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Editorial

Vaping trap: A fading breath beneath the flavors

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A vape or e-cigarette is a battery-powered smoking device that contains a liquid, which is heated to produce a vapor or aerosol that the user inhales. The inhaled vapors contain harmful chemicals, ultrafine particles, and flavoring agents that can irritate the airways and can lead to respiratory symptoms. Vaping also delivers nicotine in varying concentrations that not only drive addiction but also adversely affect the adolescent brain and behavior. Vaping is often perceived as a safer alternative to smoking, but it has emerged as a significant health concern among adolescents and young adults. Emerging evidence suggests that vaping can lead to long-term cardiopulmonary health risks.

According to a recent systematic review, the global prevalence of Electronic Nicotine Delivery System (ENDS) use among students was 10.2%.[1] Pakistan is among the countries that allow e-cigarette sales with limited regulation. This has led to an alarming rise in vaping among youth. A recent survey reported that 68% of university students in Karachi vape.[2] A 2025 systematic review reported existing e-cigarette use in four South Asian countries, with a prevalence of 6.0 to 10.1% in Pakistan.[3] In Pakistan, vaping popularity among youth increased during the COVID-19 period as a smoking alternative. Easy access to vaping products, online marketing, no clear age limit, and failure to disclose the health risks have fueled their popularity among the youth. Regular promotions and monthly offers make availability easy, while attractive designs and fruity menthol flavors trap adolescent and young adult minds. Having the device always at hand makes users vape constantly, increasing their dependence. Moreover, vaping is increasingly perceived as the status symbol of the modern age, social acceptance, and the youth's desperation to fit in with their peers.

The primary psychoactive ingredient in e-liquids is nicotine, which can disrupt brain development and further promote dependence during adolescence.[4] Teenagers who vape are at higher risk of anxiety, mood disorders, and sleep disturbances. Increased nicotine exposure through ENDS triggers epigenetic changes that sensitize the brain to other drugs and increase the risk of future substance abuse.[4] Nicotine, being an intense vasoconstrictor, can lead to increased blood pressure, heart attack, and strokes. Recent reports have highlighted concerns regarding the increased cardiometabolic health risks among e-cigarette users.[5] In Pakistan, where nicotine use remains totally unregulated and socially acceptable, users can easily access e-liquids containing up to 50 mg/ml, compared to the 20 mg/ml legal limit in Western countries, increasing the risk of its deleterious effects.[6] Many flavored e-liquids, especially sweet and buttery ones, contain diacetyl or related compounds that, when inhaled, damage the small airways, leading to a serious lung condition, "Popcorn lungs" (bronchiolitis obliterans), associated with persistent cough and breathlessness.[7] E-cigarette or Vaping-Associated Lung Injury (EVALI), which leads to interstitial lung disease, has been strongly linked to Tetrahydrocannabinol (THC) and Vitamin E acetate (VEA) like additives in the e-liquid.[8] A Johns Hopkins Medicine-led study of a diverse group of almost 250,000 people over four years has shown a clear link between the exclusive use of e-cigarettes and chronic obstructive pulmonary disease (COPD).[5] There is growing concern that consumption of e-cigarettes may increase the risk of lung cancer because their aerosols contain several proven carcinogens like formaldehyde and toxic metals like
lead, tin, and nickel, which persist in the airways once inhaled.[9] Studies on vaping-related respiratory

diseases like COPD, asthma, and bronchitis are steadily increasing.[5, 7]

Vaping is gradually gaining ground in Pakistan and raising serious public health concerns. This can lead to a host of diseases and further add to the already burdened health system of Pakistan. The government and policymakers need to act and enforce strict regulations to control the sale and consumption of vaping products. These rules and regulations should include strict age-verification measures, prohibiting access to children, requiring proof of a national identity card (NIC) at the point of purchase, and banning flavored vapes that appeal to youth. Mandatory health warnings on packaging, obligatory seller's licenses, import restrictions, taxes on vaping products, and restrictions on advertising at all platforms, especially social media. Quality control and stringent nicotine concentration regulation in vaping products can protect young users from dependence and avoidable health risks. Health care providers also need to play a proactive role in creating awareness about the diseases associated with these products. Seminars and awareness programs need to be organized to educate the masses about the hazards of vaping. The media and film industries can play a productive role in highlighting the associated risks. All educational institutions need to incorporate counseling programs for awareness of vaping risks. Parents also need to be aware of the vaping-related behaviors in children. NGOs need to continue playing their role in raising awareness and shaping public opinion regarding hazards.

Pakistan must act now before the growing trend of vaping engulfs its youth and transforms into a full-blown public health crisis that the country cannot afford.

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