

CASE REPORT

Use of Bupropion for Vaping Cessation in a Young Adult: A Case Report

Christopher Peter¹, Animesh Bhushan², Tenzing N Bhutia³

Received on: 19 June 2025; Accepted on: 04 December 2025; Published on: XX XXXX XX

ABSTRACT

Background: The use of electronic nicotine delivery systems (ENDSs), commonly known as vaping, has grown rapidly among young adults, sparking concerns about nicotine addiction and possible long-term health effects. Although treatments like nicotine replacement therapy (NRT) and varenicline are well-established for traditional smoking cessation, there is a lack of robust data on their effectiveness in helping individuals quit vaping. Bupropion, an antidepressant, also used in smoking cessation, has been insufficiently studied in the context of e-cigarette addiction.

Case description: A 21-year-old male reported heavy vape use over a two-year period, initially triggered by peer influence. His consumption increased to between 1,000 and 1,500 puffs per day, resulting in significant nicotine dependence, with a score of 8 on the E-cigarette Fagerström Test of Nicotine Dependence (eFTND). Despite several unsuccessful attempts to quit and his refusal to try NRT or psychotherapy, he agreed to begin pharmacological treatment. Bupropion was initiated at 150 mg once daily for 3 days, then increased to 150 mg twice daily. After 1 month, he reported a substantial reduction in withdrawal symptoms and had remained vape-free for 3 weeks. Upon completing a 12-week treatment course, he sustained abstinence without experiencing adverse effects.

Discussion: Bupropion functions by modulating dopamine and norepinephrine levels, thereby helping to curb nicotine cravings and ease withdrawal symptoms. Though it is commonly prescribed to assist in quitting smoking, its potential benefits for individuals attempting to quit vaping are not well documented. In the absence of standardized guidelines for managing e-cigarette dependence, this case illustrates the possible effectiveness of bupropion in supporting vaping cessation.

Conclusion: This report suggests that bupropion could be an effective aid in helping young adults quit vaping. Nonetheless, further studies are needed to assess its long-term success and to inform the development of formal treatment protocols tailored to e-cigarette addiction.

Clinical significance: Given the current lack of evidence-based treatments specifically for vaping cessation, bupropion may offer a promising pharmacologic option. More extensive research is necessary to confirm its effectiveness and guide its use in routine clinical practice.

Keywords: Bupropion, Case report, E-cigarettes, Nicotine dependence, Vaping cessation.

Indian Journal of Private Psychiatry (2026): 10.5005/jp-journals-10067-0205

INTRODUCTION

Vaping, which involves using electronic nicotine delivery systems (ENDSs) such as e-cigarettes, has seen a sharp rise in use over the past decade, especially among youth. These devices work by heating a liquid, usually a mixture of propylene glycol, vegetable glycerin, flavorings, and nicotine into an inhalable aerosol. Although often promoted as a safer alternative to traditional smoking and as a tool to help people quit cigarettes, vaping raises significant public health issues. While it generally exposes users to fewer harmful substances than combustible tobacco, extended use has been associated with possible risks to respiratory and cardiovascular health. Moreover, e-cigarettes can emit harmful chemicals and microscopic particles capable of reaching deep into the lungs, prompting concerns about their long-term safety.¹ Vaping has gained widespread popularity among teenagers and young adults, frequently without any history of traditional cigarette use. Factors such as appealing flavored e-liquids, social pressure, and the belief that it helps manage stress often contribute to its initiation.² Research shows that many young individuals who vape exhibit signs of nicotine addiction and look for help to quit. However, the majority of current cessation methods are based on approaches originally designed for smoking, and there is limited data confirming their effectiveness specifically for youth who vape.³

Despite regulatory bans, the use of vapes among adolescents in India has been documented. National-level studies indicate rising

¹Department of Psychiatry, Dr. Ram Manohar Lohia Institute of Medical Sciences, Lucknow, Uttar Pradesh, India

^{2,3}Department of Psychiatry, Bhatia Neuropsychiatric Hospital, Amritsar, Punjab, India

Corresponding Author: Christopher Peter, Department of Psychiatry, Dr. Ram Manohar Lohia Institute of Medical Sciences, Lucknow, Uttar Pradesh, India, Phone: +91 7837632544, e-mail: chrisnimhans@gmail.com

How to cite this article: Peter C, Bhushan A, Bhutia TN. Use of Bupropion for Vaping Cessation in a Young Adult: A Case Report. *Ind J Priv Psychiatry* 2026;xx(x):xx-xx.

Source of support: Nil

Conflict of interest: None

Patient consent statement: A written informed consent was obtained from the patient for the publication of details, which can include photographs and/or videos and/or case history to be published in any printed/online journals.

awareness and ease of access, with various companies actively promoting vapes through online platforms. The influence of social media and digital marketing has amplified the attractiveness of flavored vaping products among young people. Considering the changing trends in vaping within the country, there is an urgent

need for research and targeted intervention strategies focused on this demographic.¹

Nicotine addiction linked to vaping closely resembles the dependence observed with traditional tobacco products. As outlined in the DSM-5, nicotine dependence includes features such as growing tolerance, withdrawal symptoms, and the tendency to use more than intended over time. Although e-cigarettes are sometimes used as alternatives to regular cigarettes, their contribution to sustaining nicotine addiction is a significant issue. The availability of high nicotine levels in certain vaping products can deepen dependence, posing additional hurdles for those trying to quit.³

Bupropion, an antidepressant known to block the reuptake of norepinephrine and dopamine, is widely recognized as an effective aid for quitting smoking and treating nicotine dependence. Research indicates that it can help improve short-term smoking cessation rates, although its long-term effectiveness is still unclear. While it has a well-documented role in helping individuals stop smoking, there is currently a lack of specific evidence or clinical recommendations regarding its use for quitting vaping.^{3,4}

Given the growing concerns about vaping-related nicotine dependence and the lack of established treatment protocols, we present a case of a 21-year-old male with nicotine dependence due to vaping who sought cessation treatment. This case features the potential role of bupropion as a pharmacological intervention for vaping cessation in young adults.

CASE DESCRIPTION

A 21-year-old male presented to the psychiatry outpatient department with concerns about excessive vaping over the past 2 years. He had initiated nicotine vaping upon joining college under peer influence, having previously experimented with cigarettes occasionally but without developing dependence. Initially, he vaped once or twice a day, but over time, his use escalated to every 2–3 hours, totaling approximately 1,000–1,500 puffs per day.

Over the following months, he developed tolerance, increased appetite, and withdrawal symptoms, including irritability, increased appetite, and difficulty sleeping. Despite multiple attempts (three to four times) to quit vaping, he relapsed the next day due to withdrawal symptoms and cravings. He sought help as his vaping-related cough and recurrent sore throat episodes were interfering with his academic performance. The patient had no history of psychiatric illness, no family history of mental disorders, and no medical comorbidities. On assessment, his E-cigarette Fagerström Test of Nicotine Dependence (eFTND) score was 8, indicating high dependence.⁵ He declined nicotine replacement therapy (NRT) due to concerns about discretion and opted out of psychotherapy due to time constraints. Given these considerations, bupropion was initiated. He was prescribed 150 mg once daily for the first 3 days, followed by 150 mg twice daily, beginning 1 week before his planned quit date.

At his 1-month follow-up, he reported that cravings were most intense in the mornings and after meals, particularly on the 2nd day of quitting. However, by the 2nd week, he noticed significant improvement in withdrawal symptoms and no longer felt the urge to vape. By the time of his follow-up, he had been abstinent for 3 weeks, with his eFTND score reducing to zero. Bupropion 150 mg twice daily was continued for another 4 weeks. The patient did not report any side effects from bupropion. Treatment was continued for a total of 12 weeks, and at his final follow-up, he had maintained complete abstinence from vaping for 3 months. As he

no longer exhibited symptoms of nicotine dependence or cravings, bupropion was tapered and discontinued.

DISCUSSION

Bupropion was selected for vaping cessation due to its proven effectiveness in treating nicotine dependence. By inhibiting norepinephrine and dopamine reuptake, it reduces withdrawal symptoms and cravings, enhancing long-term abstinence in smokers.⁶ Clinical studies show that bupropion is the most effective pharmacologic intervention for adolescent smoking cessation when medication adherence is maintained.⁴ The effectiveness of bupropion at the FDA-approved dose of 300 mg per day is critically dependent on adherence, which is a key factor in achieving successful smoking cessation outcomes.⁷ Current clinical recommendations for e-cigarette cessation suggest offering pharmacological support such as NRT, varenicline, cytisine (cytisinicline), or bupropion to adults, adolescents, and individuals with co-occurring mental health or substance use conditions who are motivated to quit vaping.^{8–11} When NRT is not a suitable option, as demonstrated in this particular case, bupropion can be considered a practical alternative.¹²

Besides its application in nicotine dependence, bupropion can help reduce postcessation weight gain, which may be a concern for some individuals. Research indicates that people using bupropion achieve higher smoking cessation rates compared to a placebo and experience better weight control, with benefits lasting up to 1 year after discontinuation. There is a limited availability of resources and support for children and adolescents dealing with e-cigarette addiction, which makes it challenging for them to quit without access to NRT and counseling.¹³ A 2025 review highlights a significant gap in approved treatments for vaping cessation. Many interventions remain limited geographically, such as US-exclusive digital tools. Pharmacotherapies like NRT and varenicline are mostly used off-label due to a lack of official approval. Regulatory barriers complicate their use in trials. Existing measures targeting ENDS show some promise in reducing vaping but lack sufficient evidence for definitive policy guidance. This underscores the urgent need for approved pharmacological solutions for vaping cessation.¹⁴

Without proper intervention, they risk long-term health issues, including cognitive impairments that affect memory, attention, executive function, processing speed, and overall cognitive health.¹⁵ These impairments can significantly impact their daily functioning, academic performance, and future well-being. Given the absence of established treatment protocols for vaping cessation, this case underscores the potential utilization of bupropion as a pharmacological intervention. Further research is required to assess its long-term effectiveness in promoting vaping cessation, particularly among young adult populations.

CONCLUSION

This case presents the potential role of bupropion as a pharmacological intervention for vaping cessation in young adults. Given its established efficacy in smoking cessation, bupropion may help reduce nicotine cravings and withdrawal symptoms in e-cigarette users. The absence of standardized treatment protocols for vaping addiction highlights the need for further research to assess long-term outcomes and optimize cessation strategies. As vaping continues to rise among youth, integrating pharmacological and behavioral interventions will be essential in addressing nicotine

dependence. Future studies should explore the effectiveness of bupropion in larger populations to establish evidence-based guidelines for vaping cessation treatment.

Clinical Significance

Bupropion may offer a promising pharmacological approach for managing nicotine dependence related to vaping, particularly in young adults who experience significant cravings and withdrawal symptoms. Due to the absence of standardized treatment protocols specifically for vaping cessation, bupropion, which is already used in smoking cessation, may be utilized to address this gap in clinical practice. Its effectiveness in reducing withdrawal symptoms and supporting sustained abstinence highlights the need for further research to evaluate its long-term efficacy and establish evidence-based guidelines for broader application.

Ethics Approval and Consent to Participate

The patient was treated after obtaining informed consent from him.

Consent for Publication

A written informed consent was obtained from the patient for the publication of details, which can include photographs and/or videos and/or case history to be published in any printed/online journals.

Availability of Data and Materials

All data generated or analyzed during the present study are available from the corresponding author on reasonable request.

AUTHORS' CONTRIBUTIONS

All authors contributed to the study design, data acquisition, analysis, manuscript drafting, and revision. They had full access to the data, ensured its accuracy, and approved the final version for publication.

ORCID

Christopher Peter  <https://orcid.org/0000-0002-4572-6054>

REFERENCES

1. Gupte HA, Chatterjee N, Mandal G, et al. Adolescents and e-cigarettes in India: A qualitative study of perceptions and practices. *Asian Pac J Cancer Prev* 2022;23(9):2991–2997. DOI: 10.31557/APJCP.2022.23.9.2991.

2. Morean ME, Kong G, Cavallo DA, et al. Nicotine concentration of e-cigarettes used by adolescents. *Drug Alcohol Depend* 2016;167:224–227. DOI: 10.1016/j.drugalcdep.2016.06.031.
3. Huerne K, Eisenberg MJ. Vaping-cessation interventions in former smokers. *Can J Cardiol* 2023;39(9):1263–1267. DOI: 10.1016/j.cjca.2023.04.020.
4. Yan T, Goldman RD. Bupropion for smoking cessation in adolescents. *Can Fam Physician* 2021;67(10):743–745. DOI: 10.46747/cfp.6710743.
5. Rahman AU, Mohamed MHN, Jamshed S, et al. The development and assessment of modified Fagerstrom test for nicotine dependence scale among Malaysian single electronic cigarette users. *J Pharm Bioallied Sci* 2020;12(Suppl 2):S671–S675. DOI: 10.4103/jpbs.JPBS_245_19.
6. Giulietti F, Filippini A, Rosettani G, et al. Pharmacological approach to smoking cessation: An updated review for daily clinical practice. *High Blood Press Cardiovasc Prev* 2020;27(5):349–362. DOI: 10.1007/s40292-020-00396-9.
7. Leischow SJ, Muramoto ML, Matthews E, et al. Adolescent smoking cessation with bupropion: The role of adherence. *Nicotine Tob Res* 2016;18(5):1202–1205. DOI: 10.1093/ntr/ntv179.
8. Palmer AM, Carpenter MJ, Rojewski AM, et al. Nicotine replacement therapy for vaping cessation among mono and dual users: A mixed methods preliminary study. *Addict Behav* 2023;139:107579. DOI: 10.1016/j.addbeh.2022.107579.
9. Caponnetto P, Campagna D, Ahluwalia JS, et al. Varenicline and counseling for vaping cessation: A double-blind, randomized, parallel-group, placebo-controlled trial. *BMC Med* 2023;21(1):220. DOI: 10.1186/s12916-023-02919-2.
10. Rigotti NA, Benowitz NL, Prochaska JJ, et al. Cytisine for vaping cessation in adults using nicotine e-cigarettes. *JAMA Intern Med* 2024;184(8):922–930. DOI: 10.1001/jamainternmed.2024.1313.
11. D'Arrigo T. Cytisine for vaping cessation. *PN* 2024;59(9).
12. Zawertailo L, Kouzoukas E, Fougere C, et al. Clinical guidance for e-cigarette (vaping) cessation: Results from a modified Delphi panel approach. *Prev Med Rep* 2023;35:102372. DOI: 10.1016/j.pmedr.2023.102372.
13. Anish SA. Prevalence of e-cigarettes in children and adolescents: A failure of public health prevention. *Sci Insights* 2024;45(4):1593–1602. DOI: 10.15354/si.24.re1080.
14. Heshmati J, Pandey A, Benjamin J, et al. Vaping cessation interventions: A systematic review and meta-analysis. *Tob Control* 2025. DOI: 10.1136/tc-2024-058798.
15. Hall JS, Murphy W. The neurological impact of continuous nicotine exposure in adolescents. *Sci Insights* 2024;45(4):1563–1574. DOI: 10.15354/si.24.re1067.