

Tobacco-free nicotine pouches and the youth addiction crisis: The hidden danger

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KEYWORDS

nicotine pouches, tobacco free nicotine pouches, youth, marketing, nicotine addiction

Received: 24 July 2024, **Revised:** 6 August 2024, **Accepted:** 28 August 2024

Public Health Toxicol. 2024;4(3):15

<https://doi.org/10.18332/pht/192704>

Dear Editor,

Nicotine pouches are oral, smokeless, and tobacco-free devices that are inserted between the gum and the lip to release nicotine through the oral mucosa. Nicotine pouches are fundamentally made up of cellulose, nicotine salts, flavors, and acid regulators, but no tobacco-leaf material¹. The use of oral nicotine products (NPs) is becoming increasingly popular among young people. A recent cross-sectional study in Pakistan revealed that among 384 students, 10.2% were reported to be consuming nicotine pouches².

Marketing plays an important role in the popularity of these nicotine pouches among the new generation as they are marketed as harmless or tobacco-free. However, these pouches may not be as safe as promoted due to increased nicotine content. Other factors that contribute to its prevalence in young adults are its variety of flavors, convenience, and its resemblance to chewing gum³. Youth who are not susceptible to inhalable tobacco products, such as cigarettes, may still be susceptible to oral nicotine products because unlike cigarettes these nicotine pouches are also smoke-free and easy to use⁴.

Another marketing technique that companies use is altering the FDA approved label that clearly states 'This product contains nicotine. Nicotine is an addictive chemical' to something like 'The product contains tobacco-free nicotine (TFN)⁵. The advertising of these nicotine pouches has been shown to increase the sales of nicotine pouches from \$70963 in 2016 to \$216886819 during January to June 2020⁶. This increase in sales may suggest that marketing and advertisement of these products also tend to affect the sales and demand of nicotine pouches.

Originally intended to help quit tobacco, the effectiveness

of nicotine pouches for this purpose is disputed⁷. When nicotine attaches to cholinergic receptors, it sets off a convoluted chain of events that eventually releases gamma aminobutyric acid, glutamine, and dopamine. These are in charge of the drug's addictive qualities as well as the pleasant emotions users get from it⁷. Multiple studies have demonstrated the genotoxic effects of nicotine and its ability to promote the growth of tumours⁸. Oral mucosal alterations, such as hyperkeratotic alterations, have been linked to long-term oral nicotine usage⁸.

In conclusion, the growing trend of tobacco-free nicotine pouches among youth, especially non-smokers, is alarming. Therefore, we strongly believe that there needs to be extensive research on the long-term effects, risks, dosage etc. of tobacco-free nicotine pouches to prevent addiction of nicotine in future generations. Additionally, marketing strategies that could set the stage for the introduction of comparable new oral nicotine products, e-cigarettes, or combustible tobacco products should be closely monitored.

REFERENCES

1. Mallock-Ohnesorg N, Rabenstein A, Stoll Y, et al. Small pouches, but high nicotine doses-nicotine delivery and acute effects after use of tobacco-free nicotine pouches. *Front Pharmacol.* 2024;15:1392027. doi:[10.3389/fphar.2024.1392027](https://doi.org/10.3389/fphar.2024.1392027)
2. Khan M, Junaid N, Anwar Z, Timsaal Y, Mughal A. Prevalence and frequency of the use of nicotine pouches and its association with stress amongst students of medical and non-medical Universities of Karachi, Pakistan. *Research Square.* Preprint posted online June 3, 2022. doi:[10.21203/rs.3.rs-1693288/v1](https://doi.org/10.21203/rs.3.rs-1693288/v1)
3. Morean ME, Bold KW, Davis DR, Kong G, Krishnan-Sarin S, Camenga DR. "Tobacco-free" nicotine pouches: risk

- perceptions, awareness, susceptibility, and use among young adults in the United States. *Nicotine Tob Res.* 2023;25(1):143-150. doi:[10.1093/ntr/ntac204](https://doi.org/10.1093/ntr/ntac204)
4. Vogel EA, Barrington-Trimis JL, Harlow AF, et al. Prevalence of and disparities in adolescents' susceptibility to novel oral nicotine products marketed as "tobacco-free". *Prev Med.* 2023;166:107387. doi:[10.1016/j.ypmed.2022.107387](https://doi.org/10.1016/j.ypmed.2022.107387)
 5. Morean ME, Gueorguieva R, O'Malley S, Krishnan-Sarin S. Including the term 'tobacco-free nicotine' in the nicotine addiction warning label mandated by the US Food and Drug Administration alters risk perceptions and use intentions. *Tob Control.* Published online first October 28, 2023. doi:[10.1136/TC-2023-058133](https://doi.org/10.1136/TC-2023-058133)
 6. Marynak KL, Wang X, Borowiecki M, et al. Nicotine pouch unit sales in the US, 2016-2020. *JAMA.* 2021;326(6):566-568. doi:[10.1001/jama.2021.10366](https://doi.org/10.1001/jama.2021.10366)
 7. M Jackson J, Weke A, Holliday R. Nicotine pouches: a review for the dental team. *Br Dent J.* 2023;235(8):643-646. doi:[10.1038/s41415-023-6383-7](https://doi.org/10.1038/s41415-023-6383-7)
 8. NHS inform. Tobacco. Accessed August 4, 2024. <https://www.nhsinform.scot/healthy-living/stopping-smoking/reasons-to-stop/tobacco/>

CONFLICTS OF INTEREST

The authors have completed and submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest and none was reported.

FUNDING

There was no source of funding for this research.

ETHICAL APPROVAL AND INFORMED CONSENT

Ethical approval and informed consent were not required for this study.

DATA AVAILABILITY

Data sharing is not applicable to this article as no new data were created.

PROVENANCE AND PEER REVIEW

Not commissioned; internally peer reviewed.

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