Literature Review

The Phenomenon Of Vaping Among Adolescents And Its Implication For Nursing Practice: Scoping Review

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Abstract

The increasing prevalence of electronic cigarette use (vaping) among adolescents has become a major global public health concern, yet its implications for nursing practice remain insufficiently synthesized. This scoping review aimed to map current evidence on vaping among adolescents and examine its implications for nursing practice. The review was conducted following the Arksey and O'Malley framework and reported according to the PRISMA-ScR guidelines. A comprehensive search of major databases identified peer-reviewed, open-access articles published between 2020 and 2025 focusing on adolescent vaping. Five studies met the inclusion criteria. The findings indicate that vaping is the most commonly used nicotine product among adolescents, with initiation driven by peer influence, social acceptability, flavored products, and misperceptions of harm. Evidence also demonstrates associations between adolescent vaping and increased risks of nicotine dependence, initiation of combustible cigarette smoking, respiratory symptoms, and psychosocial problems. The reviewed literature highlights the critical role of nurses in early identification, health education, counseling, and prevention, particularly in school and community settings, while also revealing gaps in nursing-specific guidelines and training. These findings underscore the need to strengthen nursing education and evidence-informed interventions to address adolescent vaping effectively.

Keywords: Vapping; Adolescents; Nursing implication.

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INTRODUCTION

The increasing prevalence of electronic cigarette use, commonly known as vaping, among adolescents has emerged as a significant global public health concern. Recent global estimates indicate that approximately 15 million adolescents aged 13–15 years worldwide currently use electronic cigarettes, with adolescents being up to nine times more likely to vape than adults in countries where data are available (World Health Organization [WHO], 2023). This rapid increase is particularly concerning given that vaping products were initially marketed as harm-reduction alternatives for adult smokers. Instead, these products have gained widespread popularity among adolescents, largely driven by appealing flavors, targeted marketing strategies, extensive exposure through social media, and the widespread perception that vaping is less harmful than conventional tobacco smoking (Hammond et al., 2017; WHO, 2021). This shift poses a serious threat to adolescent health and risks undermining decades of progress in tobacco control.

Epidemiological data further illustrate the scale of the problem. Findings from the 2023–2024 National Youth Tobacco Survey (NYTS) in the United States revealed that approximately 5.9% of middle and high school students reported current e-cigarette use within the past 30 days, making vaping the most commonly used tobacco product among adolescents (Centers for Disease Control and Prevention [CDC], 2023). At the global level, analyses of Global Youth Tobacco Survey data show that the prevalence of past-30-day e-cigarette use among adolescents aged 12–16 years averages 9.2%, with prevalence rates exceeding 20–30% in several high-income countries (Kong et al., 2022). These findings demonstrate that adolescent vaping is not only widespread but also varies substantially across regions.

Adolescence is a critical developmental period characterized by heightened vulnerability to risk-taking behaviors and strong social influences. Empirical evidence consistently indicates that peer pressure, curiosity, and misperceptions regarding the safety of vaping play central roles in vaping initiation among adolescents (Chadi et al., 2019). Furthermore, longitudinal studies and systematic reviews have shown that adolescents who vape have a significantly higher likelihood of developing nicotine dependence, initiating combustible cigarette smoking, and engaging in other substance use behaviors, including alcohol and cannabis use (Yoong et al., 2021). These findings suggest that vaping may function as a gateway to broader patterns of health-risk behaviors during adolescence.

Beyond behavioral risks, accumulating evidence highlights the adverse health effects of vaping among adolescents. Short-term health outcomes include respiratory symptoms such as cough and wheezing, airway irritation, and impaired pulmonary function. Emerging evidence also suggests potential cardiovascular effects and psychosocial consequences, including anxiety, reduced attention, and depressive symptoms (CDC, 2023; WHO, 2021). Although the long-term health consequences of vaping remain under investigation, the presence of nicotine and other toxic constituents in e-cigarette aerosols raises serious concerns regarding neurodevelopmental vulnerability and respiratory health during adolescence.

Nurses play a pivotal role in adolescent health promotion and disease prevention across clinical, school, and community settings. Through routine health assessments, early screening, health education, counseling, and advocacy, nurses are strategically positioned to identify vaping behaviors early and implement preventive interventions. However, despite the expanding body of literature on adolescent vaping, evidence specifically addressing its implications for nursing practice remains fragmented, and there is limited synthesis translating current research findings into nursing-led prevention and intervention strategies.

Therefore, a scoping review is warranted to systematically map the available scientific evidence on vaping among adolescents and to examine its implications for nursing practice. By identifying prevalence trends, influencing factors, and associated health impacts, this review aims to provide a comprehensive

overview of the current knowledge base and to support the development of evidence-informed nursing interventions and policies aimed at preventing vaping among adolescents.

RESEARCH METHOD

This study employed a scoping review design to map and synthesize the available scientific evidence on vaping among adolescents and its implications for nursing practice. The review was conducted in accordance with the methodological framework proposed by Arksey and O'Malley and further refined by Levac et al., and was reported following the PRISMA Extension for Scoping Reviews (PRISMA-ScR) guidelines. A comprehensive literature search was performed across PubMed/MEDLINE, Scopus, CINAHL, Web of Science, and Google Scholar for articles published between 2020 and 2025. The search strategy combined keywords related to vaping, adolescents, and nursing practice using Boolean operators. The study selection process was conducted through title and abstract screening, followed by full-text review based on predefined inclusion criteria, namely articles published within the last five years, open-access publications, studies focusing on vaping or electronic cigarette use among adolescents, and articles published in English. Data were extracted using a standardized data charting form and analyzed using descriptive and narrative approaches to identify key themes related to prevalence, determinants, health impacts, and implications for nursing practice. In accordance with the characteristics of a scoping review, no methodological quality appraisal of the included studies was performed.

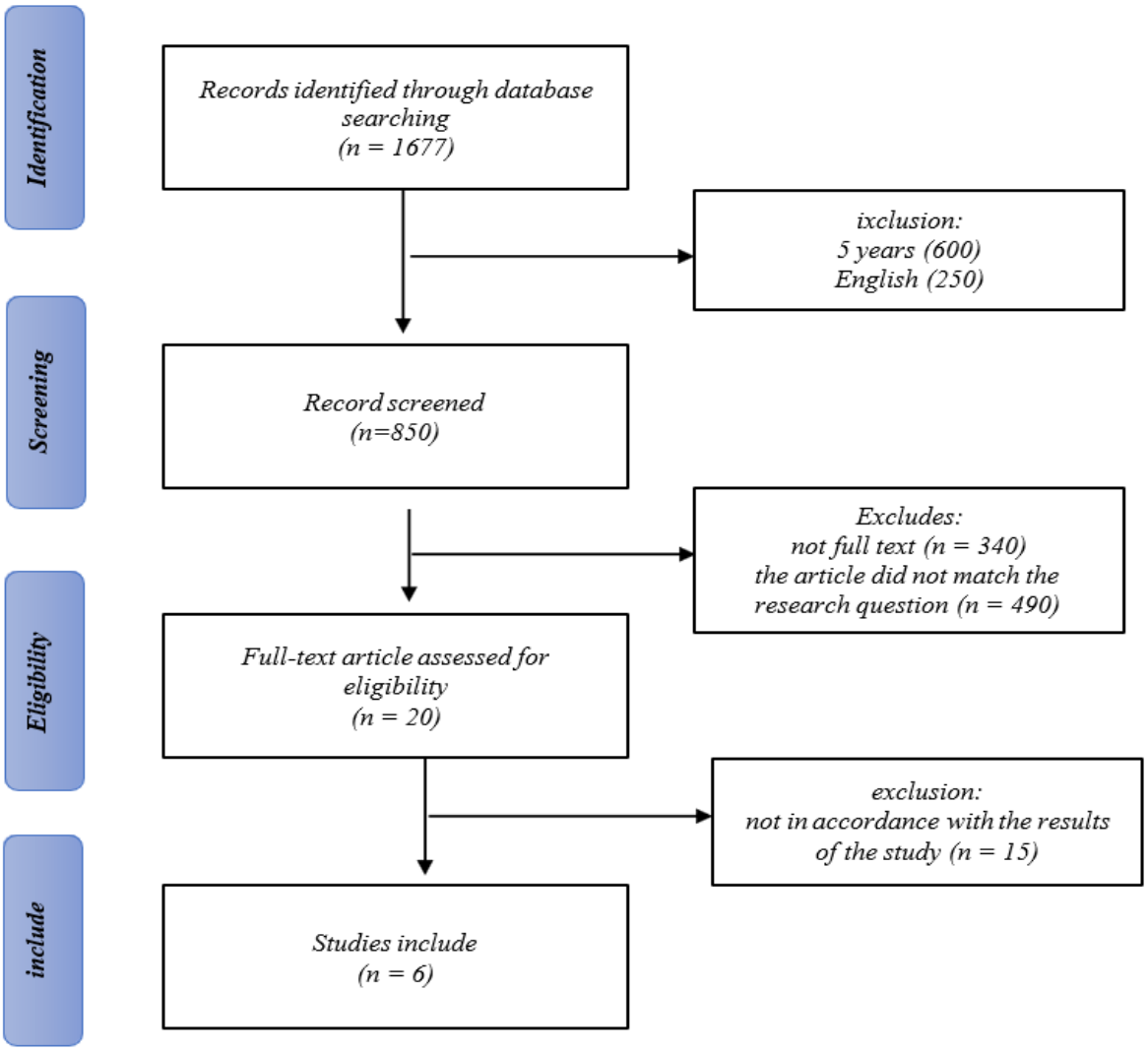


Figure 1 PRISMA flow diagram

RESULTS

Table 1
Summary characteristics of the included studies.

No	Article Title & Author	Study Design	Main Focus	Key Findings	Implications for Nursing Practice
1	*What Strategies Do Healthcare Providers Use to Promote Adolescents' Vaping Cessation? A Scoping Review Garber et al., 2025*	*Scoping Review*	*Vaping cessation strategies*	*Routine screening, brief counseling, motivational interviewing, and risk-based education*	*Nurses require training in vaping screening and evidence-based cessation interventions*
2	*The Role of the School Nurse in E-Cigarette Prevention and Cessation Headley & Garber, 2024*	*Qualitative study; United States*	*Role of school nurses*	*School nurses face barriers including limited time, training, and policy support*	*School nurses are strategically positioned to lead education, early detection, and prevention efforts.*
3	*Public Health Interventions Targeting the Prevention of Adolescent Vaping DiCasmirro et al., 2024*	*Systematic Review*	*Public health interventions*	*School- and community-based interventions reduce vaping prevalence and intention*	*Community nurses can integrate vaping prevention into adolescent health promotion programs.*
4	*Exploring Youth Vaping in New Zealand Intermediate and High Schools Jagroop-Dearing et al., 2025*	*Mixed-methods protocol*	*Prevalence and behaviors*	*Vaping influenced by social factors, access, and low risk perception*	*Provides evidence base for nursing intervention planning*
5	*Predictors of Vaping Intention among Adolescents Saruddin et al., 2025*	*Systematic Review*	*Predictors of vaping intention*	*Peer influence, advertising exposure, and psychosocial stress are major predictors*	*Supports targeted preventive strategies by nurses*

Overall, the five articles indicate that adolescent vaping is a complex health issue influeThe scoping review included five articles published between 2024 and 2025, consisting of two systematic reviews, one scoping review, one qualitative study, and one mixed-methods study protocol. The studies were conducted in high-income countries, including the United States, Canada, Australia, New Zealand, and several European countries. Overall, the included articles examined adolescent vaping from clinical, school, and public health perspectives, with a particular focus on prevention, cessation strategies, and implications for nursing practice.

The findings indicate that effective vaping prevention and cessation strategies among adolescents include routine screening, brief counseling, motivational interviewing, and risk-based education. School nurses were identified as key agents in vaping prevention through education, early detection, and counseling; however, multiple barriers were reported, including limited time, insufficient training, and

lack of policy support. Public health interventions implemented in school and community settings were shown to reduce vaping prevalence and intention, highlighting the role of community nurses in integrating vaping prevention into adolescent health promotion programs. Additionally, peer influence, advertising exposure, psychosocial stress, and low risk perception emerged as major predictors of vaping intention among adolescents, providing important targets for nursing-led preventive interventions.

DISCUSSION

This scoping review aimed to map recent scientific evidence regarding adolescent vaping and to examine its implications for nursing practice. Findings from the five included articles demonstrate that vaping among adolescents represents a complex and multifactorial public health issue, requiring comprehensive, nurse-led prevention and intervention strategies across clinical, school, and community settings.

Prevalence and Patterns of Adolescent Vaping

Across the reviewed literature, vaping is consistently identified as the most prevalent form of tobacco and nicotine use among adolescents. Evidence synthesized by Kong et al. (2022) and BMC Public Health reviews highlights that adolescent vaping prevalence has increased rapidly over the past decade, particularly in high-income countries. The widespread availability of flavored e-cigarettes, aggressive marketing, and normalization through social media platforms contribute significantly to early initiation and sustained use among adolescents. These findings align with population-level surveillance data indicating that vaping has surpassed conventional cigarette smoking among youth, reinforcing concerns that current tobacco control strategies may be insufficient to address novel nicotine delivery systems.

Determinants and Risk Factors Influencing Vaping Behavior

The reviewed studies consistently identify peer influence, perceived social acceptability, curiosity, and misperceptions regarding the safety of vaping as key determinants of adolescent vaping initiation. Chadi et al. (2019) and Kong et al. (2022) emphasize that adolescents frequently underestimate the addictive potential of nicotine delivered via e-cigarettes. Furthermore, systematic evidence indicates that adolescents who vape are more likely to engage in other risk behaviors, including alcohol and cannabis use, suggesting that vaping may function as a gateway behavior (Yoong et al., 2021). These findings underscore the importance of early identification of vaping behaviors and risk perception assessment within nursing practice.

Health Consequences and Clinical Implications

Emerging evidence across the included articles demonstrates that vaping is not a harmless behavior among adolescents. Short-term adverse health outcomes, including respiratory symptoms, airway irritation, and impaired pulmonary function, were consistently reported (CDC, 2023; WHO, 2021). Additionally, psychosocial impacts such as anxiety, impaired concentration, and depressive symptoms were highlighted as significant concerns. Although long-term health outcomes remain under investigation, the neurodevelopmental vulnerability of adolescents to nicotine exposure presents a critical challenge for healthcare professionals. These findings reinforce the need for nurses to incorporate vaping assessment into routine adolescent health evaluations and to provide evidence-based education regarding potential health risks.

Implications for Nursing Practice

The reviewed scoping reviews emphasize that nurses play a pivotal role in preventing and addressing adolescent vaping. Russell et al. (2024) specifically highlight the strategic position of school nurses in implementing prevention programs, delivering health education, and engaging families and school communities. Similarly, Nimmi et al. (2025) demonstrate that healthcare provider–led interventions, including brief counseling, motivational interviewing, and routine

screening, are effective strategies for supporting vaping cessation among adolescents. However, several studies report gaps in nurses' knowledge, confidence, and access to standardized guidelines for vaping prevention and cessation.

These findings suggest that strengthening nursing education, integrating vaping-related competencies into nursing curricula, and developing clear clinical practice guidelines are essential steps toward improving adolescent vaping prevention. Additionally, nurses are well-positioned to advocate for policy-level interventions, including restrictions on youth-targeted marketing and improved regulation of flavored vaping products..

CONCLUSION

This scoping review demonstrates that vaping among adolescents is a growing and complex public health issue influenced by individual, social, and environmental factors. The reviewed evidence indicates that vaping has become the most commonly used nicotine product among adolescents, with initiation driven by peer influence, social acceptability, flavored products, and misperceptions regarding safety. Adolescent vaping is associated with increased risks of nicotine dependence, initiation of combustible cigarette smoking, respiratory symptoms, and psychosocial problems. The findings also highlight the strategic role of nurses across clinical, school, and community settings in early screening, health education, counseling, and preventive interventions. However, significant gaps remain in nursing-specific guidelines, training, and empirical evidence evaluating the effectiveness of nurse-led interventions. Addressing these gaps is essential to strengthen the contribution of nursing practice to adolescent vaping prevention.

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