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PEER AND SOCIAL MEDIA INFLUENCE AS MEDIATORS OF KNOWLEDGE, ATTITUDES, AND PRACTICES TOWARDS VAPING AMONG YOUNG ADULTS IN SOUTH COTABATO

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Abstract

This predictive–correlational study examined the mediating role of peer and social media influence in the relationship between knowledge, attitudes, and practices toward vaping among young adults in Surallah, South Cotabato. A total of 252 respondents aged 18–24 completed a validated questionnaire. Mean, Standard Deviation, Spearman's rho, and Partial Least Squares–Structural Equation Modeling were used to analyze the data. Results showed a very low level of knowledge (M=3.00, SD=1.20), moderate attitudes (M=3.32, SD=1.26), low practices (M=2.45, SD=1.31), and moderate peer/social media influence (M=3.40, SD=1.20). It also showed that that knowledge was negatively correlated with peer influence (r_s = –.261, $p < .001$), suggesting increased knowledge reduces susceptibility to peer pressure. In contrast, attitude was positively correlated with both peer influence (r_s = .602, $p < .001$) and vaping practices (r_s = .559, $p < .001$), indicating that favorable attitudes toward vaping are correlated with greater peer influence and higher vaping frequency. Peer influence was also strongly correlated with vaping practices (r_s = .578, $p < .001$). Peer influence fully mediated the link between knowledge and practices and partially mediated the link between attitudes and practices. Findings suggest that knowledge alone does not deter vaping when pro-vaping norms are reinforced socially. The study recommends integrating health education with peer-led and media-based interventions to strengthen resistance to social pressure and correct misinformation about e-cigarettes.

Keywords: *Vaping, E-Cigarettes, Peer Influence, Social Media, Young Adults, Knowledge-Attitude-Practice, Predictive-Correlational, South Cotabato*

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Introduction

Vaping has emerged as a prominent global behavioral trend, particularly among young adults aged 18 and above (Becker & Rice, 2021). The rapid increase in e-cigarette use has raised significant public health concerns, particularly due to its addictive nature and the associated health risks. The growing prevalence of vaping has complicated tobacco control efforts, as many individuals perceive e-cigarettes to be a safer alternative to traditional smoking.

However, existing evidence underscores the considerable health risks of vaping, including respiratory issues, cognitive impairments, and a heightened likelihood of transitioning to the use of other harmful substances (Cao et al., 2020; Lyzwinski et al., 2022). It is critical to address both the long-term effects of e-cigarette use and the knowledge gaps surrounding these risks, especially among young adults (Doumi et al., 2023).

Globally, e-cigarette use continues to rise. A systematic review by Martins (2022) found that 10.72% of participants used e-cigarettes, with the highest prevalence among males aged 18–24 with higher education. In the United States, 4.5% of adults used e-cigarettes in 2021, with the highest usage (11%) in those aged 18–24 (Kramarow & Elgaddal, 2023). Europe has the highest regional prevalence at 14%, reflecting widespread acceptance (Tehrani et al., 2022). Flavored e-cigarettes, such as fruit, menthol, and candy, attract younger demographics and contribute to both experimentation and dependence (Malaisrie et al., 2019; Bauld, 2019). The outbreak of EVALI (e-cigarette or vaping product use-associated lung injury) further underscores the health risks (Cao et al., 2020). Social media promotion and misinformation about vaping's safety complicate prevention efforts, emphasizing the need for stricter regulations and public health campaigns (CDC, 2023).

Methods

This study employed a predictive correlational design to investigate the influence of knowledge, attitudes, practices, and peer/social media factors on

In the Philippines, e-cigarette use has grown, particularly among youth and young adults. Approximately 14% of Filipino youth (1.21 million) and 2% of adults (1.63 million) use e-cigarettes (Global Tobacco Control, n.d.). Despite a decline in traditional tobacco smoking, the use of electronic nicotine delivery systems (ENDS) is rising, fueled by appealing flavors and the belief that they are less harmful (Sese & Guillermo, 2023). The first reported death from vaping-associated lung injury in the Philippines has heightened concerns (Fernandez et al., 2024). Although regulations such as graphic health warnings (GHWs) exist, weak enforcement and the rapid passage of the Vape Law hinder their effectiveness (Ackary et al., 2024). Researchers advocate for tailored policies, increased research funding, and better health education (Sese & Guillermo, 2023).

In South Cotabato, youth vaping reflects national trends, yet local research remains scarce. Nearly half of young adults worldwide lack accurate knowledge of vaping risks (Doumi et al., 2023), and usage rates between 13.5% and 18.6% are often driven by misconceptions of safety (Aldurayiwish et al., 2023; Golan et al., 2023). Addressing this gap is essential for developing effective public health strategies in the region.

This study investigates how peer and social media influence mediate the relationship between knowledge, attitudes, and practices toward vaping among young adults in Surallah, South Cotabato

vaping behaviors among young adults (Putri et al., 2025). Independent variables included knowledge and attitudes, the mediating variable was peer/social media influence, and the dependent variable was

vaping practices, with demographic characteristics treated as controls.

The study was conducted in Surallah, South Cotabato, a first-class municipality with both rural and semi-urban features, selected for its relevance to youth health behaviors and accessibility to participants. The target population comprised 8,785 young adults aged 18–24, consistent with the National Youth Commission's (2021) definition of "core young adults." From this population, a sample of 252 respondents was drawn using convenience sampling, balancing statistical power with feasibility. Eligibility required residency in Surallah, South Cotabato and informed consent; both current vapers and non-vapers were included to capture diverse behavioral patterns. Ethical safeguards ensured voluntary participation, confidentiality, and transparency regarding study objectives.

Data were collected using a self-administered survey instrument adapted from Doumi et al. (2023) and the World Health Organization's Global Adult Tobacco Survey (2021). The tool employed a Likert-scale format and was adapted with permission from the original authors to specifically address e-cigarette use.

Analytical procedures utilized Spearman's rank correlation to examine the strength and direction of associations between peer/social media influence and vaping-related outcomes. This approach allowed for a nuanced assessment of predictive relationships within the study population.

The study employed a structured five-part questionnaire to investigate young adults' knowledge, attitudes, and practices (KAP) regarding vaping, as well as the influence of peers and social media. The first section gathered demographic information such as sex, age, and educational attainment to contextualize individual differences in perceptions and behaviors. The second section assessed knowledge through 14 items addressing awareness of e-cigarettes, including health risks, addiction potential, and common misconceptions. The third section explored attitudes using 12 items that examined beliefs and evaluations related to social acceptability, regulation, and perceived advantages or disadvantages of vaping. The fourth section measured practices with 8 items focusing on frequency of use, motivations (e.g., smoking cessation), flavor preferences, and experienced side effects. The fifth section investigated peer and social media influence through 11 items that captured exposure to advertisements, influencer endorsements, and peer encouragement. Responses were rated on a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

The instrument underwent pilot testing with 30 respondents, and reliability analysis using SPSS Version 3.0 confirmed strong internal consistency across all subscales. Cronbach's alpha coefficients were Knowledge ($\alpha = 0.854$), Attitude ($\alpha = 0.831$), Practices ($\alpha = 0.715$), and Peer/Social Media Influence ($\alpha = 0.886$), all exceeding the 0.70 threshold, thereby validating the questionnaire for use in the main study. Data collection was conducted among 252 young adults aged 18–24 in Surallah, South Cotabato between August and December 2025.

Data analysis inluce descriptive statistics (mean and standard deviation), were employed to summarize levels of knowledge, attitudes, practices, and peer/social media influence, providing measures of central tendency and variability. Spearman's Rho was used to examine the strength and direction of associations among variables, particularly suitable for non-normally distributed data.

Relationships tested included knowledge and peer influence, attitude and peer influence, peer influence and practices, knowledge and practices, and attitude and practices.

To further explore complex interrelationships, Partial Least Squares–Structural Equation Modeling (PLS-SEM) was applied. This enabled simultaneous analysis of direct and indirect effects, specifically testing the mediating role of peer influence in the relationships between knowledge and practices, and between attitudes and practices. Through this approach, the study was able to determine whether peer influence partially or fully mediated the effects of knowledge and attitudes on vaping behaviors, thereby offering deeper insights into the social and informational factors shaping young adults' vaping habits.

This study is subject to several limitations. First, the sample was restricted to young adults aged 18–24 residing in Surallah, South Cotabato, which limits the generalizability of findings to other age groups and geographic contexts. Second, reliance on self-reported survey data introduces the possibility of recall bias and social desirability bias, which may affect the accuracy of responses. Third, peer influence was examined only through social media and peer pressure, excluding other potentially relevant factors such as family dynamics or broader cultural influences. Despite these constraints, the study offers valuable insights into the role of peer and digital influences in shaping vaping knowledge, attitudes, and practices among young adults, providing evidence to inform health education initiatives and policy interventions aimed at reducing e-cigarette use in this vulnerable demographic.

Results and Discussion

Table 1. The Level of Knowledge on Vaping Among Young Adult

Statement	Mean Score	SD	Interpretation
E-cigarettes are approved by the Philippine Food and Drug Authority.	3	1.3	Very Low
Swallowing the liquid in e-cigarettes can cause fatal poisoning.	3	1.2	Very Low
E-cigarettes are not associated with lung cancer.	2	1.2	Very Low
E-cigarettes are associated with bladder cancer.	3	1.2	Very Low
E-cigarettes impair lung and heart function.	4	1.1	Very Low
E-cigarette vapor affects fetal development.	4	.9	Very Low
Harmful flavorings and toxins are found in e-cigarette aerosol.	4	1.2	Very Low
E-cigarettes are harmless.	3	1.4	Very Low
E-cigarettes are addictive.	4	1.4	Very Low
E-cigarettes have fewer side effects than regular cigarettes.	3	1.3	Very Low
E-cigarettes' carcinogenic component is less than that of regular cigarettes.	3	1.2	Very Low
E-cigarettes are suitable for pregnant women.	2	1.3	Very Low
E-cigarettes are suitable for children.	2	1.2	Very Low

E-cigarettes vapor affect people surrounding the smoker.	3	1.4	Very Low
Overall Mean	**3**	**1.2**	**Very Low**

Note: Mean Score--- 1-3(Very Low); 4-6 (Low); 7-9 (Moderate); 10-12 (High); 13-14 (Very High); SD-Standard Deviation; n=252

The results presented in Table 1 demonstrate a generally low level of knowledge about vaping among respondents (M = 3.00, SD = 1.2). Mean scores across items related to health risks, regulatory information, and safety perceptions ranged narrowly from 2.0 to 4.0, indicating pervasive misinformation.

Even items addressing well-established health risks—such as detrimental effects on cardiopulmonary function, fetal development, and nicotine addiction—were rated "very low." The limited variation in standard deviations (0.9–1.4) further suggests that this lack of knowledge was consistent across respondents, rather than concentrated in specific subgroups.

This study identifies a significant knowledge gap, characterized by a low mean score and prevalent misconceptions about e-cigarette regulation, particularly regarding FDA approval in the Philippines, which scored only 3.0. This reflects a broader misunderstanding that e-cigarettes are health-approved, despite their harmful contents.

Previous research, including that by Palmes et al. (2021), Sánchez-Sánchez et al. (2023), and Alvarado and Ramos (2024), highlights that young people, including nursing students, often underestimate the health risks and regulatory issues associated with vaping, perceiving it as safer due to its availability and marketing, despite the presence of substances such as nicotine and heavy metals (CDC, 2024).

Knowledge of health risks was limited, with studies by Sánchez-Sánchez et al. (2023) and Desai and Patel (2020) indicating that many young adults underestimate the addictive properties of e-cigarettes. The current study found partial recognition of e-cigarettes' addictive nature but a limited understanding of nicotine dependence. Additionally, Gravely et al. (2021) noted that younger individuals are more likely to engage in dual use, increasing nicotine exposure and health risks. Social and cultural factors, as outlined in Bandura's (1986) Social Cognitive Theory, influence vaping behaviors, with digital marketing and peer influence playing significant roles (Sánchez-Sánchez et al., 2023; Smith & Hilton, 2023). Belmonte et al. (2025) and Ajzen's (1991) Theory of Planned Behavior further emphasize how social influence, affordability, and misconceptions shape vaping intentions among Filipino youth.

Overall, these findings reflect global patterns of low knowledge and widespread misconceptions about e-cigarette risks, regulation, and safety (Alvarado & Ramos, 2024; Sánchez-Sánchez et al., 2023).

Social influence and marketing remain key factors in shaping attitudes toward vaping (Belmonte et al., 2025; Bandura, 1986; Ajzen, 1991). The results emphasize the need for health education and awareness programs that correct

misinformation and help young adults better understand the risks of vaping, ultimately supporting public health and tobacco harm reduction efforts.

Table 2. The Level of Attitude on Vaping Among Young Adults.

Statement	Mean	SD	Interpretation
The use of e-cigarettes should be allowed in all places.	2.98	1.53	Moderate
A person who uses e-cigarettes should be considered a non-smoker.	2.93	1.40	Moderate
E-cigarettes should be recommended to a non-smoker who wants to try a safer smoking option.	3.73	1.22	High
The government should restrict the use of e-cigarettes.	3.70	1.23	High
E-cigarettes are not embarrassing to use than regular cigarettes.	3.83	.97	High
Women and girls can use e-cigarettes.	2.80	.99	Moderate
Smoking e-cigarettes makes people “fit in” and feel “cool.”	3.69	1.14	High
It is acceptable to smoke e-cigarettes compared to traditional cigarettes.	3.47	1.19	High
E-cigarettes should be used as a replacement for regular cigarettes.	3.28	1.33	Moderate
It is acceptable to experiment with e-cigarettes for pleasure.	3.22	1.30	Moderate
E-cigarettes can help people reduce cigarette use or quit smoking.	3.29	1.44	Moderate
I have no problem trying e-cigarettes if offered by a friend.	2.95	1.38	Moderate
Overall Mean	**3.32**	**1.26**	**Moderate**

Note: 4.21-5.00---Very High ;3.41-4.20---High; 2.61-3.40---Moderate; 1.81-2.60---Low; 1.00-1.80--- Very Low; SD-Standard Deviation; n=252

The findings in Table 2 indicated that young adults' overall attitude toward vaping was moderate (M = 3.32, SD = 1.26). This indicate that young adults hold ambivalent attitudes toward vaping, combining some awareness of health risks with a relatively permissive view of its social acceptability. This matters because mixed attitudes can weaken the protective effect of risk knowledge: even when young adults recognize potential harms, they may still view vaping as acceptable, less stigmatized, or socially advantageous, which can increase openness to experimentation and continued use.

The pattern also suggests that attitudes are shaped not only by health beliefs but by the social meaning attached to vaping. This interpretation is supported by evidence that peer norms strongly influence vaping attitudes and behavior, often outweighing individual risk awareness (Lizhnyak & Richter, 2023; Hammond et al., 2024). Social media further reinforces these perceptions by

normalizing vaping through peer posts and influencer content, which can reduce perceived harm and make vaping appear more acceptable or common (Vogel et al., 2024; Cambridge Review, 2024; CDC, 2023). Taken together, these findings highlight why prevention efforts must address both health beliefs and social norms**,** including peer-group influence and pro-vaping online content, to reduce favorable attitudes toward vaping among young adults.

Importantly, peer influence and social media reinforce these attitudes together. Seeing vaping normalized on social media can strengthen peer group norms and make vaping seem more socially acceptable, overshadowing knowledge of its health risks (Hammond et al., 2024).

Table 3. The Level of Practices on Vaping Among Young Adults.

Statement	Mean	SD	Interpretation
I currently use e-cigarettes.	2.57	1.33	Low
I use e-cigarettes daily.	2.42	1.29	Low
I prefer fruit-flavored e-cigarettes.	2.38	1.36	Low
I have used e-cigarettes to quit smoking.	2.11	1.07	Low
I started using e-cigarettes during high school.	2.44	1.41	Low
I have increased my use of e-cigarettes over time.	2.33	1.18	Low
I have experienced side effects (such as headaches) from e-cigarettes.	2.63	1.33	Moderate
I recommend e-cigarettes to others.	2.73	1.47	Moderate
Overall Mean	**2.45**	**1.31**	**Low**

Note: 4.21-5.00---Very High ;3.41-4.20---High; 2.61-3.40---Moderate; 1.81-2.60---Low; 1.00-1.80--- Very Low; SD-Standard Deviation; n=252

The findings indicate that vaping is not yet a dominant behavior among respondents, but occasional use and social endorsement are present, which is still a public health concern. This matters because low-frequency use can still normalize vaping within peer groups, especially when some young adults recommend e-cigarettes to others despite not using them regularly. In other words, social approval may spread faster than actual use, creating conditions that support experimentation and future uptake. The variation in responses also suggests a mixed behavioral pattern (non-users, occasional users, and a smaller group of more regular users), which is consistent with evidence that peer influence plays a key role in shaping vaping behavior among young people (Groom et al., 2021; Assari et al., 2025; Valente et al., 2023).

The findings further suggest that vaping among young adults is driven more by curiosity, social influence, and normalization than by smoking cessation. This is important because it means vaping may be functioning more as a socially reinforced behavior than as a harm-reduction strategy in this population, aligning with evidence that cessation benefits are more established for adult smokers than for young non-smokers (Cochrane Tobacco Addiction Group, 2025).

Social media likely strengthens this pattern by portraying vaping as acceptable or trendy, which can reduce perceived risk and reinforce peer-driven experimentation (Vogel et al., 2024; Cambridge Review, 2024; Sánchez-Sánchez et al., 2023; Smith & Hilton, 2023). Taken together, these results support the need for prevention strategies that address not only use itself, but also the social endorsement and digital normalization of vaping among young adults.

Table 4. The Level of Peer and Social Media Influence on Vaping Among Young Adults.

Statement	Mean	SD	Interpretation
I frequently see advertisements or promotions for e-cigarettes on social media (Facebook, Instagram, TikTok, etc.).	3.82	1.15	High
Social media influences my perception of e-cigarettes as a safer alternative to traditional cigarettes.	3.29	1.28	Moderate
I have considered trying e-cigarettes after seeing positive testimonials or content about them on social media.	2.80	1.24	Moderate
I trust information about e-cigarettes shared on social media more than that from traditional media sources (TV, newspapers, health organizations).	3.19	1.32	Moderate
Social media platforms make it easy to access information on where to buy e-cigarettes.	4.03	1.14	High
I have seen influencers or celebrities promoting e-cigarettes on social media.	3.90	1.05	High
I am more likely to try e-cigarettes if I see my friend sharing posts about them on social media.	3.08	1.28	Moderate
I have friends who use e-cigarettes.	3.63	1.08	High
I have been encouraged by friends or peers to try e-cigarettes.	3.48	1.18	High
I feel pressure to use e-cigarettes because my friends or social circle use them.	3.08	1.16	Moderate
Seeing my friends use e-cigarettes makes me more interested in trying them.	3.10	1.37	Moderate
Overall Mean	**3.40**	**1.20**	**Moderate**

Note: 4.21-5.00---Very High ;3.41-4.20---High; 2.61-3.40---Moderate; 1.81-2.60---Low; 1.00-1.80--- Very Low; SD-Standard Deviation; n=252

The findings indicate that social media and peer influence function as significant contextual factors in shaping vaping-related behaviors among young adults, primarily through mechanisms of visibility, accessibility, and social normalization. This suggests that the influence of these factors may operate less through direct coercion and more through the routine exposure of young adults to vaping-related content and peer behaviors, which can gradually frame vaping as common, acceptable, and relatively low-risk. Such a pattern is particularly important because it highlights how behavioral uptake may occur even in the absence of strong explicit pressure, as repeated exposure can influence perceptions, attitudes, and behavioral intentions over time.

These results are consistent with previous studies showing that social media platforms, particularly TikTok, Instagram, and Facebook, contribute to the normalization of vaping by presenting it as fashionable, socially rewarding, or stress-relieving (Phua et

al., 2022; Vassey et al., 2022; Huang et al., 2023; Livingstone et al., 2023). The findings also support existing evidence that frequent exposure to vaping-related online content is associated with more favorable perceptions and reduced harm awareness among young people (Zhang et al., 2023; Zheng et al., 2021). In the same way, the peer influence findings align with studies demonstrating that vaping behaviors are more likely to occur when vaping is prevalent within one's social network, even when direct peer pressure is only moderate (Valente et al., 2023; Assari et al., 2025; Biles et al., 2025).

Overall, the results underscore the importance of developing interventions that address both digital media exposure and peer-group norms, including media literacy initiatives, stronger regulation of online vaping promotions, and peer-informed health communication strategies to reduce vaping-related normalization among young adults (Wu et al., 2025).

Table 5. The Test of Relationship between: Knowledge and Peer Influence; Attitude and Peer Influence; Peer Influence and Practices; Knowledge and Practices; and Attitude and Practices

Variables	r_s	p-value	Decision	Remarks
Knowledge↔Peer and Social Media Influence	-.261	<.001	Reject $H_{o1.1}$	Significant
Attitude ↔ Peer Influence	.602	<.001	Reject $H_{o1.2}$	Significant
Peer Influence ↔ Practices	.578	<.001	Reject $H_{o1.3}$	Significant
Knowledge ↔ Practices	-.035	.580	Accept $H_{o1.4}$	Not Significant
Attitude ↔ Practices	.559	<.001	Reject $H_{o1.5}$	Significant

Note: p<.05 ; r_s= rho; IV-Knowledge & Attitude; DV-Practices; Mediator-Peer Influence.*

The correlation findings indicate that knowledge, attitudes, and vaping practices are not equally shaped by social influence. Higher knowledge was associated with lower peer and social media influence, suggesting that better-informed young adults may be less susceptible to social and digital pressures related to vaping. In contrast, more favorable attitudes toward vaping were strongly associated with greater peer/social media influence and with higher vaping practices, indicating that social context appears to reinforce positive attitudes and translate them into behavior. The absence of a significant relationship between knowledge and practice further suggests that knowledge alone may not be sufficient to prevent vaping when social and normative influences remain strong.

These findings are consistent with the Theory of Planned Behavior, which emphasizes attitudes as a key predictor of behavior, while also recognizing the role of social norms in shaping behavioral intentions (Alvarado & Ramos, 2024). Prior studies similarly show that peer approval and social environments can strengthen favorable attitudes toward vaping and increase the likelihood of use, even when individuals are aware of

potential harms (Doran et al., 2024; González et al., 2024; Sánchez-Sánchez et al., 2023). Social media further amplifies this process by normalizing vaping and embedding it in everyday online interactions, making it appear more acceptable and imitable (Skinner et al., 2023; Pokhrel et al., 2024).

Overall, the results underscore that vaping behavior among young adults is shaped not only by what they know, but by how peer and digital environments influence what they believe and do, highlighting the need for interventions that address both cognitive and social determinants.

Table 6: The Mediation Analysis of Peer and Social Media Influence on the relationship between: Knowledge and Practices; and Attitude and Practice.

					95 % CI		
Path	**B**	**SE**	**t**	***p***	***LB***	***UB***	**Decision**
Direct Effects:							
ATT →PSMI (Path a_2)	0.589	0.074	7.937	0.000*	0.432	0.724	Reject $Ho_{2.1}$
ATT → PRAC (Path c_2')	0.304	0.065	4.662	0.000*	0.162	0.415	Reject $Ho_{2.2}$
KNOW →PSMI (Path a_1)	-0.288	0.067	4.317	0.000*	-0.415	-0.155	Reject $Ho_{2.3}$
KNOW→PRAC (Path c_1')	0.113	0.060	1.878	0.060	0.002	0.234	Accept $Ho_{3.4}$
PSMI → PRAC (Path b)	0.440	0.071	6.202	0.000*	0.303	0.581	Reject $Ho_{2.5}$
Indirect Effect:							
ATT → PSMI → PRAC	0.260	0.059	4.382	0.000*	0.162	0.393	Reject $Ho_{2.6}$
KNOW → PSMI → PRAC	-0.127	0.041	3.114	0.002*	-0.214	-0.059	Reject $Ho_{2.7}$
Total Effect:							
KNOW→PRAC	0.014	0.042	0.330	0.742	-0.094	0.070	Accept $Ho_{2.8}$
ATT→PRAC	0.564	0.036	15.542	0.000*	0.484	0.628	Reject $Ho_{2.9}$

Note: KNOW=knowledge, ATT=attitude, PRAC=practices, PSMI=Peer and Social Media Influence

The mediation analysis demonstrates that peer and social media influence (PSMI) plays a critical role in shaping vaping practices among young adults. Knowledge showed a significant indirect effect on vaping behavior through PSMI but no significant direct effect, indicating complete mediation. This suggests that knowledge alone does not directly reduce or increase vaping; rather, its influence operates through the social environment.

Consistent with Groom et al. (2021), awareness of health risks may be insufficient when social pressures and peer acceptance encourage vaping. In contrast, attitude exhibited both significant direct and indirect effects on vaping practices, reflecting complementary partial mediation. This indicates that attitudes toward vaping influence behavior both independently and through peer and social media dynamics. Findings align with Alvarado and Ramos (2024) and Biles et al. (2025), who emphasized that peer validation and social norms often reinforce or override individual beliefs. The strong direct effect of PSMI on vaping practices further supports Murray et al. (2025), who highlighted peer norms as powerful mediators between personal beliefs and behavior.

Together, these results underscore that educational interventions focused solely on knowledge enhancement may have limited effectiveness unless peer dynamics and social media exposure are concurrently addressed. Strengthening resistance to peer influence, as suggested by Hayward et al. (2025) and Skinner et al. (2024), may therefore be essential in reducing vaping among young adults.

Conclusion

1. Young adults possess very low awareness of vaping's health risks, reflecting misinformation about its harmful effects on respiratory, cardiovascular, and reproductive health. While regular use remains limited, peer dynamics and social media exposure strongly shape attitudes and behaviors, making them powerful drivers of experimentation. Knowledge serves as a protective factor, but favorable attitudes and peer influence are stronger predictors of actual vaping practices. This underscores the urgent need for comprehensive education and regulation to counter misinformation and reduce susceptibility to social and digital pressures.
2. In terms of attitudes, respondents exhibited a moderate stance toward vaping. This suggests a coexistence of risk recognition and social acceptance, wherein young adults acknowledge potential harms while simultaneously perceiving vaping as a socially normative and relatively safer alternative to smoking. Such ambivalence may stem from peer approval and the positive portrayal of vaping within social and digital environments, indicating the significant influence of cultural and social contexts on youth perceptions.
3. The study finds that while regular vaping among respondents is uncommon, occasional experimentation and peer influence contribute to sporadic use. Vaping is seldom recognized as a cessation method, and early indications of adverse health effects are already evident. Social curiosity and peer endorsement continue to drive exposure, reinforcing e-cigarette visibility. These findings highlight the need for preventive strategies that address experimentation, peer dynamics, and misinformation to reduce vaping uptake and hinder its normalization among young adults.
4. The study concludes that young adults possess very low knowledge of e-cigarettes, marked by misconceptions about their safety, health risks, and appropriateness for vulnerable groups. Although vaping practices remain low, occasional experimentation and minor side effects indicate emerging risks. At the same time, peer and social media influence exerts a moderate impact, with digital platforms actively shaping perceptions and normalizing vaping through promotions and influencer content.
5. Spearman's rho analysis revealed that knowledge is negatively correlated with peer influence, suggesting that higher knowledge reduces susceptibility to peer pressure. In contrast, attitudes are positively correlated with both peer influence and vaping practices, indicating that favorable attitudes toward vaping are associated with more substantial peer influence and

greater vaping behavior. Additionally, peer influence was a strong predictor of vaping practices. These findings highlight that while knowledge provides some protection, peer dynamics and attitudes are more significant predictors of vaping behavior.

6. The mediation analysis confirms that peer influence plays a pivotal role in shaping vaping behavior among young adults. Knowledge alone does not directly translate into reduced practices in the absence of peer dynamics, whereas attitudes exert both direct and indirect effects through social influence. This demonstrates that peer influence fully mediates the link between knowledge and behavior, and partially mediates the link between attitudes and behavior, underscoring its central role in the uptake of vaping. These findings highlight the need for interventions that address peer dynamics, enhance media literacy, and strengthen resistance to peer pressure, ensuring that awareness and attitudes are effectively translated into healthier behavioral outcomes.

Recommendations

Based on the conclusions, the following recommendations are proposed:

1. To address the low awareness of vaping risks among respondents, targeted educational campaigns are needed to provide clear, evidence-based information on the health dangers of vaping, including its effects on the lungs, heart, and reproductive health. These efforts should correct misconceptions, highlight the toxicity of vaping liquids, and emphasize that vaping is not a safe alternative to smoking. Utilizing social media and collaborating with schools can help counter misconceptions and misinformation. Increasing knowledge will reduce peer pressure and discourage vaping among young adults.
2. Policymakers and health authorities should intensify efforts to regulate the sale, marketing, and accessibility of e-cigarettes, primarily through online channels and social media. Stricter enforcement of age restrictions, advertising bans, and warning-label requirements should be prioritized. Regular monitoring and enforcement can help reduce the appeal and accessibility of vaping products among minors and young adults.
3. To reduce vaping uptake among respondents, preventive strategies should focus on addressing experimentation, peer influence, and misinformation. Educational campaigns should emphasize the health risks of vaping, challenge its normalization in social settings, and provide accurate information about its lack of efficacy as a cessation tool. Targeted interventions that disrupt peer endorsement and reduce exposure to vaping through social circles and media will help decrease sporadic use and prevent further normalization.
4. Public health interventions recommended that focus on improving knowledge about the risks of e-cigarettes, addressing misconceptions about their safety, and highlighting the dangers for vulnerable groups. Given the influence of peer dynamics and social media, campaigns should target digital platforms such as Facebook, Instagram, and TikTok to promote accurate information and counter the normalization of

vaping. Additionally, efforts to strengthen resistance to peer pressure and media literacy among young adults are essential to reduce vaping experimentation and its potential long-term risks.

5. Interventions should focus on increasing knowledge about the risks of vaping, as it helps reduce susceptibility to peer influence. Campaigns should also target respondents' attitudes, promoting negative perceptions of vaping. Additionally, efforts should address peer and social media influence by encouraging resistance to peer pressure and fostering healthier social norms. Engaging digital platforms and influencers to spread accurate information about vaping risks can help counter the normalization of vaping within peer groups.
6. Recommended interventions should also target peer influence as a central factor in shaping vaping behavior. Efforts should focus on enhancing media literacy, promoting resistance to peer pressure, and addressing social norms that normalize vaping. Additionally, campaigns should aim to translate knowledge and attitudes into healthier behaviors by engaging peer groups and social influencers to spread accurate information and create supportive environments for non-vaping choices.
7. Based on the findings of the mediation analysis, it is recommended that interventions targeting vaping among young adults should focus on peer dynamics and media literacy. Specifically, programs should aim to increase awareness of the harmful effects of vaping while also addressing how peer influence shapes behaviors. Efforts should be made to foster resistance to peer pressure by promoting critical thinking and challenging social norms. Additionally, media literacy initiatives can help young adults better evaluate the portrayal of vaping in digital content, thereby reducing the impact of misleading social media and peer-driven vaping behaviors.

Limitations

The study was limited to respondents residing in Surallah, South Cotabato, and within the 18–24-year-old age group, which restricts the generalizability of the findings to other populations. Additionally, data relied on self-reported responses, which may be subject to bias or inaccuracies. Peer influence was examined only through social media and peer pressure, excluding other possible factors such as family or cultural influences. Despite these limitations, the study provides meaningful insights into how peer and digital influences shape vaping knowledge, attitudes, and behaviors among young adults, offering evidence-based guidance for the development of health education programs and policy interventions aimed at reducing e-cigarette use in this vulnerable demographic

References

Ackary, S. J., Cabrera, P. J. D., Santiago, A. J. A., & Amul, G. G. H. (2025). Examining the flavor descriptors of e-

cigarettes, heated tobacco products, and nicotine pouches in the Philippines: Regulatory challenges and opportunities. PLOS Global Public Health, 5(2),e0004248. https://doi.org/10.1371/journal.pgph.0004248

Alduraywish, S. A., Aldakheel, F. M., Alsuhaibani, O. S., Jabaan, A. D. B., Alballa, R. S., Alrashed, A. W., Alhassan, M. K., & Aldwaighri, M. K. (2023). Knowledge and Attitude toward E-Cigarettes among First Year University Students in Riyadh, Saudi Arabia. Healthcare, 11(4), 502.https://doi.org/10.3390/healthcare11040502

Alvarado, A. E., & Ramos, B. A. (2024). Profile and Attitude towards Vaping among Young Adults: Basis for developing an Evidence-Based Information, Education and Communication Material.AIDEInterdisciplinary Research Journal,8,19–38. https://doi.org/10.56648/aide-irj.v8i1.107

Assari, S., Mohammadi, M., Pashmchi, M., Aghaeimeybodi,F.,& Pallera, J. A. (2025). I am my peers: How social ties influence E-Cigarette Attitudes, policy support, and use. Open Journal of Psychology,5(1),2437. https://doi.org/10.315 86/ojp.202 5.6043

Bauld, L., MacKintosh, A. M., Eastwood, B., Ford, A., Moore, G., Dockrell, M., Arnott, D., Cheeseman, H., & McNeill, A. (2019). Young people's use of e-cigarettes across the United Kingdom: Findings from five surveys 2015–2017. Tobacco Control, 28(4), 466–475. https://doi.org/10.1136/tobaccocontrol-2018-054783

Belmonte, Z. J. A., Prasetyo, Y. T., Victoria, P. E. R., Cahigas, M. M. L., Nadlifatin, R., & Gumasing, M. J. J. (2025a). Behavioral intention to use electronic cigarettes in the Philippines: The role of social influence, knowledge,price and health impact. PLoS ONE, 20(2), e0318630.

Biles, J., Kornhaber, R., Irwin, P., Schineanu, A., Sookraj-Baran, M. K., & Cleary, M. (2025). Perspectives, motivations, and experiences of adolescents and young adults using nicotine vapes: a qualitative review. Health Promotion International,40(2).https://doi.org/10.1093/he apro/daaf007

Cao, D. J., Aldy, K., Hsu, S., McGetrick, M., Verbeck, G., De Silva, I., & Feng, S. (2020). Review of Health Consequences of electronic cigarettes and the outbreak of Electronic Cigarette, or vaping, Product Use-Associated Lung Injury. Journal of Medical Toxicology, 16(3),295–310. https://doi.org/10.1007/s13181-020-00772-w

Desai, K. G., &Patel, D. M. (2020). Factors influencing the use of E-Cigarettes among adolescents and young adults. Scholar Works. https://scholarworks.calstate.edu/concern/theses/7s75dj14z

Doran, N., Gonzalez, M. R., Courtney, K. E., Wade, N. E., Pelham, W., Patel,

H., Roesch, S., & Jacobus, J. (2024). Social cognitive influences associated with susceptibility to nicotine and tobacco use in youth in the Adolescent Brain Cognitive Development (ABCD) study.Journal of Studies on Alcohol and Drugs, 86(4),521529.https://doi.org/10.15288/jsad.24-00041

Doumi, R., Khaytan, S., Alobaidan, A. S., Alqahtany, B. M., Aldosari, N. M., Almutairi, A. A., Alanazi, A. A., & Fayed, A. (2023). Knowledge, Attitude, and Practice of E-Cigarettes of Adolescents and Adults in Saudi Arabia: A Cross-Sectional Study.Healthcare,11(22),2998.https://doi.org/10.3390/healthcare11222998

Fernandez, M. I. C., Co, M. F., Rafael, J. B. M., Mag-usara, R. C., Ediza,V., Gavino, R.L., Feliciano, J. C., Santos, N. J., Yano, M. A., Huibonhoa, J. A., Tiongco, R. H., & Fernandez, L. (2024). Acute myocardial infarction with e-cigarette or vaping-use associated lung injury in a young Filipino vape user. Respirology Case Reports,12(4).https://doi.org/10.1002/rcr2.1353

Golan, R., Muthigi, A., Ghomeshi, A., White, J., Saltzman, R. G., Diaz, P., & Ramasamy, R. (2023). Misconceptions of vaping among young adults. Cureus, 15(4),e38202.https://doi.org/10.7759/cureus.38202

Golzar, J., Noor, S., & Tajik, O. (2022). Convenience sampling. www.ijels.net.https://doi.org/10.22034/ijels.2022.162981

Gravely, S., Cummings, K. M., Hammond, D., Lindblom, E., Smith, D. M., Martin, N., Loewen, R., Borland, R., Hyland, A., Thompson, M. E., Boudreau, C., Kasza, K., Ouimet, J., Quah, A. C. K., O'Connor, R. J., & Fong, G. T. (2020). The association of e-cigarette flavors with satisfaction, enjoyment, And trying to quit or stay abstinent from smoking among regular adult vapers from Canada and the United States: Findings from the 2018 ITC Four Country Smoking and Vaping Survey. Nicotine & Tobacco Research, 22(10), 18311841.https://doi.org/10.1093/ntr/ntaa095

Groom, A. L., Vu, T. T., Landry, R. L., Kesh, A., Hart, J. L., Walker, K. L., Wood, L. A., Robertson, R. M., & Payne, T. J. (2021). The Influence of Friends on Teen Vaping: A Mixed-Methods approach. International Journal of Environmental Research and Public Health, 18(13), 6784. https://doi.org/10.3390/ijerph18136784

Kramarow, E., & Elgaddal, N. (2023). Current electronic cigarette use in adults aged 18 and over: United States, 2021. https://doi.org/10.15620/cdc:129966

Livingston, J. A., Chen, C., Kwon, M., & Park, E. (2022). Physical and mental health outcomes associated with adolescent E-cigarette use. Journal of Pediatric Nursing, 64, 1–17. https://doi.org/10.1016/j.pedn.2022.01.006

Martins, B. N. F. L., Normando, A. G. C., Rodrigues-Fernandes, C. I., Wagner, V. P., Kowalski, L. P.,

Marques, S. S., Marta, G. N., De Castro Júnior, G., Ruiz, B. I. I., Vargas, P. A., Lopes, M. A., & Santos-Silva, A. R. (2022b). Global frequency and epidemiological profile of electronic cigarette users: a systematic review. OralSurgery Oral Medicine Oral Pathology and Oral Radiology, 134(5), 548–561.https://doi.org/10.1016/j.oooo.2022.07.019

Murray, J. M., Sánchez-Franco, S. C., Sarmiento, O. L., Kimbrough, E. O., Tate, C., Montgomery, S. C., Kumar, R., Dunne, L., Ramalingam, A., Krupka, E. L., Montes, F., Zhou, H., Moore, L., Bauld, L., Llorente, B., Kee, F., & Hunter, R. F. (2025). Moderators of peer influence effects for adolescents' smoking and vaping norms and outcomes in high and middle- income settings. Frontiers in Psychology, 16,1655761. https://doi.org/10.3389/fpsyg.2025.1655761

Palmes, M., Trajera, S. M., & Sajnani, A. K. (2021). Knowledge and attitude related to use of electronic cigarettes among undergraduate nursing students in an urban university setting in Philippines. PubMed, 62(3), E770–E775.https://doi.org/10.15167/2421-4248/jpmh2021.62.3.1709

Putri, L., Rezani, N. M. R., & Hermina, N. D. (2025). CORRELATIONAL RESEARCH DESIGN. Jurnal Riset Multidisiplin Edukasi, 2(6), 306317.https://doi.org/10.71282/jurmie.v 2i6.456

Sánchez-Sánchez, E., García-Ferrer, L., Ramirez-Vargas, G., Díaz-Jimenez, J., -Rodriguez, M., Díaz, A. J., Ordonez, F. J., Rosety, M. Á., Rosety, I., & Poza-Méndez, M. (2023). Knowledge, attitudes, and behaviors of adolescents and young adult population on the use of e-cigarettes or personal vaporizers. Healthcare, 11(3), 382.https://doi.org/10.3390/healthcare11030382

Sese, L. V. C., & Guillermo, M. C. L. (2023). E-Smoking out the Facts: The Philippines' Vaping Dilemma.Tobacco Use Insights,16,179173X231172259https://doi.org/10.1177/1179173x231172259

Pokhrel, P., Phillips, K. T., Kawamoto, C. T., Taketa, R., Tabangcura, K. J., Yoshioka- Maxwell, A., & Pagano, I. (2021). Exposure to e-cigarette content on social media and e- cigarette use: An ecological momentary assessment study. Addictive Behaviors Reports, 14, 100368. https://doi.org/10.1016/j.abrep.2021.100368

Skinner, A. T., Golonka, M., Godwin, J., Kwiatek, S., Sweitzer, M., & Hoyle, R. H. (2024). My friends made me do it: Peer influences and different types of vaping in adolescence. Addictive Behaviors, 159, 108128. https://doi.org/10.1016/j.addbeh.2024.108128 78

Smith, M. J., & Hilton, S. (2023). Youth's exposure to and engagement with e cigarette marketing on social media: a UK focus group study. BMJ Open, 13(8),e071270.https://doi.org/10.1136/bmjopen-2022-071270

Valente, T. W., Piombo, S. E., Edwards, K. M., Waterman, E. A., & Banyard, V. L. (2023). Social network influences on adolescent e-cigarette use. Substance Use & Misuse, 58(6), 780–786. https://doi.org/10.1080/10826084.2023.2188429

Vassey, J., Galimov, A., Kennedy, C. J., Vogel, E. A., & Unger, J. B. (2022). Frequency of social media use and exposure to tobacco or nicotine-related content in association with E- cigarette use among youth: A cross-sectional and longitudinal survey analysis. Preventive Medicine Reports, 30, 102055. https://doi.org/10.1016/j.pmedr.2022.102055

Vogel, E. A., Barrington-Trimis, J. L., Vassey, J., Soto, D., & Unger, J. B. (2024). Young adults'exposure to and engagement with Tobacco Related social media content and subsequent tobacco use. Nicotine & Tobacco Research,26(Supplement_1), S3–S12.https://doi.org/10.1093/ntr/ntad1 08

Zhang, L., Ao, S. H., & Zhao, X. (2023). Longitudinal relationship between 83 social media and e-cigarette use among adolescents: the roles of internalizing problems and academic performance. BMC Public Health, 23(1), 2133. https://doi.org/10.1186/s12889-023-17059-8

Zheng, X., Li, W., Wong, S., & Lin, H. (2021). Social media and E-cigarette use among US youth: Longitudinal evidence on the role of online advertisement exposure and risk perception. AddictiveBehaviors,119,106916https://doi.org/10.1016/j.addbeh.2021.106916