

Vapor Store Owner Beliefs about Electronic Cigarette Regulation

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Objective: To describe local vapor store owners' understanding of proposed FDA regulations and factors that could impact compliance with implementation. **Methods:** Vapor store owners (N = 33) in a large metropolitan area in Oklahoma were interviewed in 2014 about their beliefs and understanding of proposed FDA regulations and factors that could impact compliance with regulations. Interviews took place in vapor stores. Interviews were recorded then transcribed, coded, and analyzed for themes. **Results:** Most store owners support some regulation of this emerging industry but are fearful of the influence of the tobacco industry on this process. Owners feel the tobacco industry with its substantial resources and influence will manipulate the implementation of regulations to control products and the distribution of nicotine. This will force local vapor store owners out of business. Owners feel that regulations will protect both owners and customers but will stifle innovation. Whereas owners were opposed to selling vaping products to teens, most were conflicted about selling to parents of a teen who currently smoked. **Conclusions:** Understanding how local vapor store owners perceive pending regulation can assist regulators during implementation to increase support and compliance among local sellers.

Key words: electronic cigarette; vaping; FDA regulation; policy; vapor store

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Electronic cigarettes represent an emerging and rapidly growing industry. Policymakers and researchers are challenged to generate effective product regulations in reaction to frequent product innovations in components, structure and appearance, and delivery of e-liquid.¹⁻⁵

Electronic cigarette use or "vaping" is increasingly popular among current and former smokers, young adults, adolescents, other tobacco users, and non-smokers.⁶⁻¹⁰ Some evidence suggests that exposure to electronic cigarettes may promote cigarette use in adolescents and young adults and growing concerns about health effects from secondhand vaping, components of the e-liquid, and from the vapor unit itself call into question whether vaping is a harm-reduction strategy.^{1,4,5,7,11-18}

The Food and Drug Administration (FDA) has deemed electronic cigarettes a tobacco product

under the Family Smoking Prevention and Tobacco Control Act of 2009.⁵ If the FDA rule is finalized, this would increase standardization and quality control of electronic cigarettes by giving the FDA regulatory authority to register e-cigarette products, require electronic cigarette sellers to report ingredients, market new products only after FDA approval, prohibit sellers from giving out free samples or selling to minors, and require health warnings on products.^{4,5} This ruling would greatly extend local and state policy efforts which to date have primarily focused on laws restricting sales of electronic cigarettes to minors.¹⁹

The policymaking process involves understanding the context of electronic cigarette sales, the range of people who will be impacted by the policy change, the barriers they perceive to policy implementation, and how to develop an inclusive pro-

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Table 1
Characteristics of Vapor Store Owners
(N = 33)

Person interviewed	
Owner	22 (67%)
Manager	11 (33%)
Sex	
Men	23 (70%)
Women	10 (30%)
Smoking/vaping behavior	
Former smoker, now vapes	24 (73%)
Never smoker but vapes in store	2 (6%)
Former smoker, does not vape	1 (3%)
Neither smokes nor vapes	5 (15%)
Current smoker	1 (3%)
Prior occupation of vapor store owners (categories collapsed as necessary to protect identity of participants)	
Small business owner	13 (39%)
Retail	5 (15%)
Truck driver	2 (6%)
Military	2 (6%)
Apartment/hotel manager	3 (9%)
Health professional	2 (6%)
Other professional services	3 (9%)
Other	2 (6%)
Not given	1 (3%)

cess.^{20,21} Formative research can serve multiple functions in the development and implementation of public policy as a behavior change strategy. This includes assessing how proposed policy is understood by those it is meant to change, assessing current support for the new policy by target audiences, providing information about how to talk about the new policy to gain support of local and national target audiences, and assessing how opponents talk about the proposed policy to generate opposition to the policy.²¹

Local vapor stores have an established presence in many communities. However, tobacco control researchers and policymakers know little about how local owners view the electronic cigarette industry, how well these owners comprehend the information they have access to, and how they interpret

what they hear from local advocates, electronic cigarette industry sites, and the media. This information can signal to regulators and policymakers early in the process where education efforts need to be focused, identifying any challenges with compliance, and implications for small business owners that they may not have considered.

The objective of this formative research was to describe local vapor store owners understanding of proposed FDA regulations, owners' perceived implications of regulations, and factors that could impact compliance with regulations during implementation.

METHODS

Vapor stores in central Oklahoma, including a large metropolitan area and the surrounding cities were identified through electronic searches including Google, Vaporsearchusa.com, and advertisements in the local media. Sixty-four vapor stores were identified by the researchers (stores with multiple locations were counted once), 15 were out of business, and 5 were participating in another study (these were excluded from our study). Thirty-three of the remaining 44 agreed to participate (75%), with 11 (25%) declining.

Owners were initially contacted by telephone, then 1-2 members of the research team visited each store and the owner was asked to participate in a face-to-face interview, which took place in the store. If the owner did not have extensive contact with customers the general manager of the store was interviewed. There were few differences in responses for vapor store owners and managers so they are referred to collectively as "owners."

Interview questions were developed based on prior observations in vapor stores and through conversations with vapor store staff and current users. Owners were asked about regulations for the electronic cigarette industry including sales and products. Interviews were conducted May-July 2014. Participants received a \$50 store gift card.

Interviews (lasting approximately 1 hour) were audio-recorded and transcribed. NVivo (version 10; QSR International, Doncaster, Victoria, Australia) was used to code transcripts. The authors developed the codebook, coded 2 transcripts together, then made revisions to the codebook. The remaining transcripts were coded independently by the 3

authors with high agreement. After transcripts were coded and consensus was reached regarding the codes, the codebook was modified to add additional codes that emerged during the coding process. The transcripts were then reviewed again to incorporate the additional codes. The coded interviews were then analyzed for themes. It was established *a priori* that at least 25% of the interviews should discuss a topic for it to be considered a theme. This “threshold” was used to increase the credibility of themes and decrease reporting bias.^{22,23} Following thematic analysis, the transcripts were reviewed again for additional supporting and disconfirming evidence of themes.^{24,25} Finally, representative quotes were identified to illustrate themes and subthemes.

RESULTS

Participant Characteristics

Table 1 shows that 24 owners (73%) were former smokers who currently vaped, and 70% of the interviewees were men. Most vapor store owners were previously small business owners.

Approximately half of interviewees were within the city, and half from outlying areas (Table 2). One in 5 stores was part of a multi-store ownership. Most stores (79%) were located in commercial areas. Half had been open a year or more.

Themes

Three themes emerged that were expressed by almost every interviewee: the role of the tobacco industry in electronic cigarette policymaking, the need for FDA regulation but concerns over the implementation of regulations, and restrictions on sales to minors.

Tobacco Industry Influence

Vapor store owners uniformly expressed negative views about the tobacco industry. They discussed vaping’s threat to the tobacco industry and the tobacco industry’s actions behind the scenes to control the growing electronic cigarette industry.

Technology slapped big tobacco upside the head when e-cigarettes came around and they [tobacco industry] hoped that they could stop it before it developed into what it is today especially in Okla-

Table 2
Characteristics of Participating
Vapor Stores (N = 33)

Characteristic	Number (%)
Location	
Urban	17 (52%)
Smaller cities located around large city	16 (48%)
Ownership	
Single store	26 (79%)
Multiple locations	7 (21%)
Neighborhood Characteristics	
Commercial	26 (79%)
Residential	7 (21%)
Length of Time Open	
Less than 1 year	14 (42%)
One year or longer	19 (58%)

homa.... They were trying to politically start a plan right here. #7

Owners feel that the tobacco industry is losing money because of vaping and wants to drive local vapor stores out of business.

I've read that we've taken about 37% of the tobacco industry [business] ...the tobacco industry they have billions of dollars to kind of push vapor to the side or give vapor a bad image. #9

It's a big industry right now and the tobacco industry is losing a lot of money ... Why do you think [brand name]cigarettes have put out an electronic cigarettes? ... they know where the market is going. #16

Within 10 years the e-cigarette business will be bigger than tobacco. #27

Some owners also believe that the tobacco industry controls state and federal policymakers.

The tobacco lobbyist do have billions and billions of dollars to actually put into the FDA regulations and they have a strong opinion on it. ... They

are trying to save an industry that is a very large industry that sits there and pays the government and pays the congressman, pays the senators, pays everybody to sit there and [say] oh it's definitely not healthy. #18

Vapor store owners were concerned that the regulatory process would place the power over their products, especially nicotine, with the tobacco industry.

What we think is going to happen is that we are going to be forced to buy stuff through them, ... because they grow the tobacco and stuff and the nicotine they have control over it. #13

They [the FDA] are wanting to do licensing and essentially to my understanding of it is in the next 2 years they are trying to take small businesses like ourselves out of it and then trying to give it to bigger companies like big tobacco ... so it can all be regulated. #15

What if they say you can only get your nicotine from the tobacco companies? Well I don't want to support the tobacco companies. #18

They'll [tobacco industry] say anything to scare the public for now...but once they pass them laws ... they gonna put it out mass production.... They're gonna put it everywhere. #21

Owners see the tobacco industry influence in the FDA proposed regulations as a way to drive them out of business through the guise of regulation and fees.

I don't see vaping going anywhere. Unless they just make it where you can't afford it. #15

And see most of the vaping community believes that's the tobacco people trying to fight us cause they want to make it ridiculously expensive. They want to make it to where, say, say once regulations come in and I want to open a vape shop.... I've got to put up \$25,000 or \$200,000 just to even have a vape shop. #27

They've come down with a group, a list of regulations, basically catering to big tobacco companies cause they're the only ones that are going to be able to afford to pay... you're talking I mean millions of dollars. Shops like myself won't be able to afford but big tobacco companies will. #25

Owners believe the tobacco industry is pressuring the FDA to prohibit vapor stores from marketing vaping as a cessation tool.

It's still a healthier alternative. The FDA is saying that you know we are not allowed to say that because the tobacco industry is saying don't let them say this because it's going to take money out of their pockets. #18

They are talking about not allowing us to make claims. Even with scientific backing, not allowing us to make claims like this is a safer option...that would force us into a place where you know where these products would have to be marketed in the same slimy, for lack of a better term, manner that tobacco products are marketed with sex and cool you know it's cool to do it and ... it ends up falling into the same negative place. Pushing a habit you know with nicotine. #24

FDA Regulation

Most owners seemed to agree that some type of FDA regulation was necessary to protect the safety of customers.

This stuff needs to be regulated because there are too many people out there putting stuff in there that are hurting people. And not only that, they're selling people nicotine levels that are completely inappropriate for them. #1

I think just a lot of paranoia out there, I think as they come out with studies and all they're going to find out that they do have to regulate it. I think it would be better if they did personally. #6

There is no quality control standard in the industry that protects both consumer and business owner you know at this point. #24

Most owners felt that a lack of consistent standards for vapor stores has led to inconsistent quality. Store owners who discussed having high standards for quality felt they were losing potential customers because they go to poor quality stores first and decide not to vape or have a bad experience and stop vaping.

We think it sucks. I mean honestly it does from our standpoint because if you've been on our side of it and seen what we've seen and we've seen some of the people that have opened, it's horrible and it pisses you off because they want to make as much money as they can and then they're going to be done with it and we're still going to be here having to fight off all the bad they put on it and it's frustrating. #5

Some owners expressed worry or feeling unsure about their future if the industry is regulated.

We want [the] FDA to come and show us what they want. That's what we'd like to see... say this is what we want, this is what we want you to do. #7

We try really hard to protect ourselves cause we don't know for sure what's coming up with all the new laws and stuff like that. It's a big, big deal in the vape world like everybody's freaked out by it. I'm not really as freaked out as much as, I'm just waiting to see because it can be a good change or a bad change just depending on how they do it. I think a lot of the things are going towards good. #26

Many have already taken steps to comply with anticipated regulations at the state and federal level.

Some of the bills going through right now, child safety on the bottles, making manufacturers put what the ingredients, contents on the bottles - which we do, ours are already on there. #11

We are already wearing gloves we already disinfect our needles before we use you know for the mixing ... we have our MSDS sheets we have our OSHA handbook we have already done everything above and beyond what is going to be asked of us so the

worst case scenario like I said we may have to put in a clean room. #29

Several store owners have looked into initiating inspections by an accredited body but found them prohibitively expensive.

AEMSA [American E-Liquids Manufacturing Standards Association] they have formed their own little group of what is acceptable and not acceptable for a lab... that's kind of what we went off of when we did ours... they come out and tell you what you can or cannot do... its \$700 a month... We can follow their guidelines and not pay them... \$700 a month is pretty big number to meet. ... And you pay for their visit to come and test your stuff. ... and we're going to have to do that soon enough anyways with someone who has the authority to shut you down or keep you open. So we're waiting for that. We are trying to do the right thing. #5

FDA approval and regulation of the local businesses can benefit vapor store owners by helping with customer perceptions of safety.

I think there's still a lot of uncertainty out there that people are afraid because it's an unknown and you know they keep saying "well the FDA hasn't approved it." #14

Some owners currently discuss their products as containing ingredients that are already FDA-approved.

All of our stuff is already FDA approved. Because we buy everything that's already in the US and regulated including our nicotine, our nicotine is pharmaceutical grade. #6

Some believe that new regulations and fees would make it prohibitively expensive for local stores to continue to offer the wide variety of products they do now or even to stay in business.

So this strawberry that I have, if I sell it and the only thing I can, only thing I sell it is a 50/50 blend of VG-PG and a 12 milligram [nicotine].

Cool. That's one application. However if I sell the 50/50 blend and 0, 3, 6, 9, 12, 15, 18 [nicotine] all of those are applications. And I think that's a way that they can actually shut down a business... So it will definitely thin out the herd very quickly. #32

Regulations about e-liquid are important to owners because this is how they build or lose a consistent customer base.

And that would be just an absolutely devastating blow ... Variety of flavors in this industry is one of the key components to driving ... return business ... losing 90% of your flavors because you can't afford to pay the price for individualized ingredients [for] each flavor [for] each component of that flavor. #24

The bottom line is your juice [e-liquid] if you don't carry a good product you are not going to have repeat business. #29

Other owners feel transparency will limit stores ability to keep e-liquid recipes a trade secret.

They're going make to the manufacturers have to put on certain things on the label, like what's in it, when it was made, batch numbers all that kind of information so that the consumer knows exactly what's in it ... say I'm making my own flavors here verses buying them. Well I made this chocolate honeysuckle we'll call it chunnysuckle... now the FDA wants to see what's in it. #27

On the other hand, multiple vapor store owners who have seen how other stores mix their e-liquid, support a more centrally-regulated system to mix e-liquid.

The biggest thing I would like to see the FDA do is regulate who can mix these juices because I've known of places and people that are in there mixing those juices ... I just really feel for everybody's safety that places like the big companies that have their own labs and the clean safe labs that are proper with their mixing ratios I think it should stay there and not in the hands of people in shops

and that's just my opinion. And I'd have a lot of people mad at me if they heard me say that. #19

Requiring the shops to have the proper equipment to do the measuring and to make sure that things are accurate and to list the things that are there, I'm very much for that. #24

If the FDA steps in I think that's the first thing they'll get rid of is that you can't make it in the store... which they should... They're [vapor store staff] basically just following a formula that they learned on the Internet, which those are not always even close to being right. #30

Some owners expressed concern that lengthy product and inspections and regulations could limit the store's ability to provide new vaporizers to customers and will limit innovation in the market.

Like when a new product comes out we wouldn't be able to just order it and put it in our store, they would have to evaluate it and then deem it safe and then we wouldn't be able to put it in there. #15

Restricting Sales to Minors

Vapor store owners agree that 18 is a reasonable age for age restrictions on vaping, both in terms of independent decision-making and because it is the age you can buy cigarettes.

They just shouldn't be smoking they shouldn't be vaping. It's to get you off of cigarettes not start you on something different. #8

We don't sell to under 18 ... Cause that's the age to buy cigarettes. To buy tobacco. #23

We just did it because we didn't think it was right anyway. #33

Some owners do not sell vapors to parents if they know it is for a minor.

Yeah I've had a parent come in and I told her I can't do it. #25

Buying it for their kids that are under age. We have one like that but we didn't really sell to him after we found out. We're just not comfortable with that. #31

We've had it happen here ...we all got together and said hey man that was really weird, awkward, we just need to nip it in the bud really quick ... when we recognize what's going on and say "Hey look, we feel pretty confident that you're buying it for this young man standing right here which looks about 12" ... You know so, then we're going to reserve our right not to serve you ... if you know you don't understand that I'm sorry but it's a policy...but hey do you now realize that this is kind of wrong? If your child's smoking maybe you need to help them out in other ways. #32

Some owners would not sell vapor products to minors but would sell vapor products to parents. They acknowledge the parent's right to make health decisions for their children. Most owners are former smokers, and they wish something better for these teens than a lifetime of addiction to cigarettes. Yet, even among those who will sell to parents, many acknowledge a discomfort with the situation, but they feel among hard choices, trying to rescue youth from lifelong smoking is the better option.

If their parents want to come in and buy it for them that's one thing, but until they're 18 they're not allowed to make their own decision in my mind. #1

We sell to parents because they have a right to do that and I would do that and I would do that for my daughter ... if my daughter was a smoker I'd be the first one out there to get her a vapor...I would buy it for her, because I started [smoking] at 11 years old. #12

Most vapor store owners are in conflict about teen vaping. They express great uneasiness about both letting teen smokers continue with their tobacco addiction and selling a product to parents that someone underage might use. They often went back and forth in their answer to the question of parental purchases.

But they really need to be 18 to do it [vape]... they're stealing their parents cigarettes. That's been going on for many many years and I don't know I just kind of at a loss for words on that topic...I went out to get in my car and literally seen the parent hand the vapor to the kid ... I told myself I said I would no way but ...you want them to smoke [and] kill their self with cancer or do you want them to vape ... I don't know. #19

DISCUSSION

Electronic cigarettes have been called a "disruptive innovation," challenging existing power relationships between tobacco industry, e-cigarette producers, government agencies, and policy makers.²⁶ This emerging market challenges regulators to craft and implement effective regulation in response to and in anticipation of product innovation. The significance of this research is that vapor store owners support regulation but that they also have distrust and misgivings that the tobacco industry with its substantial resources and influence will manipulate the implementation of the regulations to control products and force local vapor stores out of business. Owners also feel that although regulations will protect both owners and customers, they also may stifle innovation and greatly reduce their ability to respond to customer requests for innovative products.

Owners are also confronting difficult decisions regarding youth vaping. While all agreed that sales to minors should be prohibited, most held conflicting beliefs about how they should respond to parents. It is important for policymakers to recognize these difficult situations and provide guidance to both parents and local sellers.

IMPLICATIONS FOR TOBACCO REGULATION

Policy change is a behavior change strategy. The goal is for new policy to be supported by the target audience and complied with, particularly in environments where regulator resources for monitoring are stretched thin. Policy that does not have broad support from the target audience is less likely to be successful.²⁰

Vapor store owner beliefs and concerns about regulation are worthy of attention by regulators

and policymakers. These are the people who will be impacted directly by future regulations. Understanding how owners perceive pending regulation can provide important information to regulators about compliance issues and increase support for new policies among store owners.²⁷

Most vapor store owners do not come from careers where they have the training or background to advocate for their interests. Whereas a few are active supporters of the state vapor store advocacy group, most seemed to feel they do not have a meaningful voice in the regulatory process. As electronic cigarettes are distributed in multiple forms through many different outlets, local owners feel that their interests may not be taken into account because only the most savvy and powerful have influence. Regulators and policymakers can decrease these feelings of suspicion by increasing opportunities for dialog beyond public comment periods on proposed regulations and providing information that is jargon-free and easily available to owners. These are not individuals who have prior training in policymaking, government, or healthcare, so additional education on why certain regulations or standards are needed may increase support and future compliance.

This study had several limitations. Results were based on vapor store owner self-report and their responses may have differed from other vapor store staff members who were not interviewed. The study also was limited to one geographical region and to storefront operations, which may limit generalizability to other geographic areas. One-fourth of the owners also declined to participate. Their responses might differ from those who agreed to participate.

In a time of declining public trust in government and in a market that owners perceive is dominated by the tobacco industry, local store owners are asking that regulations be implemented in a way that is affordable and achievable by local stores.²⁰ These owners support some level of regulation and see it as helping to increase the image of electronic cigarettes and protect both them and customers. However, they also need to be convinced that these rules were not developed to stifle innovation or small business in this expanding market.

Human Subjects Statement

The study was approved by the University of Oklahoma Institutional Review Board.

Conflict of Interest Statement

The authors of this article declare they have no conflicts of interest to report.

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