

Analysis of Factors Affecting the Use of E-Cigarettes (Vapes) and Their Impact on Physical, Psychological, and Social Health in Generation Z

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ABSTRACT

E-cigarettes, often referred to as vaping, are devices that heat a liquid. Through this process, nicotine is produced without the harmful substances of tobacco, but rather from a combination of propylene glycol, flavorings, and glycerin. Vapes, like regular cigarettes, can also become addictive. The use of e-cigarettes (vape) is increasingly prevalent among Generation Z. Although perceived to be safer than conventional cigarettes, various studies have shown negative impacts on physical, psychological and social health. This research uses a literature review method with data sources derived from Google Scholar, PubMed, Scient Direct databases with literature published from 2020 to 2025. The results of the literature study show that e-cigarette (vape) use among Generation Z is influenced by a number of factors, such as attractive flavors, peer pressure, social media influence, and lack of family supervision. In addition, many Generation Z members believe that vapes are safer than conventional cigarettes, which encourages them to try them. It can be concluded that Generation Z uses e-cigarettes for various reasons. Therefore, education, family supervision and strict regulations are needed to stop Generation Z from vaping and encourage a healthier lifestyle. Further research is needed to understand the long-term effects of e-cigarette use and to come up with useful prevention methods.

Keywords: *E-cigarettes, physical effects, psychological effects, social effects, Generation Z*

INTRODUCTION

Smoking is an activity that is carried out in daily life. Smoking is often seen in various locations that are considered the behavior of Indonesian people. The teenagers, adults, and children all smoke. Even people who don't smoke can feel the adverse effects of cigarettes (Salsabila et al., 2022). Cigarettes come in various types, including clove cigarettes, white cigarettes, and cigar cigarettes. In addition, there is also vaping or e-cigarettes that are

increasingly popular. E- cigarettes, often referred to as vaping, are devices that function to heat liquids. Through this process, nicotine is produced without the harmful substances of tobacco, but from a combination of propylene glycol, flavorings, and glycerin. As with conventional cigarettes, the use of vapes can also cause addiction or dependence (Adrida, 2022). E-cigarettes were initially used as one of the options to quit traditional smoking and are considered safer because the levels of formaldehyde

and acetaldehyde which are carcinogens and toxic compounds produced from e-cigarettes are lower when compared to traditional cigarettes (Arieselia et al., 2023). The statement that vaping is 'safer than tobacco cigarettes' may be useful in the context of smoking cessation, but it is irrelevant and potentially misleading when applied to non-smokers, especially to Generation Z (Banks et al., 2023). In a study conducted by the US Food and Drug Administration (FDA) in 2019, they found that the liquid used for vaping contained the carcinogenic substances Diethylene Glycol (DEG) and Tobacco-Specific Nitrosamine (TSNA) which are harmful (Mahirah et al., 2024).

According to the electronic survey GATS showed an increase in e-cigarette users from 0.3% (2011) to 3% (2021), while traditional smokers who switched to e-cigarettes increased from 0.3% (2011) to 10.9% (2018) (Saepulloh et al., n.d.). A survey conducted by National Youth Tobacco showed an increase in e-cigarette use among adolescents without a previous smoking history between 2011 and 2013. In addition, the National Socio-Economic Survey (SUSENAS) noted that the number of e-cigarette users in Indonesia reached 4.

419. 622 people. This figure reflects a significant surge in e-cigarette use in recent years. Since 2019, it has been reported that e-cigarettes can cause lung disease. In the same period, a number of cases of lung disease due to e-cigarettes have also been recorded, along with the increase in the number of their use over the past few decades. E-cigarettes can contribute to acute respiratory disease, often referred to as E-cigarette or vaping product use-associated lung injury (EVALI). In addition, the use of e-cigarettes is also at risk of causing other respiratory disorders, such as obstructive pulmonary disease and lung cancer (Widyantari & Lestari, 2023). From a medical perspective, vapes still contain nicotine as well as various other chemicals that have the potential to cause problems with the cardiovascular and respiratory systems. This can lead to symptoms such as shortness of breath, chronic cough, and increased heart rate. In addition, vaping use has been linked to decreased physical endurance, cognitive impairment, as well as visible physical changes, such as blackened lips and dull skin (Ananda & Kristinawati, 2025). A study conducted by the Center for Tobacco Control Research

and Education at the University of California shows that the use of e-cigarettes can have an impact on increased adrenaline, blood pressure, and addiction. In addition, e-cigarettes can also cause poisoning, pneumonia, asthma, heart failure, and hypotension. What is more worrying is that there is a risk of burns due to the explosion of the device in the mouth (Pelawi & Siregar, 2023). Exposure to vape aerosols causes a variety of stress and inflammatory reactions, including shortness of breath, coughing, wheezing, irritation of the bronchi and lungs, and impaired lung function (Seiler-Ramadas et al., 2021).

Although Gen Z is aware of the impacts and dangers of vaping, such as dependence and the potential for developing lipoid lung disease (blockage of fat in the lungs). It is possible that a person can experience dependence due to the nicotine contained in vapes, as this substance can stimulate the brain to produce large amounts of the hormone dopamine. The variety of flavors contained in vapes is also a major factor that encourages Gen Z to vape. Gen Z admits that they started to vape because of the interesting and fun flavors, such as mint,

fruit, and dessert (Çok, 2023), which makes it seem harmless. In addition, there is also a disease called lipoid pneumonia, which results from the aspiration of fat-like substances into the lungs. Lipoid pneumonia can cause chest pain, difficulty breathing, severe coughing, and coughing up blood. Symptoms of bacterial pneumonia are similar to those of lipoid pneumonia, and lipoid pneumonia can worsen to the point of death if left untreated (Devin & Maburur, 2023). Vape use is significantly related to the view that it is non-addictive, non-cancer-inducing, and accepted by parents. Social factors such as use by family members also increase the likelihood of use among Gen Z (Bigwanto et al., 2022). The use of vape by Gen Z not only has a physical impact but also a psychological impact. They are more likely to experience addiction and more easily engage in other risky behaviors. These include brain development problems, mental health disorders such as anxiety and depression, and increased risk of addiction (Abdullah et al., 2024).

Social media is highly influential on Gen Z's views and behaviors towards e-cigarettes. TikTok, Instagram and

YouTube often feature content or trends that influence how people view e-cigarettes. Public figures or influencers who smoke on social media can indirectly encourage people to smoke. These individuals may see the act as “normal” or even “attractive”. E-cigarette influencers play an important role in shaping Generation Z's perceptions and behaviors. Aspects such as source credibility, which includes attractiveness, expertise and trustworthiness, as well as product suitability, motives behind the endorsement and sponsor disclosure, influence how Gen Z perceives these influencers (Gonzales & Grover, 2023). Friends or individuals around Gen Z may encourage them to smoke, as smoking is still considered normal and even part of social interaction in some locations. Gen Z tends to perceive e-cigarettes as a product that is more affordable, easier to use, and does not disturb people around them, so it is considered more ‘cool’ and can be used discreetly in public places (Villanueva-Blasco et al., 2025). On the other hand, one of the reasons Gen Z started smoking is the lack of attention or supervision from parents on their children's behavior. In the absence of adequate support or

supervision, many individuals feel they have the freedom to experiment, including trying cigarettes from an early age (Rahman & Nurhayati, 2024). Susceptibility to vape in the future is influenced by factors such as positive views of vapes, having friends who vape, and the notion that vaping is common for Gen Z (Jongenelis & Thoonen, 2023).

METHOD

This research was prepared in the form of a literature review with the aim of examining in depth the factors that affect the use of e-cigarettes (vapes) among Generation Z and their impact on physical, psychological, and social health. In this study, we used databases such as: Google scholar, Pubmed, scientdirect with the keywords e-cigarettes, physical impact, psychological impact, social impact, Gen Z. Literature used from 2020 to 2025. This research has received approval from the Research Ethics Committee of Muhammadiyah University Jakarta, with approval letter number 10.059.C/KEPK-FKMUMJ/V/2025. The following is a list of literature that has been reviewed by researchers and summarized, which is listed in Table 1 below.

Table 1 List of Literature Used in Research

No	Writer	Research Title	Publications and years	Conclusion
1.	Ananda, Ira Ayu Kristinawati, Beth	An Overview of Cardiorespiratory Health of Generation Z Vapers : A Qualitative Study	Indonesian Nursing and Scientific Journal Year 2025, vol 14	This study used a descriptive phenomenological approach to 19 Generation Z respondents and found that vape use is influenced by social factors, functions as a coping mechanism, is triggered by variations in taste and daily activities, causes health problems, gives rise to addiction, but is also accompanied by awareness to quit and efforts to balance its impact with a healthy lifestyle.
2.	Aep Saepulloh, Muhammad Iqbal, Rintan Oktaria, Afrita	Phenomenon And Its Influence On The Lifestyle Of Generation Z	Journal of Business Management Innovation Vol 6 No 1, Pages 30-34	E-cigarettes or vapes have become part of the lifestyle of young generation Z, not only in the city but also in the village. The age of the most vape smokers is 16 years old with a total of 36 people (36%) and light smokers with a total of 62 people (62%). The relationship between the influence of vape smokers on lifestyle (lifestyle) was obtained at 70%.
3.	Raudhatun Mahirah, Basri Aramico, Vera Nazhira Arifin	Factors related to vaping behavior in college students	Journal of Public Health Innovation (JPHI) Vol 5 No 1 (2024): 38-47	The results showed that 66.2% of students had good knowledge, 62.2% showed a positive attitude, 68.9% were not influenced by peers, 64.9% were influenced by the media, and 59.5% were influenced by the role of parents.
4.	Gonzales, Ander jauregui Grover, Isha	Influencer Endorsement s of E-Cigarette Brands on Instagram	Journal Jonk oping University, Year 2023	The results of this study show that Generation Z has a positive perception of Instagram influencers who promote e- cigarettes, especially when the influencers show authentic personal engagement with the products they are promoting. There are six main dimensions analyzed in

				this study: <i>expertise, trustworthiness, attractiveness, product category fit, motive, and sponsorship disclosure</i>
5.	Nisa Nistrina Salsabila, Noormarin a Indraswari, Budi Sujatmiko	Overview of Smoking Habits in Indonesia Based on Indonesia Family Life Survey 5 (Ifs 5)	Journal of Indonesian Health Economics, Vol 7, June 30, Page 13	The results of the study found that smokers in Indonesia are mostly male (95%), only elementary school graduates (35%), working (80%), have a low economy (79%), and live in urban areas (57%). 46% started smoking as teenagers with the type of cigarette that is often used is filter clove cigarettes.
6.	Firdi Devin, Muhammad Faa'iq Mabruur	The Effect of Vaping on Health in Gen Z	Scientific Journal of Psychology and Public Health, Vol 1 of 2023 Pages 20-21	The results of the research obtained that vapes are currently still rarely used by Gen Z, but there is the potential for an increase in their use due to environmental and social influences. Generation Z tends to be easily influenced by their friends, although we know that vaping has many dangers, especially related to lung damage due to nicotine content. Therefore, it is very important for Generation Z to be well aware of the dangers posed by vaping use.
7.	Donna Diva Widyantari 1, Rina Lestari	The Impact of Using E-Cigarettes (Vapes) on the Risk of Lung Disease	Lombok Medical Journal, Vol 2 Year 2023	The results of the study found that the most common acute respiratory disease associated with the use of e-cigarettes is known as E-cigarette or vaping product use-associated lung injury (EVALI). Other respiratory disorders that can occur due to e-cigarette use include chronic obstructive pulmonary disease (COPD) and lung cancer.
8.	A. Muh. Fathul Rahman, St. Nurhayati	The Smoking Phenomenon in Gen Z: A Review of Health	Journal of Islamic Education and Studies Volume	The results show that although awareness of the dangers of smoking has increased, many Generation Z continue to smoke for reasons such as reducing stress, improving focus,

		Analyses, Social Influences, and Educational Prevention Strategies	3 Number 3 of 2024 Pag e 518-529	and gainingsocial acceptance. Social environmental factors, the influence of social media, and a lack of family supervision reinforce this behavior.
9.	Zita Arieselia, Lonah, Linawati Hananta, Margareta Amelia, Fenny Mariska, Via Dolorosa Halilintar, Mariani Santosa, Meiliyana Wijaya, Rita Dewi, Jonny Setiawan Monalisa Heryani,	The prevalence of e-cigarette users in college students and the determinants that affect their use behavior	Damianus Journal of Medicine Vol.22 No.2 August 2023: p.136-146	The results of the study showed that the prevalence of e-cigarette users among college students was 21.7%. In this study, the factors that affect the decision to use e- cigarettes are gender ($p<0.001$), perception ($p<0.001$), availability of supplies ($p<0.001$), family support ($p=0.002$), and peer support ($p<0.001$).
10.	İsmet Ço	The Use and Risks of Flavoring Agents in Electronic Cigarettes: Toxicological Approach	Addicta: the Turkish Journal on Addictions Year 2023, vol 10 page 202-209	The results of the study show that the fragrance contained in e-cigarette liquids contributes to the increase in vaping use, especially among adolescents and young adults. More than 80% of teens who use e-cigarettes say they are attracted to products because they taste like candy, dessert, and fruit.
11.	Villanueva-Blasco, Víctor José Belda- Ferri, Lorena Vázquez-	A systematic review on risk factors and reasons for e-cigarette use in adolescents.	Journal of Tobacco induced diseases, Vol 23, year 2025 pp. 1-	Of the 895 studies, 50 met the inclusion criteria. The strongest risk factors for e- cigarette use (EC) in adolescents included social acceptance and use in friends or family settings (13 studies), male sex

	Martínez, Andrea		25	(10 studies), low risk perception (6 studies), younger age (3 studies), and greater financial resources (3 studies). Reasons for using EC include low risk perception and appealing taste, supported by longitudinal and cross-sectional studies.
12.	Jongenelis, Michelle I. Thoonen, Karlijn A.H.J.	Factors associated with susceptibility to e-cigarette use among Australian adolescents	International Journal of Drug Policy, 2023 vol 122	The results of the study found that susceptibility to the use of e-cigarettes was observed in 45% of respondents. Individual factors associated with vulnerability included (i) respondents' overall opinion of e-cigarettes, (ii) attitudes toward e-cigarettes, (iii) expectations of regulation, and (iv) perceptions of quitting smoking. Significant social factors include descriptive norms and injunctive norms, in particular: assuming that use is okay for people their age, consent from others that it is important to use, and having at least one family member or close friend who uses vaping.
13.	Bigwanto, Mouhamad Nurmansyah, Mochamad Iqbal, Orlan, Elizabeth Farradika, Yoli Purnama, Tri Bayu	Determinants of e-cigarette use among a sample of high school students in Jakarta, Indonesia	International Journal of Adolescent Medicine and Health, Year 2022 Vol 34 Pages 1-9	This research revealed that curiosity and sensation-seeking personalities encourage students to try e-cigarettes. Although 11.9% intend to use it to quit smoking, the majority fail and become dual users (51.1%). E-cigarettes have not been proven to be effective as a smoking cessation tool and have been linked to an increase in conventional cigarette consumption among adolescents. Many find it safer, trendy, does not disturb others, and can be used in public places without a strong odor.

14.	Banks, Emily Yazidjoglo u, Amelia Brown, Sinan Nguyen, May Martin, Melonie Beckwith, Katie Yours truly, Amanda Campbell, Sai Joshy, Grace	Electronic cigarettes and health outcomes: umbrella and systematic review of the global evidence	Medical Journal of Australia, 2023 vol 218 pp. 267-275	The results showed that the use of electronic cigarettes was shown to cause poisoning, acute inhalation toxicity (including seizures), burns and injuries due to device damage, as well as lung injury (EVALI), especially in <i>THC- based</i> cigarettes but also in nicotine-based cigarettes. Vape use can lead to nicotine dependence, especially in children, adolescents, and non-smokers.
15.	Seiler- Ramadas, Radhika Sandner, Isabell Haider, Sandra Grabovac, Igor Dorner, Thomas Ernst	Health effects of electronic cigarette (e- cigarette) use on organ systems and its implications for public health	Journal Wiener Klinische Wochenschr ift, year 2021 Vol 133 pp 1020-1027	The results of the study said that exposure to e-cigarettes has caused various stresses and inflammatory reactions in the pulmonary system, including shortness of breath, coughing, wheezing, bronchial and lung irritation, and impaired lung function. In the oral and gastrointestinal systems, inflammation of the gums, sore throat, nausea, vomiting, and diarrhea have been reported. Increased tachycardia and blood pressure are reported reactions in the cardiovascular system. In the nervous system, headaches, irritability, restlessness, dependence, and insomnia are observed.

RESULT

The results of a literature study show that the use of e-cigarettes (vapes) among Generation Z is influenced by many factors, such as attractive tastes, peer encouragement, social media influence, and lack of supervision from family. In addition, many Generation Z think that vaping is safer compared to traditional cigarettes, which encourages them to try it. However, vaping can result in a variety of health problems, such as lung disorders (such as EVALI and COPD), heart issues, and psychological disorders such as anxiety, depression, and nicotine dependence. Vaping also has an effect on users' social lives, increasing the likelihood of them engaging in negative behavior. Therefore, education, parental supervision, and strict regulations are essential to reduce vaping use among Gen Z as well as maintain their health.

DISCUSSION

First, (Ananda & Kristinawati, 2025) The use of vaping among adolescents, especially among Generation Z, is increasingly prevalent and raises various concerns, both in terms of health and social. Although the number is

currently not comparable to conventional cigarettes, the trend of vaping use is expected to continue to increase, triggered by the influence of the strong friendship environment and social media.

(Saepulloh et al., n.d.) It found that Generation Z has integrated e-cigarettes into their daily lives, and the individuals who use them the most often. This research indicates that vaping is a habit and an element of their social identity. (Mahirah et al., 2024) reinforces this idea by showing that students' positive understanding and attitudes about vaping contribute to e-smoking behavior. They also show that the impact of the media and parents also plays a role in shaping this attitude.

(Gonzales & Grover, 2023) Shows that Generation Z has a positive view of Instagram influencers who promote e-cigarettes, especially when those influencers show genuine personal engagement with the products they recommend. From a health aspect, (Devin & Maburur, 2023) found the potential for increased vaping use among adolescents and emphasized the associated health hazards. (Widyantari & Lestari, 2023) shows that the use of e-cigarettes

can result in lung diseases, including EVALI and chronic obstructive pulmonary disease. This emphasizes the importance of understanding the serious health risks that e-cigarette use can pose.

(Rahman & Nurhayati, 2024) suggests increasing anti-smoking campaigns and school education programs to reduce e-cigarette use. (Arieselia et al., 2023) found that 21.7 percent of Gen Z use e-cigarettes. They found that variables such as social support and gender had an effect. According to (Çok, 2023), fragrances in e-cigarette liquids contribute to more use by Gen Z, which suggests that the attractive taste may be a major factor.

According to (Villanueva-Blasco et al., 2025), social acceptance and environmental norms are the main risk factors in e-cigarette use by Gen Z. (Jongenelis & Thoonen, 2023) found that good attitudes and social norms have an effect on vulnerability in e-cigarette use, emphasizing the importance of a community-focused approach to prevention. Finally, (Bigwanto et al., 2022) found that the perception that e-cigarettes do not cause addiction and that parental support drives student use. (Banks et al., 2023) concluded that there is

significant evidence linking e-cigarette use to health problems such as nicotine dependence. (Seiler-Ramadas et al., 2021) emphasize that the use of e-cigarettes can cause respiratory distress and inflammatory reactions as well as various other health problems.

Overall, this study indicates that a number of factors, including social, psychological, and environmental, influence e-cigarette use among Generation Z. To reduce the health risks associated with vaping, appropriate education and treatment are essential.

CONCLUSIONS AND SUGGESTIONS

From the literature review above, it can be concluded that Gen Z consumes e-cigarettes due to various factors. Such as attractive tastes, peer influence, social media, and the view that vaping is safer compared to regular cigarettes. Despite this, many studies show that vaping has negative impacts on physical health, such as lung problems, as well as psychological and social health, such as dependence and an increased risk of deviant behavior. Therefore, education, family supervision, and strict regulation are needed to stop Gen Z from vaping and encourage a healthier lifestyle. Further research is

needed to understand the long-term effects of e-cigarette use and to develop effective prevention methods.

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