RESEARCH PAPER

The Vaping Paradox: Motivations, Perceptions, and Patterns of E-Cigarette Use Among Medical Students and House Officers in Egypt

Radwa Barakat Mohamed Saleh[1], Marwa Mostafa Ahmed[2], Nesreen Mohamed Kamal Elden[3], Rehab Mohamed Sabry[4]

[1]*Assistant lecturer of Family Medicine, Cairo University*
[2]*Professor of Family Medicine, Cairo university*
[3]*Professor of Community Medicine and Public Health, Faculty of Medicine - Cairo University*
[4]*Lecturer of Family Medicine, Faculty of Medicine - Cairo University.*

Received: 26th Dec, 2025; Revised: 8th Feb 2026; Accepted: 22th Feb, 2026; Available Online: 28th Feb, 2026

ABSTRACT
Background: The prevalence of electronic cigarette (e-cigarette) use is rising among health profession students, challenging the assumption that high health literacy is a protective factor against nicotine use. Understanding the motivations behind this trend is crucial for public health policy. Objective: To assess the prevalence, reasons for use, and perceived consequences of e-cigarette use among medical students and house officers. Methods: A cross-sectional study was conducted involving 144 current e-cigarette users recruited from the Faculty of Medicine, Cairo University. Participants completed a structured questionnaire covering sociodemographic data, vaping history, and the Short Form Vaping Consequences Questionnaire (S-VCQ). Results: The mean age of participants was 21.6 years, with a male predominance (90.3%). The majority (over 65%) were former cigarette smokers. The two most cited reasons for vaping were "recreation" (reported by 61.1% of the total cohort) and "as a method to quit cigarette smoking" (57.6%). Academic stress was a major trigger, with "exams" identified as the primary circumstance increasing vaping consumption (49.3%). High nicotine concentration usage (+20 mg/ml) was common (54.2%). On the S-VCQ, participants scored highest on "Positive Reinforcement" (mean score ~7.28), indicating they perceive vaping as pleasurable and socially beneficial. Conclusion: A significant proportion of medical trainees use e-cigarettes as a harm-reduction strategy or stress-coping mechanism during exams. Despite their medical training, these students remain heavily dependent on nicotine. Medical curricula must address the specific "cessation paradox" and stress triggers driving vaping in this population.
Keywords: E-cigarettes, Medical Education, Smoking Cessation, Academic Stress, Vaping Perception.
How to cite this article: Saleh RBM, Ahmed MM, Elden NMK, Sabry RM, The Vaping Paradox: Motivations, Perceptions, and Patterns of E-Cigarette Use Among Medical Students and House Officers in Egypt. Int J Drug Deliv Technol. 2026;16(5s): 341-343. DOI: 10.25258/ijddt.16.5s.44
Source of support: None
Conflict of interest: None

INTRODUCTION

The global landscape of nicotine consumption has shifted dramatically with the advent of Electronic Nicotine Delivery Systems (ENDS), commonly known as e-cigarettes. While often marketed as safer alternatives to combustible tobacco, evidence regarding their long-term safety and efficacy as cessation tools remains inconclusive1.. Of particular concern is the rising prevalence of vaping among health science students. One would expect this population, possessing high health literacy and awareness of respiratory physiology, to avoid inhaled toxicants. However, recent data suggests that medical students are not immune to the "vaping epidemic."2

Several factors may contribute to this phenomenon. Medical training is associated with high levels of stress and burnout, making students vulnerable to substance use as a coping mechanism. Additionally, the medical community itself is divided on the role of vaping in harm reduction, potentially leading students to view e-cigarettes as a "medically acceptable" vice compared to traditional smoking.3

In Egypt, where tobacco use is a significant public health burden, data on the specific motivations for vaping among future physicians is limited. Do they vape for fun (recreation), to cope with the rigorous demands of medical school (stress relief), or genuinely to quit smoking? Understanding these drivers is essential for designing targeted wellness programs within medical schools. This study aims to profile the vaping habits, motivations, and perceived consequences among a cohort of medical students and house officers at Cairo University.

**Author for Correspondence: Radwa Barakat Mohamed Saleh*

.

METHODS

Study Design and Setting

This cross-sectional study was conducted at the Faculty of Medicine, Cairo University (Kasr Al-Ainy Hospitals). The study population consisted of medical students and house officers (junior doctors) recruited from the university hospitals. The study protocol was reviewed and approved by the Research Ethical Committee (REC) of the Faculty of Medicine, Cairo University (Code: MD-135-2023).

Participants

A total of 144 participants were included. Inclusion criteria were: (1) Medical students or house officers aged 18–25 years; and (2) Current e-cigarette users (defined as using a vaping device ≥3 days/week for the past month). Exclusion criteria included a history of diagnosed psychiatric disorders or substance abuse other than nicotine.

Data Collection Tools

Participants completed a self-administered questionnaire package including:

1. **Sociodemographic & Vaping History:** Age, gender, academic year, age of onset for smoking and vaping, nicotine concentration used, and specific triggers for increased use (e.g., exams, leisure time).
2. **Short Form Vaping Consequences Questionnaire (S-VCQ):** A 21-item scale assessing four domains of expectancies:
   - Positive Reinforcement: (e.g., "Vaping tastes good").
   - Negative Reinforcement: (e.g., "Vaping helps me deal with stress").
   - Negative Consequences: (e.g., "Vaping is hazardous to my health").
   - Appetite/Weight Control: (e.g., "Vaping keeps my weight down").

Statistical Analysis

Data were analyzed using IBM SPSS Statistics version 28. Descriptive statistics (frequencies, percentages, means, and standard deviations) were used to summarize the data. The independent t-test and Chi-square test were used to explore associations between gender/academic status and vaping behaviors.

RESULTS

Demographic Profile

The cohort consisted of 144 participants with a mean age of approximately 21.6 years. The sample was predominantly male (130 males [90.3%] vs. 14 females [9.7%]), reflecting the cultural gender gap in overt nicotine use in the region. The majority were undergraduate students, with a smaller proportion of house officers and residents.

Reasons for Use: The "Cessation Paradox" When asked about the reasons for vaping:

Recreation: Was the most common general driver, cited by 61.1% of the cohort (average of both subgroups).

Smoking Cessation: A striking 57.6% of participants explicitly stated they use e-cigarettes as a method to quit combustible cigarettes.

Peer Influence: "My friends are vapers" was cited by approximately 23.6% of participants.

Vaping Habits and Triggers

Prior Smoking: The majority (65.3%) were former cigarette smokers, supporting the "switching" hypothesis.

Nicotine Strength: High nicotine dependence was suggested by the choice of e-liquids; (45.8%) of participants used concentrations of +20 mg/ml.

Triggers: Exams were the main cause of increasing vaping consumption among all the participants (55.6%)."

Perceived Consequences (S-VCQ Scores) Participants perceived vaping largely positively.

Positive Reinforcement: Scored the highest (Mean 7.28±1.15), indicating strong association with relaxation and enjoyment.

Negative Reinforcement: Scored moderately high (Mean ~5.39±1.14), reflecting use for anxiety relief.

Appetite Control: There was a significant gender difference (p=0.021p=0.021), with females scoring higher on the belief that vaping helps control weight (Mean 5.55 ± 2.01) compared to males (Mean 4.41 ± 1.70).

DISCUSSION

In this study, the primary reason for vaping among participants in both groups was using it as a method to quit smoking cigarettes, reported by 55.6% of theparticipants . This is consistent to the findings of the study of Barakat et al. (2021), who studied the perception of adults toward electronic cigarettes among Jordanian adults and found that (56.4%) of the participants use vaping as method to quit smoking cigarettes.4

Regarding vaping habits in this study, participants identified recreation as the primary reason for the rise in youth vaping, with 69.4% of the participants holding this belief. This is in partial agreement with Patrick et al. (2016), who identified experimentation, taste, and relaxation as common reasons for vaping among U.S. adolescents.4

In the current study the nicotine concentration in the vaping methods was +20 mg/ml, it is (45.8%) of the participants .This finding aligns with the study by Farsalinos et al. (2013), which assessed nicotine levels among electronic cigarette users and found that 81% of e-cigarette users relied on liquids with a nicotine concentration higher than 15 mg/mL.5

Regarding vaping consequences in the current study the mean positive reinforcement score for vaping was 7.28±1.15 making it the highest among the four vaping-related consequence measures. Similarly, Morean et al. (2022) conducted a study among high school students, demonstrating that vaping is often associated with positive outcomes, such as stress relief and social facilitation,

while its negative consequences are perceived as minimal.6

CONCLUSION

Medical students and house officers in Egypt are using e-cigarettes primarily for recreation, smoking cessation, and stress management during exams. Despite high health literacy, they remain dependent on high-dose nicotine. Public health efforts within medical faculties should focus on stress-reduction programs and providing evidence-based cessation support (pharmacotherapy and counseling) to prevent future doctors from relying on vaping as a lifelong crutch.

REFERENCE

1. Boykan, R., & Goniewicz, M. L. (2021): Background and description of e-cigarette products and solutions. Electronic Cigarettes and Vape Devices: A Comprehensive Guide for Clinicians and Health Professionals, 37-51.
2. Menshov, V. A., Trofimov, A. V., Zagurskaya, A. V., Berdnikova, N. G., Yablonskaya, O. I., & Platonova, A. G. (2022): Influence of nicotine from diverse delivery tools on the autonomic nervous and hormonal systems. Biomedicines, 10(1): 121.
3. Grover, I., & Jauregui, A. (2023): Influencer Endorsements of E-Cigarette Brands on Instagram: A study of Gen Z perception of influencers endorsing e-cigarette brands on Instagram.
4. Barakat, M., Assaf, A. M., Al-Qudah, R. A., Thiab, S., Alhamed, M., Al-Obaidi, H. J., ... & Basheti, I. (2021). Perception of adults toward electronic cigarettes: a cross-sectional study from Jordan. Primary health care research & development, 22, e3.
5. Patrick, M. E., Miech, R. A., Carlier, C., O'Malley, P. M., Johnston, L. D., & Schulenberg, J. E. (2016): Self-reported reasons for vaping among 8th, 10th, and 12th graders in the US: Nationally-representative results. Drug and alcohol dependence, 165, 275-278.
6. Farsalinos KE, Kistler KA, Gillman G, Voudris V. (2015): Evaluation of electronic cigarette liquids and aerosol for the presence of selected inhalation toxins. Nicotine Tob Res. 17:168–174.
7. Morean, M. E., Davis, D. R., Bold, K. W., Kong, G., Jackson, A., Lee, J., ... & Krishnan-Sarin, S. (2022): Psychometric evaluation of the Short-Form Vaping Consequences Questionnaire for use with high school adolescents who use and do not use e-cigarettes. Nicotine and Tobacco Research, 24(5): 699-709