Ethical Analysis of Electronic Cigarette use in Public and Work Places

Erika McKenzie

Concordia University of Nebraska

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Dr. Vicki Boye

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Introduction

It would be difficult to live in our society today and be unaware of the health risks associated with smoking. Federal, state, and local governments have instated laws and policies to regulate smoking in public areas and work places to protect the health of bystanders. A newer issue has emerged with the development of electronic cigarettes. Electronic cigarettes, or e-cigs, are battery powered devices that mimic smoking a real cigarette through vaporizing a liquid that is then inhaled by the user (U.S. state and local laws regulating use of electronic cigarettes, 2015). They look just like regular cigarettes, and are used virtually the same way, with the smoker, or vaper as they are sometimes referred to, inhaling from the e-cig and then exhaling the vapor into the air. Electronic cigarettes can provide a smoker with their nicotine fix without many of the other harmful carcinogens associated with smoking a real cigarette. An electronic cigarette also satisfies the habitual craving of smoking by providing a similar feel in a person’s hand and mouth, and mimicking the same type of hand to mouth motion from real smoking.

Since the emergence of e-cigs is still relatively new there is limited research available regarding their safety and they may present some unknown risks to the users and others around them. Because electronic cigarettes are not technically a tobacco product they also do not necessarily fall under regulation from typical tobacco laws. This has presented several concerns for public health systems to try and address.

Background Information

Electronic cigarettes are a relatively new product on the market. They were first developed in China in 2003 and first became available in the United States in 2006 (E-cigarette
As mentioned earlier, they are battery operated devices that may have nicotine, a flavor, and a liquid that is turned into a vapor for the user to inhale (Lowell, 2014). The user then exhales a cloud of vapor that can resemble cigarette smoke but is typically odorless. The device produces vapor from an atomizer that heats the liquid.

Manufacturers of electronic cigarettes market their products as a healthy alternative to smoking. They have even claimed that an electronic cigarette can be used as an aid to quit smoking altogether. Claims of a healthier alternative in addition to being able to use an electronic cigarette, or “vape” more conveniently in areas that are otherwise prohibited for smoking can be very appealing to cigarette smokers. Many smokers also find appeal in a device that looks and feels just like a regular cigarette.

Smoking regular cigarettes poses various health risks. Nicotine is the physically addictive substance in a cigarette that can cause a smoker to have a physical craving, but smokers inhale a lot more than just nicotine when they smoke. The majority of the health risks associated with smoking come from the other chemicals present in the cigarette aside from nicotine (Recknagel, 2013). Because e-cigs are marketed as only having nicotine, a vapor, and possibly a flavor, this allows smokers to avoid withdrawal symptoms by getting their nicotine fix while avoiding other associated carcinogens.

**Health Issues and Potential Risks**

There is much debate regarding the safety of electronic cigarettes not only for the user but also for those around them. The U.S. Food and Drug Administration (FDA) (2014) analyzed samples from different brands and found that the levels of nicotine were variable, regardless of how much nicotine the package said it contained. They also discovered that the samples from
two of the most popular brands of e-cigarettes contained carcinogens and traces of other toxic chemicals. The FDA (2014) ultimately has taken a stance of questioning the safety of the products and urges consumers to stay away from them, even issuing a warning pertaining to the potential health risks associated with e-cigarettes. The FDA website (2014) also explains that since these products are so new they have not been thoroughly studied for long term effects and risks. Therefore, consumers cannot be aware of risks, levels of nicotine or other chemicals being inhaled during use, or whether there are any true benefits associated with the products (FDA, 2014). The FDA also speculates that e-cigarettes could appeal to younger people and this could lead to initiation of other tobacco products which are known to be harmful. The FDA is trying to gain authority to regulate these products by proposing a rule that would give authority to cover additional products that meet the legal definition of a tobacco product which would then include e-cigarettes.

Available Research

A study looking at what is in the vapor compared to secondhand smoke from cigarettes found e-cigarettes to be safer than regular cigarettes (Kopf, 2013). The researchers looked at vapors from three popular brands of e-cigarettes and compared the samples from each vapor to second hand smoke considering levels of nicotine, airborne particles, carbon monoxide, and volatile organic compounds (VOCs). The e-cig vapor had nicotine in it but not the other toxic components found in tobacco smoke. The nicotine level in the vapor was also less than that from tobacco smoke. Based on these findings it was concluded that e-cigarette use indoors would not expose nonusers to the same levels of toxic byproducts. These findings would imply that e-cigarette vapor is less dangerous than secondhand smoke for nonusers, but the researchers still
stressed that more research is necessary to determine the safety of even low levels of exposure to vulnerable populations like children, pregnant women, elderly, or those with heart ailments. This study also did not include testing for propylene glycol and formaldehyde which are some of the more worrisome components of secondhand e-cigarette vapor that other studies have found (Kopf, 2013).

A different study evaluating toxicant and carcinogen metabolites in the urine of e-cigarette users compared with cigarette smokers also found lower levels of these compounds in e-cigarette users, concluding that e-cigarettes are more favorable in terms of toxicity when compared with regular cigarettes (Hecht, Carmella, Kotandeniya, Pillsbury, Chen, Ransom, Vogel, Thompson, Murphy & Hatsukami, 2014).

A review and analysis of various literatures regarding the human health effects of exposure to e-cigarettes and related components found scientific evidence to be limited (Callahan-Lyon, 2014). While the vapor from e-cigarettes may have less toxicants than cigarette smoke, there is inconclusive evidence suggesting that they are actually less harmful. E-cigarette vapor contains propylene glycol and glycerol which can produce irritation in the mouth and throat. First or second hand exposure to the aerosol emitted from e-cigarette users may have an association with impairment of respiratory function. Other emerging data has shown that e-cigarettes supply high levels of nanoparticles which have been known to produce inflammation and are linked to asthma, stroke, heart disease, and diabetes (Raloff, 2014). Ultimately the safety and health impact of e-cigarettes for not only the users but also the general public and the environment cannot be determined with the data currently available (Callahan-Lyon, 2014).
Current Laws

Current legislation does not federally regulate the use of electronic cigarettes. While the FDA has authority to regulate tobacco products, they do not have authority to regulate electronic cigarettes as they are not yet considered tobacco products (Electronic cigarettes (e-cigarettes), 2014). Some states have elected to restrict e-cigarette use in venues considered smoke free, but as of January 1, 2015 only three states had done so (U.S. state and local laws regulating use of electronic cigarettes, 2015). Fifteen other states have elected to restrict e-cigarette use in some venues like restaurants, bars, workplaces, or gambling facilities.

The U.S. Department of Transportation has interpreted the federal regulations that prohibit smoking on airplanes to also include e-cigarettes (Restrictions on the Use of E-Cigarettes, 2014). Businesses and private properties can also elect to adopt policies that either restrict or prohibit using an electronic cigarette on their premises. Additionally, employers have jurisdiction to adopt e-cig policies regarding the use of e-cigarettes in the workplace. Landlords also have authority to include lease provisions that may prohibit their tenants from vaping. However, if businesses, employers, or private properties have not elected to enforce these types of laws and unless the local definition of a “smokefree law” includes e-cigarette use, then using an e-cig may be acceptable in areas where smoking is not.

Ethical issues

The use of and lack of regulation regarding electronic cigarette use presents many ethical concerns. An e-cig user exposes more than just themselves to the potential risks associated with vaping, just as a cigarette smoker may expose others to second hand smoke. This can present many challenges for innocent bystanders who may wish to not be exposed to the vapor. Because
the use of electronic cigarettes is not yet regulated in most places, there is an increased risk for bystander exposure to the vapor. Exposure to second and third hand vapor has not been thoroughly evaluated to understand the risks associated with exposure (Callahan-Lyon, 2014). While e-cigarette users have a right to accept any potential risks associated with vaping, they do not have a right to expose others to these same risks without their consent. The negative rights of a non-user in this instance are more important than the rights of the user.

Another ethical concern with e-cigarette use is that an e-cig can appear to look just like a regular cigarette. If an e-cigarette user is vaping in an area where smoking is prohibited, it could create confusion about current smoking laws. A smoker may see someone vaping and think they are actually smoking and start smoking themselves if they think it is acceptable in that area.

Because e-cigarettes are marketed as being a healthy alternative to smoking this advertising may lure younger users who could be put at risk of potential side effects from vaping. Different flavors in the cartridges may also be appealing to someone who believes e-cigarettes are safe. They could also acquire an addiction to nicotine from vaping. People may believe the manufacturer’s advertising and not realize that their products and claims are not actually regulated. There is also concern that initiation of electronic cigarette usage could trigger regular cigarette usage or other tobacco use among younger populations (FDA, 2014). Additionally, ex-smokers who still have cravings may turn to the e-cig and reignite an old habit with potential risks.

Since many e-cigarette products are marketed as “quit aids” many current smokers may turn to e-cigarettes to quit smoking as opposed to products that are actually approved by the FDA. Products like the Patch, the Gum, and Lozenges are all approved by the FDA (2014) to aid in smoking cessation, while e-cigarettes are not. Instead of obtaining a safe quit aid that helps to
break the hand to mouth motion associated with smoking, smokers who want to quit may turn to a questionable e-cigarette instead.

Another concern with e-cigarettes is with the nicotine levels in the cartridges. Some products indicate that they contain zero nicotine, while others indicate a certain level of nicotine. The FDA (2014) did research on some products labeled as “zero nicotine” and still found nicotine in these cartridges. Other cartridges had different amounts of nicotine than what was labeled. This could make it difficult for a user to know how much nicotine they are really consuming and put themselves at risk of overdose, which could lead to a heart attack or stroke as the worst case scenario (FDA, 2014).

Yet another potential issue with electronic cigarettes is the safety with the device itself. Because these products are not regulated, their safety cannot be ensured. There have been instances where the lithium battery that heats the liquid has overheated and started a fire or an explosion (V2 cigs speaks out about the dangers of modified e-cigs, 2012).

**Recommendations**

Given the lack of clarity regarding the risks associated with exposure to second or third hand vapor, as well as vaping itself, there is a need for regulation pertaining to the matter. The FDA and other governmental organizations like the Drug Enforcement Administration (DEA) need to be given authority to regulate these products to protect the health and safety of the public.

Electronic cigarette products need to be regulated to ensure that their products contain what they say they do. It is one thing for a user to accept risks but they should be able to be properly informed about the substances they are inhaling if they choose to do so. Since electronic
cigarettes are legal, there should be regulation pertaining to the monitoring of ingredients and safety measures for the actual devices. There need to be some quality standards to minimize risks. If there are not any quality standards present then electronic cigarettes should be illegal like other drugs that may present unknown risks.

There also needs to be governmental regulation regarding where electronic cigarette users are permitted to smoke. Electronic cigarettes should be considered tobacco products and be regulated the same way that regular cigarettes are since they present some similar risks and may appear to be an actual cigarette. This would not impede a user’s rights in telling them they cannot vape, but just that they can only do it in areas where they aren’t exposing others to the potential risks of doing so. Bystanders have a right to not be exposed to something that could potentially endanger them, and banning electronic cigarette use in public and workplaces is the only way to do this. One of the core functions of public health is assurance and one of the ten essentials services is to “enforce laws and regulations that protect environmental health and ensure safety (Core Functions of Public Health and How They Relate to the 10 Essential Services, 2011).” The aforementioned forms of regulation would fall under this essential service.

Public health ethics suggests doing good and not doing harm. Some main principles of public health ethics include justice, equity, and respect for autonomy (Richter & Laster, 2004). The Precautionary Principle is a common sense type rule that aims to prevent harm when in doubt by taking precautionary measures to avoid harm or risk. Applying this principle to electronic cigarette regulation would shift the focus of known risks associated with the issue to focusing on showing an absence of risks to bystanders (Richter & Laster, 2004). Applying this principle to the situation highlights justice, equity, and respect for autonomy for those who wish
to not be exposed to potential harm from second hand vapors and reinforces the need for regulation surrounding this issue.

**Conclusion**

While electronic cigarettes may be safer than a regular cigarette and offer some potential benefits to current smokers, one cannot yet guarantee their safety with research available. The e-cig user can accept these risks if they choose to vape or smoke the e-cig without fully understanding the risks of doing so. However, innocent bystanders may be exposed to dangerous chemicals emitted from vapor exhaled by the user. Because electronic cigarettes are still so new and not enough time has passed to conduct long term studies on the risks of exposure one cannot determine what level of exposure, if any, is safe and to whom.

The responsibility of public health systems is to protect the health of the public. With e-cigarette use increasing considerably in the United States in the last few years (King, Patel, Nguyen & Dube, 2014), it is crucial for public health to address this growing concern for the general public. Because one cannot be sure of the safety of exposure to second hand vapor, public health must protect those who could be affected without choosing to be. In a state of unsurety, public health must take the safe route. It is better to protect the rights of non-users than it is to try and treat their health issues later from exposure now.
References


