

Characterizing reasons for e-cigarette use among Filipino adults who smoke: A cross-sectional study

Raniyan Zaman¹, Lauren Czaplicki¹, Elizabeth Crespi¹, Joanna E Cohen¹, E Ulysses Dorotheo², Madeleine Valera³, Ana Mayor⁴, Filomena T Dayagbil⁵, Kevin Welding¹

ABSTRACT

INTRODUCTION There is a potential risk of increased dual use of e-cigarettes and cigarettes among people who currently smoke and use e-cigarettes. Limited data are available on why people who smoke in the Philippines use e-cigarettes, including reasons that relate to smoking cessation. The current study addresses this gap to inform e-cigarette regulatory strategy.

METHODS Data were collected via an online self-administered cross-sectional survey in November 2023 from 611 Filipino adults who smoke and reported current e-cigarette use (i.e. dual users). Participants selected their primary reason for e-cigarette use from a pre-populated list of 15 reasons. We conducted separate logistic regression models of each top reason for e-cigarette use, controlling for demographic and tobacco-use variables.

RESULTS The top primary reasons for e-cigarette use were to cut down smoking (26%), to help quit smoking (24%), to use when not allowed to smoke cigarettes (11.6%), vaping is less harmful than smoking to others around me (11.6%), and 'I enjoy the flavor' (8.5%). Men were more likely than women to select to help quit (adjusted odds ratio, AOR=1.84; $p=0.003$, 95% CI: 1.22–2.77). Those intending to quit smoking within the year were more likely to select to help quit (AOR=5.22; $p<0.001$, 95% CI: 2.30–11.9) and to cut down (AOR=2.84, $p<0.001$, 95% CI: 1.36–5.95), and less likely to select to use when not allowed to smoke (AOR=0.25, $p<0.001$, 95% CI: 0.13–0.50) and because 'I enjoy the flavor' (AOR=0.24, $p<0.001$, 95% CI: 0.12–0.49).

CONCLUSIONS Some people who smoke in the Philippines use e-cigarettes in order to support smoking cessation; however, there is a risk of prolonged dual use if strong regulations are not implemented to promote complete cessation. Further research should investigate causal factors for e-cigarette use to identify policy pathways for reducing dual use and supporting cessation efforts.

AFFILIATION

¹ Johns Hopkins Bloomberg School of Public Health Institute for Global Tobacco Control, Baltimore, United States

² Southeast Asia Tobacco Control Alliance, Manila, Philippines

³ Vital Strategies, Manila, Philippines

⁴ GoodThinking Inc., Pasig City, Philippines

⁵ Cebu Normal University College of Teacher Education, Cebu, Philippines

CORRESPONDENCE TO

Lauren Czaplicki. Johns Hopkins Bloomberg School of Public Health Institute for Global Tobacco Control, 2213 McElderry Street Baltimore, MD 21205, United States

E-mail: lczapli1@jhu.edu

ORCID iD: <https://orcid.org/0000-0002-7496-0990>

KEYWORDS

e-cigarettes, cessation, tobacco control, Philippines

Received: 23 February 2026

Revised: 8 May 2026

Accepted: 11 May 2026

INTRODUCTION

Since the Philippines ratified the World Health Organization Framework Convention on Tobacco Control (WHO FCTC) in 2005, the country has seen progress in reducing adult smoking rates from 28.3% in 2009 to 18.5% in 2021¹. Part of this decline can be attributed to passing tobacco control laws based on WHO FCTC recommendations, which include raising the price of cigarettes through taxation, restricting smoking in all indoor public places, requiring cigarette packs be sold with graphic health warning labels (HWLs)

that cover the bottom 50% of the front and back of the pack, and restricting cigarette marketing in public places and on the internet^{2,3}.

In many respects, the Philippines lacks a comprehensive regulatory structure for e-cigarettes, even as data show 6% of adults and 14% of adolescents report ever using an e-cigarette^{1,4}. E-cigarette packaging must include 50% HWL coverage, and e-cigarette use is restricted in the same indoor public places as cigarettes³. However, public places are permitted to establish 'designated vaping areas', and e-cigarettes are taxed at a significantly lower rate. Other marketing restrictions exist to limit the use of flavor descriptors (fruit, candy, or dessert) and imagery (cartoon characters) that are known to appeal to youth, and there is a ban on the sale of e-cigarettes other than plain tobacco or menthol flavored^{3,5}. Yet, e-cigarettes are allowed to be marketed and sold online, which may facilitate access and exposure to flavored products⁶.

There is global concern that the sale of flavored e-cigarettes has the potential to increase e-cigarette initiation without improving the likelihood of smoking cessation⁷. Flavored e-cigarettes appeal to youth and nicotine non-consumers⁸, and adolescents are more likely to initiate vaping through flavored e-cigarettes versus non-flavored e-cigarettes⁹. Furthermore, there is evidence that both youth and adults perceive flavored e-cigarettes as less harmful^{9,10} and youth e-cigarette use is associated with uptake of smoking¹¹⁻¹⁴. Among those who currently smoke, there is a potential risk of increased dual use of cigarettes and e-cigarettes¹⁵. While some studies suggest that e-cigarettes may contribute to smoking cessation if used exclusively¹⁶, people who use both cigarettes and e-cigarettes in an attempt to quit smoking often struggle to fully make the transition to sole e-cigarette use, which results in prolonged dual use of both products¹⁷. Rather than facilitating smoking cessation, under-regulated e-cigarette markets may entrench dual use¹⁸ – prolonging nicotine dependence and undermining smoke-free policies, particularly when vaping is permitted in places where smoking is banned¹⁹.

To date, very limited information is available on why Filipino adults who smoke use e-cigarettes. In other countries, like the US, adults

who smoke and use e-cigarettes commonly cite smoking cessation, convenience, and other health-related factors among their reasons for e-cigarette use²⁰. One study from Malaysia found that common reasons for e-cigarette use among people who smoke included reducing the number of cigarettes smoked, a pleasant taste, to quit smoking, and for their enjoyment²¹. The current research fills a gap in exploring the main reasons for e-cigarette use among adults who smoke in under-regulated e-cigarette environments in low-and middle-income countries, such as the Philippines.

METHODS

Study sample

Data were collected in November 2023 via an online survey. The Manila-based market research firm, GoodThinking, managed data collection. Participants were recruited through the online panel PureProfile. Panelists were eligible if they were at least 18 years old, lived in the Philippines, smoked at least 100 cigarettes in their lifetime, smoked on at least one of the past 30 days, reported buying their own cigarettes, and were able to speak and read at least one of the languages that the survey was offered in (English, Tagalog, or Cebuano).

In total, 911 adults who smoke completed the survey. We removed 25 participants (2.7% of the sample) who completed the survey in under 4 min, or roughly one standard deviation below the average completion time (~10 min), resulting in 886 respondents. We restricted the sample to the 618 adults who both currently smoke (defined as those who smoked 100 cigarettes in their lifetime and reported smoking in the past 30 days) and reported using an e-cigarette or vaping device within the past 30 days. Our final analytic sample included 611 participants who had complete data. We removed seven participants (~ 1%) from the analysis; six participants did not report household income, and one did not report time to first cigarette.

The distribution of our sample of Filipino adults who smoke was similar to the latest Global Adult Tobacco Survey (GATS) estimates in terms of age and wealth/income; however, women who smoke were over-represented compared to GATS data¹. Additionally, past-day e-cigarette use in our sample

of people who smoke was substantial ($n=618/886$ or roughly 70%) and markedly higher than the past 30 day point prevalence of e-cigarette use among the general population in the Philippines (regardless of smoking status)^{1,2}. However, the prevalence of e-cigarette use among people who smoke from a nationally representative surveillance survey is not available to make a direct comparison of how estimates in this study might differ.

All participants provided digitally written consent to participate. The study protocol was approved by the Johns Hopkins Bloomberg School of Public Health Institutional Review Board (#00024497) and the Philippine Social Science Council-Social Science Ethics Review Board (CF-23-24).

Demographic measures

Participants provided information on their age, gender (male, female), and household income (PHP) (<40000, 40000–59999, 60000–99999, 100000–149999, 150000–199999, 200000–249999, 250000–299999, 300000–349999, 350000–399999, 400000–449999, 450000–499999, ≥ 500000 , and No income). For age, we categorized participants into the following age groups: 18–24, 25–34, and ≥ 35 years. For personal income, we categorized income (PHP) into the following categories: <60000 (including those who reported ‘No income’), 60000–299999, and ≥ 300000 .

E-cigarette-related measures

Participants reported frequency of e-cigarette use (less than weekly, 1–3 days per week, 4–7 days per week), most recent device type used (reusable, disposable), and most recent flavor used (tobacco, menthol, mint, fruit, dessert, some other flavor). The last flavor used was dichotomized into tobacco/menthol or other. Dichotomizing e-cigarette flavors in this fashion allowed us to run a stable model, given the low distribution of tobacco flavor use, and allowed us to compare the most commonly available flavors for cigarettes (tobacco, menthol) versus other flavors. Participants were provided with a definition of device type where reusable was defined as ‘you recharge the device when the battery life is low or at 0% AND you refill or replace the tank/pod/cartridge when it runs out of e-liquid’) and disposable was defined as ‘you discard the

entire device when the battery life is low or at 0% OR when the device runs out of e-liquid’.

Smoking-related measures

We calculated smoking dependence level (score: low 0–1, medium 2–4, high 5–6) by summing participants’ responses to two items: time to first cigarette (≤ 5 min [3 points], 6–30 min [2 points], 31–60 min [1 point], >60 min [0 points]) and number of cigarettes smoked each day (≤ 10 [0 points], 11–20 [1 point], 21–30 [2 points], ≥ 31 [3 points])²². Participants were also asked about their intention or plan for quitting smoking with response options: ‘I plan to quit in 1 month’, ‘I plan to quit in 6 months’, ‘I plan to quit in 12 months’, ‘I plan to quit someday but not in the next 12 months’, ‘I am not interested in quitting’, and ‘I don’t know’. We divided this variable into three categories: 1) combining responses related to quitting within 1 month, 6 months, and 12 months; 2) planning to quit someday but not in the next 12 months; and 3) combining responses ‘I don’t know’ and ‘I am not interested in quitting’ to create a category that reflected no interest or uncertain interest in quitting.

Outcome measure

Participants were asked: ‘What is your PRIMARY reason for using an e-cigarette or vaping device?’, select one answer only. Response options were informed by prior research^{20,23} and included the following (in the order presented to participants): ‘To help quit smoking cigarettes’, ‘To cut down smoking cigarettes’, ‘To use when I am not allowed to smoke cigarettes’, ‘Vaping is less harmful than others around me’, ‘Absence of smell’, ‘To socialize’, ‘To have a longer break at work’, ‘I enjoy the flavor’, ‘I enjoy the boost’, ‘I am addicted’, ‘My friends use them’, ‘Curiosity/just wanted to try them’, ‘Stress, anxiety, depression, or other mental health concerns’, ‘Some other reason (open-ended response)’, and ‘Prefer not to answer’. Response options were presented to participants in the order listed above, which broadly followed the order of response options from a prior study^{24,25}. The reasons ‘To help quit smoking cigarettes’ and ‘To cut down smoking cigarettes’ are both directly related to cessation but conceptually distinct. The former can be interpreted as an intention to fully eliminate

smoking, which would immediately reduce smoke exposure, while the latter can be interpreted as a step toward quitting that would still lead to regular smoke exposure.

Statistical analysis

We used Stata (version BE 19.5) to descriptively characterize the study sample, including the distribution of reasons for e-cigarette use. For each of the top reasons for use, which we defined as a reason selected by at least 5% of the sample, we conducted individual logistic regressions of selecting (vs not selecting) that statement (e.g. 'to help quit smoking') as the primary reason for e-cigarette use. Models were adjusted for the following factors that are often related to and possible confounders of e-cigarette use and reasons for e-cigarette use, including demographic measures (age, gender, and income)^{21,26,27}, e-cigarette-related behavioral measures (last device type used, last flavor used, frequency of use), and smoking-related behavioral measures (smoking dependence level, intention to quit). Crude odds ratios for each model are provided in [Supplementary file Table 1](#) to facilitate comparison to the adjusted estimates.

Given the large proportion of women who smoke in our sample, we stratified the final models by gender to determine if there were any key differences in the pattern of results. Significance level was set to 0.01 to account for multiple comparisons ($p=0.05/5$ models).

RESULTS

Approximately 70% of the study sample ($n=618/886$ Filipino adults who smoked) reported e-cigarette use in the past 30 days. Table 1 presents the demographic characteristics and tobacco use behaviors of the analytic sample of 611 Filipino adults who reported smoking and using e-cigarettes. Approximately 44% were aged 25–34 years, followed by 29% who were 18–24 years, and 27% who were ≥ 35 years. Over half were men (57.1%), and 42.9% reported an annual income (PHP) between 60000–300000 versus <60000 (35.5%) or ≥ 300000 (28.8%). Most (70.2%) had most recently used a reusable e-cigarette device compared to a disposable device (29.8%). With respect to flavor, 4.6% reported tobacco as the last flavor they used, 36.8% reported menthol, and the

remaining 58.6% reported some other flavor (31.4% fruit, 17.5% mint, and 8.5% dessert). Few participants (3.1%) reported less than weekly e-cigarette use, and most reported using e-cigarettes 1–3 days per week (48.6%) or 4–7 days per week (48.3%). In terms of smoking dependence, over half (61.4%) of participants reported medium dependence, and around one-third (35.3%) reported low dependence. Most participants (64.8%) reported an intention to quit smoking within a year, and 22.7% reported an intention to quit someday but not within the next year. The top five reported primary reasons for e-cigarette use were: to cut down smoking cigarettes (26.3%), to help quit smoking cigarettes (24.7%), to use when not allowed to smoke cigarettes (11.6%), the belief that vaping is less harmful than smoking to others around me (11.6%), and enjoyed the flavor (8.5%). The remaining primary reasons for e-cigarette use were selected by <5% of the sample.

Table 2 presents the results from the logistic regressions. Participants who reported intending to quit smoking within a year had significantly higher odds of selecting 'to cut down smoking cigarettes' as their primary reason for e-cigarette use if they intended to quit smoking within a year (adjusted odds ratio, AOR=2.84; 95% CI: 1.36–5.95, $p=0.006$) or intended to quit someday but not within the next year (AOR=2.93; 95% CI: 1.31–6.52, $p=0.009$) versus not being interested in/not knowing if they want to quit. Participants had significantly higher odds of selecting 'to help quit smoking' as their primary reason for e-cigarette use if they were men (AOR=1.84; 95% CI: 1.22–2.77, $p=0.003$) versus women and if they reported intending to quit within a year (AOR=5.22; 95% CI: 2.30–11.9, $p<0.001$) versus no clear intention to quit. Participants had significantly lower odds of selecting 'to use when I am not allowed to smoke cigarettes' (AOR=0.25; 95% CI: 0.13–0.50, $p<0.001$) and 'I enjoy the flavor' (AOR=0.24; 95% CI: 0.12–0.49, $p<0.001$) as their primary reason for e-cigarette use, respectively, if they intended to quit within the next year versus no clear intention to quit smoking. There was no significant association between selecting 'vaping is less harmful than smoking to others around me' and the demographic or tobacco use variables examined in the regression model.

Table 1. Demographic characteristics and tobacco use behaviors of Filipino adults who smoke and reported e-cigarette use within the past 30 days, November 2023 (N=611)

Characteristics	% (n)
Age (years)	
18–24	28.6 (175)
25–34	44.5 (272)
≥35	26.8 (164)
Gender	
Female	42.9 (262)
Male	57.1 (349)
Income (PHP)	
>60000	35.7 (218)
60000–299999	35.5 (217)
≥300000	28.8 (176)
E-cigarette device type	
Reusable	70.2 (429)
Disposable	29.8 (182)
Last e-cigarette flavor used	
Tobacco	4.6 (28)
Menthol	36.8 (225)
Other	58.6 (358)
Frequency of e-cigarette use	
Do not use weekly	3.1 (19)
1–3 days per week	48.6 (297)
4–7 days per week	48.3 (295)
Smoking dependence level	
Low	35.3 (216)
Medium	61.4 (375)
High	3.3 (20)
Intention to quit smoking	
Not interested/don't know	12.4 (76)
Intend to quit within a year	64.8 (396)
Intend to quit someday (>1 year)	22.7 (139)
Primary reason for e-cigarette use	
To help quit smoking cigarettes	24.7 (151)
To cut down smoking cigarettes	26.3 (161)
To use when I am not allowed to smoke cigarettes	11.6 (71)
Vaping is less harmful than smoking to others around me	11.6 (71)
Absence of smell	4.1 (25)
To socialize	2.0 (12)
To have a longer break at work	1.3 (8)

Continued

Table 1. Continued

Characteristics	% (n)
I enjoy the flavor	8.5 (52)
I enjoy the boost	0.8 (5)
I am addicted	0.8 (5)
My friends use them	1.5 (9)
Curiosity/just wanted to try them	2.8 (17)
Stress/anxiety/depression/other mental health concerns	3.4 (21)
Some other reason	0.2 (1)
Prefer not to answer	0.3 (2)

PHP: 1000 Philippine Pesos about US\$16.

Supplementary file Tables 2A and 2B present the results from the models when stratified by gender. When restricted to respondents identifying as men, findings broadly follow the same pattern as the full sample. One difference was that men with high smoking dependence had higher odds (AOR=10.2; 95% CI: 1.99–52.7, $p<0.01$) of selecting ‘to use when not allowed to smoke’ compared to men with low smoking dependence. When we restricted to respondents identifying as women, we found that there were no significant associations between intention to quit smoking and the outcomes. We also found that women who reported a household income of ≥ 300000 PHP, had higher odds (AOR=3.31; 95% CI: 1.52–7.19, $p<0.01$) of selecting ‘to cut down smoking cigarettes’ than women with incomes below <60000 PHP.

DISCUSSION

This is one of the first studies to investigate reasons for e-cigarette use among Filipino adults who smoke. We found that in our sample, the top reasons for e-cigarette use among people who smoke were to cut down or to help quit smoking, where about a quarter of people in this sample reported either one of these two reasons. A smaller but notable number of participants reported their primary reason for using e-cigarettes was because they believed vaping was less harmful than smoking to others, or they used e-cigarettes when they were not allowed to smoke.

These findings broadly align with research in Malaysia and the US, where the top reasons for e-cigarette use among people who smoke were

Table 2. Adjusted logistic regression models of choosing (vs not choosing) one of the top five reasons for e-cigarette use of Filipino adults who smoke and reported e-cigarette use within the past 30 days, November 2023 (N=611)

Variables	To cut down smoking cigarettes	To help quit smoking cigarettes	To use when not allowed to smoke cigarettes	Vaping is less harmful than smoking to others	I enjoy the flavor
	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)
Age (years)					
18–24 (ref.)	1	1	1	1	1
25–34	1.16 (0.72–1.86)	1.23 (0.76–1.99)	0.71 (0.38–1.34)	0.66 (0.36–1.20)	0.76 (0.37–1.56)
≥35	1.28 (0.76–2.17)	1.01 (0.58–1.76)	0.64 (0.30–1.34)	0.83 (0.41–1.65)	0.94 (0.42–2.12)
Gender					
Female (ref.)	1	1	1	1	1
Male	1.16 (0.79–1.70)	1.84 (1.22–2.77)**	0.58 (0.34–0.99)*	0.67 (0.40–1.11)	0.84 (0.46–1.53)
Income (PHP)					
>60000 (ref.)	1	1	1	1	1
60000–299999	1.22 (0.77–1.94)	1.11 (0.70–1.77)	1.45 (0.77–2.75)	1.12 (0.62–2.04)	0.83 (0.40–1.72)
≥300000	1.80 (1.11–2.91)*	0.75 (0.44–1.25)	1.21 (0.60–2.43)	0.82 (0.41–1.63)	1.03 (0.48–2.19)
E-cigarette device type					
Reusable (ref.)	1	1	1	1	1
Disposable	1.14 (0.76–1.72)	1.36 (0.89–2.08)	0.68 (0.37–1.27)	1.04 (0.59–1.80)	0.40 (0.18–0.88)*
Last e-cigarette flavor used					
Tobacco/menthol (ref.)	1	1	1	1	1
Other	1.22 (0.83–1.79)	0.77 (0.51–1.14)	1.04 (0.61–1.77)	1.09 (0.65–1.83)	1.02 (0.56–1.86)
Frequency of e-cigarette use					
Do not use weekly	0.32 (0.07–1.44)	0.43 (0.09–1.98)	1.61 (0.42–6.22)	0.32 (0.04–2.47)	1.46 (0.30–7.07)
1–3 days per week	1.26 (0.86–1.84)	0.71 (0.47–1.05)	1.55 (0.90–2.66)	0.76 (0.45–1.27)	1.14 (0.62–2.09)
4–7 days per week (ref.)	1	1	1	1	1
Smoking dependence level					

Continued

Table 2. Continued

Variables	To cut down smoking cigarettes	To help quit smoking cigarettes	To use when not allowed to smoke cigarettes	Vaping is less harmful than smoking to others	I enjoy the flavor
	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)
Low (ref.)	1	1	1	1	1
Medium	0.80 (0.54–1.19)	1.39 (0.90–2.14)	2.05 (1.12–3.76)*	0.87 (0.51–1.47)	0.61 (0.33–1.14)
High	0.41 (0.11–1.51)	1.95 (0.66–5.79)	4.60 (1.39–15.2)*	0.34 (0.04–2.68)	1.21 (0.30–4.76)
Intention to quit smoking					
Not interested/don't know (ref.)	1	1	1	1	1
Intend to quit within a year	2.84 (1.36–5.95)**	5.22 (2.30–11.9)***	0.25 (0.13–0.50)***	0.61 (0.30–1.23)	0.24 (0.12–0.49)***
Intend to quit someday (>1 year)	2.93 (1.31–6.52)**	1.32 (0.51–3.43)	0.87 (0.42–1.79)	0.69 (0.30–1.58)	0.35 (0.15–08.1)*

PHP: 1000 Philippine Pesos about US\$16. * p<0.05 ** p<0.01 *** p<0.001. AOR: adjusted odds ratio.

to cut down or quit smoking^{20,21}, and with a US study where people who smoke and use e-cigarettes often cited consideration of others and convenience as one of the top reasons for e-cigarette use²⁰. This study suggests that people who smoke in the Philippines are using e-cigarettes for similar reasons compared to people who smoke in other countries, and when asked to select their top reason for use, respondents report motivations for use that are largely related to personal smoking cessation/reduction goals.

In this study, less than a tenth of the sample reported that enjoyment from e-cigarette flavors was their primary reason for e-cigarette use. Other studies from Malaysia and the US conducted among adults who smoke and use e-cigarettes found that a higher proportion of respondents commonly cite flavor or taste as one of their reasons for use when asked to select from a list of options^{20,21}. It is possible that participants in our study would have endorsed flavor if the question allowed them to select multiple reasons for use. However, when forced to choose a single reason, flavors seemed to be rated as less important than other reasons like quitting or reducing their smoking. This data could lend weight to support a broader ban on e-cigarette non-tobacco flavors, which are known to appeal to youth and are often cited as a reason for e-cigarette use initiation among people who do not smoke^{28,29}, particularly if they may not be necessary to support smoking cessation motivations for e-cigarette use among people who use both products.

We found intention to quit smoking within 1 year was significantly associated with greater odds of selecting 'to cut down smoking' or 'to help quit smoking' as the primary reason for e-cigarette use among participants in this study. Intention to quit smoking is an important precursor to quitting³⁰, and our results suggest notable e-cigarette use among Filipino adults who smoke and indicate readiness to quit smoking. While it is possible that study participants who indicated their primary reason for e-cigarette use was to help quit smoking may be more primed to quit smoking compared to those who indicated their primary reason for e-cigarette use was to reduce smoking; both groups are at risk of prolonged dual use if they do not transition to exclusive e-cigarette use. Further, longitudinal

studies of people who smoke and use e-cigarettes often find that this population rarely successfully transitions to exclusive e-cigarette use¹⁷. Therefore, our data can only provide insight into the motivations of people who use cigarettes and e-cigarettes and cannot address whether e-cigarettes are an effective smoking cessation tool among the study population. Further, those participants who did not intend to quit smoking or were uncertain about quitting were more likely to select using e-cigarettes when they were not allowed to smoke, and enjoyed flavors as their primary reason for use. These data provide insight into how dual use of cigarettes and e-cigarettes may continue if gaps in policy are not closed.

Overall, we did not observe many differences in selecting one of the top five reasons for using e-cigarettes by age or income. We did observe that individuals who selected 'to help quit smoking' as their primary reason for e-cigarette use were more likely to be men than women. There is a large gender disparity with respect to smoking in the Philippines, where approximately ten times more men than women report smoking tobacco daily¹. In the supplemental analysis, we found that men with a higher smoking dependence were more likely to select 'to use when not allowed to smoke' as their primary reason for e-cigarette use compared to men with a lower smoking dependence. This pattern highlights the complex interplay between dual use, smoking dependence, and use of e-cigarettes when not allowed to smoke, particularly for men who smoke in the Philippines. However, the use of e-cigarettes when not allowed to smoke might also sustain nicotine dependence and undermine the health benefits of smoke-free regulations. This data adds to the evidence base that can be used to consider policy pathways to strengthen indoor air policies to reduce overall nicotine intake.

We did not observe any significant differences in selecting a reason for e-cigarette use with the last e-cigarette flavor or device type used. It is possible that device features are not related to intrinsic motivations related to quitting smoking or reducing smoke exposure to others, and participants may be selecting devices and flavors based on other factors related to availability or cost. We also did not observe significant relationships with

our outcomes and frequency of e-cigarette use or smoking dependence level. There was a notable (though not statistically significant) relationship between higher levels of smoking dependence and greater odds of selecting the ability to use an e-cigarette when smoking is not allowed as the primary reason for e-cigarette use.

Limitations

This study is subject to several limitations. First, although participants could provide a write-in response for an unlisted primary reason for use, our response options may not be exhaustive of reasons for use (e.g. cost/affordability). Participants were also instructed to select only one primary reason, which may not reflect people who had multiple reasons for e-cigarette use. Additionally, the order of response options for the primary reason for e-cigarette use was not randomized in the online survey. It is possible that primacy bias toward selecting the first options on the list influenced response rate. Second, although our study utilizes a sample of people across three regions of the Philippines who smoke, this was not a nationally representative sample of Filipino adults who smoke and may not be reflective of the experience of all individuals who smoke and use e-cigarettes in the Philippines. Women, in particular, were over-represented compared to GATS estimates¹. Additionally, our data are cross-sectional, and we cannot establish a temporal relationship between reasons for e-cigarette use and quit intention or account for how reasons for e-cigarette use may have changed over time or in relation to when e-cigarette use started. Our study design also does not allow us to follow individuals over time to assess whether citing a cessation-related reason for e-cigarette use will contribute to smoking cessation. Smoking and e-cigarette use status are self-reported only and were not biochemically verified, leaving our data subject to misclassification bias. There is also a possibility of residual confounding from unmeasured variables not included in the analysis.

CONCLUSIONS

This study provides emerging insights into the reasons why Filipino adults who smoke use

e-cigarettes. Our findings indicate that around half of the study sample cited smoking cessation-related reasons as their primary reason for e-cigarette use; however, others are primarily using e-cigarettes when they are not allowed to smoke or they enjoy the flavors. These data provide insight into the motivations for people who smoke and use e-cigarettes, but not into whether e-cigarettes are an effective cessation aid. Further research, along with our data, could support strengthening the Philippines' e-cigarette regulatory approach by limiting the appeal of e-cigarettes among people who do not use tobacco while also creating conditions that optimize the potential for complete smoking cessation among people who currently smoke and use e-cigarettes in the Philippines. Such measures could contribute to reducing smoking rates in the country and region, and offer insights for other countries facing similar e-cigarette-related regulatory challenges.

REFERENCES

1. Philippines Statistics Authority. 2021 Philippines Global Adult Tobacco Survey; 2023. Accessed May 11, 2026. <https://drupal.gtssacademy.org/wp-content/uploads/2024/11/2021-GATS-Country-Report.pdf>
2. Bellew B, Antonio M, Limpin M, et al. Addressing the tobacco epidemic in the Philippines: Progress since ratification of the WHO FCTC. *Public Health Action*. 2013;3(2):103–108. doi:[10.5588/pha.13.0006](https://doi.org/10.5588/pha.13.0006)
3. Campaign for Tobacco-Free Kids. Philippines Legal Summary | Tobacco Control Laws. Updated May 23, 2022. Accessed May 11, 2026. <https://www.tobaccocontrolaws.org/legislation/philippines/summary>
4. World Health Organization. Global Youth Tobacco Survey Fact Sheet, Philippines, 2019. Published 2019; Accessed May 11, 2026. [https://cdn.who.int/media/docs/default-source/ncds/ncd-surveillance/data-reporting/philippines/philippines-gyts-2019-fact-sheet-\(ages-13-15\)-final_508tag.pdf](https://cdn.who.int/media/docs/default-source/ncds/ncd-surveillance/data-reporting/philippines/philippines-gyts-2019-fact-sheet-(ages-13-15)-final_508tag.pdf)
5. Republic Act No. 11467. An Act Amending Sections 109, 141, 142, 143, 144, 147, 152, 263, 263-A, 265 and 288-A, and Adding A New Section 290-A to Republic Act No. 8424, as Amended, Otherwise Known as the National Internal Revenue Code of 1997, and for Other Purposes (Philippines). Approved January 22, 2020. *LawPhil*. Accessed May 11, 2026. https://lawphil.net/statutes/repacts/ra2020/ra_11467_2020.html
6. Earley J. The Role of E-marketing in the Philippines' Rising 'Vapedemic'. Institute for Global Tobacco Control, Johns Hopkins Bloomberg School of Public

- Health. Published December 2025. Accessed May 11, 2026. <https://publichealth.jhu.edu/institute-for-global-tobacco-control/2025/the-role-of-e-marketing-in-the-philippines-rising-vapedemic>
7. Chen-Sankey JC, Kong G, Choi K. Perceived ease of flavored e-cigarette use and e-cigarette use progression among youth never tobacco users. *PLoS ONE*. 2019;14(2):e0212353. doi:[10.1371/journal.pone.0212353](https://doi.org/10.1371/journal.pone.0212353)
 8. Villanti AC, Johnson AL, Glasser AM, et al. Association of flavored tobacco use with tobacco initiation and subsequent use among US youth and adults, 2013-2015. *JAMA Netw Open*. 2019;2(10):e1913804. doi:[10.1001/jamanetworkopen.2019.13804](https://doi.org/10.1001/jamanetworkopen.2019.13804)
 9. Zare S, Nemati M, Zheng Y. A systematic review of consumer preference for e-cigarette attributes: Flavor, nicotine strength, and type. *PLoS ONE*. 2018;13(3):e0194145. doi:[10.1371/journal.pone.0194145](https://doi.org/10.1371/journal.pone.0194145)
 10. Thoonen KAHJ, Jongenelis MI. Perceptions of e-cigarettes among Australian adolescents, young adults, and adults. *Addict Behav*. 2023;144:107741. doi:[10.1016/j.addbeh.2023.107741](https://doi.org/10.1016/j.addbeh.2023.107741)
 11. Golder S, Hartwell G, Barnett LM, et al. Vaping and harm in young people: Umbrella review. *Tob Control*. 2025. doi:[10.1136/tc-2024-059219](https://doi.org/10.1136/tc-2024-059219)
 12. Begh R, Conde M, Fanshawe TR, et al. Electronic cigarettes and subsequent cigarette smoking in young people: A systematic review. *Addiction*. 2025;120(6):1090–1111. doi:[10.1111/add.16773](https://doi.org/10.1111/add.16773)
 13. Chan GCK, Stjepanović D, Lim C, et al. Gateway or common liability? A systematic review and meta-analysis of studies of adolescent e-cigarette use and future smoking initiation. *Addiction*. 2021;116(4):743–756. doi:[10.1111/add.15246](https://doi.org/10.1111/add.15246)
 14. O'Brien D, Long J, Quigley J, et al. Association between electronic cigarette use and tobacco cigarette smoking initiation in adolescents: A systematic review and meta-analysis. *BMC Public Health*. 2021;21(1):954. doi:[10.1186/s12889-021-10935-1](https://doi.org/10.1186/s12889-021-10935-1)
 15. Coleman SRM, Piper ME, Byron MJ, Bold KW. Dual use of combustible cigarettes and e-cigarettes: A narrative review of current evidence. *Curr Addict Rep*. 2022;9(4):353–362. doi:[10.1007/s40429-022-00448-1](https://doi.org/10.1007/s40429-022-00448-1)
 16. Lindson N, Livingstone-Banks J, Butler AR, et al. Electronic cigarettes for smoking cessation. *Cochrane Database Syst Rev*. 2025;11. doi:[10.1002/14651858.CD010216.pub10](https://doi.org/10.1002/14651858.CD010216.pub10)
 17. Krishnan N, Berg CJ, Elmi AF, et al. Trajectories of ENDS and cigarette use among dual users: Analysis of waves 1 to 5 of the PATH study. *Tob Control*. 2024;33(e1):e62–e68. doi:[10.1136/tc-2022-057405](https://doi.org/10.1136/tc-2022-057405)
 18. Abi Nehme AM, Lou X, Yan X, Lee J-H, Salloum RG. Transition to smoking cessation among dual cigarette and e-cigarette users in the population assessment of tobacco and health study, waves 3 and 4 (2015-2017). *Addict Behav*. 2022;129:107284. doi:[10.1016/j.addbeh.2022.107284](https://doi.org/10.1016/j.addbeh.2022.107284)
 19. Pokhrel P, Herzog TA, Muranaka N, Regmi S, Fagan P. Contexts of cigarette and e-cigarette use among dual users: A qualitative study. *BMC Public Health*. 2015;15(1):859–z. doi:[10.1186/s12889-015-2198-z](https://doi.org/10.1186/s12889-015-2198-z)
 20. Patel D, Davis KC, Cox S, et al. Reasons for current e-cigarette use among U.S. adults. *Prev Med*. 2016;93:14–20. doi:[10.1016/j.ypmed.2016.09.011](https://doi.org/10.1016/j.ypmed.2016.09.011)
 21. Hairi FM, Goh KT, Driezen P, et al. Reasons for using e-cigarettes and support for e-cigarette regulations: Findings from the 2020 ITC Malaysia survey. *Tob Induc Dis*. 2022;20:33. doi:[10.18332/tid/146364](https://doi.org/10.18332/tid/146364)
 22. PhenX Toolkit. Protocols – Heaviness of Smoking Index. Accessed October 23, 2025. <https://www.phenxtoolkit.org/protocols/view/330201>
 23. Romijnders KAGJ, van Osch L, de Vries H, Talhout R. Perceptions and reasons regarding e-cigarette use among users and non-users: A narrative literature review. *Int J Environ Res Public Health*. 2018;15(6):1190. doi:[10.3390/ijerph15061190](https://doi.org/10.3390/ijerph15061190)
 24. Nian Q, Hardesty JJ, Crespi E, Cohen JE. Reasons for continued usage of ENDS: Differences by device and liquid characteristics among US adults. *Tob Prev Cessation*. 2024;10:10.18332/tpc/189924:1–13. doi:[10.18332/tpc/189924](https://doi.org/10.18332/tpc/189924)
 25. Vaping and Patterns of E-cigarette use Research (VAPER) Study. Wave 2: Baseline Questionnaire. Published 2023. Accessed May 11, 2026. <https://www.globaltobaccocontrol.org/en/article-resource-page>
 26. Gardner LA, O'Dean S, Champion KE, et al. Prevalence, patterns of use, and socio-demographic features of e-cigarette use by Australian adolescents: A survey. *Med J Aust*. 2023;219(7):332–334. doi:[10.5694/mja2.52075](https://doi.org/10.5694/mja2.52075)
 27. Adebisi YA, Bafail DA, Oni OE. Prevalence, demographic, socio-economic, and lifestyle factors associated with cigarette, e-cigarette, and dual use: Evidence from the 2017-2021 Scottish health survey. *Intern Emerg Med*. 2024;19(8):2151–2165. doi:[10.1007/s11739-024-03716-2](https://doi.org/10.1007/s11739-024-03716-2)
 28. Berg CJ. Preferred flavors and reasons for e-cigarette use and discontinued use among never, current, and former smokers. *Int J Public Health*. 2016;61(2):225–236. doi:[10.1007/s00038-015-0764-x](https://doi.org/10.1007/s00038-015-0764-x)
 29. Tsai J, Walton K, Coleman BN, et al. Reasons for electronic cigarette use among middle and high school students — national youth tobacco survey, United States, 2016. *MMWR Morb Mortal Wkly Rep*. 2018;67(6):196–200. doi:[10.15585/mmwr.mm6706a5](https://doi.org/10.15585/mmwr.mm6706a5)
 30. Smit ES, Fidler JA, West R. The role of desire, duty and intention in predicting attempts to quit smoking. *Addiction*. 2011;106(4):844–851. doi:[10.1111/j.1360-0443.2010.03317.x](https://doi.org/10.1111/j.1360-0443.2010.03317.x)

the World Health Organization, the FDA Center for Tobacco Products, the Pan American Health Organization and the University of Augusta (all paid to institution), received payment or honoraria from Bath University (paid to individual) and had a leadership/fiduciary role at the Institute for Health Metrics and Evaluation (University of Washington) – Tobacco Metrics Advisory Group (unpaid). L. Czaplicki, F.T. Dayagbil, E.U. Dorotheo, A. Mayor, M. Valera, R. Zaman and E. Crespi report that since the initial planning of the work, received support from the Bloomberg Philanthropies' Bloomberg Initiative to Reduce Tobacco Use (payments made to their institution). L. Czaplicki reports that in the past 36 months received a grant from the National Institutes of Health (payments made to her institution), received payment or honoraria from the University of California Office of the President (payment made to her for grant review activities), and received support for attending meetings and/or travel from Bloomberg Philanthropies (payment made on her behalf and payment reimbursed directly to her for travel expenses for in-country partner meetings and conference attendance) and from the National Institutes of Health (payment made on her behalf for conference fee). F.T. Dayagbil reports that in the past 36 months received support for attending meetings and/or travel from Cebu Normal University, Commission on Higher Education and had a leadership/fiduciary role at the Philippine Association for Teachers and Educators. E.U. Dorotheo reports that in the past 36 months received a grant from the Gates Foundation (Grant payment to his organization, Southeast Asia Tobacco Control Alliance) and received support for attending meetings and/or travel from the International Union for Cancer Control (travel support for World Cancer Congress 2024). A.M.F.G. Mayor reports that in the past 36 months received consulting fees from the Bloomberg Philanthropies' Bloomberg Initiative to Reduce Tobacco Use (payments made to institution). M. Valera reports that in the past 36 months received support for attending meetings and/or travel from Vital Strategies.

FUNDING

This research was funded by the Bloomberg Philanthropies' Bloomberg Initiative to Reduce Tobacco Use.

ETHICAL APPROVAL AND INFORMED CONSENT

Ethical approval was obtained from the Johns Hopkins Bloomberg School of Public Health Institutional Review Board (Approval number: 00024497; Date: 17 October 2023) and the Philippine Social Science Council–Social Science Ethics Review Board (Approval number: CF-23-24; Date: 5 October 2023). Participants provided informed consent.

DATA AVAILABILITY

The data supporting this research are available from the authors on reasonable request.

AUTHORS' CONTRIBUTIONS

RZ, LC, EC, and KW: research concept and design. RZ, LC, EC, AM and KW: collection and assembly of the data. RZ and LC: data analysis and interpretation. RZ and LC: writing of the original draft. All authors: reviewing and editing of the manuscript. All authors read and approved the final version of the manuscript.

PROVENANCE AND PEER REVIEW

Not commissioned; externally peer-reviewed.

SUPPLEMENTARY FILE DISCLAIMER

The content has been provided by the author(s) and has not been reviewed, verified, or endorsed by European Publishing. It may not have undergone peer review. The views, opinions, and recommendations expressed are solely those of the author(s) and do not necessarily reflect the position of European Publishing.

European Publishing accepts no responsibility or liability for any consequences arising from the use of, or reliance on, this content.

DISCLAIMER

Edgardo Ulysses Dorotheo reports that he is an Editorial Board Member Editor of the journal and that he had no involvement in the peer-review or acceptance of this article and had no access to information regarding its peer-review. Full responsibility for the editorial process for this article was delegated to a handling editor of the journal.

ACKNOWLEDGEMENTS

We would like to acknowledge the contributions of study participants and the expert data collection team at GoodThinking Inc. We also thank Dr. Tuo-Yen Tseng at the Johns Hopkins Bloomberg School of Public Health Institute for Global Tobacco Control and our partners at Campaign for Tobacco-Free Kids and Vital Strategies for their feedback and review of study findings.

CONFLICTS OF INTEREST

The authors have each completed and submitted an ICMJE form for disclosure of potential conflicts of interest. The authors declare that they have no competing interests, financial or otherwise, related to the current work. J. Cohen reports that since the initial planning of the work, received support from the Bloomberg Philanthropies' Bloomberg Initiative to Reduce Tobacco Use – Grant No. 47580 (to her institution) and that in the past 36 months, received payment for expert testimony from Grant & Eisenhofer P.A. (payment to her for preparing an abatement plan report in litigation against a tobacco company), received support for attending meetings and/or travel from Bloomberg Philanthropies' (payment made on her behalf and payment reimbursed directly to her for travel expenses for in-country partner meetings and conference attendance), and had a leadership/fiduciary role as a board member of the Society for Research on Nicotine and Tobacco, completed 3-year term (no payment). K. Welding reports that since the initial planning of the work received support from the Bloomberg Philanthropies' Bloomberg Initiative to Reduce Tobacco Use (Funding number 110801, paid to institution, and that in the past 36 months, received grants or contracts from NIH/NIDA,