

Understanding E-cigarette Use in India: Challenges, Health Implications, and Regulatory Responses

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INTRODUCTION

India, home to one of the largest populations of tobacco users globally, with approximately 267 million tobacco consumers, the country ranks second only to China in tobacco consumption.¹⁻³ The landscape of tobacco consumption has undergone a significant transformation with the advent of electronic cigarettes (e-cigarettes), also known as electronic nicotine delivery systems.⁴ These devices, touted as harm-reduction tools for smokers, have sparked debates regarding their efficacy as cessation aids and potential health risks.^{5,6} The rise of e-cigarettes, particularly among the youth globally, has raised concerns, prompting stringent regulatory measures.⁷

In this editorial, we explore the multifaceted aspects of e-cigarette use, exploring their potential benefits and concerns while delving into the complexities surrounding e-cigarette use in India, emphasizing the need for comprehensive regulation, public health interventions, and further research.

E-CIGARETTES: A NOVEL APPROACH TO NICOTINE DELIVERY

E-cigarettes offer a unique method of delivering nicotine, functioning by heating a liquid solution (e-liquid) containing nicotine, flavorings, and other additives to produce an aerosol, commonly known as "vaping."⁸ Initially marketed as a safer alternative to traditional tobacco products, questions have arisen regarding the potential health risks associated with their use, especially among young individuals. While e-cigarette supporters argue that e-cigarettes can aid in smoking cessation efforts, concerns persist regarding the safety of their ingredients, including cancer-causing chemicals and respiratory irritants.⁹

The Centers for Disease Control and Prevention and other health organizations have identified the increasing use of e-cigarettes among adolescents as a significant public health issue.¹ Factors such as being a current smoker, being male, having access to e-cigarettes via retail outlets, being exposed to others' use through media, and false perceptions all increased the risk of vaping.¹⁰⁻¹² The long-term health effects of vaping remain uncertain, prompting the need for further comprehensive research, particularly regarding dual-users who concurrently use both e-cigarettes and traditional tobacco products, as they may face increased risks of respiratory illnesses.

HEALTH EFFECTS OF E-CIGARETTE USE IN ADOLESCENTS

While e-cigarettes are often perceived as safer alternatives to combustible cigarettes, they still carry notable health risks. Nicotine, a common component in e-cigarettes, is highly addictive and can foster psychological dependence, especially in adolescents

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whose brains are still maturing.¹³ This may increase the likelihood of experimenting with other substances and illicit drugs. Additionally, e-cigarette use has been associated with various respiratory issues such as coughing, wheezing, and asthma, as well as cardiovascular effects like tachycardia, hypertension, and potential atherosclerosis.¹⁴ Moreover, inflammation and damage to blood vessels have been reported among e-cigarette users.⁸ Growing evidence links e-cigarette use to anxiety and depression due to nicotine's impact on brain neurotransmitters.^{13,14} Vaping as a coping mechanism may worsen mental health issues.¹¹ Dual-use, combining e-cigarettes with traditional cigarettes, presents unique health risks. While nicotine from e-cigarettes may theoretically reduce cigarette intake, studies suggest that dual users may increase exposure to toxicants and nicotine.⁹ Experimental studies indicate potential pulmonary function effects from e-cigarette use, emphasizing the need for further research in this area. Also, the unintended consequences, including accidental ingestion by children and vaping-related injuries, further underscore the need for stringent regulations.

INCEPTION OF E-CIGARETTES IN INDIA

The introduction of e-cigarettes in India dates back to the early 2010s, primarily through online platforms and selected retail outlets. Marketed as a safer alternative to traditional tobacco products, e-cigarettes swiftly garnered attention among smokers, aiming to curb or diminish their tobacco consumption.¹ The availability of various flavors and the perceived novelty of vaping further contributed to their initial appeal. Additionally, the absence of specific legislation governing their sale and usage facilitated their unregulated proliferation.^{1,3}

Recognizing the necessity for comprehensive surveillance data on e-cigarette usage, several nations, including Indonesia, Malaysia, Qatar, and Greece, integrated inquiries about e-cigarettes into the Global Adult Tobacco Survey (GATS) as early as 2011. Nevertheless, India only introduced such inquiries in the second round of GATS, conducted between 2015 and 2016. Despite the survey indicating a relatively low prevalence of e-cigarette users, standing at 1.22%, the Indian government proceeded with a ban on these products.²

REGULATORY FRAMEWORK

In September 2019, the Government of India enacted the Prohibition of E-cigarettes Act (PECA) 2019, imposing a comprehensive prohibition on the sale, manufacture, distribution, and advertising of e-cigarettes. A primary driver behind this move was the escalating trend of youth vaping.¹ With 65% of the population below the age of 35, India's demographic composition underscores the critical need to shield young individuals from addictive substances like nicotine. Research indicates that e-cigarette usage among adolescents is alarmingly widespread, with around 4% of youths aged 15–24 being aware of these products.² The aggressive marketing strategies employed by e-cigarette companies, particularly the promotion of appealing flavors across various media platforms, heighten the risk of youth experimentation and addiction.¹ Therefore, proactive measures like the prohibition were deemed essential to safeguard the nation's health, particularly that of its youth, from the potential hazards associated with vaping. Moreover, the ban signifies the government's unwavering commitment to promptly addressing emerging health challenges.

However, the sanction encountered legal challenges and ignited debates regarding its efficacy and possible unintended repercussions. While supporters of the ban argued for its necessity in safeguarding public health, critics raised concerns about its potential impact on harm reduction initiatives, the livelihoods of small-scale manufacturers and retailers, and the potential emergence of a black market for e-cigarettes. Despite the significant penalties specified for violating the ban, reports indicate that e-cigarettes remain readily available through various sources, including general stores and online retailers.¹⁵

ROLE OF RESPIRATORY THERAPISTS

Respiratory therapists (RTs) primarily focus on cardiopulmonary care and are well-positioned to address tobacco and e-cigarette use in patients.^{16,17} With their frequent interactions with smokers and at-risk individuals, RTs play a crucial role in educating patients about the respiratory risks associated with vaping and smoking. Through personalized counseling and evidence-based information, RTs empower patients to consider cessation programs.¹⁶ RTs also conduct comprehensive assessments to evaluate the impact of e-cigarette use on respiratory function, using lung function tests and diagnostics to guide interventions. Tailored treatment plans, including bronchodilator therapy and airway clearance techniques, aim to alleviate symptoms and improve respiratory health. Additionally, RTs oversee pulmonary rehabilitation programs to optimize lung function and enhance the overall quality of life of those affected.¹⁸ Beyond patient care, RTs advocate for policies to reduce e-cigarette use, particularly among vulnerable populations, and contribute to research efforts investigating the long-term effects of vaping on respiratory health.

In conclusion, the rise of e-cigarettes has sparked debates globally, with India's regulatory approach exemplified by the PECA 2019 reflecting proactive measures to address public

health concerns. While proponents advocate for e-cigarettes as potential harm-reduction tools, evidence suggests significant risks, particularly concerning youth initiation and long-term health effects. RTs are vital in educating patients about tobacco and e-cigarette risks. They could offer personalized counseling and tailored treatment plans to promote respiratory health and advocate for policy changes.

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