



## CLOUDED JUDGEMENTS: EXPLORING THE IMPACT OF E-CIGARETTE CULTURE ON YOUTH IN IPOH, PERAK

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### Abstract

*Today's global climate, the prevalence of e-cigarette usage among youth has greatly increased, raising serious societal concerns. The goal of this study is to look at the impact of this new trend on young people in Ipoh, Perak. The main issue is that young people are increasingly using electronic cigarettes, which has negative consequences for their health and well-being. The study employs qualitative methods and involves 12 participants aged 18 to 25, representing both genders. Data is gathered through in-depth interviews, and thematic analysis is used to discover major themes and patterns, resulting in a more nuanced understanding of the impact on individuals and the larger community. The findings revealed a considerable inclination among Ipoh's youth for regular e-cigarette smoking. Their conviction in the safety of e-cigarettes, mixed with cultural acceptance, fuels this habit. Furthermore, the study emphasizes teens' increased proclivity for e-cigarette usage, which is driven by a mix of internal and external variables such as self-intention, environmental stimuli, and peer pressure. These factors combine to make e-cigarettes more appealing, leading future generations down a perilous path of addiction. This study goes beyond observation, providing crucial information for practical approaches to limit teenage e-cigarette use and address the identified issue. Recognizing the gravity of the situation, the study offers valuable information for educated interventions. Addressing the pervasive influence of e-cigarette culture on Ipoh's youngsters offers the groundwork for successful approaches to limiting harm and protecting the well-being of the next generation.*

**Keywords:** E-cigarettes; Effects; Youths; E-cigarette Usage; Addiction

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## INTRODUCTION

The electronic cigarette, a battery-operated device emitting vaporized nicotine or non-nicotine solutions for inhalation, has gained popularity globally. Low in tobacco content but rich in nicotine and other chemicals, it provides a similar sensation to traditional smoking. Electronic cigarettes, also known as e-cigarettes, e-cigs, vape pens, or electronic nicotine delivery systems, refer to the same type of device, has emerged in China in 2004 and gained traction, with 3.2% of U.S. adults using it in 2016 (Lang-Perez, 2019).

The proliferation of e-cigarettes extends to both traditional and online marketing. In 2013, nearly 30,000 videos and advertisements on social media platforms demonstrated the relationship between individuals and e-cigarettes. This surge in marketing, both online and offline, has influenced a growing number of individuals towards e-cigarettes, reflecting increased interest and engagement (Vogel et al., 2021).

The study is prompted by the escalating numbers of e-cigarette users, with the latest information revealing alarming trends in Malaysia. In the Asian context, Malaysia has seen a significant growth in the e-cigarette industry, with estimates suggesting that around one million individuals in the country have become regular users of e-cigarettes (Puteh et al., 2018). As reported by the 2019 National Youth Tobacco Survey (NYTS), more than five million youths now consider e-cigarettes as a self-image enhancing tool, contributing to a steady rise in their usage (Glasser et al., 2021). Furthermore, recent findings from the Tobacco and E-cigarette Survey Among Adolescents in Malaysia (TECMA) conducted by the Ministry of Health in 2016 show an increase in both smoking and e-cigarette use among young people in educational institutions. This rise in usage has led to critical mental health issues among this population. These results underscore the urgent requirement to examine and address the growing prevalence of e-cigarette usage among youth in Malaysia (Graverly et al., 2014).

The NYTS data for 2017 and 2018 underscore a concerning rise in e-cigarette usage between middle and high school students, aged 11 to 18, with over 3.6 million students currently using e-cigarettes daily. The prevalence of e-cigarette usage, combined with a 78% increase from 11.7% in 2017 to 20.8% in 2018 between high school students, is a concerning development that raises alarms. The allure of flavors, such as cherry and gummy bear, contribute to this rise, indicating a need to delve into the reasons behind this increase. Subsequent findings in 2019 reveal a continued rise in e-cigarette usage among youths, emphasizing the urgency of understanding and addressing this escalating issue. Moreover, 2019 saw an alarming 805 cases of illnesses and 12 deaths related to e-cigarette usage in the U.S. This signifies the urgency to address the potential health hazards of e-cigarette use.

From the Malaysian perspective, the lack of evidence supporting e-cigarettes as effective smoking cessation aids further emphasizes the necessity of this study in the local context (AbRahman et al., 2019; Bhatt et al., 2020; Sapru et al., 2020; Hartmann-Boyce et al., 2021). The objective of this study, therefore, is to investigate the effects of the increasing frequency of e-cigarette usage among youth in Ipoh, Perak.

## LITERATURE REVIEW

### Youth and E-Cigarette

The literature on e-cigarettes paints a nuanced picture of their impact on human health and behavior. e-cigarettes, also known as electronic nicotine dispensing systems (ENDS), have been commonly perceived as a less harmful

alternative to conventional cigarette smoking. Although e-cigarettes are considered a relatively safer alternative to traditional cigarettes, they are not entirely harmless, and studies on the potential long-term health implications of e-cigarette use are scarce, as noted by Marques et al. (2021). E-cigarette use has been linked to various health effects, encompassing addictive properties, the potential for nicotine addiction, and concerns about their influence on traditional smoking, especially among young people (Tzortzi et al., 2020; Giovacchini et al., 2022; Alotaybi et al., 2022). Additionally, studies have shown a causal relationship between increased e-cigarette usage among youth and its effects on perception, health, and behaviors (Tzortzi et al., 2020). Furthermore, there are apprehensions about the marketing and promotion of e-cigarettes, particularly their impact on the youth demographic (Tzortzi et al., 2020).

Studies have established a causal relationship between increased e-cigarette usage among youth and its effects on perception, health, and behaviors (Perikleous et al., 2018). While e-cigarettes may be safer than conventional cigarettes, they are not without harmful effects, and the potential long-term consequences of e-cigarette consumption have been minimally explored (Gotts et al., 2019). Furthermore, concerns have been raised about the potential for e-cigarettes to renormalize cigarette smoking and become a new smoking innovation, particularly among young people (Alotaybi et al., 2022). A systematic review focusing on the effects of e-cigarette use on lung function has emphasized the necessity for further research to establish the impact of e-cigarettes on clinical outcomes, measures of lung function, and the risk of increased predisposition to lung-related health problems. The review underscores the importance of conducting long-term studies with large sample sizes to address the knowledge gap regarding the wellbeing and potential health effects (Honeycutt et al., 2022; Giovacchini et al., 2022).

The 2016 National E-cigarette survey in Malaysia revealed that e-cigarette use is more widespread in urban regions than in rural areas. Additionally, the survey highlighted the significant extent of e-cigarette use in Malaysia, particularly among male teenage and current cigarette smokers (AbRahman et al., 2019). Based on the findings from the World Health Organization (WHO) in 2019, it is estimated that more than 20,000 male adults in Malaysia die annually from complications related to their vaping habits (Institute for Health Systems Research, 2020). E-cigarettes have emerged as the most commonly used tobacco product among United States middle and high school students, as indicated by the 2018 National Youth Tobacco Survey (NYTS). The report indicates a concerning surge in e-cigarette use among youth, with a 78% increase among high school students and a 48% increase among middle school students.

In 2018, the number of middle and high school students who currently use e-cigarettes surged to 3.6 million. Furthermore, the NYTS discovered that young people who use e-cigarettes are not only using them more often but also opting for flavored products with increasing frequency. In conclusion, the literature on e-cigarettes underscores the imperative for comprehensive research to fully comprehend their impact on human health and behavior. Despite being marketed as a less harmful substitute to conventional cigarettes, ongoing investigations are warranted due to concerns about their potential long-term effects, addictive properties, and influence on traditional smoking. The latest citations and references provided in the search results offer valuable insights into the complex nature of usage of e-cigarette and its wide ranging effects.

### **Social Cognitive Theory (Sct) As Theoretical Framework**

The theoretical foundation of this study rests upon the Social Cognitive Theory (SCT), originally formulated as the Social Learning Theory (SLT) by Albert Bandura in the 1960s and subsequently evolved into the SCT in 1986.

SCT posits that individuals acquire and shape their behaviors through personal experiences, observations of others, and environmental influences. The theory underscores the continuous interplay between cognitive, behavioral, and environmental factors in the development of human behavior, with a distinct emphasis on social influence and reinforcement, both internal and external (Vinney, 2019).

Central to SCT are seven key elements crucial for understanding individual behaviour change: self-efficacy, behavioural capability, expectations, expectancies, self-control, observational learning, and reinforcements. These components collectively contribute to the process of behaviour change. Self-efficacy involves an individual's belief in their ability to execute a behavior, behavioral capability pertains to the understanding and skill required to perform a behaviour, while expectations determine the anticipated outcomes of behaviour change. Self-efficacy significantly influences motivations, decisions, and commitment levels, impacting individual actions and beliefs (Hopper, 2023).

The underlying assumptions of social cognitive learning include individuals being influenced by their environment, learning through observation, and the continuous interaction between individuals, their environment, and behavior. SCT's strengths lie in its comprehensive consideration of human behavior, cognition, and environment. It addresses the motivational aspects through reinforcement and self-efficacy and places importance on self-regulation in the learning process (Bandura, 2004). However, it has limitations, such as not fully addressing the complexities of human differences and neglecting certain factors like personality traits, biological differences, and mood when explaining behaviors and cognitive processes (Greer et al., 2022).

Within the scope of this research, SCT offers a robust framework for comprehending how youths in Ipoh, Perak consciously shape their attitudes, behaviors, and perceptions related to the rising usage of e-cigarettes. By emphasizing the interplay between internal cognitive processes and external social influences, SCT aids in unraveling the complexities of the youth's developmental processes concerning e-cigarette usage. Social cognitive theory has been used prior studies to examine other health behaviour among youth such as dietary intake (Corbett et al., 2019; Greer et al., 2022; Rocheleau et al., 2020; Schunk & DiBenedetto, 2020).

This study's conceptual framework combines the Social Cognitive Theory (SCT) with relevant factors, placing the impact of increasing e-cigarette use among young people in Ipoh, Perak as the outcome variable on the right side. On the left side are the independent variables representing behavior, environment, and person. This visual representation serves as a guide for exploring the intricate relationships within the study, aligning with the theoretical underpinnings of SCT (Berg, 2021; Bandura, 2004).

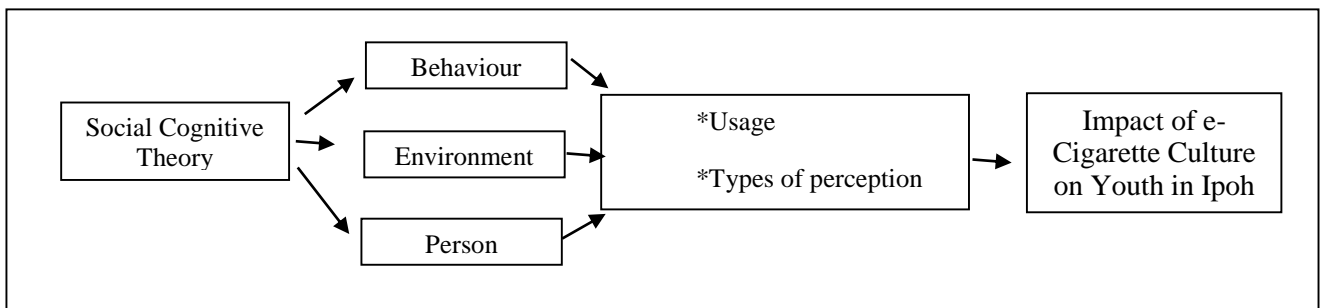


Figure 1: Theoretical Framework of the Impact of e-Cigarette Culture on Youth in Ipoh, Perak

Hence, the conceptual framework provides a road map for exploring the interplay of critical variables, resulting in a thorough understanding of the factors driving the growing trend of e-cigarette use among teenagers in Ipoh, Perak. It complements the SCT by connecting theory and empirical research to deepen our understanding of the complex dynamics of juvenile e-cigarette use.

## **METHODOLOGY**

This study used a qualitative research method, specifically in-depth interviews, to investigate the impacts of increasing e-cigarette use among young people in Ipoh, Perak. The target demographic for this study was youths aged 18 to 25 in Ipoh, Perak. The three-month study aimed to engage 10 to 12 participants, with a primary focus on youngsters who used e-cigarettes. In-depth interviews were used to collect data and allow for detailed conversations with each participant. These face-to-face exchanges were videotaped with a preset list of research-related questions. While the interview had a set style, conversations were permitted to flow based on participant responses. The interviewer's ability was critical in eliminating data loss and guaranteeing accurate and reliable information collecting. Despite the small sample size, the study avoided producing biased results (Steber, 2017).

Despite the small sample size, the study prioritized avoiding biased findings. Purposive sampling was used to select participants based on particular criteria (Coyne, 1997), which included self-identification as male or female, ages ranging from 18 to 25 years, daily e-cigarette use, and domicile in the Ipoh, Perak area. As for data analysis. Thematic analysis was used to uncover, analyze, and present patterns, often known as 'themes,' within the acquired data. This technique organizes the dataset minimally while providing detailed descriptions (Braun and Clarke, 2006). Braun and Clarke (2006) proposed six thematic analysis approaches, which were followed in this study: (1) Familiarizing with the data, (2) Generating initial codes, (3) Searching for themes, (4) Reviewing themes, (5) Defining and identifying themes, (6) Creating the report.

## **RESULTS AND DISCUSSION**

Thematic content analysis is based on in-depth interviews with 12 informants, including both male and female youngsters from Ipoh, Perak. These informants, who met the researchers' predefined criteria, provided useful insights into regional teenagers' perceptions, experiences, and impacts on e-cigarette use. Thematic content analysis of interview transcripts indicated findings that were consistent with the research study's aims and answered the initial research questions. The analysis revealed five key themes: perception, non-toxicity, health complications, influence factors, and benefits. These themes encapsulate the many facets of e-cigarette use, offering light on the complex dynamics involved.

Thematic analysis revealed diverse viewpoints on e-cigarette consumption among teenagers in Ipoh, Perak. The claimed benefits and risks of e-cigarettes highlight the complexities of this situation. Participants regarded e-cigarettes favorably, stressing their convenience and lower risk compared to regular cigarettes. However, the recognition of potential health issues indicates a more nuanced awareness among the youth. Peers, social media, and product design revealed as key influences on e-cigarette consumption. These findings (refer to Table 1) add to the continuing discussion about e-cigarette prevalence among teens, underlining the importance of targeted treatments and comprehensive educational activities to address the varied nature of this issue.

Table 1: Data from Thematic Analysis

Theme	Operational Definitions	Codes
<b>Perception</b>	The manner in which something is perceived, construed, viewed, and comprehended	Cool, much better, special, less harmful, peace, relaxation, harmony, good, release stress, satisfaction, useful, no restriction, convenient
<b>Non-Toxic</b>	A substance that is not perceived as toxic and does not produce any adverse reactions	Environmental friendly, lesser effect, lesser health complication, safe, healthier than tobacco cigarette, healthy substitute, no chemical substance
<b>Health Complication</b>	A state of physical and mental ill-being caused by illness or disorder that requires medical attention and therapy	Sore throat, gum bleeding, dry mouth, coughs, stomach ache, congested lungs, gastric problem, breathlessness, excessive thick mucus production, mouth ulcer, strong addiction
<b>Influence Factors</b>	The influence or impact that one individual or entity has on shaping another person's growth, actions, and beliefs.	Peer influence, social media, design of the e-cigarette, friends, myself, curiosity, own intentions, attracted by massive vapour smoke, flavours, Lazada, Gerbang Malam, Vape store, neighbourhood, online
<b>Benefits</b>	A benefit or substantial gain that is derived from something	Convenient, better alternative, release stress, healthy substitute, reduce the amount of tobacco smoker, pleasure, good product, determined to stop smoking, safer, cost saving, zero smell, environmental friendly, can be used in smoke free environments, user friendly

### **Perception**

The thematic analysis of in-depth interviews provided valuable insights into how youth in Ipoh, Perak perceive and interpret e-cigarettes, unraveling the factors influencing their engagement. This theme delves into the intricate ways in which e-cigarettes are conceptualized by the youth, shaping their attitudes and influencing usage behaviors. Participants articulated their perceptions, emphasizing the positive attributes associated with e-cigarettes. For instance:

Informant 1: *“For me, ermmm...E-cigarette is a cool thing which gives you the feelings of peace, ermmm....relaxation and harmony”*

Informant 2: *“Is much better than smoke cause less harm than cigarettes does”*

Informant 3: *“For me it releases stress”*

Informant 4: *“It is something special la because e-cigarette ahhh...does not have any restriction and another one is it is more convenient to carry around”*

Youths' positive perceptions of e-cigarettes as a "cool" and less harmful alternative resonate with findings from current literature. Studies by Strombotne et al., (2020) and Mhazo (2019) highlight the influential role of perception in driving e-cigarette use among the youth, where the products are often viewed as trendy and less detrimental to health compared to conventional cigarettes. The appeal of e-cigarettes, as expressed by the participants, extends beyond harm reduction to encompass the sensory experience they offer. The availability of various flavors and the absence of stringent restrictions contribute to the perception of e-cigarettes as a "special" and "convenient" product, aligning with recent research by Pepper et al, (2019). These positive perceptions hold significant implications for usage behaviour. The perception that e-cigarettes are less addictive and harmful may encourage young people to try them, leading to prolonged use and increasing the risk of a gateway effect, where e-cigarette use ultimately leads to traditional tobacco smoking. This aligns with the issues raised by public health experts, as seen in the work of Hammond et al., (2020).

In conclusion, unraveling the nuanced perceptions of e-cigarettes among youth is pivotal for developing targeted interventions and regulatory measures. The positive connotations associated with e-cigarettes necessitate comprehensive public health strategies that address the appeal factors while emphasizing the potential risks. The findings contribute to the ongoing discourse on e-cigarette use among youths, urging policymakers and health practitioners to consider the intricate interplay of perception, convenience, and harm reduction in developing effective interventions.

### **Non-Toxic**

The insights gained from the in-depth interviews highlight the perception among youths that e-cigarettes are relatively harmless and pose minimal health risks. These are reflected as below:

Informant 1: *“Because I was determined to stop smoking tobacco”*

Informant 2: *“They are beneficial to stop tobacco cigarette and its hmmm...more better alternative”*

Informant 3: *“It's a healthy substitute for people who wanna quit smoking”*

These excerpts highlight the appeal of e-cigarettes to young people as a new way for traditional tobacco smokers to reduce their cigarette consumption. The participants emphasized the perceived benefits of e-cigarettes, positioning them as a safer and healthier alternative. The belief in e-cigarettes as a non-toxic substitute stems from the understanding that e-cigarettes contain fewer harmful chemical substances than traditional tobacco cigarettes. Notably, youths recognized the absence of tar, carbon monoxide, benzene, or ammonia in e-cigarettes, contributing to the perception of reduced health and environmental consequences.

The idea that e-cigarettes can reduce harm is supported by existing research, which indicates that people perceive e-cigarettes as a safer alternative to traditional cigarettes and a potentially useful aid for quitting smoking (Warner & Mendez, 2019; Jongenelis et al., 2019; Worku & Worku, 2019). The perceived safety of e-cigarettes may influence the higher addictiveness and susceptibility rates observed among youths in this study. While the harm reduction perspective is prevalent, it is crucial to critically evaluate the empirical data supporting the health benefits assertions of e-cigarettes. Additionally, understanding the factors contributing to the perceived safety of e-cigarettes can inform targeted public health interventions and regulatory measures.

### **Health Complication**

The examination of youths' perspectives on e-cigarette health effects reveals a nuanced landscape. While a minority expressed concerns about potential harm, the majority, particularly heavy users, displayed a notable lack of awareness regarding associated health risks. Regular e-cigarette users, who reported strong addiction, experienced a variety of health issues, including respiratory and gastrointestinal problems, such as throat inflammation, oral bleeding, oral ulcers, coughs, stomachaches, congested lungs, gastric issues, breathlessness, and excess phlegm. The participants' statements provide valuable insights into their perceptions of these health consequences.

Informant 1: *"not much laa... just gum bleeding and mouth ulcer"*

Informant 2: *"Sore throat, gastric problem, and the thick mucus production always"*

Informant 3: *"So far nothing so serious, only dry mouths"*

Informant 4: *"In the beginning, I had breathlessness problem but for now, I'm okay with it, so far I have nothing"*

Informant 5: *"I got stomach ache sometimes because of consuming e-cigarette but it's fine for me as the stomach ache not so serious one"*

Despite facing various health impacts due to usage of e-cigarette, the youth commonly asserted e-cigarettes have a lower toxicity profile compared to traditional tobacco cigarettes, with fewer hazardous chemicals present.. This perception, albeit at odds with existing scientific discourse, contributes to the overall narrative of e-cigarettes as a socially acceptable and useful product in their milieu. The reported symptoms, albeit often minimized, align with documented health effects linked to e-cigarette use, emphasizing the necessity for heightened awareness, education, and targeted interventions among youths to address the prevailing misconceptions and encourage informed health-related decision-making.

### **Influence Factors**

The theme of influence factors illuminates the intricate web of internal and external elements shaping youths' perspectives, behaviors, and opinions on e-cigarettes. Internally, the youth cite personal interest, perception, and curiosity as pivotal factors driving their engagement. Externally, the social environment emerges as a key



influencer, encompassing four main elements: people, things, cultures, and technology. Excerpts from participants shed light on these influence factors:

Informant 1: *“My friends and the seller of e-cigarette products from Gerbang Malam”*

Informant 2: *“Me myself because I’m too curious to try the product hmm...because I see the e-cigarette shape and functions more amazing”*

Informant 3: *“Alfred: My friends, neighborhood, and Facebook”*

Informant 4: *“Peer influences”*

Informant 5: *“My friends and online social media like Insta”*

External factors, particularly peer influence, neighborhood dynamics, product characteristics, and the omnipresence of social media platforms, significantly shape the youths' e-cigarette inclinations. Friends are identified as crucial catalysts, actively providing exposure and encouraging e-cigarette use (McCausland et al., 2020). Social media outlets, including Instagram and Facebook, play a significant role in highlighting the attractive features of e-cigarettes, thereby exerting a profound influence on young people (Yeung, 2018).

Additionally, physical spaces like Vape stores and local night markets serve as influential environments where e-cigarette sellers employ persuasive techniques, inspiring curiosity and promoting engagement. These external forces, combined with internal drivers, underscore the need for comprehensive interventions addressing both individual perceptions and external influences to foster a more informed youth populace.

### **Benefits**

The exploration of the benefits theme delves into the tangible advantages perceived by youths in Ipoh, Perak, amid the burgeoning usage of e-cigarettes. Participants expressed a resounding consensus that e-cigarette usage yields significant advantages in their daily lives. The youths articulated various reasons for their regular consumption, positioning e-cigarettes as a safer alternative to traditional tobacco smoking.. Key excerpts include:

Informant 1: *“I love e-cigarette because there are no restrictions for e-cigarette and it can be used in smoke-free environments”*

Informant 2: *“Can smoke anywhere you want, and it is user-friendly, you know”*

Informant 3: *“Vaping is cool because it gives me the feeling of peace, freedom like that”*

Informant 4: *“There is no unpleasant smell like the normal cigarette, the tobacco one and less harm than tobacco cigarette”*

Informant 5: *“E-cigarette actually does not pollute the air like how the tobacco cigarette does, and another one is the product, flavors all also available at a reasonable price as well”*

The youths contend that e-cigarettes offer a gamut of advantages, including the absence of usage restrictions, suitability for smoke-free environments, user-friendliness, and the provision of a sense of peace and freedom.

Additionally, one prominent benefit highlighted by the participants is the perceived lack of restrictions on e-cigarette usage, allowing them the flexibility to smoke in various environments (Jane Ling et al., 2023). Consistent with prior studies, the lack of strict regulations is found to contribute to the attractiveness of e-cigarettes, particularly among youth, as observed by Abdulrahman et al. (2020) and Van Der Eijk et al. (2022).

## CONCLUSION

Our research into the impact of e-cigarette culture on youths in Ipoh, Perak, has revealed a rich tapestry of perspectives, behaviors, and consequences that illustrate the intricacies of this emerging phenomenon. The thematic analysis shed light on the reasons, influences, and health concerns that affect Ipoh's youth's usage of e-cigarettes.

The first topic, perception, presented electronic cigarettes as a compelling and appealing option for young people, with a focus on coolness, damage reduction, and stress relief. This supports prior study on the symbolic significance of e-cigarettes in adolescent culture (Pepper et al., 2019). However, these positive attitudes must be carefully examined within the context of contemporary debates about the health effects of e-cigarettes, necessitating a balanced viewpoint (Strombotne et al., 2020; Mhazo, 2019). In the second topic, Non-Toxic, the youth believe that e-cigarettes are less harmful than regular tobacco cigarettes, which supports the harm reduction narrative. While previous studies suggest that e-cigarettes may be a relatively safer option, their highly addictive nature and high rates of susceptibility among users necessitate a prudent and cautious approach to their use (Warner & Mendez, 2019; Jongenelis et al., 2019; Worku & Worku, 2019).

The third topic, Health Complications, provides a paradox: a minority acknowledges the potential health risks, while the majority, often heavy users, remain blissfully unaware. This highlights a significant gap in youth awareness and health literacy, necessitating targeted interventions and educational measures (Herrmann et al., 2023). The fourth subject, Influence Factors, emphasizes the wide range of impacts on teenage behavior. Peer influence, social media, and marketing strategies all have a significant impact on e-cigarette adoption. These findings are consistent with broader concerns regarding how marketing and social circumstances influence teenage substance use (McCausland et al., 2020).

Lastly, the advantages theme underscores the favorable perceptions of e-cigarette use among young people, focusing on its perceived benefits. The claimed advantages of reduced harm, convenience, and environmental friendliness represent the evolving narrative surrounding e-cigarettes. However, it is crucial to interpret these benefits with caution and in the context of expanding scientific understanding (Jane Ling et al., 2023).

The study provides insight into the complex interaction of factors influencing e-cigarette culture among adolescents in Ipoh, Perak. As the situation evolves, policymakers, public health specialists, and educators must use the data to design focused responses. To navigate the murky waters around e-cigarettes and preserve the well-being of Ipoh's children, regulatory measures that weigh the potential benefits and risks must be supplemented with rigorous teaching activities. This study's results add to the ongoing discussion about the effects of e-cigarette culture, highlighting the need for a comprehensive approach that takes into account the complex interplay of factors involved.

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