

Tobacco and Substance Use:

Can smoking lead to Illicit Substance Use?

Ahmad Hajebi, MD, Professor of Psychiatrist
Director, Research Center for Addiction & Risky Behavior (ReARB)
Iran University of Medical Sciences
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History of Tobacco Use

- During the 1800s, tobacco was smoked mainly in pipes and cigars.
- Starting in 1881, the rolling machine could make cigarettes in large numbers.
- During World War I, cigarettes were part of the army's daily ration.
- By the 1920s, cigarettes had become the favorite choice of Americans who used tobacco.

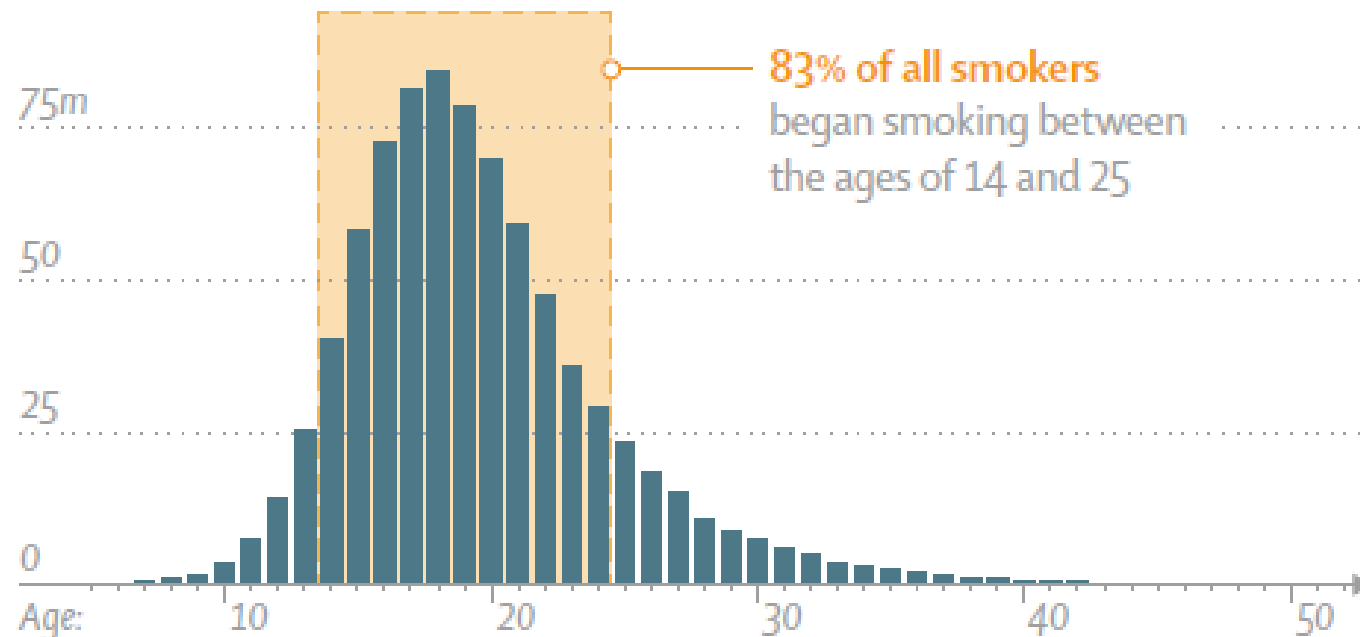
History of Tobacco Use

- Smoking increased until the mid-1960s, when an estimated 42% of U.S. adults smoked.
- The Surgeon General released a report in 1964 that linked smoking with serious health risks. By 2017, the number of adults who smoke had shrunk to about 14% of the total population.

Preventing new smokers is key to controlling the tobacco epidemic

14–25 years: a critical window for intervention

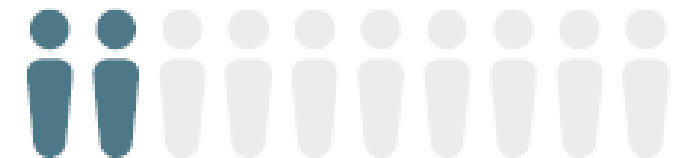
Age at which smokers began smoking regularly



9 out of 10 smokers began smoking regularly by the age of 25, globally



2 in 10 began smoking regularly by the age of 15



Read the full paper: Reitsma MB, Flor LS, Mullany EC, Gupta V, Hay SI, Gakidou E. Spatial, temporal, and demographic patterns in prevalence of smoking tobacco use and initiation among young people in 204 countries and territories, 1990–2019. *Lancet Public Health* 2021; published online May 27

Trends of Tobacco Use

- The fourth WHO global tobacco trends report (2021) shows that there are **1.30 billion** tobacco users globally compared to **1.32 billion in 2015**. This number is expected to drop to **1.27 billion by 2025**.
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- Tobacco smoking causing **7.7 million deaths** – including 1 in 5 deaths in males worldwide.
- **In 2020, 22.3%** of the global population used tobacco, 36.7% of all men and 7.8% of the world's women.
- **Over 80% of the 1.3 billion** tobacco users worldwide live in **low- and middle-income** countries, where the burden of tobacco-related illness and death is heaviest.

Trends of Tobacco Use in the Youth

- According to the CDC, from 2011 to 2018, current cigarette smoking has decreased among middle and high school students.
- Nearly 1 of every 50 middle school students (1.8%) reported in 2018 that they smoked cigarettes in the past 30 days—a decrease from 4.3% in 2011.
- About 2 of every 25 high school students (8.1%) reported in 2018 that they smoked cigarettes in the past 30 days—a decrease from 15.8% in 2011.

Trends of Tobacco Use in the Youth

- As the numbers of youth who smoke cigarettes drop however, the numbers of youth who use electronic cigarettes, has grown exponentially.
- Nearly 1 of every 20 middle school students (4.9%) reported in 2018 that they used electronic cigarettes in the past 30 days—an increase from 0.6% in 2011.
- Nearly 1 of every 5 high school students (20.8%) reported in 2018 that they used electronic cigarettes in the past 30 days—an increase from 1.5% in 2011.

Tobacco Use In Iran

- ▶ The prevalence of current tobacco smoking and current daily cigarette smoking in 2016 was 14.1% and 9.7%, respectively. Only 0.2% of participants smoked water-pipe.
- ▶ Current tobacco smoking prevalence remained unchanged during 2004-2016 for both men and women and does not conform to the international trends.
- ▶ The prevalence of passive smoking at home or workplace was 27.4%.
- ▶ Current tobacco smoking prevalence and current daily cigarette smoking was significantly lower among women than men.

Tobacco Use Among Youth In Iran

- ▶ The prevalence of **current smoking** among the general population aged 15–24 years was **3.3–13.9%**. The prevalence of **regular smoking** among the general population aged 15–24 years was **1.0–10.2%**.
- ▶ For high school students, the life-time prevalence of cigarette smoking was **13% in girls and 23% in boys**. The **pooled prevalence** of current and regular smoking among high school **boys was 9% and 5%**, respectively, compared with **3% and 1% in girls**.
- ▶ For university students, the life-time prevalence **was 11% in women and 33% in men**. The **pooled prevalence** of current and regular smoking among **male** university students was **22% and 11%**, respectively, compared with **5% and 1%** among **female** students.

Smoking and Tendency toward Illicit Drug Use

(Johns Hopkins School of Public Health)

- ▶ Cigarette smoking **increases a person's risk of using illegal drugs**, which will eventually lead to entirely new consequences.
- ▶ Results showed that those who had smoked cigarettes were more likely to use illegal drugs. For all age groups combined, participants who had ever smoked were:
 - ▶ **Seven times more likely to have tried marijuana**
 - ▶ **Seven times more likely to have tried cocaine**
 - ▶ **14 times more likely to have tried crack**
 - ▶ **6 times more likely to have tried heroin**

Smoking and Tendency toward Illicit Drug Use

(Johns Hopkins School of Public Health)

- ▶ **Associations** between smoking and illegal drug use were significantly stronger for **young people**. For instance:
 - ▶ People ages 12 to 15 who smoked cigarettes were 44 times more likely to use crack, compared with only a twofold risk in those 50 or older.
 - ▶ A strong cautionary message is that **those who smoked cigarettes before the age of 15** were up to **80 times** more likely to use illegal drugs than those **who did not smoke cigarette**

Sequence of Illicit Drug Use Following Smoking

(report from the six South American countries)

- ▶ The sequence begins with alcohol and tobacco use, followed by the use of marijuana, and finally extending to cocaine, cocaine type substances and other drugs.
- ▶ Although there is a very low prevalence of heroin use in these countries, in the few cases reported heroin is the final stage of the sequence.
- ▶ Most consumers stop at the initial tobacco/alcohol stages, and as for those who move on to illicit drugs, many stop at marijuana, while those going on to the higher cocaine stage are a minority.

Sequence of Illicit Drug Use Following Smoking

(report from the six South American countries)

The impact of early use and intensity of use

- ▶ These data show that those who reached the **more advanced stages of the sequence** are also **those who started using the first or preceding drugs at an earlier age**: it is usual to find earlier use of tobacco/alcohol among those transitioning to marijuana, and earlier use of marijuana for those who have moved on to cocaine.
- ▶ Those moving through the sequence show **greater signs of abuse/dependence on the first or preceding drugs**. It is more likely to find alcohol abuse among those who moved into marijuana, and there are higher marijuana dependence rates among those progressing into cocaine than for those who stopped in the sequence.

Sequence of Illicit Drug Use Following Smoking

(report from the six South American countries)

The impact of risk perception and availability

- ▶ The drug use sequence is distinctly organized in a gradient of risk perception and availability found in these countries.
- ▶ The perception of risk for tobacco/alcohol is low; it is a little higher for marijuana, and definitively higher for cocaine.
- ▶ Advancement to marijuana use plays a critical role: marijuana initiation has a dramatic impact on the decreased perception of risk associated with using cocaine. Therefore, the gateway effect focus mainly on marijuana, either because:
 - ▶ It lessens the perception of risk about the next drug (cocaine)
 - ▶ It leads to further consumption opportunities through a greater exposure to drug offers such as cocaine/pasta base.

Tobacco Smoking and Its Association with Illicit Drug Use in Slums (Bangladesh)

- ▶ The odds ratio increased with the number of cigarettes smoked daily. Those who smoked 5 cigarettes or less per day were between two to three times more likely to use illicit drugs compared to nontobacco users, but the likelihood for those who smoked 10 or more cigarettes per day increased to 12 times higher.
- ▶ While the migrants who stayed in the slums for less than 10 years had a lower tendency of IDU than the highest likelihood of IDU was among the migrants who lived there for at least 10 years.

Joint Demand For Cigarettes and Marijuana: Interdependence

- ▶ Studies have demonstrated **interdependence between policies** directed at curbing tobacco and marijuana use.
- ▶ The researchers found that **higher cigarette taxes appear to decrease the intensity of marijuana use** and may have a **modest negative effect** on the probability of use among males.

Smoking and Relapse of Substance Use: Past History and Smoking after Abstinence

- ▶ A study has found that continuing or initiating cigarette use after stopping the use of illicit drugs is associated with an increased likelihood of substance use relapse.
- ▶ Daily smokers and nondaily smokers had about twice the odds of relapsing to drug use at the end of the three-year period compared to nonsmokers.
 - ▶ Those odds held even after controlling for demographics and other factors, including mood, anxiety, and alcohol use disorders.

Smoking and Relapse of Substance Use: Past History and Smoking after Abstinence

- ▶ Among those with remitted substance use disorders who were smokers at the beginning of the study:
 - ▶ More than 1 in 10 (12 percent) who continued smoking three years later relapsed to illicit substance use, while only 8 percent of those who had quit smoking and 6.5 percent of never-smokers relapsed to substance use.
- ▶ The study cites several possible reasons why smoking may increase the likelihood of relapse, including that cigarettes may become a “cue” for use of illicit drugs, and that nicotine may cause increased cravings for stimulants and opiates.

Bidirectional Relationship between Tobacco and Illicit Drug Use

- ▶ Bidirectional relationship hypothesis reveals that **smoking initiation** may lead to increased **alcohol consumption, cannabis use and cannabis dependence**.
- ▶ **Cannabis use** may also lead to **smoking initiation** and **opioid dependence to alcohol consumption**.
- ▶ Given that tobacco and alcohol use typically begin before other drug use, these results may reflect **a shared risk factor** or a **bidirectional effect** for cannabis use and opioid dependence.

Summary of Findings

- ▶ Epidemiological studies indicate that licit drug use (e.g. tobacco and alcohol) may serve as a gateway to illicit drug use.
- ▶ Three-quarters of adults with substance use disorders (SUDs) also have a history of cigarette smoking.
- ▶ There is a sequence from tobacco use to illicit drug use as following: tobacco, alcohol, marijuana, cocaine, heroine
- ▶ Tobacco users are 7 times more likely to use marijuana, 7 times more likely to use cocaine, 14 times more likely to use crack, 16 times more likely to use heroine.

Summary of Findings

- ▶ Initiation of tobacco use under the age 15, increases 80 times more illicit substance; increasing crack use up to 44 times
- ▶ Intensity of use of tobacco or alcohol such as abuse or dependence is a risk factor for illicit substance use.
- ▶ Higher cigarette taxes appear to decrease the intensity of marijuana use. This means more expensive cigarettes leads to less smoking and therefore less marijuana use

Summary of Findings

- ▶ Marijuana is considered gateway to SUD, because it decreases risk perception especially of cocaine use and increases drug offer opportunities of cocaine.
- ▶ After cessation of drug use, smokers had about twice the odds of relapsing to drug use at the end of the three-year period compared to nonsmokers.
- ▶ Possible reasons why smoking may increase the likelihood of relapse, include that cigarettes may become a “cue” for use of illicit drugs, and that nicotine may cause increased cravings for stimulants

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**Thank You for Your
Attention**