

POLICY BRIEF

IMPACT OF CIGARETTE PRICES AND TOBACCO CONTROL POLICIES ON SMOKING INITIATION AMONG ADOLESCENTS: EVIDENCE FROM NORTH MACEDONIA

YOUTH SMOKING IS A CRITICAL PUBLIC HEALTH ISSUE

Tobacco consumption is a leading cause of preventable death, with 100 million deaths attributed to it during the 20th century and nearly one billion deaths projected for the 21st century without significant policy interventions. Most of these deaths will occur in developing countries.

Early-age smoking poses a significant and central challenge that must be tackled with strong tobacco control. Almost all first use of cigarettes occurs during the high school years in North Macedonia. Youth smokers commonly underestimate the health consequences of smoking and the risk of developing nicotine addiction.

Early-age smoking is more likely to lead to a lifelong addiction to nicotine, making it a critical public health issue that must be addressed. The timing of smoking initiation plays a crucial role, as the earlier an individual starts smoking, the higher the likelihood of developing a regular or frequent smoking habit. Recognizing the importance of preventing young individuals from starting to smoke is key to achieving a decline in smoking prevalence.

Tackling smoking initiation among young people is a vital step towards achieving lower smoking prevalence and promoting healthier communities.

Increasing tobacco taxes, restricting access to tobacco products, and implementing comprehensive tobacco control policies are all integral parts of the policy toolkit for preventing smoking and reducing youth smoking rates.

ADDRESSING YOUTH SMOKING IN NORTH MACEDONIA IS CRITICAL

North Macedonia is ranked very high globally in terms of smoking prevalence and the average number of cigarettes smoked per day per smoker. With a smoking prevalence of 48.4 percent, the country surpasses the EU average of 18.4 percent in tobacco consumption. Present tobacco consumption rates in North Macedonia could lead to approximately 39,000 tobacco-related deaths—all entirely preventable—over the next four decades.

- **Almost 81.4 percent of smokers in North Macedonia started smoking before 25 years of age.**
- **Around 12.4 percent of students (14.6 percent of boys and 9.8 percent of girls) used tobacco products** according to the Global Youth Tobacco Survey (GYTS) conducted in 2016.

TOBACCO CONTROL POLICY IN NORTH MACEDONIA

North Macedonia has implemented a series of significant tobacco control measures (Figure 1), demonstrating the country's commitment to addressing smoking-related issues and promoting public health enshrined in its legal commitment as a Party to the Framework Convention on Tobacco Control. In 2014, North Macedonia also ratified the Protocol to Eliminate Illicit Trade in Tobacco Products.

Figure 1. Chronology of tobacco control policies in North Macedonia

2003 – "Law on Protection from Smoking places partial restrictions on public smoking."

2008 – Smoking is prohibited in most public places in North Macedonia, including schools and other public buildings accommodating children and young people, promoting smoke-free environments, and safeguarding their health.

2010 – North Macedonia implemented a general ban on smoking in public places, including restaurants and bars, enhancing public health by creating smoke-free environments.

2018 – The smoking ban in North Macedonia experienced a partial weakening with amendments to the Law on Protection. The revisions introduced provisions allowing smoking in specially designated areas and open-air terraces, altering the previous comprehensive smoking ban.

In North Macedonia, the price and excise of tobacco products are regulated with the Excise Law. The current excise level per 1,000 cigarettes in North Macedonia falls significantly below the minimum prescribed by the European Union (EU): whereas the EU prescribes a minimum level of EUR 90, North Macedonia's excise rate is EUR 54.

To meet the EU's specific excise requirement, North Macedonia would need to increase the current tobacco excise rate by 66 percent.

STUDY APPROACH

This policy brief draws upon a comprehensive, nationally representative study conducted in North Macedonia examining the influence of cigarette prices, tobacco control policies, and various factors on smoking initiation among adolescents. The study utilizes two Global Youth Tobacco Surveys (GYTS) for North Macedonia in 2008 and 2016 to conduct a detailed analysis. The GYTS survey in 2008 covered 5,824 respondents (response rate of 90.1 percent) and 5,141 students in 2016 (response rate of 86.2 percent). Smoking initiation is modeled as a function of the following variables: cigarette prices, excise tax rate, non-price tobacco control policy variables, gender, age, friends' and parents' smoking behavior, education on the dangers of smoking, and respondent's own perceptions on the harmful side effects of smoking.

RESULTS DISCUSSION

It is very common for children in North Macedonia to start smoking at a very young age (Figure 2). The average age of adolescents who initiate smoking is 13.5 years. There is only a small difference in the initiation age between genders (males try cigarettes at 13.5 years on average, whereas females initiate at 13.6 years).

Figure 2. Youth smoking initiation – average age and percent of initiation, by gender

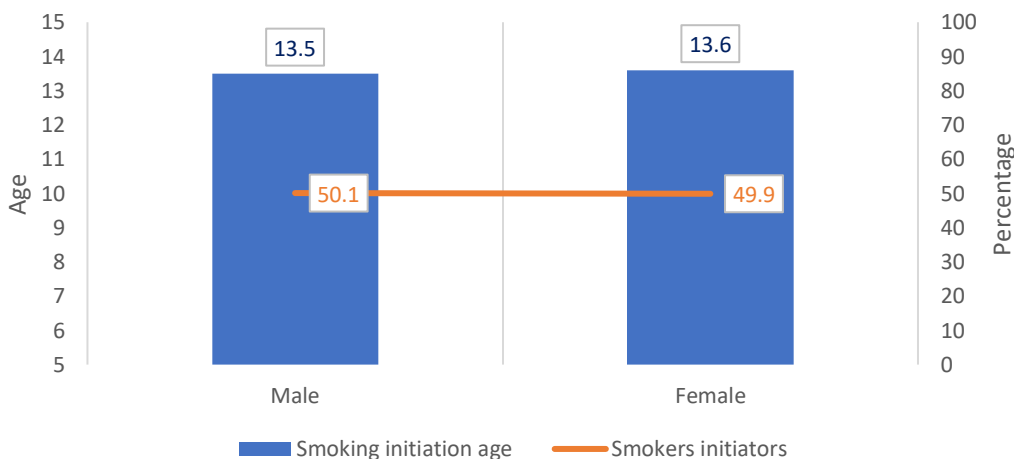
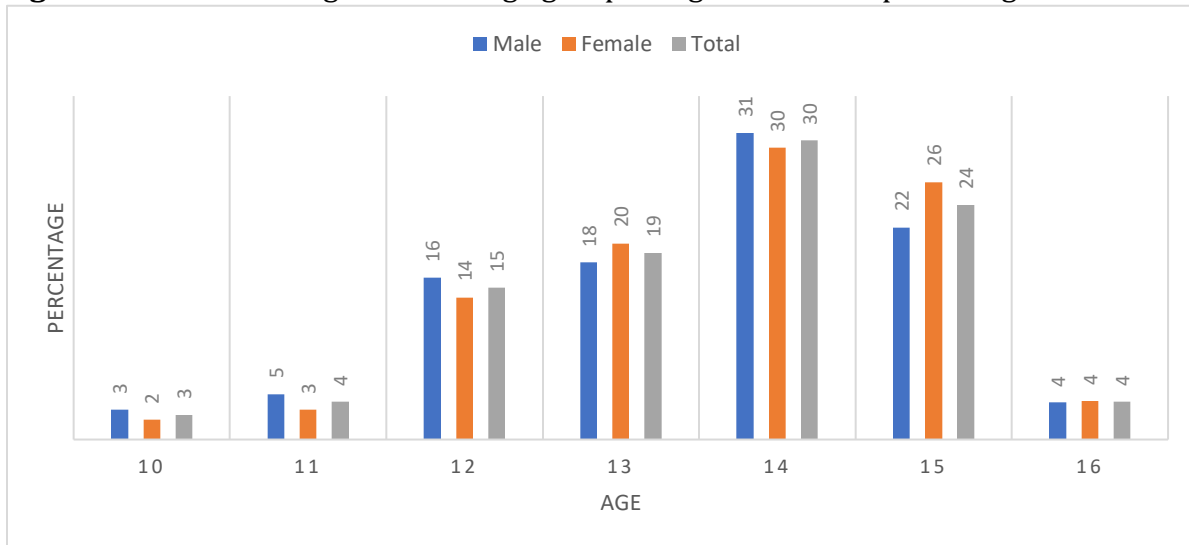


Figure 3. Youth smoking initiation: age group and gender-based percentage distribution



Around 30 percent of youth smokers in North Macedonia initiate smoking before 14 years of age.

Males have slightly higher risk compared to females up until 15 years. After that, the risk of initiation is more or less the same. Approximately 50 percent of the respondents are estimated to not start smoking at the end of the time period considered (age 17). However, the hazard for smoking initiation is significantly more pronounced for males as opposed to females. This result is typical in the empirical literature. This suggests that the gender effect may be stronger in countries from the Balkan region, where traditionally, it was socially unacceptable for a female to smoke.

The hazard for smoking initiation is significantly more pronounced for males as opposed to females. Cigarette price has an impact on the decision to initiate smoking among youths in North Macedonia, albeit indirectly through peer influence and other variables in the model. The results show that an increase in tobacco excise tax that increases cigarette prices will likely decrease smoking initiation among youth.

An increase of cigarette prices by 10 percent reduces the likelihood of youth smoking initiation by 3 percent.

KEY MESSAGES

Understanding the determinants of smoking initiation among young people in North Macedonia is crucial. The findings of this research provide valuable insights for policy makers to develop targeted interventions and evidence-based policies that effectively discourage smoking initiation among adolescents.

- **Cigarette price has an impact on the decision to initiate smoking among youths in North Macedonia.** Moreover, the relative affordability of cigarettes in the country shows that there is still considerable room for future price increases, which could contribute to discouraging smoking initiation and promoting cessation. This emphasizes the importance of increasing the tobacco excise tax to decrease the smoking initiation among youth through higher prices.
- Females are less likely to initiate cigarette smoking than males, and prices might influence smoking initiation in females more compared to males.
- **Youths' decisions to initiate smoking are significantly influenced by friends' and parents' smoking behavior.** Youths who have friends who smoke are 62 percent more likely to start smoking. Having parents that smoke is also significantly and positively associated with likelihood of smoking initiation: students with a parent who smokes at home are 79 percent more likely to start smoking. These findings reinforce the potential for excise tax increases to raise prices, which will affect peers' and parents' smoking behaviors.
- **Youth smoking initiation is negatively affected by perceptions of the dangers of smoking.** The importance of education and knowledge about the harmful effects of tobacco use—among both youth and their parents—cannot be overstated.
- **Smoking onset among youth in North Macedonia has been influenced by non-price tobacco control policies.** Together, all policy changes and measures introduced in the period after 2008 are estimated as statistically relevant, reinforcing the importance and efficacy of evidence-based tobacco control measures.

FINAL CONSIDERATIONS

Raising cigarette prices is likely to serve as an effective measure to combat smoking.

The relative affordability of cigarettes in North Macedonia indicates room for future price increases, which could contribute to reducing smoking prevalence and discouraging smoking initiation.

Implementing higher cigarette prices, along with comprehensive tobacco control strategies, can help create a more significant deterrent effect and promote healthier behaviors among individuals in North Macedonia.

Increasing knowledge of the negative side effects of smoking among parents and youth in North Macedonia is very important. This can be achieved by introducing:

- 1) media campaigns to educate parents about harmful effects of smoking and the importance of being a healthy role model for their children,
- 2) educational and health lectures in the curricula of school programs to educate young people about the negative effects of smoking, and
- 3) mass media government campaigns that emphasize the importance of living a healthy and smoke-free life to the entire society.

Strengthening the implementation of tobacco control policies that ban smoking in public places and restrict access to tobacco products for underage students are likely to increase the reduction of youth smoking initiation.

The collective impact of various policy changes and measures introduced after 2008 is statistically significant, indicating their relevance in discouraging smoking initiation among youth.

Acknowledgments

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This Policy Brief was prepared by researchers from the Analytica think tank in North Macedonia. The authors are Biljana Jovanovic, Tamara Mijovic Spasova, Bojana Mijovic Hristovska, & Kristijan Kozheski.