

The Changing Landscape of Tobacco Use and Switching Behaviors among US Adults

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Center for Research and Technology
Tobacco Science Research Conference
September 25-27, 2023

Introduction

With the emergence of e-vapor and novel oral nicotine products, the adult tobacco use landscape has been changing rapidly in recent years. It's important to understand the evolving tobacco landscape and switching behaviors from smokable to smokefree tobacco products to support harm reduction strategies.

Methods

Study Overview and Objective:

This analysis was performed to overview the adult tobacco landscape by tobacco product type based on national surveys. Based on National Health Interview Survey (NHIS) 2016 to 2021 cross-sectional data; PATH Wave 1 (data collection period: September 2013 - December 2014) to Wave 5 (data collection period: December 2018 - November 2019) longitudinal data, this analysis tracked current adult tobacco consumers (ATCs) by smokable (cigarettes and cigars) and smokefree (e-vapor, smokeless tobacco products, snus) use overtime. We further studied switching behaviors of adults who smoke cigarettes (AS) by trend analysis and segmentation of inhalable (e-vapor) versus oral (smokeless tobacco products, snus) use.

Participants:

Adult (21+/18+ in NHIS/PATH) who self-reported every day/some day use of tobacco products (including cigarettes, cigars, e-cigarettes, smokeless tobacco, and snus) in the past 30 days. Switching in NHIS analysis is defined as adults who met lifetime+ cigarette smoking criteria and reported current use of only smokefree products without any smokable product use. Switching in PATH analysis is defined as participants who reported current use of cigarettes in prior study waves and only using smokefree products in subsequent wave.

Study Outcomes and Analyses:

- Trend Analysis of adult tobacco landscape by smokable vs. smokefree product use, inhalable vs. oral product use
- We computed weighted population/percentages to estimate tobacco product use by tobacco product categories at population level.
- We plotted visualizations to track the change of tobacco use over time.

Notes and References

Notes: Smokable products include cigarette and cigar. Smokefree products include e-Vapor, smokeless tobacco and snus. Numbers may not foot due to rounding. Estimates computed on population weights.

¹ Low statistical precision as raw cell size <=30

⁺ Cigarette lifetime definition is having smoked 100 cigarettes lifetime.

References:

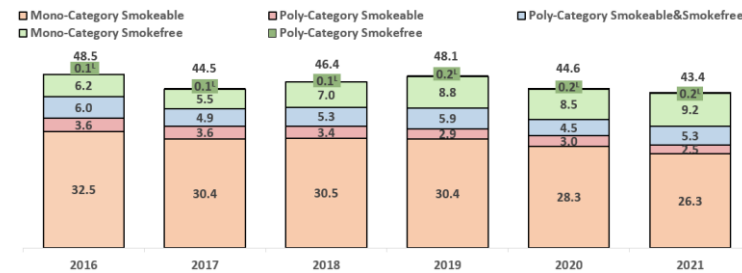
- National Center for Health Statistics. National Health Interview Survey (2018). Public-use data file and documentation. Retrieved from: <https://www.cdc.gov/nchs/nhis/dataquestionnaires-documentation.htm>.
- United States Department of Health and Human Services. National Institutes of Health. National Institute on Drug Abuse, and United States Department of Health and Human Services. Food and Drug Administration. Center for Tobacco Products. Population Assessment of Tobacco and Health (PATH) Study Public-Use Files. Retrieved from: <https://www.icpsr.umich.edu/web/NAHDAP/studies/36498>

Results

Adult Tobacco Landscape Continues to Shrink over Time

Shown in Figure 1, we see a general decreasing trend of adult tobacco consumers over the past 5 years, driven by the decrease of smokable user population. While the total number of ATCs is shrinking, smokefree user population has increased by 3.1M (6.3M to 9.4M) from 2016 to 2021.

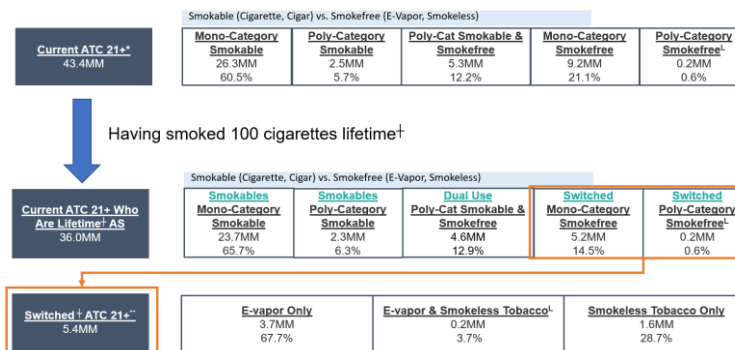
Figure 1. Smokable vs. Smokefree Trend for Adult Tobacco Consumers - Population Estimates in Millions, NHIS 2016 to 2021



There Has Been 5.4M Lifetime+ AS Who Switched to Smokefree Product Use Only

Shown in Figure 2, of the 36.0M lifetime+ AS, 5.4M have successfully switched to smokefree product use. Most people who have switched are now using e-vapor products.

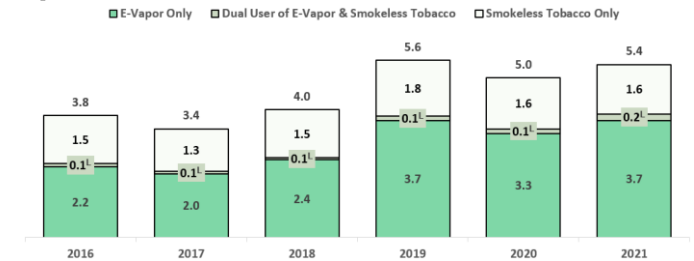
Figure 2. Current Tobacco Use Portfolio of Lifetime+ Cigarette Users - Population Estimates in Millions, NHIS 2016 to 2021



The Percentage of E-Vapor Use among Switched Lifetime+ AS Has Grown

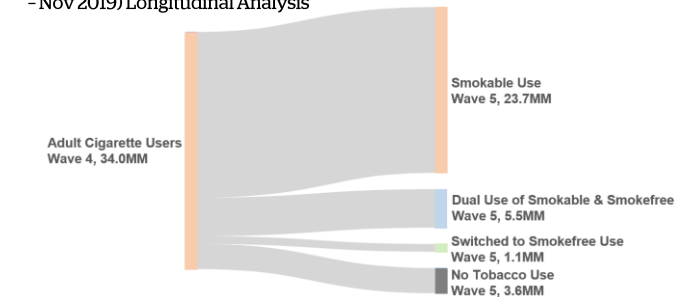
Lifetime+ AS who switched to smokefree product use has grown from 3.8M in 2016 to 5.4M in 2021. The percentage of e-vapor use among the switched population has grown.

Figure 3. Lifetime+ Adult Cigarette Smokers Who Switched to Smokefree Products - Population Estimates in Millions, NHIS 2016 to 2021



Adult Cigarette Smokers Have Been Moving Out of Smokable Use and Transitioning to Smokefree Use

Figure 4. Lifetime+ Adult Cigarette Smokers' Tobacco Use Transition Journey - Population Estimates in Millions, PATH Wave 4 (Dec 2016 - Jan 2018) to Wave 5 (Dec 2018 - Nov 2019) Longitudinal Analysis



Conclusions

The prevalence of exclusive smokefree product usage has been increasing while exclusive use of smokable products has been declining. A growing proportion of lifetime adult cigarette smokers have switched to exclusive smokefree product use.

Our analysis may be limited by the lack of assessments of novel tobacco products (e.g., nicotine pouches) in NHIS and PATH surveys. Adding these assessments to national surveys is critical to keep pace with the changing landscape.

