Nicotine Use Disorder Project Summary

October 2025

This activity is one part of a multi-part Foundation project related to substance use disorder. The multi-part project is supported by the Food and Drug Administration (FDA) of the U.S. Department of Health and Human Services (HHS) as part of an overall award of $2,470,442 of federal funds (100% of the project). The contents are those of the author(s) and do not necessarily represent the official views of, nor an endorsement, by FDA, HHS, or the U.S. Government.

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Project Overview

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Tobacco use is the leading U.S. cause of preventable disease, disability, and death.[1]

In 2024

- 11% of adults reported smoking a cigarette and 7% reported vaping nicotine in the past week[2]
- 2.25 million middle and high school students reported current use (use on one or more days during the past 30 days) of any tobacco product[3]

1. Centers for Disease Control and Prevention. Public Health Strategies for Tobacco Prevention and Control. March 28, 2024. https://www.cdc.gov/reach/php/strategies/tobacco-prevention-control.html
2. Jones JM. Cigarette Smoking Rate in U.S. Ties 80-Year Low. Gallup's annual Consumption Habits poll, conducted July 1-21, 2024. https://news.gallup.com/poll/648521/cigarette-smoking-rate-ties-year-low.aspx
3. Jamal A, Park-Lee E, Birdsey J, et al. Tobacco Product Use Among Middle and High School Students — National Youth Tobacco Survey, United States, 2024. MMWR Morb Mortal Wkly Rep 2024;73:917–924. DOI: http://dx.doi.org/10.15585/mmwr.mm7341a2

Project Overview

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Explore consumer and healthcare provider perspectives about risk reduction and treatment for nicotine use disorder

Understand Opportunities for Risk Reduction

- Gather perspectives from youth, adults, and healthcare providers on quitting or reducing use of nicotine products
- Gain insight into consumer motivations to quit or reduce use of nicotine products
- Explore perceived health benefits of reduction vs. cessation
- Explore motivations for continued use

Identify Unmet Treatment Needs

- Learn about consumer and healthcare provider experiences with treatment to aid in reducing or quitting use of nicotine products
- Understand *how* consumers want to reduce their risk and what types of treatment approaches they believe would be most helpful
- Engage with healthcare providers to identify barriers to effective medical treatment to aid in reduction or cessation of nicotine product use

Project Approach

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Preliminary Research

- Reviewed current literature on **health outcomes of reducing or quitting use of nicotine products**
- Analyzed social media content for insight into consumer conversations about nicotine product use

Real-World Insights

- Conducted listening sessions to understand knowledge, beliefs, attitudes, and experiences with **healthcare providers, smoking cessation facilitators, and adult & youth consumers**
- Fielded a national online poll of adult consumers to corroborate key learnings

Literature Recap

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Study Quality

Terminology is not consistent across surveys and studies. Tobacco and nicotine are used interchangeably as are e-cigarettes, ENDs, and vaping. Youth generally refers to survey participants under age 18. The age range for "young adults" varies, with a minimum age of 18 or 19 and maximum age between 25 and 30.

Quantification of nicotine intake is challenging, especially with vaping products.

The current evidence base needs well-conducted qualitative studies and studies using real world evidence, which may assist in better understanding barriers to treatment, treatment hesitancy, treatment adherence, and patient-defined treatment needs.

Prevalence

Annual prevalence data from multiple surveys provide a good picture of tobacco use year to year for all age groups.

Data from multiple surveys shows a general reduction in overall nicotine use by all age groups. However, the perception is that nicotine use, especially nicotine vaping, is highly prevalent among teens and young adults. Adolescents and young adults report that some of their peers are moving from vapes to pouches because they are more discreet.

Cessation Pharmacotherapy

Clinical guidelines are consistent in recommending varenicline, bupropion, and combination NRT as first line therapies for adults. Pharmacotherapy paired with behavioral interventions is most likely to lead to sustained nicotine abstinence.

The most effective interventions are supported by high-quality, high-certainty evidence. Despite this evidence, treatment uptake remains low. Combinations of drugs that are most effective and best tolerated require further study.

There is a paucity of data evaluating effectiveness and uptake of pharmacotherapy for nicotine cessation in youth. Overall study quality is fair to low. Clinical guidelines for behavioral interventions, pharmacotherapy, and digital interventions to aid youth are lacking.

Quality evidence is also lacking for e-cigarette/vaping and cessation interventions in both youth and adults. This is also true for interventions to aid cessation of other nicotine products (e.g., smokeless tobacco).

Medication adherence is associated with a greater likelihood of abstinence, however, medication adherence wanes over time. This is seen clinically and in clinical studies where dropout rates are fairly high. Reasons for nonadherence are nuanced and multifactorial. Nonadherence may be drug-related (e.g., side effects, perceived effectiveness, cost), secondary to changes in motivation, or related to stigma associated with using medications for cessation.

Health Effects

Unlike smoking cessation, reduction studies have found little to no effect on morbidity & mortality from cardiovascular disease, stroke, and respiratory disease; the one exception is a reduction in risk of lung cancer. Less is known about the health effects from switching to vaping or smokeless products, and vaping reduction.

Takeaways

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Adult (≥ 18 yrs) product users and professionals are aligned in viewing reducing as an acceptable alternative to quitting outright

Adults felt that reducing is an acceptable goal for those who many not be ready to quit. For teens, quitting, not just reducing, is the ideal endpoint.

Teens who want to quit feel unsupported

Teens want peer-driven tools, not adult-led programs and prefer non-drug interventions

Stark divide in perceptions between nicotine product users – particularly younger users – and health or smoking cessation facilitators

Both providers and cessation facilitators were confident that nicotine usage has trended towards young adults, (who are primarily vaping), with little to no receptiveness to quitting based on perceptions that vaping is "safer." By contrast, few nicotine product users of any age felt vaping is safe, and awareness of the risks of vaping was strongest among those under the age of 25, as was aversion to vaping and openness to cessation efforts.

Takeaways

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Greater synergies between providers, patients, and programs can strengthen the supports available for cessation efforts

Disconnects between the different groups extended to basic awareness of resources available for smoking cessation programs. Nicotine product users and healthcare providers showed low utilization and awareness of targeted smoking cessation programs, while cessation facilitators voiced the clearest support for improved cooperation and integration between providers and cessation programs.

An opportunity exists to reframe treatment tools and nicotine alternatives to align with how teens think, feel, and attempt to quit.

Nicotine product users and professionals agree that there is ample room for the current market of smoking cessation products to improve

Initially, healthcare providers suggested that those attempting cessation may be "jaded" about available nicotine replacement therapies. However, subsequent sessions with product users and smoking cessation facilitators echoed some version of hope for more effective medications, interventions, and tools in the future.

Personalized treatment is key for successful cessation

Nicotine users repeatedly emphasized that a tailored approach is the strongest guarantee for successful cessation. Smoking cessation facilitators were the most adamant that no 'magic bullet' method exists, but providers and nicotine product users agreed that treatment is contingent on a variety of personal, lifestyle, and environmental factors.

What We Heard – Reasons for Use

Teens and adults use nicotine products to cope with stress and anxiety

"To soothe a craving. To be social."

-Adult nicotine user poll respondent

"Cigarettes calm me down and give me a small break from things"

-Adult nicotine user poll respondent

Teens vape to cope with mental health challenges (e.g., depression, mood instability, anxiety). Initially they find relief but with continued use, mental health and associated symptoms tend to worsen.

Motivations cited for nicotine use by teens, young adults, and older adults were consistent across the literature, social media listening, listening sessions, and poll findings.

What We Heard – Motivation to Quit

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Motivations for quitting followed generational patterns

"External reward seems to be most effective in changing behavior. And, a lot of cases, if you push that reward where it's achievable and it's compelling as opposed to the unwanted behavior, you're more likely to be successful… A strong external reward that outweighs the unwanted behavior and social factors."

– Listening session healthcare provider

Teens and young adults were motivated by image (e.g., no longer being "cool"), physical symptoms limiting activities (e.g., playing sports, singing), guilt, and losing the stress/anxiety relief provided by initial use (finding that that longer term use made them feel worse).

Adults over age 25 were motivated to quit by health changes, wanting to protect the health of those around them, and new disease diagnoses.

What We Heard – Risk Reduction

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Healthcare providers and adults felt reduction in use was a sufficient goal towards quitting, but teens felt that abstinence should be the ultimate goal

According to the literature, gradual reduction in nicotine use is less likely to result in abstinence versus setting a stop date and quitting. To date, reduction studies have found little to no effect on morbidity and mortality.

"I think the end goal should be to quit, but any reduction is obviously better than none. So, I'm going to go the route of, I think stopping, even if you stop for a little bit than maybe start back up again."

– Adult listening session nicotine user

What We Heard – Medication Hesitancy

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The majority of nicotine users prefer to quit on their own without the use of healthcare providers or medications

"I'm not taking a drug to quit another drug."

-Teen listening session

"I don't like taking medications because of possible side effects."

-Adult nicotine user poll respondent

Adolescents prefer seeking support from peers and people with lived experience and the use of non-drug interventions.

Many adult nicotine product users shared low familiarity with, or openness to, pharmacological solutions.

What We Heard – Medication-Based Treatment

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Adult Consumers' Top Concerns or Hesitations About Taking Medication

1. Side effects or allergic reactions
2. Concerns about dependence or addiction to the prescription medication or trading one habit/drug for another
3. Do not like taking medication
4. Question the effectiveness of a medication for cessation/reduction
5. Concerns about overall health or physical effects
6. Do not trust medications
7. Concerns about safety
8. Do not want to take another medication in addition to what they are already taking
9. Cost
10. Past adverse experience in self or friend/family

Online poll respondents also cited concerns about long term or unknown effects, risk of harm, and contraindications (n=414)

What We Heard – Medication-Based Treatment

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Health professionals both face and create barriers

Healthcare providers (HCPs) demonstrated **low awareness of cessation programs** and optimal use of pharmacotherapy or pharmacotherapy paired with behavioral support for smoking cessation.

Smoking cessation facilitators, who also happen to be HCPs, will **lean on prescription medications** but also try to identify a patient's smoking habits and connect them with more behavioral support.

Despite the availability of guidelines supported by high-quality evidence, medication uptake is low, and **medications are not being optimized** (e.g., starting dose, whether to taper off, duration of therapy, immediate cessation vs. setting a future quit date).

What People Want

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1. More effective smoking cessation options
2. Individualized treatment options (e.g., patient-centered treatment plans, shared decision-making, tailored outcome measures to patient-identified endpoints)

Moving Forward

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Further Study and Development Opportunities

- New therapies that reduce cravings and address other behavioral components of smoking/vaping nicotine
- Medication combinations that are more effective and better tolerated
- Digital tools to assist with reduction and cessation
- Impact of peer education and other supports that could be paired with medications

Product users and smoking cessation facilitators echoed some version of hope for more effective medications, interventions, and tools in the future

Education Opportunities

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For Healthcare Providers and Smoking Cessation Facilitators

- Cessation support options and how to individualize treatment
- Importance of ongoing screening, conversations devoid of judgment, and use of motivational interviewing
- Optimization of pharmacotherapy with or without behavioral or digital support

For Adult Nicotine Users

- Resources available to assist with quitting or reducing

For Teen Nicotine Users

- Resources providing peer-to-peer education using stories or testimonials