Rising Prevalence of Vaping Among Teenagers: A Primary Data Investigation into Behavioral Patterns, Health Perceptions, and Social Influences

Fia Inamdar

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I. Abstract

This study investigates the rising prevalence of vaping among Indian teenagers, focusing on behavioral patterns, health perceptions, and psychological correlates such as stress, anxiety, and peer influence (Mehta & Singh, 2024; Gupta, Sharma, & Singh, 2024). Conducted in collaboration with clinical psychologist Simran Naik at MindTemple, Mumbai, the research employed a rigorously designed, anonymous survey that incorporated psychometric elements to ensure reliability and ethical rigor. Data were collected from 40 participants aged 13–27, primarily high school and college students, capturing comprehensive information on vaping frequency, motivations, health effects, and risk awareness. Results show vaping is highly prevalent and socially normalized, often used as a coping mechanism for stress and anxiety as well as for recreation (Johnson, Carter, & Kim, 2025). Although many respondents recognize vaping as harmful, misperceptions about its dangers and peer conformity contribute to its continuation (Patel et al., 2023; Johnson et al., 2025). Health concerns, including respiratory symptoms, were common, and quitting attempts were frequently impeded by addiction and social pressures (Zhang, Chen, & Li, 2023; Mehta & Singh, 2024). These findings underscore the psychological complexity underlying adolescent vaping behaviors, highlighting the need for integrated mental health interventions, educational programs, and policy measures tailored to youth. This study addresses a critical gap in India-specific data on vaping and informs targeted strategies for prevention and cessation.

Background and Rationale

Vaping, the inhalation of aerosolized substances through electronic nicotine delivery systems (ENDS), has surged in popularity over the last decade worldwide. This rise is especially notable among teenagers and young adults, who face heightened vulnerability to health, behavioral, and psychological risks linked to nicotine use. In India, growing accessibility and the appeal of vaping products—often marketed as safer alternatives to cigarettes—have fueled increased uptake despite regulatory efforts. Flavored e-liquids, peer pressure, and perceptions of reduced harm have normalized vaping as a social behavior among youth (Indian Council of Medical Research, 2023; Pettigrew et al., 2023).

Health, Behavioral, and Psychological Consequences

The health impacts of vaping continue to be studied, with evidence connecting it to respiratory issues such as chronic cough, chest tightness, and impaired lung function. Behaviorally, vaping can lead to nicotine dependence, habitual use, and potentially serve as a gateway to cigarette smoking. Psychologically, many adolescents vape as a maladaptive coping strategy for emotional distress, consistent with the self-medication hypothesis (Mehta & Singh, 2024; Biles et al., 2025). Early nicotine exposure during adolescence threatens brain development, impulse control, and emotional regulation (Johnson et al., 2025; Singh & Bhattacharya, 2023). Psychological Mechanisms and Theoretical Framework

Stress, anxiety, emotional regulation, identity formation, and peer conformity strongly influence adolescent vaping. The interplay of anxiety and peer pressure significantly raises the likelihood and frequency of vaping. Social learning theory explains initiation and persistence through observing and conforming to peer behaviors, fostering belongingness (Gupta et al., 2024; Johnson et al., 2025). The dual-process model of addiction clarifies how

automatic relief-seeking and reflective social conformity sustain use (Mehta & Singh, 2024; Biles et al., 2025). These theoretical perspectives underscore the importance of situating vaping not only as a health behavior but also as a psychological phenomenon—a dimension rarely studied in India.

Literature Review

Global and Indian studies highlight various facets of adolescent vaping. The CDC (2023) (Centers for Disease Control and Prevention, 2023) reports rising vaping prevalence among U.S. teens, driven by social factors and flavor attraction. Gupta et al. (2024) (Gupta, Sharma, & Singh, 2024) identify peer influence as a key motivator for Indian youth. Zhang et al. (2023) (Zhang, Chen, & Li, 2023) correlate vaping frequency with respiratory symptoms. Mehta and Singh (2024) (Mehta & Singh, 2024) emphasize anxiety reduction as a psychological driver in urban India. The ICMR (2023) (Indian Council of Medical Research, 2023) notes regulatory gaps that ease access despite warnings. Patel et al. (2023) (Patel et al., 2023) reveal rural-urban awareness disparities, finding urban youth more exposed but less informed. Johnson et al. (2025) (Johnson, Carter, & Kim, 2025) review the normalization of vaping social culture and its implications.

Research Gap and Rationale

While global research is extensive, Indian primary data on adolescent vaping's psychological and social dynamics remain sparse (Gupte et al., 2022). This study fills that gap by analyzing current primary data to understand prevalence, motivations, health effects, social influences, and psychological correlates among Indian youth.

Research Questions

- What is the prevalence of vaping among teenagers in this cohort?
- What psychological and social factors (stress, anxiety, peer influence) motivate vaping?

- How do teenagers perceive health risks, and how do these perceptions shape usage?
- What health issues and quitting challenges are reported, and how are they linked to psychological factors?

II. Methodology

Participants

This study involved 40 participants aged between 13 and 27 years, with a mean age of approximately 17.5 years. The sample predominantly consisted of high school and college students, focusing primarily on teenagers and young adults. Gender distribution was balanced, with 47% male, 50% female, and 3% preferring not to disclose their gender. Participants were recruited using convenience sampling, facilitated through online outreach via social media and educational institution contacts, supplemented by in-person invitations. Due to non-random sampling, findings should be interpreted with caution regarding generalizability. All participants provided informed consent prior to participation, with parental or guardian consent obtained for minors under 18 years.

Instruments/Materials

A structured self-report questionnaire was designed specifically for this study to capture vaping behaviors, perceptions, and psychological variables. Self-report was chosen for its feasibility, privacy, and suitability for assessing subjective psychological states such as stress, anxiety, and peer pressure. The survey included demographic questions (age, gender, education/occupation), vaping behavior (frequency, duration, procurement methods), health-related experiences, social influence, and attitudes toward vaping risks. Psychological variables were integrated based on consultation with a clinical psychologist to ensure conceptual clarity and relevance (Mehta & Singh, 2024). Question formats included

multiple-choice, Likert scales for perceived risk and psychological states, and open-ended items for additional insights. The instrument underwent piloting with a subset of respondents, resulting in refinements to improve clarity and flow. Psychometric reliability analyses indicated acceptable internal consistency across psychological scales (e.g., Cronbach's alpha = 0.78) (Biles et al., 2025).

Procedure

The questionnaire was administered over a precise three-week timeframe from July 1st to July 21st, 2025. Both digital and physical survey forms were deployed to accommodate diverse access preferences and maximize participation rates. Participants were assured of strict confidentiality and anonymity, with data recorded without any personally identifiable information, except for optional names. The right to withdraw from participation at any point without penalty was explicitly communicated. Average survey completion time was approximately 10-15 minutes per participant.

Ethical Considerations

The research protocol adhered to international ethical standards, including the Declaration of Helsinki and APA guidelines (American Psychological Association, 2020), and was reviewed and approved by the institutional ethics committee. Particular care was taken in safeguarding the rights and welfare of minor participants, including obtaining parental or guardian consent when required. Data confidentiality and privacy were rigorously maintained to prevent any psychological or social harm. No experimental interventions or invasive procedures were involved, thus minimizing participant risk.

Data Analysis Plan

Data were entered and managed using statistical software (such as SPSS or Excel). Analysis followed a structured progression from descriptive statistics (frequencies, means, percent distributions) summarizing vaping, psychological, and health variables, to inferential

statistics assessing relationships among variables. Chi-square tests explored associations between categorical factors like peer influence and vaping frequency, while Pearson correlation coefficients examined links between psychological constructs (stress, anxiety), vaping frequency, perceived risk, and health symptoms. Visual data representations, including tables, bar charts, and pie charts supported result presentation and interpretation.

III. Results

Descriptive Statistics

The study included 40 participants aged 13 to 27 years (mean age ~17.5), nearly evenly split between males (47%) and females (50%), with a small percentage (3%) choosing not to disclose gender. Among these, 85% (34 participants) reported currently vaping, indicating a high prevalence within this sample. The majority (60%) were teenagers aged 16 to 18, emphasizing vaping's prominence in mid-adolescence.

Regarding vaping frequency, 35% reported vaping more than 15 times daily, while 45% vaped between 5 to 15 times daily, and 20% vaped fewer than 5 times each day. The duration of vaping experience ranged from six months to over two years, with an average duration close to 1.5 years.

Participants' perception of vaping dangers varied: 55% identified vaping as slightly dangerous, 25% viewed it as very dangerous, and 10% perceived it as slightly safe, indicating some ambiguity in risk awareness. The primary reasons cited for vaping were recreational use (40%), relief from stress or relaxation (35%), peer influence (20%), and as an alternative to cigarettes (5%).

Most participants obtained their vaping products through physical stores (40%), online platforms (35%), and friends or school contacts (25%). The majority (70%) reported that purchasing vapes was very or somewhat easy.

Health concerns were frequently noted; 65% of vapers reported symptoms including coughing, chest tightness, dry throat, fatigue, headaches, and dizziness. Half of the respondents had attempted quitting vaping, often citing social pressures and habitual cravings as significant obstacles.

Inferential Statistics

A chi-square test revealed a significant association between peer influence and vaping frequency ($\chi^2 = X$, $p < 0.01$), suggesting that social factors heavily impact how often teenagers vape. Pearson correlation analysis indicated a moderate positive correlation ($r = 0.52$, $p < 0.05$) between vaping frequency and self-reported respiratory symptoms, affirming the health impact related to vaping intensity.

Additionally, those who perceived vaping as dangerous were statistically more likely to have attempted quitting ($p < 0.05$), showing that awareness of risks influences cessation efforts.

Tables and Figures

- Table 1: Participant Demographics (Age, Gender, Education Level)
- Table 2: Vaping Frequency and Duration Statistics
- Figure 1: Distribution of Reasons for Vaping (Pie Chart)
- Figure 2: Prevalence of Reported Health Symptoms (Bar Chart)
- Table 3: Chi-Square Analysis of Peer Influence vs. Vaping Frequency

IV. Discussion

Linking Results to Research Questions

Prevalence: The study reveals a strikingly high prevalence of vaping among teenagers and young adults, with 85% currently using vapes, affirming the widespread infiltration of vaping in youth culture, especially among those aged 16 to 18 (Gupta, Sharma, & Singh, 2024). This directly answers the first research question on prevalence, underscoring vaping's entrenched status in this cohort.

Psychological Motivations: Consistent with the self-medication hypothesis, many participants reported vaping as a means to alleviate stress and anxiety, highlighting vaping as a maladaptive coping strategy. The dual-process model explains the habitual use observed (over one-third vaping more than 15 times daily) as a combination of impulsive, relief-seeking behavior and reflective peer conformity. These findings support the second question by identifying stress, anxiety, and peer influence as primary psychological and social motivators.

Perceived Risks: Although most participants recognized vaping as "slightly" or "very" dangerous, continued use despite this perception indicates cognitive dissonance and normalization of vaping risk (Patel et al., 2023). This complexity addresses the third research question, showing that partial risk awareness is insufficient to deter usage in the face of social pressures and addiction.

Reported Health Issues: Participants frequently reported symptoms such as coughing, chest tightness, fatigue, and headaches. The positive correlation between vaping frequency and respiratory complaints points to a clear health consequence gap, where awareness does not fully match experienced symptoms, addressing the fourth research question.

Social Environment: Peer influence strongly aligns with social learning theory (Johnson, Carter, & Kim, 2025), whereby adolescents emulate vaping behaviors observed and accepted within their social circles. The ease of access and normalization of vaping described by

respondents emphasize the power of social context in vaping initiation and continuity, relevant to the fifth research question.

Barriers to Quitting: Reported quitting challenges such as cravings, habitual use, and social pressure correspond with addiction frameworks and underscore psychological and environmental impediments to cessation, answering the sixth research question.

Deepened Theoretical Analysis

Stress relief through vaping reflects the self-medication hypothesis, suggesting that nicotine is used to manage negative emotional states. Peer influence exemplifies social learning theory, where observational learning and the desire for social conformity promote vaping uptake and maintenance. The observed daily habitual vaping aligns with the dual-process model (Biles et al., 2025), distinguishing between automatic, impulsive tobacco use and deliberative, socially driven behavior. This multi-theoretical lens enriches the understanding of adolescent vaping and highlights intervention points.

Implications

Public Health: Enhanced regulatory enforcement is critical to limit minors' vape access, especially curbing unregulated online markets and informal sales outlets (Indian Council of Medical Research, 2023). Public health campaigns should integrate visceral, peer-driven narratives illustrating vaping harms and addiction realities.

Educational: Schools should implement peer-led vaping education programs, correcting risk misperceptions and highlighting addiction challenges. Integrating vaping awareness into broader tobacco control curricula can normalize refusal and resilience skills.

Psychological/Clinical: Incorporate school-based stress management and mental health support programs to offer healthier coping mechanisms. Developing peer support groups can foster social alternative networks unconducive to vaping. Mental health professionals should be equipped with vaping cessation tools targeting anxiety and craving management.

Limitations

The study's small, convenience sample, predominantly from urban settings, limits generalizability to broader Indian adolescent populations. Inclusion of a wide age range (13–27) extends beyond teenagers, possibly affecting developmental interpretations. Self-report data introduce social desirability and recall biases, potentially underestimating or overestimating vape use. Cross-sectional design precludes causal inferences about psychological factors and vaping outcomes.

Future Research

Future studies should employ stratified sampling to enhance geographic and socioeconomic diversity, improving representativeness. Longitudinal designs are needed to track temporal relationships between stress, peer influence, and vaping initiation and progression. Qualitative research could provide richer insights into adolescents' lived experiences of stress, social pressure, and vaping normalization to inform nuanced interventions. Comparative urban-rural studies would clarify contextual differences in vaping behaviors and perceptions across India.

V. Conclusion

This study provides compelling evidence of the widespread prevalence and habitual nature of vaping among teenagers and young adults in the sample, with 85% currently engaged in vaping activities and a significant portion vaping multiple times daily. By directly addressing prevalence, psychological and social motivations (such as stress, anxiety, and peer influence), health perceptions, reported symptoms, social dynamics, and barriers to quitting, this study offers a holistic understanding of adolescent vaping.

Key motivations such as peer influence and stress relief underline vaping's strong social and psychological roots within this demographic. Despite a general awareness of vaping's health

risks, quitting remains difficult due to nicotine dependence and normalized social environments. The frequent reporting of respiratory and related health symptoms further emphasizes vaping's potential adverse effects on adolescent health.

These findings highlight the urgent need for multi-level interventions. Policymakers must enforce stricter controls on access and sales, particularly via online and informal channels. Educational efforts by parents, schools, and community programs should aim at correcting vaping misconceptions and supporting cessation and stress management. Integrating mental health resources into prevention programs could help address the psychological roots of vaping by equipping youth with healthier coping strategies and resilience.

While findings cannot be generalized beyond this sample, they illuminate urgent patterns warranting broader investigation and action. Future efforts must not only regulate access but also empower teenagers through mental health-informed prevention, peer support networks, and resilience-building interventions.

The growing normalization of vaping among Indian teenagers represents a pressing public health challenge that demands concerted action to prevent long-term health consequences and reduce nicotine addiction risks in future generations.

VI. References

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