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Sociocultural determinants of e-cigarette use among generation Z as a lifestyle

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ABSTRACT
The behavior of using electronic cigarettes has become a major concern among generation Z in Indonesia because its prevalence continues to increase. The aim of this research is to describe the socio-cultural determinants that influence the behavior of using e-cigarettes in generation Z. Through a literature review, this article presents an overview of the socio-cultural factors that influence the use of e-cigarettes, as well as the implications of this behavior for public health. For this purpose, perceptions and reasons for using electronic cigarettes, which are reviewed from a socio-cultural perspective, are discussed systematically in generation Z. PUBMED and Scopus are used to search for articles that fit the predetermined theme and sub-theme categories, namely from social factors, including peer influence. and family, the influence of media and advertising. Meanwhile, cultural factors include social norms and the popularity of innovative products.

1. Introduction

The vape pod phenomenon has become popular among the younger generation, including Generation Z. Generation Z, which consists of individuals born between 1997 and 2012, is a demographic group that shows high interest and use of e-cigarettes. There is no data that clearly states how many Generation Z users in Indonesia use e-cigarettes, but Indonesia will be the country with the largest number of e-cigarette users in the world in 2023 (Annur, 2023).

Electronic cigarettes and vaping devices are quickly becoming the most commonly used tobacco products by young people and have become part of their lifestyle. As e-cigarettes continue to become popular, it is important to understand the factors associated with them in Generation Z, especially in Indonesia, as knowledge there is still limited. Electronic cigarette advertisements claim that electronic cigarettes are a kind of smoking cessation aid for teenagers (Lee, 2013). This may contribute to the high prevalence of e-cigarette use behavior. As more efforts are made to reduce smoking, the appeal of e-cigarettes when advertised as smoking cessation aids may become greater. However, a study examining the relationship between e-cigarette use and smoking cessation found no relationship between the two (Sung, 2018).

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In 2019 there were 805 cases of illness and 12 deaths related to e-cigarette use in the US. This indicates the importance of addressing the potential health dangers of using e-cigarettes. WHO defines health broadly as a state of complete physical, spiritual and social well-being and not just the absence of disease or infirmity (WHO, 2018). Therefore, e-cigarettes may have potential

its impact on the body (disease), and its impact on cognitive processes and the socioecological environment that influence risk behavior.

E-cigarette use was associated with being more male, receiving higher recognition, receiving a higher weekly allowance, living in an urban area, smoking friends, smoking daily, higher number of cigarettes smoked, and attempts to quit (Park, et al., 2017) In addition, electronic cigarettes are also easily accessible (Benowitz et al., 2013). Other research found that more family members smoking and witnessing smoking at school was associated with smoking and e-cigarette use, suggesting a "cultural" or "social" aspect of the behavior (Joung, 2016). If used appropriately, e-cigarettes can be considered a strategy for harm reduction (Chan & Siegerl, 2011).

Furthermore, various socio-cultural factors can influence the behavior of using e-cigarettes in generation Z. These factors include social norms in the surrounding environment, the influence of media and advertising, peer pressure, and perceptions of the usefulness and safety of e-cigarettes. Apart from that, cultural factors such as smoking habits in local culture also play a role in shaping the behavior of using e-cigarettes in Generation Z. Furthermore, behavioral norms in Generation Z may be influenced by the brand's desire to adapt socially. The desire to experiment with e-cigarettes may result from the interaction of individual factors (e.g. curiosity), beliefs about the risks of the product (e.g., perception of danger) and pressure generated by environmental colleagues (Valente, 2023).

Several previous studies have examined the relationship between e-cigarette use in general and the norms of certain socio-cultural aspects, such as the use of e-cigarettes in public places, and the potential impact on renormalizing tobacco use behavior (Saminathan et al., 2019). Likewise, the use of e-cigarettes in public places is subject to social norms, including exaggerating peer use, perceived loss, curiosity, and vulnerability (Bigwanto, Nurmansyah, Orlan, Farradika, & Purnama, 2022). From a public health perspective, this study is needed to provide an overview of socio-cultural factors on the behavior of using e-cigarettes in generation Z based on previous research to be taken into consideration in creating health promotion strategies with a socio-cultural approach in generation Z.

2. Literature Review

2.1. Generation Z and E-Cigarettes

The literature on e-cigarettes paints a different picture of their impact on human health and behavior. Electronic cigarettes, also known as electronic nicotine dispensing systems (ENDS), are generally considered a less harmful alternative to conventional smoking. Although e-cigarettes are considered a relatively safer alternative to traditional cigarettes, they are not completely harmless, and research on the potential long-term health implications of e-cigarette use is rare (Marques et al., 2021). The use of e-cigarettes has been associated with various health effects, including addictive properties, and the potential for nicotine addiction, especially in Generation Z (Giovacchini et al., 2022). Additionally, research has demonstrated a causal relationship between

the increased use of e-cigarettes in Generation Z and its effects on perceptions, health, and behavior (Tzortzi et al., 2020).

Previous research has found a causal relationship between the increased use of e-cigarettes in Generation Z and the effects of increased e-cigarette use on perceptions, health and behavior (Perikleous et al., 2018). Although e-cigarettes may be safer than conventional cigarettes, they still have dangerous effects and have the potential for long-term impacts (Gotts et al., 2019). In addition, concerns have also emerged about the potential for e-cigarettes to renormalize smoking habits and become a new smoking innovation, especially among young people (Alotaybi et al., 2022). Systematic reviews focusing on the effects of e-cigarette use on lung function have emphasized the need for further research to determine the impact of e-cigarettes on health clinical outcomes, measures of lung function, and the risk of increased predisposition to lung-related health problems. This review underscores the importance of conducting long-term research with large sample sizes addressing knowledge gaps regarding well-being and potential health impacts (Honeycutt et al., 2022; Giovacchini et al., 2022).

2.2. Concept of Lifestyle and Consumerist Culture

According to Keesing (1981), culture is more defined as a collection of learned experiences. In Anthropology, researching and analyzing various ways of human life and

various human action systems, the learning aspect is the main thing (Koentjaraningrat, 2009). Popular culture is the art of processing what is produced by the system. Pop culture creativity does not lie solely in the production of industrial communities. Community art is the art of "processing" (Certau in Fiske, 2011). To become pop culture it must be accepted by "the people"; it must provoke conversation and enter the oral circulation and recirculation. Ultimately, like other things provided by the media and cultural industry, it must be made popular (Storey, 2008). In this study, researchers used pop culture ideas to examine how the vaporizer community consumes these products.

Consumption can be found in various studies regarding fan culture and shopping culture as a form of pop culture. As an ideology, consumerism drives false needs and that these needs work as a form of social control (Storey, 2010; Bakti et al., 2019). This ideology explains how a person desires to be a certain type of person, wear a certain type of clothing, eat a certain type of food, drink a certain type of drink, and use certain items such as e-cigarettes.

According to Featherstone in Alfitri (2017), there are three main perspectives of consumer culture, namely: 1) expansion of capitalist commodity production, 2) satisfaction with objects related to social status, and 3) the issue of emotional pleasure for consumption. According to Walker (2010), there are various types and phases of pleasure and they are closely related to consumerism, including: 1) pleasure of desire, 2) pleasure of buying, 3) pleasure of the object itself, 4) pleasure of use, and 5) pleasure of relating to the other is impression

that a person creates through the possession of things: an elevated image, status, or ability of a person, an impression of wealth or refined taste. This is related to lifestyle which according to Toffler in Walker (2010) is a vehicle through which individuals signal their identification with a particular subculture. Each lifestyle is constructed from a mosaic of items, therefore a lifestyle is a kind of 'super-product' that offers a way of organizing products and ideas.

2.3. *Social Cognitive Theory as Theoretical Framework*

The theoretical basis of this research rests on Social Cognitive Theory (SCT), which was initially formulated as Social Learning Theory (SLT) by Albert Bandura in the 1960s and then developed into SCT in 1986. SCT states that individuals acquire and shape their behavior through personal experience, observation of other people, and environmental influences. This theory underscores the ongoing interaction between cognitive, behavioral, and environmental factors in the development of human behavior, with particular emphasis on social influences and reinforcement, both internal and external (Vinney, 2019).

At the heart of SCT are seven key elements that are important for understanding individual behavior change: self-efficacy, behavioral abilities, expectancies, expectancies, self-control, observational learning, and reinforcements. These components collectively contribute to the behavior change process. Self-efficacy involves an individual's belief in their ability to perform a behavior, behavioral ability relates to the understanding and skills required to perform a behavior, while expectations determine the anticipated outcomes of behavior change. Self-efficacy significantly influences motivation, decisions, and levels of commitment, impacting individual actions and beliefs (Hopper, 2023).

The assumptions underlying social cognitive learning include individuals being influenced by their environment, learning through observation, and ongoing interactions between individuals, their environment, and behavior. The strength of SCT lies in its comprehensive consideration of human behavior, cognition, and the environment. It discusses aspects of motivation through strengthening and self-efficacy and prioritizes the importance of self-regulation in the learning process (Bandura, 2004). However, this has limitations, such as not being able to fully address the complexity of human differences and ignoring certain factors such as personality traits, biological differences, and mood when explaining behavior and cognitive processes (Greer et al., 2022).

Within the scope of this study, SCT offers a powerful framework for understanding how Generation Z consciously shapes their attitudes, behaviors and perceptions regarding the increasing use of e-cigarettes. Emphasizing the interaction between internal cognitive processes and external social influences, SCT helps reveal the complexity of adolescents' developmental processes regarding e-cigarette use.
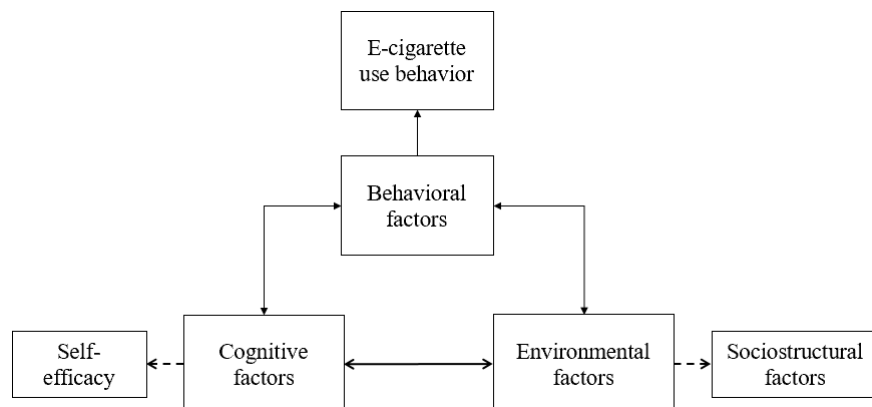
Figure 1. Conceptual framework of sociocultural factors of e-cigarette uses among Generation Z

Source: Berg, 2021; Bandura, 2004

3. Methodology

We conducted an electronic search in the following databases: PubMed and Scopus, using a combination of the following keywords: Generation Z, e-cigarettes, Socioculture. The search covered all types of articles over the last five years from 2016 to 2024. A total of 376 articles were found, and only 3 articles met the predetermined themes and subthemes. The exclusion criteria were as follows: not belonging to generation Z (n = 139 articles), not original research (n = 83 articles), not relevant data, for example e-cigarette marketing issues, consumer preferences for certain products, etc. (n = 68 articles), use of conventional cigarettes (n = 59 articles), use of alternative tobacco products (n = 24). The strategy followed and search results are shown in Figure 2.
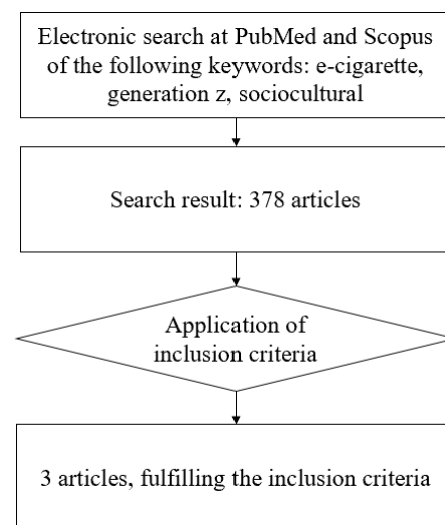

Figure 2. Flow chart of the search strategy

4. Results

A large body of evidence indicates an increasing interest in exploring the sociocultural determinants of e-cigarette use in generation Z. Table 1 summarizes the current literature on sociocultural factors associated with e-cigarette use in generation Z.

5. Discussion and Implications

This literature review has revealed various perspectives, behaviors and consequences that describe the socio-cultural determinants that influence the use of e-cigarettes in generation Z.

Furthermore, this research shows how e-cigarette practices in generation Z stand out as inherently social and rooted in the broader present and global youth culture. Electronic cigarettes facilitate play and self-presentation and serve various social purposes. This allows the younger generation to do so to participate in rituals of social interaction, to show defiance, and to facilitate identity positions. The social practices

Table 1. Summary of Socioculturaldeterminants of e-cigarette use among generation Z

Study	Participants	Main Results	Comments
Asaithamby, YP, & Zamri, NAK (2024)	Youths aged 18 to 25 in Ipoh, Perak, Malaysia. Assessment through in-depth interviews	Perception of e-cigarettes as cool, less harmful, and stress-relieving. Positive attitudes towards e-cigarettes.	Need for balanced viewpoint considering health debates. Targeted interventions needed for youth awareness and health literacy.
Scheffels, J., Tokle, R., Linnansaari, A., Rasmussen, S.K., & Pisinger, C. (2023)	46 Danish, Finnish, and Norwegian young people aged 15–20 years (mean age 17 years). 13 focus groups	E-cigarette use is inherently social, rooted in youth culture, and influenced by digital lives.	Strengthening regulations on e-cigarettes and social media marketing is critical.
Cheney, M. K., Gowin, M., & Wann, T. F. (2016)	Young adults ages 19-31 years. Assessment through interviews in community locations	E-cigarette use began to reduce smoking but led to dual use. Social influences like family and friends played a significant role.	Public health professionals should consider workplace regulations and ensure accessible information for informed decisions.

and meanings of e-cigarettes are closely linked to the innovative features of e-cigarettes, such as optional nicotine content and new and exciting flavor additives. These features further facilitate use in new arenas, for example indoors lack of foul odors and associated social disapproval. The innovative features of e-cigarettes also enable new user practices – such as performing tricks with vapor – and social media platforms are critical to these interactions where vaping images are both seen and displayed for others to see. Overall, the social meaning of e-cigarettes stands out because it is closely related to perceptions of visual and social appeal and interactional utility at a particular time in young people's lives.

Along with the wide variety of e-cigarette devices available, optional nicotine content and the range and appeal of alternative flavors (Goldenson et al., 2019) appear to weave e-cigarettes into an innovative, attractive, and attractive product. The flexibility associated with these innovative features is described as the ability of young people to choose e-cigarette products that suit their personal style, accessorize e-cigarettes, and make them fit their identity. The innovation of e-cigarettes has been described as holding the potential for play and as facilitating certain social interaction rituals (Collins, 2014), where they can demonstrate their usefulness to others, perform tricks, socialize, and express identity (Evans-Polce et al., 2018) by a way that creates feelings of togetherness and shared enthusiasm (Chu et al., 2017). Overall, the way the young people in this study talked about their demonstration of e-cigarette use was the materiality of e-cigarettes, the competencies they had, when, and where to use e-cigarettes, as well as the meanings attached to e-cigarettes combine together in a particular social practice entity (Shove et al., 2012). Social media was described as a primary arena for e-cigarette use and related interaction rituals. In line with the way today's young people use social media to communicate and share images and ideas about everything that interests them (Gardner & Davis, 2013), the visual nature of e-cigarettes (vapor, possibilities for performing tricks, various devices) seems to be the use of cigarettes Electricity has succeeded in becoming a youth cultural practice suitable for social interaction and self-presentation on digital platforms.

To develop policies that address e-cigarette use among young people in an appropriate way, we need a better understanding of how the social practice of e-cigarette use consists of particular materials, meanings and competencies (Shove et al., 2012).

We also need knowledge about how socialization of e-cigarette use in generation Z can emerge, persist, shift, or disappear when there is a relationship between the elements contained in the practice. This insight contributes to an understanding of the various dynamics of daily life that are integrated with Generation Z's e-cigarette use behavior and their relationship to overcoming the challenges of enacting policies related to e-cigarettes. This literature review shows the importance of targeted prevention policies that take into account certain issues regarding the use of e-cigarettes in generation Z and the social meaning they hold in youth culture.

However, the most striking finding in this study is how national preventive efforts against youth vaping appear to be being undermined by the new online and global marketplace. As in countries where the sale of e-cigarettes is less regulated (Smith et al., 2021), the product is perceived as easy to obtain. Digital marketplaces play an important role in providing ease of access, also among those under 18 years of age. While this generally emphasizes the importance of strengthening legal enforcement and monitoring of age restrictions for sales in online channels (Walley et al., 2019), it also points to how global digital markets can weaken national regulations. This shows the need for transnational digital market regulations to support each country in limiting the younger generation's access to e-cigarettes.

Another important finding is how the younger generation's digital lives provide a new arena for the use and display of e-cigarettes. Positively framed vaping-related posts are described as widely available and popular (Kong et al., 2019; Sun et al., 2021), and the boundaries between personal posts and the commercial actors posting this content appear blurred (Hickman & Delahunty, 2019; Kong et al., 2020). Exposure to even low-intensity e-cigarette advertising has been associated with susceptibility to e-cigarette use among younger generations who have never previously used e-cigarettes (Wang et al., 2020). This suggests a need for stronger and more consistent regulation regarding new global advertising and marketing channels such as social media, including regulating how social media platforms filter content that appears in users' feeds (Cen & Shah, 2021) and how influencers can promote vaping products. Overall, strengthening global regulations appears important to ensure consistent and comprehensive regulation of e-cigarettes across countries (Linnansaari et al., 2022). Especially regarding Tobacco Advertising it should be revised to also include new marketing channels such as social media. Recommendations or implementation guidelines could be strengthened to more explicitly cover e-cigarettes, ban online sales and purchases to simultaneously reduce indirect marketing in online channels.

Finally, the study also shows how Generation Z themselves engage in digital e-cigarette use practices that have the potential to influence their peers (Harrell et al., 2019), for example, practicing the same tricks as the 'professionals' in the videos shown they see and share the picture with friends. This illustrates how today's young generation are 'digital natives' (Prensky, 2009) and how vaping is closely integrated into the digital lives of Generation Z, and in contemporary, increasingly global youth culture (Osgerby, 2020). This study shows how e-cigarette use must be understood as a contemporary youth cultural practice, and what its meaning is influenced by dynamics within youth culture itself, so that it intersects with digital entertainment, self-presentation, positioning, and social interactions with peers, both online and offline. , as well as developments in the materiality of e-cigarette products. These elements of social practice consist of things that promote and develop e-cigarette use behavior in Generation Z, and these things must be kept in mind when developing policies and interventions.

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