

TOBACCO USE BEHAVIOR AMONG ADOLESCENTS IN HANOI, 2023

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ABSTRACT

The study was conducted to determine the prevalence of adolescent smoking in Hanoi city in 2023 and the perception of adolescents toward adverse impacts of tobacco. The piece of research was a cross-sectional study, using quantitative methods. In total, 1009 students aged from 12 to 18 years old in 4 districts in Hanoi participated in the research through answering online form of question. The survey results showed that: 21,3% adolescents have ever smoked, 16,2% adolescents currently smoke, prevalence of male and high school students are respectively higher than female and secondary student, respectively; e - cigarettes were the most popular among adolescents; e – cigarettes and heated tobacco were supposed to be less toxic. The proportion of secondary and high school students in Hanoi who have used tobacco are critically high. Basing on research results, some recommendations were indicated: update the policies related to tobacco management including advertising and sale; conduct behavior change campaign to raise awareness for students about the harmful effects of nicotine on physical development, brain, negative health effects caused by tobacco; establish support groups for adolescents to quit smoking and promote penalizing students smoking.

Keywords: *adolescents, smoking, tobacco, cigarettes, students, prevalence*

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I. INTRODUCTION

Tobacco use is the leading cause of preventable diseases and premature death worldwide. The World Health Organization estimates that more than 6 million people die each year of smoking or exposure to passive smoke [8]. Tobacco use remains as a serious public health and development issue in Viet Nam. Chronic diseases account for 75% of the total disease burden and tobacco use is one of the leading causes.

Each year, about 75,000 people in Viet Nam die of tobacco-related health problems. Although the smoking rate in youths in Viet Nam is relatively low, adolescent smoking in Viet Nam should not be underestimated as adolescence is a vulnerable period when it comes to initiating sexual intercourse and smoking – most smokers start using tobacco before the age of 18 years, and cigarettes marketing and trading increasingly being promoted, with a variety of models, cheap prices can boost the rate of youths smoking.

Tobacco use in adolescence is associated with both physical and social consequences. Smoking at an early age is more likely to lead to nicotine addiction than starting at a later age. Nicotine may be particularly addicting to adolescents, and adolescents may not fully realize the potential to become addicted or the difficulty in quitting. Nicotine addiction occurs rapidly in adolescents. In addition to nicotine dependence, cigarette smoking causes many well-known ill effects, including increased pulmonary and cardiovascular diseases and increased risk for lung cancer. Behaviors such as being

involved in fights, carrying weapons, attempting suicide, engaging in high-risk sexual behavior, and using alcohol and other drugs are also more likely to occur in adolescents who smoke cigarettes.

Reducing tobacco use among youth is the key approach to ending the tobacco epidemic. Trends in tobacco use rates among young people point to new smokers – an important indicator that needs to be systematically monitored. Accordingly, this study was formed to understand tobacco use behavior among young people to provide solutions to prevent the prevalence of tobacco products among adolescents according to Decision 568 issued on May 24, 2023 by the Prime Minister.

Research objectives:

- Determine the prevalence of tobacco use among adolescents in Hanoi City.
- Determine the level of understanding of youth in Hanoi about the adverse effects of tobacco.

II. METHODOLOGY

- 1. Time:** From 20/7/2023 – 15/8/2023.

III. RESEARCH RESULTS

3.1. Demographic characteristics

Table 1. Demographic characteristics of students

Characteristics		Frequency (n)	Percentage (%)
Gender	Male	453	44,9
	Female	556	55,1
Education level	Secondary school	494	49,0
	High school	515	51,0
Age	12	62	6,1
	13	106	10,5
	14	164	16,3
	15	162	16,1
	16	186	18,4
	17	329	32,6

2. Study subjects: Adolescents aged 12-17 years old are currently studying at secondary and high schools in Hanoi.

3. Method of data collection: the survey participants answer on Google form, through the steps:

- The surveyor contacted the family for parental consent.
- The surveyors met children, introduced survey purpose, implementation process and information security.
- Provide a mobile device or a link for participants to answer the survey question on their own.

4. Sample size and sample selection: The study used a 2-stage randomization method, 1009 secondary and high school students in 4 districts participated in the survey.

5. Some concepts used in the study: In order to differentiate tobacco use situation among students, the following concepts were in this study:

- Ever smokers: have ever smoked cigarettes before the time of the survey.
- Current smokers: have smoked in the last 30 days prior to the survey.

The proportion of male and female students participating in the study were 44,9% and 55,1%, respectively. By age, 17-year-olds accounted for the highest proportion (32,6%); The groups of 12 and 13-year-olds were the lowest ones (6,1% and 10,5%, respectively); The proportion of the rest groups ranged from 16% to 18%.

3.2. Behavior of using tobacco in adolescents

3.2.1. Percentage of adolescents ever smoking cigarettes

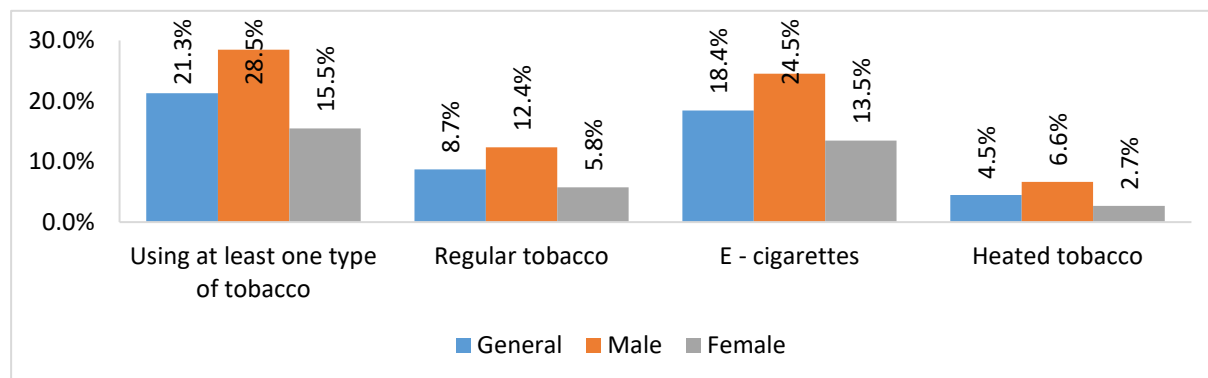


Figure 1. Percentage of adolescents ever smoking cigarettes, by gender

As shown in figure 1, 21,3% of students had ever used at least one type of tobacco. The most popular tobacco was e-cigarettes with 18,4%; and the least common was heated tobacco, with 4,5%. With regarding to all types of tobacco used by students, the percentage of male students who had ever used tobacco were about 1,8 to 2,45 times higher than this one among female students.

Table 2. Percentage of adolescents ever smoking cigarettes, by education level and age

Characteristics		Ever using at least one type of tobacco		Regular cigarettes		E - cigarettes		Heated tobacco	
		n	%	n	%	n	%	n	%
Education level	Secondary school	79	16.0	25	5.1	69	14.0	11	2.2
	High school	136	26.4	63	12.2	117	22.7	34	6.6
Age	12	9	14.5	1	1.6	9	14.5	1	1.6
	13	13	12.3	3	2.8	10	9.4	2	1.9
	14	25	15.2	10	6.1	24	14.6	2	1.2
	15	32	19.8	11	6.8	26	16.0	6	3.7
	16	48	25.8	21	11.3	42	22.6	11	5.9
	17	88	26.7	42	12.8	75	22.8	23	7.0

The prevalence of ever smoking tobacco among high school students was remarkably higher than among secondary students. Especially, the percentage of high school students who have used heated tobacco was 3 times higher than this rate in secondary schools.

The survey results indicate that the percentage of students smoking all type of tobacco had the same tendency to vary by age. In particular, the 15-17 age groups were significantly higher than the 12-13 years old groups.

3.2.2. Percentage of students currently smoking cigarettes

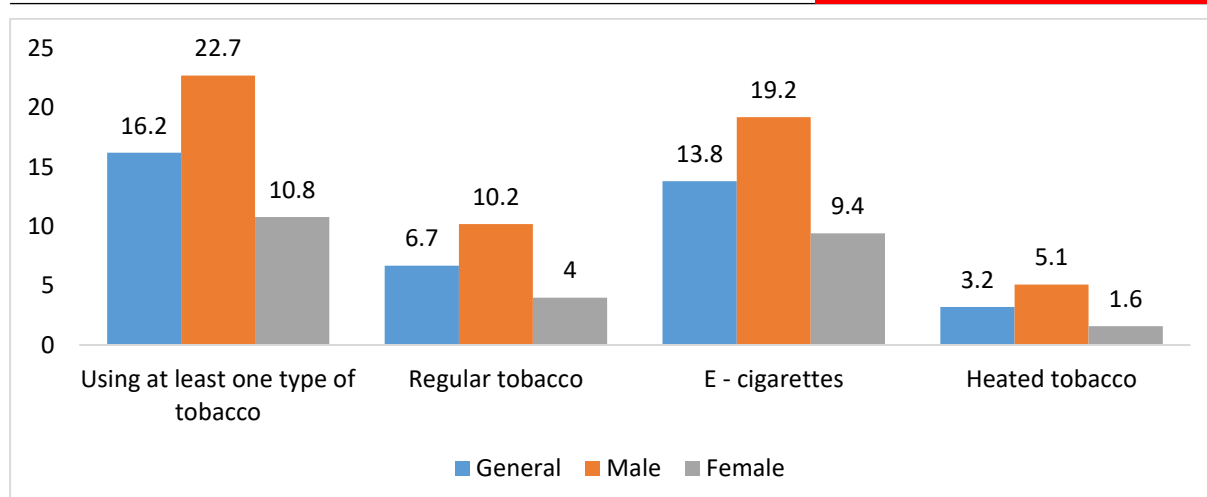


Figure 2. Percentage of students using tobacco within 30 days, by gender

Generally, 16,2% students currently smoke in 30 days. In which, the rate of students using e-cigarettes was the highest and the lowest one was heated tobacco. The proportion of male adolescents currently smoking was 2,04 - 3,2 times higher than this one of females.

Table 3. Percentage of adolescents currently smoking cigarettes, by education and age

Characteristics		Currently using at least one type of tobacco		Regular cigarettes		E - cigarettes		Heated tobacco	
		n	%	n	%	n	%	n	%
Education level	Secondary school	56	11.3	19	3.8	46	9.3	7	1.4
	High school	107	20.8	49	9.5	93	18.1	25	4.9
Age	12	7	11.3	2	3.2	6	9.7	0	0.0
	13	11	10.4	3	2.8	7	6.6	2	1.9
	14	17	10.4	7	4.3	17	10.4	2	1.2
	15	21	13.0	7	4.3	16	9.9	3	1.9
	16	37	19.9	16	8.6	35	18.8	7	3.8
	17	70	21.3	33	10.0	58	17.6	18	5.5

The percentage of high school students currently smoking were 1,8-3,5 times higher than the same prevalence in secondary school students, especially the difference of 3,5 times for heated cigarettes. The proportion of students who smoked cigarettes in the last 30 days were higher in age of 16-17 than in other groups.

3.2.3. Frequency of tobacco use in the last 30 days

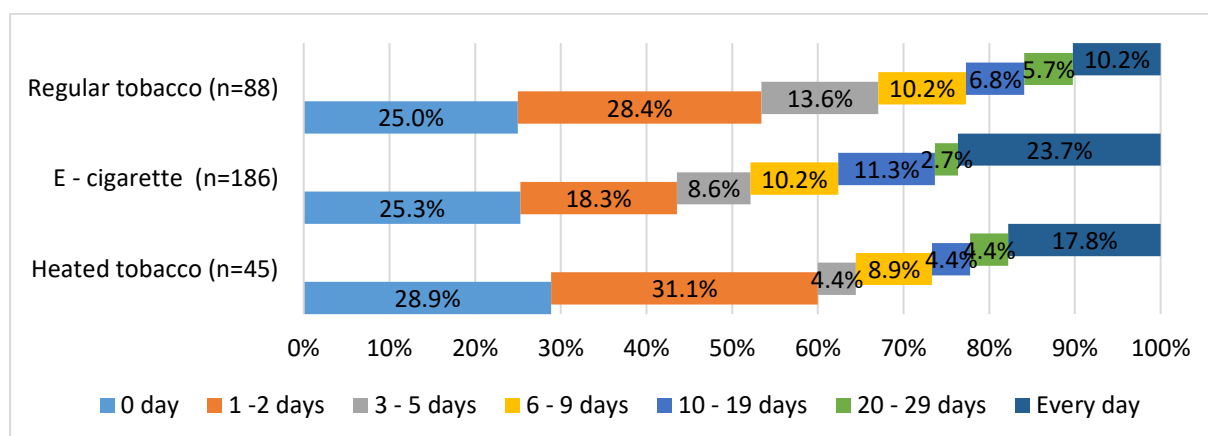


Figure 3. Frequency of tobacco use among students ever using tobacco
 Among ever smokers, e-cigarettes and heated cigarettes were used more frequently.

3.3. Perception of students on tobacco harms

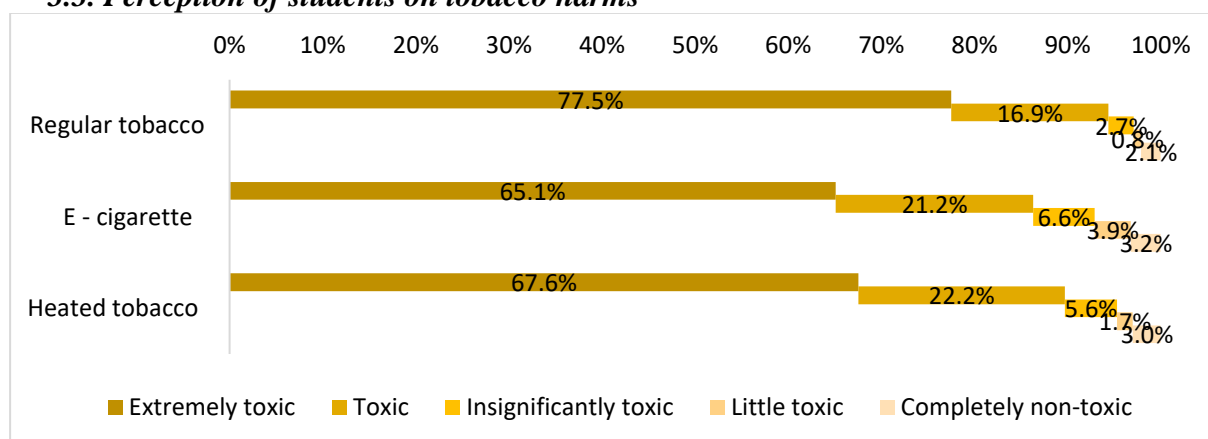


Figure 4. Students' perception about the harmful effects of tobacco

Over 96,8% of students identified cigarettes as toxic or extremely toxic. However, the level of toxicity identified by students varied by category: regular cigarettes were rated as the most toxic with 94,4% rated as very toxic or toxic; Meanwhile, the prevalence of the same rating levels towards e-cigarettes and heated cigarettes were significantly lower, accounting for 86,3% and 89,6%, respectively.

IV. DISCUSSION

4.1. Demographic information

The proportion of male and female were equal, but the students aged from 16 – 17 years old were in the majority.

4.2. Percentage of students ever smoking

21,3% of students in Hanoi participating in this survey had used tobacco. This result is significantly higher in comparison with the prevalence in previous studies: Research on tobacco using habits of students in the USA and Vietnam in 2019 (with 1385 students in Da Nang City and HCMC participating and 18,4% of students had ever smoked at least one type of tobacco [2]; or in the study: "Cigarette and e-cigarette smoking among

school adolescents in Vietnam 2013-2019: prevalence and related factors (2019)" by Hoang Van Minh et al. in 20 provinces/cities across Vietnam, 8,2% of youth were ever smokers [4].

In the survey "Smoking, vaping, and depressive symptoms among high school students in Jakarta, Indonesia", among 10-19 year olds in 2022, 38,6% of students had ever smoked, remarkably higher than our study [6]. In contrast, the results in our study were higher when compared to a similar survey on a group of 15-17 years old students in the study "Association between socio-ecological factors and e-cigarette use among Thai youth in 2022", that indicated the smoking rate of 2,9% [1].

Within Southeast Asia, most studies indicated that Indonesia is a country with a highest percentage of youth using tobacco, and Thailand, in contrast, is the country with the lowest percentage of youth smoking [7]. This difference is partly due to the contrary tobacco management policies in the two countries. In details, the import of e-cigarettes banned in Thailand in 2014, followed by a ban on the sale and service of e-cigarettes in 2015. In contrast, Indonesia is the only country in Asia that has not ratified the FCTC (WHO Framework Convention on Tobacco Control) [7].

4.3. Percentage of students who smoked cigarettes in the last 30 days

In the last 30 days, 16,2% of students surveyed used tobacco, nearly 2 times higher than Bair Weiss's study with 8,92% of students in Da Nang City and HCMC currently using tobacco at the time of the study [2].

The proportion of students currently using cigarettes and e-cigarettes in the last 30 days in our study was 6,7% and 13,8%, many

times higher when compared to previous studies: 2,8% of students smoked regular cigarettes and 2,6% smoked e-cigarettes [4]. Comparing to research by Acharaporn Seeherunwong et al. in Thailand, the proportion of adolescents aged 15-17 who smoked traditional cigarettes and e-cigarettes was only 2,9% and 1,9% [1], respectively. There are clear differences in the prevalence and tendency of tobacco use with the results noted in our study.

With regarding to the type of cigarettes used, the most common is e-cigarettes and the least common is heated cigarettes, this may be due to young people's preference for e-cigarettes, such as cheap, odorless and unique, advertised as less toxic. In contrast, heated cigarettes are new cigarette sort, the current cost is 2-4 times higher than e-cigarettes, so they are less popular with students. This result contrasts with studies by author Hoang Van Minh (2019) [4], which showed that the percentage of students smoking conventional cigarettes is higher than that of e-cigarettes. One supposition for this is that the cost of e-cigarettes decreased and children had easier access to e-cigarettes through online shopping channels.

For the breakdown of smoking rates by gender, the results in this study are equivalent to other studies in Vietnam or Thailand that recorded 1.5-3.5 times higher rates of male students smoking than female students smoking [2], [4]. This disparity is markedly lower in comparison with the study by Megatsari et al. in Indonesia (2019), which recorded 16,7 times more male adolescents smoking different types of cigarettes (38,5%/2,3%) than female adolescents [4].

The percentage of students who have ever smoked and used heated tobacco is

noticeable. The percentage of students in Hanoi using heated cigarettes in the last 30 days was 3,25, that is 1,23 and 2,46 times higher than the rates recorded in the study by authors Jun Hyun Hwang and Jun Ho Cho in Korea, respectively [5].

Comparing the results of the study with previous surveys/studies on tobacco habits in Vietnam and some nearby countries, the proportion of adolescents in Hanoi using tobacco is significantly higher. Especially for heated cigarettes, despite being the newest cigarettes on the market, the price is more expensive, but has quickly attracted the interest of teenagers. Although it is considered to have less harmful substances, heated cigarettes have also been warned of many negative health effects.

Vietnam and Myanmar are the only two countries in Southeast Asia that do not have laws document regulating e-cigarettes and heated cigarettes or nicotine-containing products. The concepts in Decree No. 67/2013/NĐ-CP do not cover cover e-cigarette and heating products, making it difficult to control the import, export and consumption of these products [7].

4.4. Students' perception on tobacco harms

The percentage of students who thought heated cigarettes or e-cigarettes were toxic or toxic were significantly lower than traditional cigarettes. Although e-cigarettes and heated cigarettes reduce intake amount of nicotine, toxic derivatives, it is possible to increase the frequency of smoking due to more pleasure, convenience, longer battery. It is important to pay attention to the difference in negative health effects between the group of using and not using e-cigarettes or heated tobacco, rather than how the two cigarettes are less harmful than regular

cigarettes. It's true that advertising programs and awareness of users often insist on that these two cigarettes are less harmful than traditional cigarettes.

V. CONCLUSION

Due to the current situation that all new tobacco products have not been put into regulation, controlling these products by policy has not been enforced. The proportion of secondary and high school students in Hanoi who had used regular cigarettes, electronic cigarettes and heated tobacco were 8,7% respectively; 18,4% and 4,5%

In particular, the least popular products in the last 30 days was heated tobacco with 3,2%; regular cigarettes were 6.7%; and the highest was e-cigarettes at 13,8%.

The tendency of ever – smoking and currently smoking: Male rates are higher than female; high school students higher than lower secondary school; and tends to increase with age;

96,8% of students rated all kinds of cigarettes as toxicity at different level. In general, the percentage of high school and middle school students who are aware of the harmful levels of tobacco is generally quite high; however, tobacco use rates are high, even higher than South Korea's data recorded, so we need to review propaganda measures and regulations to punish smoking among young people.

VI. RECOMMENDATIONS

- Update the concepts of cigarettes, e-cigarettes, heated tobacco or nicotine-containing products to include these items in tobacco regulatory legislation;

- Promote policies on management of tobacco advertising and sale, especially

through online distribution channels for children as well as adults;

- Conduct behavior change campaign to raise awareness for students about the harmful effects of nicotine on physical development, brain, negative health effects caused by tobacco;

- Establish support groups for adolescents to quit smoking, organize more physical activities at home and school to relieve stress;

- Use the legal corridor, strictly enforce the penalties of the current legal system for minors using any type of tobacco, similar to Japan and Korea,.... At schools, the maximum penalty of suspension for the first offense may be considered instead of just a warning, and also a harsher penalty for repeat offenses, etc.

VII. LIMITATIONS OF THE STUDY

- The prevalence of tobacco use among high school students is markedly higher than that of secondary students. Meanwhile, the group of students aged 16 and 17 dominated the study, so the research data may be higher than the actual use among young people in general.

- The study was only conducted within some districts of Hanoi, so it may not be representative of the general population as a whole.

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