% safe."

"More flavors is more chemicals."

Some participants expressed opposition to banning flavors. One believed that flavors were important for the process of switching from cigarette smoking to vaping:

"For me, it was the flavor that kept me on e-cigs and prevented me from going back to regular cigarettes. I actually grew to dislike the smell and the taste."

Others opposed flavor bans because the decision about which flavors to ban would be arbitrary, because people could still create their own flavor recipes, and because flavor bans would not deter e-cigarette use completely:

"I mean, which ones are you really gonna ban? Do you ban ones that are most popular? Do you ban the ones that are the weirdest? I mean where do you go with it?"

"If someone was craving nicotine they would smoke, even, no matter how bad nicotine tastes, they would have the juice without any flavoring, if they wanted the nicotine bad enough."

"And if they do a ban on all flavors, there's always gonna be those few people that are gonna make those flavors again and sell them to minors."

"You can go online. My friend [name] went online and it gives you the breakdown of how to make the juice at home."

During the discussion, the groups wrestled with the dilemma about keeping flavors away from youth but still allowing adults access to flavors:

"I kind of feel torn, because if they're going all out, throw some regulations on it, but there's 3000 different flavors…then, if you're an adult, you should be able to choose what flavor you have. But then, I'm torn between if it's enticing to people to pick up this habit because of that, younger children picking up this habit because of that, then I don't necessarily, fully agree with that."

"If you take away the flavors, it would guarantee that kids aren't going to want to pick it up... But, just like I don't want somebody to tell me I can't smoke my favorite brand of cigarettes, I don't want them to ban that."

"It's a completely different story when you throw kids into it. If it was just adults, then to each his own."

"When you're an adult you want to have that

choice. But when you're thinking of a child, you don't want that child to pick it up because it tastes like cotton candy. You want a child to look at it and 'no, that's just an e-cigarette.' And it's hard to differentiate between that because we want to make our own decisions, if we want to put that in our body that's fine, but you don't want kids to put that in their body."

E-liquids and Vaping Devices Should Have Warning Labels

These focus groups were conducted before the FDA's Deeming Rule mandated that nicotine-containing products must have warning labels stating that nicotine is addictive, starting in 2018. However, most participants agreed that e-liquids and/or vaping devices should be labeled with warnings about the potential harms of nicotine and other ingredients.

"We still don't know what the long term effects are. It should have a Surgeon General's warning on it. Not like cigarettes because we know what cigarettes do, maybe 'Warning, this product may have chemicals harmful to your health. Causes unknown.' Something like that, but not quite like cigarettes, but along those lines."

"They could still cause cancer so it should still have a disclaimer on the side. I wouldn't want somebody pregnant smoking or vaping at all."

"Just explaining the hazards of it….if there are any hazards in there, they should have to put a warning label on there."

"I think there should be a label on there because there is one on cigarettes."

"I think it should at least have a cautionary label to where this product can give you such and such and also an ingredient label to actually show you what's in there. And what you're putting in your body."

Because some companies already label their products voluntarily, some participants perceived that further regulation of labeling was unnecessary:

"I think it should be completely voluntary."

"I think it could be actually a great marketing tool. It shows that you are concerned, you know, on how your product's used. So I think that's a positive for use of that product."

"The biggest guys in the game….they're being transparent as to saying that the e-liquids may contain trace amounts of what we talked about the diacetyl and acetyl propionyl. So they're being transparent which is kinda cool…..they'll have warnings which say 'May contain nicotine' even if it's not indicated so once again, letting you know that it's possible; there's some in there. Tree nut warnings, um, poison control instructions- that is washing skin thoroughly. Poison control phone number, is another big one. Um, prop 65- which you'll find now in all alcohol vendors, all coffee vendors. ….You'll find ingredients listed by volume. Um, and then also warnings about um, preexisting respiratory issues 'May be aggravated by use of product'. Um, pregnant, breast feeding, may become pregnant. Um, asthma, blood pressure, heart related diseases, depression and anxiety are all not recommended to use this product."

The Government is Regulating E-cigarettes before They Have Evidence for the Health Effects

Although most participants agreed that regulations would protect consumers, they were concerned that the government was passing arbitrary regulations before the health effects of e-cigarettes were completely understood. This gave the impression that the government was acting prematurely, based on incomplete evidence. They did not offer specific suggestions about whether or how the government should regulate e-cigarettes in the meantime, while the scientific knowledge continues to evolve:

"They're putting regulations on vaping without even having scientific evidence that it's bad for you. So they're jumping the gun in a preconceived attempt to ban it before we even know if it's bad

or not. Like the science isn't even out on that."

"I think people are trying to attribute all of these negative behaviors of huffing or cigarette smoking to vaping without even knowing it and it over… they're making these rules before we even know if it's bad."

"People who vape....would agree that if they come out with science that says this is really harmful to other people and to yourself, the whole conversation is gonna change. We don't have that yet."

"Whatever rule you try to make about something, it's probably gonna be obsolete, you know, very quickly. And this product, I think really shouts that….and I love it from that standpoint. It's kinda interesting to see the government regulators scurry around this thing, you know, come up with something they have no idea what they're doing. Cause they know as much as we do."

The FDA and Other Public Health Agencies Have Low Credibility

In general, participants had low levels of trust in government regulators, including the FDA and state governments. They recalled instances when FDA-approved products were later found to be unsafe and were taken off the market. They doubted the FDA's interest in protecting the public from dangerous products. In contrast, some participants believed that the appropriate role of the government was to warn and inform the public, not to outlaw products. Participants also noted that some anti-tobacco media messages were unconvincing, and they generally viewed government attempts to regulate tobacco products as fear-driven:

"The FDA...how many times have you seen recall class actions on the TV? You know the government's gonna say what's good for you and what's not good for you but if you have the money to get it on the table, you got a product on the market in 90 days. And in a year, people have crazy side effects."

"The FDA they put their regulations on everything. My pack of Camels has been regulated by the FDA but they're still bad for you. They don't care, you know."

"[The warnings] are always changing. I mean aspartame, a few years ago aspartame was dangerous to little kids and now they're [saying] you can let a kid drink diet Pepsi, it's alright."

"I see these new commercials about cigarettes and they're like 'Nicotine is addictive as heroin' and I'm sitting next to someone who's a recovering heroin addict, and his only response was like 'Oh, that's bullshit'. .. It was like, that's the most ridiculous thing I've ever heard – you're linking cigarettes to heroin use? Like let's go down to skid row right now and ask these people, 'Was it cigarettes man? Is that what did this?"

"The majority of people that I've run into that are for regulation, don't have experience with it, aren't smokers and it seems to be very fear driven."

"I'd hate to see something like this just be smashed into oblivion by overzealous regulations and overzealous moralizing. Um, I mean, people have a right to have fun, people should have a right to have fun. People should have a right to put what they chose in their bodies. I think the point of government was just to protect people's rights and to, like I said, my case, I use the common rhyme, 'warn and inform'. That's what the government role in this should be."

DISCUSSION

This study elucidated the attitudes and perceptions of e-cigarette regulation among people in demographic groups with low support for regulation. In this focus group sample of southern Californians, considerations of harm reduction and precautionary principle approaches were evident. There was considerable support for regulation (albeit limited regulation) of e-cigarettes. Participants overwhelmingly recognized the importance of preventing children from using e-cigarettes, preventing involuntary exposure to e-cigarette aerosol, and ensuring product safety, in general and as government regulatory goals. They agreed that a government's role includes implementing and enforcing

regulations to protect vulnerable populations from harm caused by others. Although they preferred that individuals and businesses take the responsibility for achieving these goals, they recognized that some level of government intervention can be necessary to protect the public.

There was overwhelming support for government regulations to prevent youth access to e-cigarettes, including banning sales to minors and requiring retailers to be licensed to sell e-cigarettes. Even though some of the participants used e-cigarettes or cigarettes themselves, they did not want future generations of youth to become addicted to nicotine. They seemed receptive to the argument that some limits on the freedom of individuals and businesses are necessary to ensure protection of youth and non-vapers, as long as those limits were not overly restrictive (eg, prohibitively high retailer licensing fees).

The participants agreed that the government should inform the public about health risks, so individuals can make informed decisions. They supported regulations requiring accurate labeling of ingredients and comprehensive health warnings on e-liquids and vaping devices. They did not mention the potential role of government to constrain profit-maximizing (and misleading) marketing by tobacco companies. Although some companies already include health warnings on their packaging voluntarily, there is no enforcement of the accuracy of these warnings, and previous studies have shown that the ingredients of e-liquids often differ from those listed on the packaging.[21,22] For example, liquids labeled as 0% nicotine have been found to contain nicotine,[23] and some liquids labeled as containing caffeine or other "energy" ingredients actually did not contain those ingredients.[24] This this study was purely observational and did not educate the participants about the possibility of incorrect or misleading warning labels. However, future studies could investigate the effect of providing such information on participants' attitudes toward regulation.

It is encouraging that the majority of these participants supported taxes on e-cigarettes, because tax and price increases offer one of the most effective ways to prevent and reduce youth use and the tobacco industry typically campaigns and lobbies aggressively to convince tobacco users and conservative voters and elected officials to oppose tobacco taxes.[25] E-cigarette advocacy groups have recently used similar tactics to try to convince e-cigarette users and others that the California Department of Health Services' motive for supporting a new tax on e-cigarettes was driven by a desire to collect more tax money, not to protect public health.[26] An important finding in this study was that most participants favored taxes if the tax money would fund health education, research, and cessation programs. Participants were somewhat supportive of using e-cigarette tax money to fund treatment for other substance use problems, but some who were e-cigarette users would resent having to pay e-cigarette taxes that would be used for health problems caused by combustible cigarettes. Importantly, several participants did not want any e-cigarette tax revenues to fund general government operations. These findings indicate that governments might be able to garner more support for e-cigarette taxes if they clearly specify that the tax money will be used for health education, research, and health programs, especially if those programs focus on e-cigarettes and protecting youth from tobacco-related disease.

Effectively regulating e-cigarette flavorings is a complex issue involving judgements about potential risks and benefits to individuals and to society (eg, harm reduction vs precautionary principle arguments). The participants in this study recognized that some flavorings are designed to appeal to youth, and they agreed that using such flavors in marketing to youth should not be allowed. However, they were reluctant to recommend policies that restrict adults' access to flavored e-liquids. The question of how to prevent e-liquids from appealing to youth while still allowing adults access to a wide variety of e-liquids was not addressed by the participants. One possible solution (not discussed by these participants) would be to allow e-cigarette marketing only in direct communications to adult current nicotine users and to prohibit advertisements that are attractive to youth, including references to candy and cartoon characters. Participants were also generally unaware of the accumulating research on the hazards from specific ingredients in certain e-liquid flavorings,[27] suggesting that new efforts are necessary to inform and warn the public of these risks (a type of regulatory action the participants generally favored).

Our findings are remarkably consistent with those of a similar study of vapers in the United Kingdom.[28] In both studies, participants strongly agreed that youth should be protected from experimenting with e-cigarettes, but that adult vapers should have access to at least some flavors and places to use e-cigarettes. Participants in both studies also agreed that there are certain places where vaping should be restricted, including schools, hospitals, or around food. Participants in both studies also raised concerns about governments regulating a product and behavior (beyond preventing youth use) before obtaining a complete knowledge of the risks and benefits of vaping. The similarity of anti-regulatory opinions in across these 2 countries is noteworthy given that the governments of the 2 countries have taken different approaches to e-cigarettes.[8,29]

Limitations

This study was specifically designed as a follow-up to our previous statewide survey,[16] with the goal of understanding the opinions of people who oppose e-cigarette policies. We purposely recruited participants in the demographic groups with low policy support. However, we did not confirm that each participant had low policy support before the focus groups. Our findings might not generalize to other populations in different geographic areas or with different demographic characteristics or political ideologies. Participants might have reported attitudes that they thought the interviewer wanted to hear, rather than their actual attitudes. Participants reported their initial impressions, and it is unclear whether their opinions would change if they viewed anti-tobacco or pro-tobacco messages.

IMPLICATIONS FOR TOBACCO REGULATION

Previous studies have shown strong and increasing support for regulating e-cigarettes. Although certain groups such as political conservatives, smokers, low SES populations, and people without college degrees show lower support for tobacco product regulations, the results of this qualitative study indicate that certain regulations would be acceptable to these groups. These regulations also might be acceptable to the current US federal administration, and by executives, legislators and regulators in many US state governments, which generally support anti-regulatory, pro-business, anti-big-government policies. Regardless of political orientation, this study and previous studies suggest that there is support for policies to prevent youth access to e-cigarettes, protect nonusers from exposure to e-cigarette aerosol, inform consumers about the chemical contents of e-liquids, and warn the public about the potential dangers of e-cigarettes. Communications about these policies might be more effective in garnering support from similar sub-populations if they appealed to the values expressed by the participants (eg, explaining that policies are designed to protect youth, explaining that tax revenue will be used for health education and research). This study also suggests that new efforts are needed to establish more trust among these specific sub-populations (and possibly others) in the FDA and state- and local-level governmental agencies with regulatory jurisdiction over tobacco products. Developing policies that are effective in reducing tobacco-related harm and acceptable to anti-regulation stakeholders (including the government) is a considerable challenge. This findings from this study suggest some potential ways to frame these policies.

Human Subjects Statement

This research was approved by the University of Southern California Institutional Review Board. All participants provided written consent.

Conflict of Interest Statement

The authors report no conflicts of interest.

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References

1. Filippidis FT, Laverty AA, Gerovasili V, Vardavas CI. Two-year trends and predictors of e-cigarette use in 27 European Union member states. *Tob Control*. 2017;26(1):98-104.
2. US Food and Drug Administration (FDA). Deeming Tobacco Products To Be Subject to the Federal Food, Drug, and Cosmetic Act, as Amended by the Family Smoking Prevention and Tobacco Control Act; Restrictions on the Sale and Distribution of Tobacco Products and Required

Warning Statements for Tobacco Products. Final Rule. *Fed Regist*. 2016;81(90):28973-29106.
3. Rose A, Filion KB, Eisenberg MJ, Franck C. Electronic cigarettes: a comparison of national regulatory approaches. *Can J Public Health*. 2015;106(6):e450-e453.
4. American Nonsmokers' Rights Foundation. States and Municipalities with Laws Regulating Use of Electronic Cigarettes. Available at: http://www.no-smoke.org/pdf/ecigslaws.pdf. Accessed July 5, 2016.
5. Dobbs PD, Hammig B, Sudduth A. 2015 legislative update of e-cigarette youth access and exposure laws. *Prev Med*. 2016;88:90-94.
6. Bush AM, Holsinger JW Jr, Prybil LD. Employing the precautionary principle to evaluate the use of e-cigarettes. *Front Public Health*. 2016;4:5.
7. Kozlowski LT, Abrams DB. Obsolete tobacco control themes can be hazardous to public health: the need for updating views on absolute product risks and harm reduction. *BMC Public Health*. 2016;16(1):432.
8. Farsalinos KE, Le Houezec J. Regulation in the face of uncertainty: the evidence on electronic nicotine delivery systems (e-cigarettes). *Risk Manag Health Policy*. 2015;8:157-167.
9. Hoek J. Informed choice and the nanny state: learning from the tobacco industry. *Public Health*. 2015;129(8):1038-1045.
10. van der Eijk Y, Porter G. Human rights and ethical considerations for a tobacco-free generation. *Tob Control*. 2015;24(3):238-242.
11. Barraza LF, Weidenaar KE, Cook LT, et al. Regulations and policies regarding e-cigarettes. *Cancer*. 2017 Apr 25. doi: 10.1002/cncr.30725. [Epub ahead of print]
12. Nikitin D, Timberlake DS, Williams RS. Is the e-liquid industry regulating itself? A look at e-liquid internet vendors in the United States. *Nicotine Tob Res*. 2016;18(10):1967-1972.
13. Liber AC, Drope JM, Stoklosa M. Combustible cigarettes cost less to use than e-cigarettes: global evidence and tax policy implications. *Tob Control*. 2017;26(2):158-163.
14. Stoklosa M, Drope J, Chaloupka FJ. Prices and e-cigarette demand: evidence from the European Union. *Nicotine Tob Res*. 2016;18(10):1973-1980.
15. Tan AS, Lee CJ, Bigman CA. Public support for selected e-cigarette regulations and associations with overall information exposure and contradictory information exposure about e-cigarettes: findings from a national survey of U.S. adults. *Prev Med*. 2015;81:268-274.
16. Unger JB, Barker D, Baezconde-Garbanati L, et al. Support for electronic cigarette regulations among California voters. *Tob Control*. 2017;26(3):334-337.
17. Brose LS, Partos TR, Hitchman SC, McNeill A. Support for e-cigarette policies: a survey of smokers and ex-smokers in Great Britain. *Tob Control*. 2017;26**:**e7-e15.
18. Farsalinos KE, Kistler KA, Gillman G, Voudris V. Evaluation of electronic cigarette liquids and aerosol for the presence of selected inhalation toxins. *Nicotine Tob Res*. 2015;17(2):168-174.
19. Corey CG, Ambrose BK, Apelberg BJ, King BA. Flavored tobacco product use among middle and high school students – United States, 2014. *MMWR Morb Mortal Wkly Rep*. 2015;64(38):1066-1070.
20. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol.* 2006;3(2):77–101.
21. Buettner-Schmidt K, Miller DR, Balasubramanian N. Electronic cigarette refill liquids: child-resistant packaging, nicotine content, and sales to minors. *J Pediatr Nurs.* 2016;31(4):373-379.
22. Peace MR, Baird TR, Smith N, et al. Concentration of nicotine and glycols in 27 electronic cigarette formulations. *J Anal Toxicol.* 2016;40(6):403-407.
23. Hutzler C, Paschke M, Kruschinski S, et al. Chemical hazards present in liquids and vapors of electronic cigarettes. *Arch Toxicol*. 2014;88(7):1295-1308.
24. Lisko JG, Lee GE, Kimbrell JB, et al. Caffeine concentrations in coffee, tea, chocolate, and energy drink flavored e-liquids. *Nicotine Tob Res*. 2017;19(4):484-492.
25. Lum KL, Barnes RL, Glantz SA. Enacting tobacco taxes by direct popular vote in the United States: lessons from 20 years of experience. *Tob Control*. 2009;18(5):377-386.
26. Allem JP, Escobedo P, Chu KH, et al. Campaigns and counter campaigns: reactions on Twitter to e-cigarette education. *Tob Control*. 2017;26**:**226-229.
27. Barrington-Trimis JL, Samet JM, McConnell R. Flavorings in electronic cigarettes: an unrecognized respiratory health hazard? *JAMA*. 2014;312(23):2493-2494.
28. Farrimond H. E-cigarette regulation and policy: UK vapers' perspectives. *Addiction*. 2016;111(6):1077-1083.
29. Green SH, Bayer R, Fairchild AL. Evidence, policy, and e-cigarettes – will England reframe the debate? *N Engl J Med*. 2016;374(14):1301-1303.