

E-Cigarette Use Among Rural Adolescents: Emerging Challenges for Tobacco Control

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Abstract

E-cigarette use among rural adolescents has emerged as a serious public health concern, with usage rates now comparable to or exceeding those in urban areas. This study highlights how weak regulatory enforcement, aggressive marketing strategies, peer influence, and limited access to prevention and cessation resources collectively drive rising vaping rates among rural youth. Geographic disparities, socioeconomic barriers, and inadequate school- and community-based interventions further exacerbate the crisis, leaving adolescents vulnerable to nicotine addiction and respiratory health risks. Strengthening policy enforcement, implementing culturally tailored prevention programs, and improving healthcare access are critical to addressing this growing problem. Coordinated efforts from policymakers, educators, and health professionals are essential to curb e-cigarette use, protect adolescent health, and promote equity in tobacco control.

Keywords: tobacco; adolescents; cigarette

Introduction

E-cigarette use is a serious and growing public health concern among rural adolescents that requires urgent attention. Data from multiple regions suggest that rural youth now use e-cigarettes at rates comparable to, or even higher than, their urban counterparts, signaling a troubling trend that widens existing health disparities [1]. Rural adolescents face unique social, economic, and infrastructural challenges that make them particularly vulnerable to nicotine initiation and long-term respiratory problems. This is not simply an issue of personal choice but rather the outcome of systemic gaps in regulation, prevention, and healthcare access. Weak enforcement of tobacco regulations compounds the problem significantly. Despite age restrictions on e-cigarette sales, many middle and high school students continue to report easy access to vaping products [2]. In rural communities, oversight mechanisms are often less robust, and vendors may exploit these regulatory gaps. Geographic studies show that vape shops and outlets are often situated near schools, colleges, and community centers, creating an environment where access to such products is normalized for young people [3]. These patterns make it difficult to protect adolescents from exposure and temptation, even when families and schools are actively trying to discourage use.

The influence of aggressive marketing strategies further exacerbates the crisis. E-cigarette companies frequently deploy tactics that resonate strongly with adolescents, such as influencer partnerships, lifestyle-oriented advertising, and viral content spread across social media

platforms [4]. For many rural teens, exposure to these messages combines with peer influence and curiosity to create a powerful pull toward experimentation [5]. Once initiated, adolescents face a heightened risk of nicotine dependence, and studies continue to link vaping to adverse respiratory outcomes and increased susceptibility to pulmonary disease [6]. For vulnerable rural youth, this path can lead to lifelong health struggles that mirror or even surpass the harms once tied exclusively to traditional cigarette smoking.

Adding to the challenge is the limited availability of cessation resources and preventive education in rural areas. While research shows that community- and culture-specific campaigns can be effective, such interventions remain scarce outside urban centers [7]. During the COVID-19 pandemic, despite restrictions and school closures, adolescents in rural areas still reported access to e-cigarettes, demonstrating that both policy enforcement and health promotion strategies are insufficient [8]. Compounding this problem are financial and infrastructural barriers: many rural families face economic hardship, while schools and local health workers often lack the funding, materials, and training needed to deliver effective prevention or cessation programs.

Marketing that emphasizes independence, rebellion, and modernity resonates deeply with adolescents navigating issues of identity and belonging, especially in rural areas where recreational and social opportunities may be limited. As a result, many young people continue to believe the misconception that vaping is safer than

smoking, despite mounting scientific evidence to the contrary. The convergence of weak enforcement, predatory marketing, lack of resources, and limited healthcare infrastructure leaves rural adolescents particularly exposed to the harms of e-cigarette use [9, 10]. Addressing this emerging crisis requires urgent, coordinated action. Policymakers should prioritize strengthening school-based prevention initiatives, expanding healthcare provider training on youth tobacco use, and enforcing tighter restrictions on sales and marketing aimed at minors. At the same time, community-driven and culturally tailored programs should be developed to ensure that interventions resonate with rural adolescents lived experiences. These combined efforts are essential to reducing disparities in tobacco-related harms, protecting rural youth, and promoting equity in public health. By implementing targeted education, strong regulatory measures, and comprehensive prevention programs, stakeholders can help curb the rising tide of e-cigarette use among rural adolescents. Such actions are critical not only to reducing immediate risks but also to preventing long-term nicotine addiction and advancing fairness in tobacco control. Without decisive action now, the gap in health outcomes between rural and urban youth will continue to widen, with serious implications for future generations.

Declarations

Declaration of Interest

The author declares no conflicts of interest.

Funding

This research received no external funding.

Acknowledgement

The author would like to acknowledge the aid of some mentors and community partners who provided insights during the preparation of this manuscript.

Authors Contribution

The author made substantial contributions to the completion of this study. Conceptualized the research, developed the methodology, and provided overall supervision, was responsible for conducting the literature review, collecting the data, and performing the data analysis, do the interpretation of findings and was

actively involved in drafting and critically revising the manuscript. The author reviewed and approved the final version of the manuscript for submission.

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Cite this article: Glenn J. Pulvera. (2025). E-Cigarette Use Among Rural Adolescents: Emerging Challenges for Tobacco Control, *Journal of BioMed Research and Reports*, BioRes Scientia Publishers. 8(5):1-2. DOI: 10.59657/2837-4681.brs.25.201

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Article History: Received: August 30, 2025 | Accepted: September 13, 2025 | Published: September 20, 2025