

THE VAPER'S PERSPECTIVE: A QUALITATIVE STUDY OF E-CIGARETTE USERS AND SMOKERS IN SLOVENIA

»VEJPANJE«: KVALITATIVNA RAZISKAVA UPORABNIKOV IN KADILCEV E-CIGARET V SLOVENIJI

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ABSTRACT

Keywords:

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Background: The use of e-cigarettes has been rapidly expanding in recent years. The reasons people in Slovenia chose to use electronic cigarettes have not been studied to date. This study examines e-cigarette users' attitudes regarding their health risks.

Objectives: The aim of the study was to examine the users' standpoint towards e-cigarettes and their understanding of the impact on people's health.

Methods: This qualitative study consists of 15 semi-qualitative interviews. Fifteen active or former tobacco smokers and/or e-cigarette users were interviewed using semi-structured interviews between 1 December 2019 and 30 April 2020. Data were analysed using qualitative content analysis. The employed inductive analysis consisted of coding, creating categories and abstraction; that is, framing a general description of the research topic through generating categories.

Results: Data show that the interviewees do not have a unified opinion regarding the use and harmful effects of e-cigarettes. They agree that e-cigarettes are less harmful than regular cigarettes, but do not believe that they completely eliminate harmful effects for people that smoke regularly. The results also show that vaping is typical of young people, who use e-cigarettes as an important element of their subculture.

Conclusions: The use of e-cigarettes in Slovenia is still a matter of public debate, because the advantages and harmful effects of using e-cigarettes are not yet well known. National guidelines for reducing the harmful effects of e-cigarettes are needed.

IZVLEČEK

Ključne besede:

e-cigarete

vejpanje

manj škodljive

alternative

kvalitativne študije

Slovenija

Izhodišča: Uporaba e-cigaret se v zadnjih letih hitro širi. Razlogi, zakaj se ljudje v Sloveniji odločajo za uporabo elektronskih cigaret, do danes niso bili raziskani. Ta raziskava preučuje odnos uporabnikov e-cigaret do njihovih zdravstvenih tveganj.

Cilji: Namen raziskave je bil preveriti stališče uporabnikov do e-cigaret in njihovo razumevanje vpliva na zdravje ljudi.

Metode: Kvalitativna študija je sestavljena iz 15 pol-kvalitativnih intervjujev. Med 1. decembrom 2019 in 30. aprilom 2020 je bilo s pol-strukturiranimi intervjuji anketiranih 15 aktivnih ali nekdanjih kadilcev tobaka in/ali uporabnikov e-cigaret. Podatki so bili analizirani s kvalitativno vsebinsko analizo. Uporabljena induktivna analiza je bila sestavljena iz kodiranja, ustvarjanja kategorij in abstrakcije; to je oblikovanje splošnega opisa raziskovalne teme z ustvarjanjem kategorij.

Rezultati: Podatki kažejo, da anketiranci nimajo enotnega mnenja glede uporabe in škodljivosti e-cigaret. Strinjajo se, da so e-cigarete manj škodljive od navadnih cigaret, vendar ne verjamejo, da popolnoma odpravijo škodljive učinke za ljudi, ki redno kadijo. Rezultati tudi kažejo, da je vejping značilen za mlade, ki uporabljajo e-cigarete kot pomemben element svoje subkulture.

Zaključek: Uporaba e-cigaret je v Sloveniji še vedno predmet javne razprave, saj prednosti in škodljivosti uporabe e-cigaret še niso dobro poznane. Potrebne so nacionalne smernice za zmanjšanje škodljivih učinkov e-cigaret.

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1 INTRODUCTION

The use of electronic cigarettes (e-cigarettes) has been rapidly expanding worldwide in recent years (1). Although both tobacco cigarettes and e-cigarettes serve as nicotine delivery systems, they differ fundamentally in their composition, health risks, regulatory frameworks and social perceptions. E-cigarettes are often promoted as a less harmful alternative to conventional cigarettes; however, to date the commercialisation (sale, import, distribution or manufacture) of e-cigarettes as consumer products has not been proven to benefit public health. Instead, alarming evidence about their adverse health effects on the population is mounting. The WHO Study Group on Tobacco Regulation has published a number of reports that contain evidence-based recommendations on electronic nicotine delivery systems and electronic non-nicotine delivery systems (ENDS and ENNDS), colloquially referred to as e-cigarettes (2, 3). The use of e-cigarettes has dramatically increased over the last four years, particularly among young people (4). Etter (5) reported that 7.5 million people in the European Union currently use e-cigarettes. E-cigarettes have been marketed as a new method for smoking cessation or decreasing cigarette consumption because they are cheaper than normal cigarettes and they taste and smell better than normal cigarettes (6). The evidence base for e-cigarettes is certainly still emerging, particularly in relation to their effectiveness as quitting aids and the health impacts for long-term users (7). A study by Chen et al. (8) reported that most participants believed e-cigarettes had influenced their cigarette smoking behaviour, and stated that e-cigarettes had helped them temporarily cut back on smoking. They also added that e-cigarettes serve as a replacement for normal cigarettes and help alleviate their craving. Pokhrel et al. (9) found that e-cigarettes were perceived as an effective way to cut back on or quit smoking. On the other hand, adolescents that use e-cigarettes are more than twice as likely to later use conventional cigarettes, and there is a pattern of dual or multiple tobacco and nicotine product use among youth (10).

Some studies have shown that participants that used e-cigarettes failed to quit smoking, and, instead, many ended up using e-cigarettes in addition to normal cigarettes (11). Etter (5) concluded that 66% of vapers had no intention of stopping vaping. Buckell and Sindelar confirmed this and found that e-cigarettes encouraged participants that prefer vaping to keep vaping instead of quitting (12). Moreover, Coleman et al. (13) highlighted that adult e-cigarette users that wanted to reduce or quit normal cigarette smoking were less likely to say they would stop using e-cigarettes in the short or long term. Skelton et al. (14) found that less than half of their study participants believed that e-cigarettes were helpful for quitting or cutting back on smoking.

Coleman et al. (13) found that the most frequently repeated point of discussion regarding e-cigarettes was the lack of stigma surrounding e-cigarette use compared to normal cigarettes; that is, the social acceptability of e-cigarettes. Most of these study participants had positive attitudes about e-cigarettes because e-cigarettes allow them to continue to enjoy the social aspects of smoking. Furthermore, studies by Gorukanti et al. (4) and Aghar et al. (6) revealed that e-cigarette users are more acceptable to their friends because e-cigarettes are considered trendier. It was found that 36.8% use e-cigarettes exclusively for social smoking purposes. The idea of using e-cigarettes to enhance social status was derived from Pokhrel et al. (10), who found that e-cigarette users perceive e-cigarettes as a way to enhance their social interactions, feel that they are more acceptable, believe they can be used around children and that children do not need to be left unattended while users go smoke, believe they allow users to enjoy the company of non-smokers without fear of harmful second-hand exposure, and believe that e-cigarette use could help them meet or get to know new people that also use e-cigarettes. Alexander et al. (15) found that younger users are more likely to use e-cigarettes with others compared to older users.

Although most people know that e-cigarettes contain nicotine, few individuals were able to mention specific ingredients in e-cigarette liquid, revealing a general lack of knowledge about the ingredients other than nicotine (13). In a study by Gorukanti et al. (4), 19.05% agreed that smoke from e-cigarettes is water vapor, and 23.03% thought e-cigarettes are not a tobacco product. Some participants did not know that e-cigarettes could contain nicotine. They were also unsure about the differences between the nicotine in e-cigarettes and the nicotine in normal cigarettes. They believed that normal cigarettes contain natural nicotine, derived from tobacco plants, as opposed to chemically synthesized nicotine in the e-liquid. E-cigarettes generate vapor by heating a liquid that is typically composed of nicotine, a humectant, and flavoring; however, nicotine itself is teratogenic, even in the absence of combustion by-products (8). On the other hand, because the delivery of nicotine in e-cigarettes takes place through heating but not burning the liquid, they do not expose individuals to as many toxins as combustible tobacco products (14).

Tobacco product marketing is prohibited in Slovenia, and the legislation became stricter in 2024. Except for tobacco, all flavourings, including menthol, are prohibited in heated tobacco products and electronic cigarettes. Smoking rooms will be banned by the end of December 2025. The main goal of the tightened restrictions is to prevent and reduce the use of tobacco and related products, especially among adolescents and children, who are the main target of the tobacco industry (16).

Koprivnikar notes that after the introduction of effective tobacco control measures in Slovenia there has been a decrease in the prevalence of smoking among adults; currently, approximately one in five adult residents of Slovenia smokes. Due to the tightening of measures, to meet its goal of increasing sales and profits, the industry began marketing various types of products with tobacco or nicotine, such as electronic cigarettes, heated tobacco products and nicotine pouches, which are also present in Slovenia (17). The Slovenian medical profession has already been dealing with the harmful effects of e-cigarettes (18). However, the reasons people choose to use e-cigarettes are not well studied. This study examines e-cigarette users in Slovenia and their attitudes regarding the health risks of vaping. The study investigates how users perceive e-cigarettes and their understanding of the impact on people's health. The primary research questions are why people start using e-cigarettes and whether their reasons are personal or social.

2 METHODS

2.1 Study design

This qualitative study uses semi-structured interviews. Qualitative interviews play an important role in research projects based on participant observation (18). The reasons for using a qualitative approach can be found in the specific characteristics of e-cigarette users, such as their specific reasons for using e-cigarettes (e.g., how useful e-cigarettes are if one wants to quit smoking, the belief that e-cigarettes are not harmful, family and subculture affiliation, etc.). Vaping is a relatively new phenomenon that justifies the use of this exploratory method, which has also been recognized by other researchers (3, 7, 9, 15).

2.2 Participants

The researchers conducted semi-structured interviews with fifteen active e-cigarette users. Some participants used both normal cigarettes and e-cigarettes, and some have given up normal cigarettes and switched to e-cigarettes. Interviews were conducted between 1 December 2019 and 30 April 2020, until saturation was reached (no more new views and opinions were forthcoming). The participants were between 30 and 59 years old. The following criteria were considered when selecting the participants: they are smokers that use e-cigarettes, they are capable of reflection (not biased), they have time available to be interviewed, and they are willing to take part in our study. All the interviews were audio recorded and transcribed verbatim by a trained administrator. The questionnaire was developed in the following manner: after studying the Slovenian and international literature on e-cigarettes and their impact on health and social life, the question set was developed. The researchers then discussed this set to narrow down the topics.

2.3 Recruitment and interview process

A literature review was conducted first, which included case reports, comparative studies, datasets, interviews, meta-analysis, reviews and systematic reviews written in English. Following the literature review, the scenario for interviews was developed in three rounds. The next phase was dedicated to training the interviewers in November 2019. These trained interviewers conducted 15 interviews with e-cigarette smokers through purposive sampling. The sample size was determined using theoretical saturation, which is the point in the data collection process when new data no longer offer additional insights for the research question (19–21). The saturation process was applied prospectively, during the course of data collection, which allowed us to stop interviewing after a certain period of time. Under this condition, the final number of interviews conducted was 16. All the interviews were audio recorded and transcribed verbatim.

2.4 Data analysis

Qualitative content analysis (QCA) was used for the systematic examination of the data collected. QCA is a method derived from the communication sciences that is useful for systematic analysis in a wide range of research domains (22), including for e-cigarettes and their health risks (9). This study used inductive content analysis, which includes coding, creating categories and abstraction: framing a general description of the research topic through generating categories (23–25). The interviews were independently coded by two researchers. The study used a data-driven coding scheme and formed codes sorted into logical categories/themes to observe patterns in the data analysed and explain e-cigarette users' attitudes toward health risks. During the coding process, consensus was sought between the two researchers. If consensus was not reached, we tried to achieve intercoder agreement about the differently perceived parts of the text analysed to fit the category created, also known as a "unitizing" process (24, 25).

3 RESULTS

Three categories were determined using QCA: 1) attitudes and beliefs about e-cigarettes; 2) subcultural determinants; and 3) awareness-raising measures. Themes were named according to the content they illustrate, as well as relying on the literature discussing previous empirical studies.

3.1 Attitudes and beliefs about e-cigarettes

Interviewees' opinions regarding the use of e-cigarettes differed. There is virtually no consensus on whether e-cigarettes are harmful or not. Some of the interviewees believe that e-cigarettes are a "healthier alternative"

that can help people quit smoking. They believe that e-cigarettes are less dangerous for smokers (because of the way they deliver nicotine) and for other people in the surrounding area. As an example, they emphasise improved breathing and reduced symptoms of cough or phlegm. Here are some typical responses:

- However, having used it for 4 or 5 months, I feel that my breathing is better. (P7)
- E-cigarettes or vapes are a better option or a better alternative to quit normal smoking. They are less dangerous than cigarettes, but still the healthier option would be not smoking at all. So this was a healthier—I mean not healthy, but less dangerous—alternative to normal cigarettes. (P12)
- If you smoked normal cigarettes in the past, what were the reasons for switching to e-cigarettes? There are two: that's what health is, definitely. When, after so many years, you start to worry a little, even though the medical examinations, thank God, have always been fine. On the other hand, there's also a financial reason. (P1)
- For me, this is a better alternative to completely cutting nicotine straight away or going back to cigs. (P13)

Some of our interviewees were less optimistic regarding the damage caused by e-cigarettes, which was associated with nicotine content.

- But for now, I'm still on a minimum amount of nicotine. Otherwise, between normal cigarettes and this, I think that the addiction to normal cigarettes is greater, in my opinion, cigarettes are significantly worse because it's so much harder. . . I've already tried to quit smoking before. It's harder to stop smoking normal cigarettes than this. Here you can still regulate how much nicotine you give yourself. (P2)

3.2 Subcultural determinants

Some of our interviewees described attractive characteristics of e-cigarettes, such as their cool appearance, and attractive packaging and colours, taste and smell. Practically all interviewees were convinced that this appeals to young people, who are the most enthusiastic about e-cigarettes. They are convinced that this is a subcultural element, which is also exploited by the tobacco industry. The visual appeal of these products seems to be more important to young users than the idea of e-cigarettes being less harmful than normal cigarettes. Below are some of the most indicative statements:

- But I think even younger people are more likely to try something like this at all because it's visually appealing. (P1)

- Most people will start using these e-cigarettes because they look cool when people are vaping and stuff. To be honest, I took advice from a few people at work and then chose a nice colour. I can also choose the taste and not stink so much after smoking. (P14)
- I've heard of different shapes and flavours before, and I definitely think this adds to the appeal of these things. As people, we tend to get attached to things that we find pleasant, and thus safe. Young people are probably particularly susceptible to this. (P5)
- E-cigarettes are visually more attractive than regular cigarettes. Also, nobody likes to stink, and you can avoid it with an e-cigarette, for example. (P10)

Some interviewees pointed out that e-cigarettes are easier to choose because of the way one finds out what they are. One interviewee mentioned that he decided to switch to e-cigarettes so he would not bother others with the smell at the workplace. He also said that smoking gave him a feeling of belonging, and it helped his social life.

- And also, it didn't stink. Because normal cigarettes stink. E-cigarettes don't stink that much. The smell is annoying. It wasn't for me because I don't want other people, like non-smokers, to be affected by the smell. Because when you have a cigarette and you go back, the smell stays on you, and if the person sitting next to you doesn't smoke, it bothers them. And this doesn't have any smell. It doesn't linger around. It's just like no smoke. (P11)

Some of interviewees pointed out that smoking e-cigarettes gave them the feeling of belonging among peers. Similar to their attitude towards alcohol, young people do not want to be excluded from society, so they choose to have a drink or a cigarette. It means following generational norms and meeting the conformist expectations of youth subculture. In other words, by smoking an e-cigarette you are accepted among your peers.

- Because everyone in your circle of friends is smoking and you're just standing there, and smoke is blowing in your face, and it's just weird like that. Because everyone's doing it, and then you'd be the only one who's just standing there. (P11)

3.3 Awareness-raising measures

Some of our interviewees, as experienced vapers, pointed out the importance of raising awareness about the harmful effects of e-cigarettes and smoking as such. They highlighted the lack of educational programmes that are urgently needed to limit this phenomenon in the long run. They were practically united on the need to draw up national guidelines for raising public awareness about the harmful effects of e-cigarettes. They agreed that a ban on the sale of tobacco products and fines were not optimal.

- My doctors know that I smoke because this is always among the first questions when meeting them here. What else would be of benefit to you in e-cigarette prevention and use? Help with quitting. We're supposed to have assistance service or support available through a facility. (P15)
- How familiar are you with prevention programmes such as Healthy Living workshops and Smoking Cessation workshops? I haven't really heard about those. (P11)
- I'm not familiar with these things, so I haven't been involved in any of these workshops. (P4)

4 DISCUSSION

The data presented here show that interviewees in Slovenia do not have a unified opinion regarding the use and harmful effects of e-cigarettes. Some of them agree that e-cigarettes are less harmful than regular cigarettes but not completely free of side effects for people that smoke constantly. The interviewees agreed that vaping is typical mainly among young people, which is confirmed by data in Slovenia (26). They attribute the use of e-cigarettes to the subculture and packaging (i.e. marketing) of such products.

Our research findings are in line with those of researchers in other countries. Smoking habits are affected by individual, psychological and social factors such as curiosity, the smoking behavior of friends or family members, and their social environment. At the social level, many factors, such as sales, education and knowledge, influence the use of e-cigarettes (27).

Most interviewees believed that e-cigarettes influenced their cigarette smoking habits, and stated that e-cigarettes temporarily helped them cut back on smoking. They also added that e-cigarettes served as a replacement for normal cigarettes and helped alleviate the craving for them. This is consistent with past research, in which researchers similarly found that e-cigarettes were perceived as an effective way to reduce or quit smoking (28). However, Duarte et al. (11) found that e-cigarette users failed to quit smoking. Furthermore, instead of encouraging smokers to switch from conventional cigarettes to less dangerous e-cigarettes or quitting altogether, e-cigarettes are reducing smoking cessation rates and even expanding the nicotine market by attracting young people (29).

An important finding in our study relates to the youth subculture: smoking e-cigarettes is acceptable among young people. They use e-cigarettes to express their belonging to a peer group. This finding is similar to that of Coleman et al., who found that most participants had positive attitudes towards e-cigarettes because they allow them to continue to enjoy the social aspects of smoking (13). E-cigarette users are better accepted among their friends because they are considered trendier (6).

In line with previous results, our interviewees also mentioned a lack of awareness and information about the harmful effects of e-cigarettes. General practitioners play an important role in providing patients with health information, support and treatment to encourage them to quit smoking. Despite conflicting evidence on the effectiveness of e-cigarettes as a smoking cessation aid, there is growing interest in the role e-cigarettes might play as an alternative to smoking tobacco (30). Clear guidance on the role of e-cigarettes is needed to inform and educate general practitioners about e-cigarettes for smoking cessation.

As in other countries, e-cigarettes are relatively new devices in Slovenia, and our interviewees stated that they are not well informed about the harms and benefits of e-cigarettes. They unanimously agreed that national guidelines for reducing the harmful effects of smoking need to be developed in the future, with a special focus on e-cigarettes.

4.1 Limitations

Some methodological limitations of our study could be related to the open research question, and the study's explanatory character may have been hampered by the inductive creation of codes, categories and themes. In this regard, it is important to note that the study is subjective—which is, in fact, the most frequent criticism of qualitative research in general (23). However, all co-authors relied on a careful and deliberate research strategy and respected the basic characteristics of qualitative research at the stage of data collection and analysis. Some of our findings may have also been limited due to the polarised and insufficiently researched area of e-cigarette use in Slovenia (17). As an example of recommendations for quitting e-cigarettes, we cite the publication "Clinical Guidance for E-Cigarette (Vaping) Cessation" in the journal *Preventive Medicine Reports* (31). In 2020, the Slovenian National Institute of Public Health published *Elektronske cigarete - podrobnejše informacije za zdravstvene delavce (Electronic Cigarettes: More Detailed Information for Health Workers)* (32).

5 CONCLUSION

Findings from this qualitative study provide insight into e-cigarette users' standpoints and beliefs about e-cigarettes. Three themes were created based on the interviewees' inputs. Attitudes and beliefs about e-cigarettes included seeing them as a way to reduce or quit smoking. The study also found that e-cigarettes are used for social enhancement. Most interviewees consider e-cigarettes a healthier alternative that improves breathing and is less dangerous. Under subcultural determinants, it was found that the attractive features of e-cigarettes

such as taste, smell, colours and appearance, along with being convenient to use, affect smoking behaviours and e-cigarette use. The interviewees especially pointed out the demographic group of young people. Cessation workshops tailored to new findings on e-cigarettes should be offered. Recommendations and guidance should be provided to physicians on e-cigarette cessation.

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CONFLICTS OF INTEREST

The authors declare that no conflicts of interest exist.

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ETHICAL APPROVAL

This study was approved by the Ethical Review Board in Slovenia under the number 0120-619/2019/8.

AVAILABILITY OF DATA AND MATERIALS

Data sharing is not applicable to this article as no datasets were generated or analysed during the current study.

LLM STATEMENT

During the preparation of this work the authors did not use AI tools.

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