

Initiation and Addiction of Flavored Tobacco Products and E-Cigarettes among Adolescents and Youth

Rakesh Gupta^{1*}, Barsa Priyadarshini Rout², Gursimrat Kaur³ and Sonu Goel⁴

¹President and Director of Public Health, Strategic Institute for Public Health Education and Research (SIPHER), Chandigarh, India

²HRIDAY, New Delhi, India

³Intern at SIPHER, Chandigarh, India

⁴DCM PGIMER Chandigarh India

***Corresponding Author:** Rakesh Gupta, President and Director of Public Health, Strategic Institute for Public Health Education and Research (SIPHER), Chandigarh, India.

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Abstract

The tobacco industry is developing attractive flavored products so as to target a larger number of youngsters. Flavors are also being used in emerging nicotine and tobacco products: e-cigarettes (also known as electronic nicotine delivery systems, or ENDS), heated tobacco products (HTPs) and nicotine pouches. These flavors make tobacco products including smokeless ones more harmful as they make using them more palatable, thus increasing the risk of using any tobacco product and making it harder to quit. Inclusion of flavors may lead to the mistaken conclusion that the flavored products are healthier as compared to non-flavored products.

Conclusion: Flavors in all types of Tobacco products like cigarettes, beedis, hookahs, cigars and the smokeless tobacco products lead to initiation and addiction in adolescents and youth. Flavored tobacco products/E-Cigarettes are more popular with adolescents' youth and so are being regulated in several countries.

The flavors raise the interest of e-cigarette use. The greater attractiveness of e-cigarettes may contribute to indirect harm by facilitating initiation of tobacco products (dual use) and increasing the intensity of tobacco product use. Flavors may be the major reason to initiate and continue to use e-cigarettes, especially for youth and young adults [8].

Keywords: Addiction; Flavored Tobacco Products; E-Cigarettes; Adolescents; Youth

Introduction

Young people are highly susceptible to initiation and addiction of tobacco products especially the flavored ones which puts them at a greater risk of becoming lifelong tobacco consumers. Globally, the tobacco product landscape is diversified and includes e-cigarettes (also known as electronic nicotine delivery systems, or ENDS), heated tobacco products (HTPs), nicotine pouches, snus, dissolvables and hookah. Inclusion of flavor additives to the existing tobacco products further increases the appeal of these tobacco products.

Tobacco free initiative was established by WHO in July 1998 so as to reduce the harmful effects of tobacco consumption on physical, mental and social health of an individual. The main focus is to reduce the global burden of the disease as well as mortality due to exposure and intake of the product [1].

World health organization framework convention on tobacco control (WHO FCTC) mentions guidance on regulating the contents of tobacco products including ingredients which give flavors.

Partial guidelines for implementation of articles 9 and 10 recommends: i) Regulation to prohibit or restrict ingredients that may be used to increase palatability in tobacco products, ii) Laboratories for industry disclosure of tobacco product ingredients and government compliance testing should meet international standards, iii) Compliance testing laboratories should be independent of the tobacco industry. Article 11 and 13 recommends reducing the tobacco companies' ability to market flavors by implementing restrictions on packaging design, including flavor descriptors and advertising.

Flavors are being added in different styles by tobacco industry:

- In 2007, flavored capsule cigarettes were introduced in Japan, flavor capsules embedded in the filter and users could crush to release the flavor. Most commonly used flavors in capsules: Menthol, fruit and spices, concept flavors like "arctic air" and "tropical breeze". Capsule cigarettes accounted for the second largest proportion of unique packs in India (with over half being menthol flavored). Crush ball, in which flavor is added via crushing a small plastic capsule in the filter [2].
- Infusing flavors into the packaging and through flavored accessories. Smoking accessories are easily available online in India in sites like Flipkart, Amazon, Shop Dop, India Mart, Etsy, Alibaba.com etc.

Cigarettes

Cigarettes are flavored to conceal the harshness of the tobacco smoke and restrain the social taboo associated with smoking. Flavors may be added to the tobacco, rolling paper, foil or the taste is delivered by flavored pellets (polyethylene bead), into the filter. Most commonly used flavors are menthol, cinnamon, clove, wintergreen, fruit, and alcohol etc. Flavors are usually added at the last stage of the cigarette manufacturing process. Flavored cigarettes are heavily preferred by youth quote study [3]. Menthol is a chemical derived from mint plants that leads to a cooling sensation in the throat. Users of menthol flavored cigarettes are 80% more likely to become life-long smokers than those who smoke unflavored cigarettes. Menthol increases the addictive properties of the nicotine in tobacco mostly by increasing the nicotine receptors in the brain, having desensitizing effect reducing irritation in the lungs and airways. and encourages deeper and longer inhalation because of the cooling and soothing effects.

Cigars

The cigars are classified into three main categories - little cigars, large cigars, and cigarillos. The flavors most commonly infused in little cigars, cigarillos, and large cigars, include menthol, candy and fruit flavors, such as sour apple, cherry, grape, and chocolate [4]. There is popularity of flavored cigars among African American young adults [5]. Cigars which are often considered as safe alternatives for cigarettes contain the same toxic and carcinogenic compounds found in cigarettes and are equally harmful.

Bidis

Bidis are popular among low and middle-income countries, and get imported from India to more than 122 countries worldwide, including the USA [6]. Bidis are composed of approximately 0.2g of dark, sun-dried and processed tobacco flakes wrapped in a tendu oil leaf (*Diospyros melanoxylon*). Common flavors in bidis are chocolate, cherry and mango. Smoking bidis is associated with an increased risk of cancer, coronary heart disease and chronic bronchitis. Bidi smokers are potentially exposed to significantly higher concentrations of nicotine though having less tobacco compared to conventional cigarettes due to the greater puffing frequency [6].

These are popular because of the low cost and flavors. Flavored bidis contribute an additional complexity to the bidi smoke. At a time when cigarette sales are falling significantly due to huge price increases, several bidi makers across India are busy giving a makeover to

traditional beedis, which include catchy names, sleek packaging, adding filters, offering exotic flavors and 'organic' products, putting up fancy signage in vendor outlets and organizing social media campaigns [7].

Hookah/Shisha

Molasses/Shisha in the tobacco product used in hookahs is mostly flavored. Typical flavors include apple, plum, coconut, mango, mint, strawberry and cola, with mint and double apple being the most popular. Unusual flavors, including white gummy bear, blueberry, spiced chai and power bull flavor (similar to the flavor of a red bull energy drink), have been introduced in recent years by modern tobacco companies. Heating these flavorings releases toxic chemicals and carcinogens such as carbon monoxide (CO), polycyclic aromatic hydrocarbons (PAHs), furans, phenols, aldehydes (such as acrolein), and acids, in addition to nitrogenous carcinogens, alcohols, and heavy metals, all of which are dangerous to human health. A comparison of 13 common hookah flavors found that melon flavors are the most dangerous, with their smoke containing four classes of hazards in high concentrations.

Hookah bars are banned in many Indian states for e.g. Maharashtra, Rajasthan, Gujarat, Punjab and Chandigarh etc. Hookahs were also banned during COVID 19 pandemic under the epidemic act in many Indian States.

Smokeless tobacco (SLT)

Smokeless tobacco contributes to the highest burden of death and disability in India and the Southeast Asia region. SLT is almost always available with flavors to make it palatable and attractive to youth. No additives, scents, sweeteners or flavorings should be used as an ingredient in tobacco or nicotine products: As per the food safety standards act of India (FSSAI), tobacco and nicotine cannot be used as an ingredient in any food item in India, any kind of advertisement promoting tobacco products including SLT on media is prohibited under the cinematograph act and the cable television networks act, use of tobacco as an ingredient in toothpaste is banned under drug and cosmetics act. The biggest issue is that there is no need of license for manufacturing SLT products while it's vice versa in case of cigarettes under the industrial development act. However, the violations are very common as most of the SLT products are sold after mixing scents, sweeteners or flavors. Often flavored pan masala containing areca nut is sold separately and mixed with SLT easily available as cheap pouches [8]. Gutkha, which is a mixture of pan masala (Scented or flavored areca nut etc) plus chewable tobacco is banned under FSSAI in India.

E-cigarettes

Flavors lead to youngsters getting attracted to electronic cigarettes. In countries where E-cigarettes are not banned comprehensively, the flavors need to be regulated or prohibited to monitor the range of e-liquid flavors that are available to consumers. The manufacturers are required to provide product information to authorities in regions where they plan to market their products. In 2017, about 20,000 flavors in e-cigarettes were reported in the Netherlands. The commonest flavors used were tobacco, fruit, dessert, coffee, alcohol and candy etc [9]. E-Cigarettes are comprehensively banned in India under PECA 2019 Act.

Heated tobacco products (HTPs)

Heated tobacco products (HTPs), or 'heat-not-burn tobacco products', are battery-powered devices that deliver nicotine to the user by heating a tobacco stick. KT&G, the largest Korean tobacco company in November 2017, introduced an innovative product of tobacco sticks with flavor capsules for HTPs (also known as capsule heat-sticks). The flavors of capsules originally included only menthol, but flavors have expanded to include fruits (e.g. mango, cherry, grape, lemon, strawberry and orange) and drinks (mojito) [10]. HTPs are comprehensively banned in India under PECA 2019 Act.

Gaps in law in India and recommendation for all countries

The presence of specific flavors in tobacco and nicotine products along with the flavor descriptors on packaging and in advertising is linked to increasing the appeal and uptake of tobacco and nicotine products, particularly among children and adolescents. There is a dire need to conduct surveillance globally to assess the use of flavored tobacco products and also perceptions about the appeal and addictive potential of these products. There is a need for more robust research for determining the toxicity and adverse health effects of various concentrations of flavored chemicals and their metabolites:

- The law in India does not regulate, nor grant any authority to regulate, contents and ingredients in smoking or smokeless tobacco. Therefore, the use of menthol, mint and spearmint, spices and herbs (excluding mint) and contents that may create an impression of health benefits in cigarettes/beedis/hookahs/smokeless tobacco is not restricted.
- All countries must align with FCTC Art. 9 and the FCTC arts. 9 and 10 partial guidelines [11].
- All government stakeholder ministries must consider regulating or even prohibiting flavors in tobacco products with strict enforcement of the provisions in laws.
- Adoption of the FSSAI regulations of 2011 by all countries to prevent adulteration of food through tobacco and nicotine is required and also enforce the existing provisions in the law.

Conclusion

Flavors in all types of tobacco products like cigarettes, beedis, hookahs, cigars and the smokeless tobacco products lead to initiation and addiction in adolescents and youth. Flavored tobacco products/E-Cigarettes are more popular with adolescents' youth and so are being regulated in several countries.

The flavors raise the interest of e-cigarette use. The greater attractiveness of e-cigarettes may contribute to indirect harm by facilitating initiation of tobacco products (dual use) and increasing the intensity of tobacco product use. Flavors may be the major reason to initiate

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