GLOBAL ADULT TOBACCO SURVEY

GATS

MALAYSIA 2023

TECHNICAL REPORT

Disclaimer:

The findings and conclusions in this report are those of the author(s) and do not necessarily represent the official position of the U.S. Centers for Disease Control and Prevention, CDC Foundation, nor the opinions of the other investigators participating in the survey, nor the view or policy of the Ministry of Health Malaysia.

MESSAGE FROM THE DIRECTOR GENERAL OF HEALTH MALAYSIA

Tobacco use is one of the leading causes of preventable deaths and diseases worldwide. In Malaysia, tobacco use presents a major public health challenge, burdening our healthcare system and impeding progress towards better health outcomes. Malaysia signed the World Health Organization Framework Convention on Tobacco Control (WHO FCTC) in 2005 and undertook its first Global Adult Tobacco Survey (GATS) in 2011. In line with WHO FCTC, Malaysia has also adopted the WHO MPOWER measures to assist in the country-level implementation of effective interventions to reduce the demand for tobacco.

Thus, it is my honour to present the GATS Malaysia 2023 technical report. This survey is a testament to our unwavering commitment in creating a tobacco-free future for all Malaysians. The survey's comprehensive methodology ensures that the data collected is robust, reliable, and representative of our diverse population. Key findings from the GATS reveal important insights on the prevalence of tobacco and e-cigarette use, exposure to second-hand smoke, and public perceptions of tobacco control measures. These insights are critical as they underscore the areas that require urgent attention and action.

I wish to congratulate the Institute for Public Health for meticulously conducting GATS Malaysia for the second time in collaboration with the Disease Control Division, Ministry of Health (MOH) Malaysia. I would also like to extend my deepest gratitude to the U.S. Centers for Disease Control and Prevention (CDC), Atlanta, Georgia USA, RTI International, and the World Health Organization (WHO) for providing technical assistance and programme support. I also deeply appreciate the Bloomberg Philanthropies and the *Bloomberg Initiative to Reduce Tobacco Use* who provided the study grant through the CDC Foundation.

Finally, I would like to extend my sincere gratitude to all data collectors and field staff who contributed to this survey. I would also like to extend a special thank you to the respondents who graciously took the time to participate in this survey. Without your involvement, crucial data on tobacco use among the Malaysian population would not have been obtained. I trust that this data will be utilized effectively to enhance our healthcare services, educate the public about the risks of tobacco use, and support the development of evidence-based policies and interventions.

Datuk Dr Muhammad Radzi bin Abu Hassan

Director General of Health

Ministry of Health, Malaysia

MESSAGE FROM THE U.S. CENTERS FOR DISEASE CONTROL AND PREVENTION (CDC)

On behalf of the U.S. Centers for Disease Control and Prevention's (CDC) Office on Smoking and Health, we congratulate Malaysia on releasing their second Global Adult Tobacco Survey (GATS) Country Report. This report reflects Malaysia's commitment to track and monitor tobacco product use and key tobacco control measures using global standards. The data reported can further improve tobacco control and prevention efforts in Malaysia. GATS Malaysia data will be important in assisting the country in supporting the implementation of World Health Organization (WHO) Framework Convention on Tobacco Control (FCTC) and WHO MPOWER, a package of six evidence-based demand reduction measures-**M**onitor tobacco use and prevention policies; **P**rotect people from tobacco smoke; **O**ffer help to quit tobacco use; **W**arn about the dangers of tobacco; **E**nforce bans on tobacco advertising, promotion, and sponsorship; and **R**aise taxes on tobacco.

Malaysia conducted two rounds of GATS surveys, one in 2011 and most recent in 2023; the GATS data presented in this report show key tobacco indicators such as tobacco use, cessation, secondhand smoke exposure (SHS), anti- and protobacco media, tobacco economics, and knowledge, attitude and beliefs regarding tobacco in 2023 and in comparison, to 2011. Overall, GATS Malaysia results demonstrate progress in addressing tobacco product use, as well as improvements in other tobacco control measures. The findings indicate a notable decline in overall tobacco use in the country, from 24.0% in 2011 to 19.5% in 2023; a relative decline of 18.8%, paving the way for 30% relative reduction by 2030, as outlined in the WHO's Sustainable Development Goals Health Targets. Moreover, there were also decreases in secondhand tobacco exposure in homes, workplaces, and public transportation. While there is much to celebrate, the second round of GATS presents Malaysia with opportunities to build on the progress and further reduce the burden of tobacco use among its population.

Tobacco product use is a major global public health challenge as it is a leading preventable risk factor for noncommunicable diseases, including cancers, cardiovascular diseases, diabetes, and chronic lung disease. Tobacco use contributes to increased health care costs and loss of economic productivity. GATS data provide key information to stakeholders and decisionmakers in Malaysia, enabling and sustaining the public health initiatives to improve tobacco control programs and to enforce existing policies to assure protections of all citizens.

The success of GATS in Malaysia is attributed to the collaboration among numerous partners. Contributors included the Public Health Institute and the Disease Control Division, Ministry of Health Malaysia, WHO, RTI International, CDC, and CDC Foundation. Our combined efforts were vital in making the GATS Malaysia 2023 a reality and providing Malaysia with data needed to measure its progress, assess effectiveness of existing programs, and chart a course for future tobacco control efforts.

We thank you for your leadership and look forward to continued collaboration in global tobacco control and prevention. A hearty congratulations to you on your remarkable efforts.

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MESSAGE FROM THE WORLD HEALTH ORGANIZATION (WHO)

Global Adult Tobacco Survey (GATS) have been implemented in more than 30 low- and middle-income countries with the highest burden of tobacco use to date. The GATS data provides key information to stakeholders and policy makers, further enabling and sustaining public health initiatives to improve tobacco control programs and to enforce existing policies.

In Malaysia, the first GATS was conducted in 2011. The findings of the survey at the time highlighted that over 23.1% of the population, about 4.75 million people, were tobacco product users. Only 1 in 7 smokers have thought about quitting within the past 12 months, and 2 out of 5 non-smokers are exposed to secondhand tobacco smoke.

Since then, Malaysia has launched several campaigns and initiatives aimed at improving tobacco control regulations within the country, including revising legislation pertaining to tobacco taxes and retail price, while also stepping up enforcement activities.

The GATS 2023 highlighted the success of these campaigns with a reduction of smokers from 23.1% to 19.0% over the period, and 1 in 5 non-smokers were exposed to secondhand tobacco smoke. The intention-to-quit rate remained stable during that period.

However, the 2023 survey highlighted emerging concerns in tobacco product use and the tobacco control programme; the percentage of electronic cigarette and vape users have risen from 0.8% in 2011 to 5.8% in 2023.

The findings of the survey highlight the need for continuous monitoring and evaluation of the tobacco control program to ensure legislation and programme activities match the changing trends in consumer choices.

GATS Malaysia data will be important in assisting the country in supporting the implementation of WHO Framework Convention on Tobacco Control (FCTC) and WHO MPOWER, a package of six evidence-based demand reduction measures—Monitor tobacco use and prevention policies; Protect people from tobacco smoke; Offer help to quit tobacco use; Warn about the dangers of tobacco; Enforce bans on tobacco advertising, promotion, and sponsorship; and Raise taxes on tobacco.

WHO would like to congratulate the Government of Malaysia for conducting GATS 2023 and takes this opportunity to reaffirm its commitment to supporting efforts to reduce the risk to health from tobacco use.

We thank the U.S. Centers for Disease Control and Prevention (CDC) Foundation for its financial support and congratulate the Ministry of Health, Malaysia, for successfully conducting the survey.

Dr Rabindra Abeyasinghe

WHO Representative to Malaysia, Brunei Darussalam and Singapore

ACKNOWLEDGMENT

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LIST OF ABBREVIATIONS

AHS	Adolescent Health Survey
CDC	U.S. Centers for Disease Control and Prevention
CI	Confidence Interval
CTPR	Control of Tobacco Product Regulation
DEFF	Design Effect
ENDS	Electronic Nicotine Delivery Systems
ENNDS	Electronic Non-Nicotine Delivery Systems
FTP	File Transfer Protocol
GATS	Global Adult Tobacco Survey
GDP	Gross Domestic Product
GSS	General Survey System (software)
HRR	Household Response Rate
HTP	Heated Tobacco Product
IPH	Institute for Public Health
MOE	Margin of Error
MOH	Ministry of Health
MPOWER	**M**onitor tobacco use and prevention policies; **P**rotect people from tobacco smoke; **O**ffer help to quit tobacco use; **W**arn about the dangers of tobacco; **E**nforce bans on tobacco advertising, promotion and Sponsorship; and **R**aise taxes on tobacco
NECS	National E-Cigarette Survey
NGO	Non-Governmental Organizations
NHMS	National Health Morbidity Survey
PRR	Person-level Response Rate
PSU	Primary Sampling Unit
SAS	Statistical Analysis System
SE	Standard Error
SHS	Secondhand Smoke
SPSS	Statistical Package for Social Science
TRR	Total Response Rate
WHO	World Health Organization
WHO FCTC	WHO Framework Convention on Tobacco Control

EXECUTIVE SUMMARY

1. Introduction

Over 8 million people worldwide lose their lives to the tobacco epidemic each year, including an estimated 1.3 million people who do not smoke (1). In the Western Pacific Region, tobacco use kills 3 million people annually (2). The complications from tobacco use claim the lives of approximately 27,000 people yearly in Malaysia (3). These deaths are preventable if more stringent measures are implemented, especially strategies pertaining to smoke-free laws, tobacco price increases and anti-tobacco media campaigns (4). In addressing the tobacco epidemic, Malaysia signed the World Health Organization Framework Convention on Tobacco Control in 2005 and undertook its first Global Adult Tobacco Survey (GATS) in 2011. Currently, 183 countries are parties to the WHO FCTC treaty, covering more than 90% of the world population (5).

In line with WHO FCTC, Malaysia has also adopted the WHO MPOWER measures to assist in the country-level implementation of effective interventions to reduce the demand for tobacco. The MPOWER package consists of six cost-effective measures for fighting the global tobacco epidemic: (1) monitoring tobacco use and prevention policies; (2) protecting people from smoke; (3) offering help to quit tobacco use; (4) warning about the dangers of tobacco; (5) enforcing bans on tobacco advertising, promotion and sponsorship; and (6) raising taxes on tobacco. MPOWER measures are shown to save lives and reduce costs from averted healthcare expenditures. Hence, a systematic and efficient surveillance system is critical to monitor tobacco products use, and electronic cigarette (e-cigarette) use and evaluate their prevention and control interventions.

The Global Adult Tobacco Survey (GATS) is a nationally representative household survey of people aged 15 years or older that monitors tobacco products use, e-cigarette use, and tracks key tobacco control indicators. The use of a standard questionnaire, sampling methodology, and protocols in GATS makes comparison of survey results possible across countries.

Malaysia first implemented GATS in 2011. The country has since made progress in reducing tobacco products use and e-cigarette use, and adopted many key tobacco control initiatives, including prohibiting smoking in 23 indoor public places; prohibiting tobacco advertising, promotion, and sponsorship; making graphic health warning labels mandatory on all tobacco product packs; and increasing tobacco taxes.

The second round of GATS Malaysia was conducted in 2023 by the Institute for Public Health in collaboration with the Disease Control Division, Ministry of Health Malaysia. Technical assistance was provided by the U.S. Centers for Disease Control and Prevention (CDC), RTI International, and the World Health Organization (WHO). Additional program assistance support was provided by the CDC Foundation. Funding was provided by the Ministry of Health of Malaysia and the Bloomberg Initiative to Reduce Tobacco Use through the CDC Foundation with a grant from Bloomberg Philanthropies.

2. Methods

GATS uses a global standardised methodology to systematically monitor adult tobacco products use, and electronic cigarette use, and track key tobacco control measures. It includes information on respondents' background characteristics, use of tobacco products (including cigarettes, smokeless tobacco products, and heated tobacco products), electronic cigarette use, tobacco cessation, secondhand smoke exposure, economics, media, and knowledge, attitudes, and perceptions towards tobacco use. GATS Malaysia 2023 adopted a similar survey design with the GATS 2011, which was a household survey of persons aged 15 years or older. A multi-stage stratified sample design was used to produce nationally representative data. A total of 5,780 households were sampled, and one individual was randomly selected from each participating household to complete the survey. Survey information was collected electronically using handheld devices. A total of 4,269 individual interviews were completed, yielding an overall response rate of 81.5%.

3. Key findings in 2023

1. Tobacco use

In 2023, 19.5% (4.8 million) of adults in Malaysia reported current tobacco use in any form (36.2% of men and 1.8% of women). In total, 19.0% of adults currently smoked tobacco[1] (35.7% of men and 1.5% of women). In total, 14.6% (3.7 million) of adults currently smoked tobacco daily (27.2 % of men and 1.4% of women). Overall, 16.8% of adults (31.9 % of men and 0.9 % of women) currently smoked cigarettes (manufactured cigarettes, hand-rolled or kretek) (data not shown in table). The average number of cigarettes smoked per day was 13.1 cigarettes among adults who smoked tobacco daily. Among adults aged 20–34 years who had ever smoked daily, the mean age of daily smoking initiation was 18.2 years, while 46.4% of adults started smoking before the age of 18 (data not shown in table). An estimated 29.2% of adults who smoked tobacco daily reported first smoking tobacco within 30 minutes of awakening (data not shown in the table). Smokeless tobacco products were used by just 0.9% (0.2 million) of adults (1.1% of men and 0.7% of women) (data not shown in the table).

2. Electronic cigarette use

Overall, 68.1% of adults had ever heard of e-cigarettes, 8.9% (10.5% of men and 0.8% of women) had ever used e-cigarettes, and 5.8% of adults currently used e-cigarettes (data described in this paragraph are not shown in the table). An estimated 62.8% of adults who currently used e-cigarettes preferred fruit flavours. The prevalence of adults who used both e-cigarettes and smoked tobacco (dual use) was 3.9%. The percentage of adults who either currently smoked tobacco or currently used e-cigarettes was 21.0%.

3. Smoking cessation

Among adults who currently smoked tobacco, 9.0% planned to quit within the next month, and 13.3% were thinking about quitting smoking within the next 12 months (data not shown in the table). However, 30.5% of adults who currently smoked tobacco were not interested in quitting smoking (data not shown in the table). Among adults who currently smoked tobacco and visited a healthcare provider in the past 12 months, 66.6% were advised to quit smoking.

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[1] Currently smoked tobacco includes manufactured cigarettes, hand-rolled cigarettes, kreteks, pipes, cheroots, cigars, cigarillos, bidis, and shisha/hookah.

4. Secondhand smoke exposure

Among adults who worked indoors, 21.0% (1.8 million) were exposed to tobacco smoke in their workplace in the past 30 days. Among adults who did not smoke and worked indoors, 16.9% (1.2 million) were exposed to tobacco smoke in their workplace in the past 30 days (data not shown in the table). Overall, 19.4% (4.8 million) of adults were exposed to tobacco smoke at home. Among adults who did not smoke, 12.1% were exposed to tobacco smoke at home Among adults who visited various public places, 77.6% were exposed to tobacco smoke in restaurants, 67.9% in bars or nightclubs, 29.2% in government buildings, 19.0% on public transportation, and 18.6% in healthcare facilities.

5. Economics

In 2023, the average amount spent on 20 manufactured cigarettes was *Malaysian Ringgit* (RM) 10.8. The average monthly expenditure on manufactured cigarettes was RM 177.7. About 4 in 5 adults (79.9%) who smoked manufactured cigarettes made their last purchase of cigarettes from a grocery store. Among adults who currently used electronic cigarettes, 38.6% spent less than RM 50.0 on e-cigarettes in the past month (data not shown in the table). Most of the adults who currently used e-cigarettes (85.5%) made their last purchase of e-cigarettes at the e-cigarette/vape shop (data not shown in the table).

6. Advertising, promotion, and sponsorship

Among all adults ages 15 years and older, 81.8% noticed anti-cigarette information in any location during the past 30 days. Overall, 52.2% of adults noticed anti-cigarette information on TV, 35.4% noticed it on radio, 59.3% noticed it on the internet, 49.8% noticed it on billboards, and 5.8% noticed it somewhere else in the past 30 days (data not shown in the table). Overall, 18.3% of adults noticed any cigarette advertisements, promotions, or public event sponsorship.

7. Knowledge, attitudes, and perception

Overall, 86.6% of adults believed smoking causes serious illness, and 85.9% of adults believed that breathing other peoples' smoke causes serious illness for those who do not smoke. Furthermore, the majority of adults believed that anti-smoking actions such as increasing no-smoking zones (85.9%), increasing cigarette prices (78.1%), and more quit smoking services (89.5%) could reduce the number of persons who smoke in Malaysia (data not shown in the table).

4. Changes between 2011 and 2023

- Overall, the prevalence of current tobacco use significantly decreased from 24.0% in 2011 to 19.5% in 2023 (from 44.9% to 36.2% among men). This represents an 18.9% relative percent decline in tobacco use (19.4% significant relative decline for men and no significant change for women).

- Overall, the prevalence of current tobacco smoking significantly decreased from 23.1% in 2011 to 19.0% in 2023 (significant decline from 43.9% to 35.7% among men, and no significant change among women). This represents a 17.7% relative percent decline in tobacco smoking (18.8% relative decline for men).

- The prevalence of current e-cigarette use increased from 0.8% in 2011 to 5.8% in 2023. Additionally, the prevalence of current e-cigarette use among those aged 15 to 24 years increased from 1.1% in 2011 to 8.6% in 2023 (data not shown in the table).

- Smoking cessation and health care seeking behaviour among adults who currently smoked and those who made quit attempts in the last 12 months have remained stagnant. Among adults who smoked tobacco in the past year, 48.6% made a quit attempt in 2011 and 49.3% in 2023. Among adults who smoked tobacco and visited a healthcare provider, 52.6% were advised to quit by a healthcare provider in 2011 compared with 66.6% in 2023.

- Exposure to tobacco smoke in homes, workplaces, and public transportation significantly declined from 2011 to 2023. In homes (at least weekly), exposure to tobacco smoke declined from 38.4% in 2011 to 19.4% in 2023, representing a relative change of 49.5%. In workplaces (in the last 30 days), the exposure to tobacco smoke declined from 39.8% in 2011 to 21.0% in 2023, representing a relative change of 47.3%.

- Among adults who visited various public places, exposure to tobacco smoke significantly declined on public transportation (from 28.2% in 2011 to 19.0% in 2023); however, exposure significantly increased in government buildings (from 20.0% in 2011 to 29.2% in 2023), restaurants (from 71.0% in 2011 to 77.7% in 2023), and in healthcare facilities (from 8.7% in 2011 to 18.6% in 2023).

- The percentage of adults who smoked tobacco and noticed health warning labels on cigarette packages in the past 30 days significantly declined from 92.8% in 2011 to 70.9% in 2023. In addition, the percentage thinking about quitting because of the warning labels significantly declined (45.8% in 2011 vs. 33.2% in 2023) (data not shown in the table).

- The percentage of adults who noticed anti-cigarette smoking information in various places in the last 30 days significantly declined from 94.0% in 2011 to 77.1% in 2023. However, the proportion of adults who noticed anti-cigarette smoking information on the internet significantly increased from 17.7% in 2011 to 59.3% in 2023 (data not shown in the table).

- The percentage of adults who noticed any in-store cigarette advertisements or promotions significantly decreased from 21.7% in 2011 to 8.8% in 2023 (data not shown in the table). In addition, the percentage of adults who noticed any tobacco advertisements, promotion, and sponsorship significantly decreased from 35.6% in 2011 to 18.3% in 2023.

- The average amount spent on 20 manufactured cigarettes significantly decreased from RM 13.2 in 2011[2] to RM 10.8 in 2023. The average monthly expenditure on manufactured cigarettes significantly decreased from RM 234.0 in 2011[2] to RM 177.7 in 2023.

5. Conclusion

Although the prevalence of adults who currently smoked tobacco significantly declined from 2011 to 2023, much must be done to tackle other tobacco use related challenges, mainly in the areas of secondhand smoke exposure, the cost of cigarettes, and the increased use of e-cigarettes. Between 2011 and 2023, Malaysia implemented various tobacco control policies, including: regularly monitoring adult and adolescent tobacco use through national surveillance activities; expanding smokefree public places to include open eateries; enhancing smoking cessation programmes at private healthcare facilities, workplaces, and higher education institutions; introducing a new set of 12 pictorial health warnings on cigarette packaging; prohibiting the sale of tobacco products through direct or indirect promotion such as advertisements on billboards, at points of sale, and through the internet; and increasing

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[2] In adjusted constant 2023 Malaysian Ringgit using the Inflation Rate for Average Consumer Prices from the International Monetary Fund's World Economic

tobacco excise tax from 28 cents to 40 cents per cigarette stick and increasing the minimum price of 20 sticks of cigarettes and cigars to RM 12.00.

6. Policy implementation and recommendation

Strengthen law and enforcement on the control of tobacco and smoking products.

In December 2023, Malaysia passed the Control of Smoking Products for Public Health Act. This standalone act aims to curb tobacco smoking and e-cigarette use epidemic in Malaysia. Under this new act, all tobacco smoking and e-cigarette use control measures are likely to be strengthened in line with the WHO FCTC, including stricter regulations on tobacco products (smoking and smokeless tobacco products) and e-cigarettes, the expansion of no-smoking zones, and the use of new sets of pictorial health warnings based on tobacco products, and e-cigarettes. Additionally, more enforcement activities should be carried out, especially in the smokefree zones. To conduct these activities, more officers should be authorised by the Minister of Health to other ministries and agencies, including local authorities.

Community empowerment and multisectoral participation (Health in All Policies)

Although smoking tobacco is a public health issue, solving it should not be solely the responsibility of the Ministry of Health. All parties are encouraged to participate in the tobacco control measures through community-based programmes, such as the Malaysian Home without Smoking Environment (MyHOUSE) and smokefree workplaces. Communities can be empowered to advise adults who smoke or use e-cigarettes not to smoke or use these devices in public places. Children can be taught at home about the dangers of using tobacco or e-cigarettes to prevent the initiation of these products. Promoting and advocating programmes towards a tobacco-free generation can be conducted continuously through community and multisectoral collaboration. Health in All policies could be implemented to help Malaysia achieve a smoke- and e-cigarette-free country by 2040.

Empower the Malaysia Quit Smoking Services through smart collaboration with professional bodies, non-governmental organizations (NGOs), and private agencies.

Although the prevalence of tobacco use and tobacco smoking has decreased from 2011 to 2023, the increase in e-cigarette prevalence is a public health concern. Hence, all healthcare providers should advise adults who smoke tobacco or use e-cigarettes to quit using an effective intervention offered by the Ministry of Health. The Malaysia Quit Smoking Services should be promoted nationwide, targeting adults who smoke tobacco or use e-cigarettes. In addition, the ministry should increase smoking cessation service providers and engage NGOs and private agencies through training to encourage adults who smoke tobacco or use e-cigarettes to join www.jomquit.com, a mobile application that offers quit smoking services online. This app could increase access to smoking and e-cigarette cessation services, especially in rural and remote areas. At the same time, continuous monitoring, surveillance, and regular evaluation of tobacco products, and e-cigarette control interventions are critical to reducing the prevalence of tobacco products use, e-cigarette use, and related morbidity and mortality among adults in Malaysia.

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MPOWER Summary Indicators – GATS Malaysia, 2011 and 2023.

	2011			2023		
Indicator	Overall	Male	Female	Overall	Male	Female
M: Monitor tobacco use and prevention policies						
Current tobacco use[1]	24.0 (22.0, 26.1)	44.9 (41.5, 48.3)	1.7 (1.2, 2.3)	19.5 (17.5, 21.6)	36.2 (32.5, 40.1)	1.8 (1.0, 3.3)
Current tobacco smoking	23.1 (21.2, 25.2)	43.9 (40.6, 47.3)	1.0 (0.7, 1.6)	19.0 (17.1, 21.1)	35.7 (32.0, 39.5)	1.5 (0.8, 3.1)
Current cigarette smoking	22.9 (21.0, 25.0)	43.6 (40.3, 46.9)	1.0 (0.6, 1.6)	16.8 (15.1, 18.6)	31.9 (28.9, 35.1)	0.9 (0.4, 1.7)
Current manufactured cigarette smoking	20.1 (18.2, 22.0)	38.3 (35.1, 41.7)	0.7 (0.4, 1.2)	15.1 (13.4, 16.8)	28.6 (25.9, 31.6)	0.8 (0.4, 1.6)
Average number of cigarettes smoked per day[2]	13.9 (13.1, 14.7)	14.0 (13.2, 14.8)	-	13.1 (11.8, 14.3)	13.2 (11.9, 14.5)	-
Average age at daily smoking initiation[3]	17.2 (16.6, 17.8)	17.2 (16.6, 17.8)	-	18.2 (17.3, 19.2)	18.1 (17.1, 19.1)	-
Former smokers among ever daily smokers	9.5 (7.5, 11.9)	9.4 (7.5, 11.9)	10.0 (4.2, 22.4)	8.4 (6.1, 11.4)	8.6 (6.2, 11.7)	-
P: Protect people from tobacco smoke						
Exposure to secondhand smoke at home at least monthly	38.4 (35.9, 41.1)	43.3 (39.9, 46.8)	33.3 (30.2, 36.4)	19.4 (17.3, 21.7)	23.6 (20.1, 27.4)	15.0 (12.9, 17.5)
Exposure to secondhand smoke at home at least monthly among non-smokers	27.9 (25.5, 30.4)	19.5 (16.2, 23.2)	32.8 (29.8, 36.0)	12.1 (10.6, 13.8)	8.8 (7.0, 11.2)	14.3 (12.2, 16.8)
Exposure to secondhand smoke at work[§]	39.8 (35.9, 44.0)	46.2 (41.1, 51.5)	30.1 (24.7, 36.1)	21.0 (17.5, 25.1)	25.8 (20.6, 31.6)	15.1 (11.2, 19.9)
Exposure to secondhand smoke in public places:[4,§]						
Government building/offices	20.0 (16.4, 24.2)	20.1 (16.0, 25.0)	19.8 (14.7, 26.2)	29.2 (23.7, 35.4)	33.3 (25.2, 42.6)	24.2 (17.9, 31.8)
Health care facilities	8.7 (6.9, 10.8)	7.8 (5.4, 11.2)	9.4 (7.1, 12.4)	18.6 (15.2, 22.5)	19.6 (14.5, 26.1)	17.7 (13.7, 22.5)
Restaurants	71.0 (67.7, 74.0)	73.1 (69.2, 76.6)	68.4 (63.8, 72.8)	77.6 (74.3, 80.7)	76.7 (71.9, 81.0)	78.7 (73.6, 83.0)
Bars or nightclubs	n/a	n/a	n/a	67.9 (54.0, 79.1)	77.1 (61.9, 87.5)	51.0 (28.6, 73.0)
Public transportation	28.2 (23.3, 33.5)	32.1 (24.7, 40.6)	25.2 (19.5, 31.9)	19.0 (13.2, 26.5)	22.9 (14.7, 33.9)	15.6 (9.0, 25.6)
O: Offer help to quit tobacco use						
Made a quit attempt in the past 12 months[5]	48.6 (44.1, 53.2)	48.7 (44.0, 53.4)	45.7 (24.8, 68.3)	49.3 (43.4, 55.2)	49.5 (43.5, 55.4)	46.0 (17.4, 77.5)
Advised to quit smoking by a health care provider[5,6]	52.6 (43.8, 61.2)	52.2 (43.2, 61.0)	-	66.6 (54.1, 77.1)	66.8 (53.9, 77.5)	-
Attempted to quit smoking using a specific cessation method:[5]						
Pharmacotherapy	9.0 (5.7, 13.8)	9.2 (5.9, 14.1)	-	9.5 (4.8, 17.9)	9.9 (5.0, 18.5)	-
Counselling/advice	4.4 (2.8, 7.0)	4.4 (2.7, 6.9)	-	8.3 (5.5, 12.3)	8.6 (5.8, 12.8)	-
Interest in quitting smoking[7]	70.7 (66.3, 74.7)	70.4 (66.0, 74.5)	82.8 (61.3, 93.6)	59.7 (54.2, 64.9)	59.2 (53.7, 64.4)	77.9 (54.5, 91.2)
W: Warn about the dangers of tobacco						
Belief that smoking tobacco causes serious illness	92.2 (90.9, 93.4)	90.7 (88.5, 92.4)	93.9 (92.5, 95.1)	86.6 (84.4, 88.6)	84.5 (81.2, 87.4)	88.9 (86.2, 91.1)

Belief that smoking causes stroke, heart attack, <u>and</u> lung cancer	77.5 (75.3, 79.5)	75.2 (72.2, 77.9)	79.9 (77.3, 82.3)	78.8 (76.5, 81.1)	77.3 (73.7, 80.5)	80.5 (77.7, 83.0)
Belief that breathing other peoples' smoke causes serious illness	85.8 (84.3, 87.3)	84.1 (81.7, 86.2)	87.7 (85.8, 89.5)	85.9 (83.9, 87.7)	84.9 (82.3, 87.1)	87.0 (84.3, 89.3)
Noticed anti-cigarette smoking information at any location[§]	94.0 (92.7, 95.1)	93.5 (91.5, 95.1)	94.5 (92.9, 95.8)	77.1 (73.9, 79.9)	75.7 (72.1, 79.0)	78.4 (74.5, 81.9)
Thinking of quitting because of health warnings on cigarette packages[7,§]	45.8 (41.3, 50.4)	45.7 (41.2, 50.2)	51.7 (30.7, 72.1)	33.2 (28.0, 38.7)	32.9 (27.9, 38.3)	42.9 (19.3, 70.3)
E: Enforce bans on tobacco advertising, promotion, and sponsorship						
Noticed any cigarette advertisement, sponsorship, or promotion[§]	35.6 (32.9, 38.5)	39.0 (35.4, 42.7)	32.0 (28.7, 35.5)	18.3 (16.3, 20.5)	18.3 (15.7, 21.3)	18.2 (15.6, 21.2)
R: Raise taxes on tobacco						
Average cigarette expenditure per month (*Malaysian Ringgit*)[8,9]	233.98 (183.74, 284.22)	236.38 (185.30, 287.47)	-	177.73 (156.53, 198.93)	178.82 (157.75, 199.88)	-
Average cost of a pack of manufactured cigarettes (*Malaysian Ringgit*)[8,9]	13.19 (10.43, 15.95)	13.24 (10.45, 16.02)	-	10.82 (9.72, 11.92)	10.78 (9.68, 11.88)	-
Last cigarette purchase was from a store[8]	79.6 (75.4, 83.3)	79.5 (75.2, 83.2)	-	79.9 (74.6, 84.2)	79.3 (74.1, 83.7)	-

[1] Current tobacco use includes current tobacco smoking, smokeless tobacco use, and/or heated tobacco product use. Heated tobacco product use was included in the 2023 questionnaire but not in 2011.
[2] Among current daily cigarette smokers.
[3] Among respondents 20-34 years of age who are ever daily tobacco smokers.
[4] Among those who visited the place in the last 30 days.
[5] Among past-year tobacco smokers (includes current smokers and those who quit in the past 12 months).
[6] Among those who visited a health care provider in the past 12 months.
[7] Among current tobacco smokers.
[8] Among current smokers of manufactured cigarettes.
[9] GATS Malaysia 2011 cost data were adjusted for inflation for direct comparison to 2023 using the Inflation Rate for Average Consumer Prices from the International Monetary Fund's World Economic Outlook Database.
[§] In the last 30 days.
* $p < 0.05$
Results for prevalence estimates / averages and 95% CIs are rounded to the nearest tenth (0.1). The relative changes are calculated using un-rounded prevalence estimates and might be different if calculated using rounded prevalence estimates shown in this table.
- Indicates estimates based on less than 25 unweighted cases and has been suppressed.
n/a – data was not collected in 2011

(01) INTRODUCTION

1.0 INTRODUCTION

Tobacco usage continues to pose a substantial threat to global health, causing over 8 million deaths annually, with 7 million attributed to direct usage and 1.2 million to second hand smoke exposure (1). Approximately 27,000 people die from the health complications of tobacco use every year in Malaysia (2). Additionally in recent years, the increasing prevalence of electronic cigarettes among youth presents a significant issue that demands immediate attention (3).

There is a significant need for comprehensive research on tobacco use in Malaysia, as understanding of the prevalence, patterns, and associated health risks can help develop effective prevention and control strategies. This information can aid policymakers, healthcare professionals, and public health organizations in designing targeted interventions to reduce tobacco consumption and its detrimental effects on the population's health and well-being.

The Global Adult Tobacco Survey (GATS) is a worldwide surveillance system aimed at monitoring tobacco use and its related socio-economic, environmental, and health consequences, as well as key tobacco control indicators, among adults aged 15 years and above. By providing valuable data on tobacco consumption patterns, GATS assists governments and health organizations in developing effective tobacco control policies and strategies to reduce tobacco use and tobacco-related diseases and promote population health. The second round of GATS Malaysia was conducted in 2023. The GATS survey collected data on respondents' background, tobacco consumption, cessation, secondhand smoke exposure, economics, media influence, and attitudes and perceptions towards tobacco use. The report presents crucial findings from this significant survey in Malaysia.

1.1 Tobacco Control in Malaysia

1.1.1 Legislation

a. The Control of Tobacco Product Regulation (CTPR) 2004

Malaysia enforced the Control of Tobacco Product Regulation (CTPR) since 2004 under the Food Act 1983 [Act 281]. This regulation controls various tobacco products such as cigarettes, cigars, shisha (waterpipe), heated tobacco products (HTP), loose tobacco products, and snus. Electronic cigarettes (e-cigarettes), including vaping products, with or without nicotine, were not covered under this regulation.

The CTPR has undergone amendments many times since 2008, as below:

NO	YEAR	MAIN AMENDMENT
1.	2008	1. Introduction of six (6) sets of pictorial health warnings (PHW) on packets and cartons of cigarettes. 2. New regulation on "Emission standard for cigarette" where; • The maximum allowable level for nicotine shall be 1.5mg per cigarette; and • The maximum allowable level for tar shall be 20 mg per cigarette.
2.	2009	New regulations on "Declaration of retail selling price of tobacco product", "prohibition on selling tobacco product below retail selling price or by giving a price promotion", "minimum cigarette price", "prohibition on selling packets of cigarettes below minimum price", and "prohibition on selling cigarettes without price label".
3.	2010	Expansion of no-smoking areas to any air-conditioned place of work with a centralized air-conditioned system.
4.	2011	Amendment on Retail selling price of tobacco product due changes in excise duty and sales tax.
5.	2012	Deletion of no-smoking area which is in any building specified by the Minister.
6.	2013	1. Additional six (6) sets of pictorial health warning (PHW) on packet and carton of cigarette. 2. Minimum cigarette price where each packet of 20 sticks of cigarettes shall be RM7.00. 3. Cigarette to be sold in an unopened packet where the packet of cigarette shall ONLY contain 20 sticks of cigarette. 3. Expansion of no-smoking area *in any area which is used for any assembly activity in a building other than private or residential building"* and sub-regulation *"11(1A)"* to include surrounding area of building within the borders of the fence or land of any premises; area inside the building and includes the five-foot way within the border of permanent roof covered the building; and within three meters from the distance of the building line.
7.	2015	1. Amendment on definition of smoking which means inhaling and expelling the smoke or vapour of any tobacco product and includes the holding of or control over any ignited, heated or vaporized tobacco product 2. Increasing the minimum retail price of cigarettes to RM9.00 in 2015, and to RM10.00 in 2016.
8.	2017	Expansion of no-smoking area to any area of a public park except an open public car park; and in any observational tower, camp site, canopy bridge and five meters from the entrance or exit of the canopy bridge in the national park or state park.
9.	2018	Expansion of no-smoking areas to open eateries.
10.	2020	Increase the minimum retail price of cigarette and cigar to RM12.00.
11.	2021	Insertion on the requirement to submit a laboratory analysis report when submitting the application for retail selling price of tobacco products.

b. The Control of Smoking Product for Public Health Act 2024 [Act 852]

To overcome the loopholes, the Ministry of Health had been developing a new Act for more than a decade. The Control of Smoking Products for Public Health Act 2024 [Act 852] was finally gazetted on February 2nd 2024 following approval in the Dewan Rakyat on 30th November 2023 and in the Dewan Negara on 14th December 2023. The new Act contains two (2) main components which are:

a.   The regulation of smoking products which are :

i.   tobacco products such as conventional cigarette, cigar etc.,

ii.   smoking substance which is also referred to e-cigarette liquid or gel in Electronic Nicotine Delivery Systems (ENDS) and Electronic Non-Nicotine Delivery Systems (ENNDS), and

iii.   Substitute tobacco products., and

b.   The control of sale, purchase, or use of smoking products by minors which refer to anyone below the age of 18 years.

All smoking products including ENDS, ENNDS and HTP must undergo registration with the Ministry of Health (MOH) for approval prior to importing to or marketing within the country. There are also prohibition of advertisement, promotion, and sponsorship; control of sale; and prohibition of smoking and use of smoking products specifically by minors. The Act 852 with its Regulations and Order are set to be enforced in the middle of 2024.

1.1.2. Enforcement Activities

Law enforcement is crucial for effective tobacco control. The implementation of the CTPR 2004 and the Control of Smoking Products for Public Health Act 2024 [Act 852] is carried out by MOH officers posted at the State and District Health Offices in all 14 states in Malaysia and supported by auxiliary police officers.

These local enforcement activities are conducted routinely and continuously. In addition, thematic enforcement activities are being carried out monthly nationwide. MOH is planning to involve more enforcement officers from other Ministries, agencies, and local authorities through delegation of power to assist MOH in the enforcement activities.

1.1.3. Anti-tobacco Promotion

a.   National Strategic Plan for Tobacco Control

The National Strategic Plan for Tobacco Control 2015-2020 was the first strategic plan since Malaysia became a party to the World Health Organization Framework Convention on Tobacco Control (WHO FCTC). This plan was used as the basis for government and non-governmental organizations and other agencies in strengthening activities to control the usage of tobacco and other smoking products in Malaysia. It has been formally structured in line with the MPOWER strategy outlined by the WHO.

Progress has been made during the implementation phase of this Strategic Plan, including the development of screening and intervention programmes among youth smokers, gazettement of new non-smoking places, strengthening of smoking cessation services, and enhancement of the community empowerment programmes. In addition, a Steering Committee of WHO FCTC chaired by MOH has been set up. The members (updated June 2021) include eleven other governmental ministries and one non-governmental organization (NGO) to discuss issues pertaining to tobacco control.

The plan was continued in the second edition of the National Strategic Plan for the Control of Tobacco and Smoking Products 2021–2030 which aimed at strengthening tobacco control and smoking products. The plan, which began in 2021 and ending in 2030, aims to strengthen activities in order to achieve Malaysia's status as a smoke-free country. This strategy is structured in line with the three (3) major global goals as follows:

1)   NCD Global Target by 2025;

2) Strengthening the implementation of WHO Framework Convention on Tobacco Control (FCTC) under the Sustainable Development Goal (SDG); and

3) Global target for the endgame of tobacco.

b. Community Empowerment

Malaysians are encouraged to participate in voluntary programmes and smoke-free initiatives such as *Rumah Bebas Asap Rokok* (RBAR) organized by the *Komuniti Sihat Pembina Negara (KOSPEN)* as well as the Malaysia Home Without Smoking Environment (MyHOUSE) organized by NGOs. These programs aim to promote a no-smoking culture at home, thereby encouraging smokers to quit smoking. *KOSPEN* communities are also encouraged to conduct smoke-free events such as smoke-free weddings, public meetings and gatherings.

c. *Kesihatan Oral Tanpa Amalan Merokok (KOTAK) program*

i. The *Kesihatan Oral Tanpa Amalan Merokok* or also known as KOTAK programme is an initiative from the Oral Health Program, Ministry of Health Malaysia since 2015. KOTAK is an early smoking detection and intervention programme designed for all primary and secondary school children throughout the country. It is a strategic partnership between the Ministry of Health and the Ministry of Education (MOE) with the main objective of reducing smoking prevalence among school children.

ii. This programme screened almost all primary and secondary school students for their smoking status. Students who were identified as current smokers were required to attend three intervention sessions based on 5R Techniques (Ask, Advice, Assess, Assist and Arrange) during the dental health team visit.

d. Places where smoking is prohibited

Currently, there are 23 places where smoking is prohibited. The latest CTPR 2004 amendment in 2019 expands the smoke-free regulation to non-air-conditioned eateries. Under the new Act 852, MOH will expand the places where smoking is prohibited to include other public places such as self-service laundry to ensure protection for non-smokers in all public places.

e. Smoke-free city program

This program was conducted by local authorities in various states of Malaysia. Smoke free city project is a special initiative from the state government with their respective NGOs. This program was initiated in 2011 in Malacca and has been emulated in other cities in Malaysia. At present, there are 5 smoke-free cities, which are Melaka, Johor Bahru, Georgetown, Kota Bharu, and Kuala Terengganu. The National Strategic Plan for the Control of Tobacco and Smoking Product 2020-2030 has indicated that the Smoke Free City project is to be expanded to many more cities in Malaysia.

f. Dedicated Smoking rooms

Beginning 2018, the MOH has taken stern action to close dedicated smoking rooms in all domestic airports in Malaysia. Currently, there are eight (8) dedicated smoking rooms at the Kuala Lumpur International Airport (KLIA) Terminal 1, three (3) at KLIA Terminal 2, and two (2) at the Penang International Airport.

1.1.4 Smoking Cessation Services

The Quit Smoking service has been offered by the Ministry of Health Malaysia (MOH) at government hospitals and clinics since 2000. The service offers treatment and rehabilitation to help smokers quit, and advocacy for the public to remain a non-smoker. The MOH introduced the Malaysia Quit Smoking Services (mQuit) in 2015 and is now entering its 3rd phase. The services provided are based on the partnership between the public and private Sectors in offering smoking cessation treatment to the community. During phase 1, from 2015 to 2017, more private healthcare facilities such as hospitals, clinics, and pharmacies were encouraged to join as a service provider on top of the existing government hospitals and clinics. In phase 2 of mQuit, from 2017 to 2020, the quit smoking services were extended to workplaces. Currently, the mQuit is at phase 3, years 2020 to 2025, and evolving with today's technology offering quit smoking services through an uberization system aimed to increase the accessibility of the Quit Smoking Services (mQuit). Smokers can get their treatment and rehabilitation services via online access at www.jomquit.com, from the registration process to quit success, per Clinical Practice Guideline: Treatment of Tobacco Use Disorder 2016.

1.1.5 Taxation

The WHO FCTC highlights the effectiveness of price and tax measures in reducing tobacco consumption, especially among young people. However, Malaysia's excise tax for tobacco products has remained unchanged since 2015, with a recent shift in tax systems causing only a minor increase in retail prices from Good and Services Tax (GST) at 6% to Sales and Services Tax (SST) at 10%. The current taxation for the most popular cigarette brand in Malaysia stands at 46.5%, which might not be sufficient to significantly deter tobacco consumption and protect public health.

From January 1, 2021, the government introduced an excise duty for e-cigarette liquids and gels without nicotine at a rate of MYR0.40 per millilitre. Starting April 1, 2023, excise duty was extended to include e-cigarette products containing nicotine at the same duty rate.

Malaysia has introduced an increase of 5% in the price of chewing tobacco and tobacco snuff in the Budget 2024, raising the cost to RM 27.00 per kilogramme.

1.2 Burden of Tobacco Use in Malaysia

1.2.1 Smoking among Malaysian adults aged 15 years and above

The National Health Morbidity Survey (NHMS) 2019 shown that the prevalence of current tobacco smoking was 21.3% among adults aged 15 years and above in Malaysia (approximately 4.8 million people) and the prevalence was higher among males than females (male: 40.5%, female: 1.2%). There was a small decline from the 2015 NHMS where the prevalence of tobacco smoking was 22.8% overall, 43% among males, and 1.4% among females.

The prevalence of e-cigarette or vape product use was 3.2% among Malaysian adults aged 18 years and above in 2016. In 2019, the prevalence of e-cigarette or vape product user was 4.9% among those aged 15 years and above.

1.2.2 Smoking among youth aged 13 to 17 years

The Adolescent Health Survey (AHS) reported that the prevalence of smoking among adolescents between 13 to 17 years reduced from 15.9% in 2017 to 9.0% in 2022. The prevalence of smoking among boys dropped from 25.3% in 2017 to 14.5% in 2022, while the prevalence among girls dropped from 6.7% in 2017 to 3.6% in 2022. However, the prevalence of adolescents between 13 to 17 years who used e-cigarette or vape products increased from 9.8% in 2017 to 14.9% in 2022, as reported in the AHS.

1.2.3 Economic Impact of Smoking

The economic impact of tobacco use is substantial, affecting various sectors such as healthcare, productivity, and government revenues. Tobacco-related health issues lead to increased healthcare costs and lost productivity due to illness or premature death. The significant financial burden of treating smoking-related diseases in Malaysia, amounted to 0.7% of the GDP in 2004, 26.1 percent of the Ministry of Health Malaysia's total budget.

As for e-cigarette or vaping-use-associated lung injury (EVALI), a lung injury linked to electronic cigarettes, can lead to severe breathing issues, requiring hospitalization for treatment. The cost of treating a four-day hospitalized EVALI patient in Malaysia is approximately RM 50,297.37, as per a 2022 Regulatory Impact Assessment (RIA) study. The cost associated with a patient experiencing complications due to smoking is comparable to the financial burden of a conventional cigarette smoker from the health issues related to their smoking habit, which is estimated to be approximately RM 58,400.00.

Governments also face the burden of providing healthcare and social services for tobacco users. Tobacco taxes generate significant government revenues, ranging from RM 2.5 to 3.5 billion annually. However, the projected expenses for treating smoking-related complications by 2030 are substantially higher at RM 8.77 billion.

1.3 Survey Objectives

The primary objectives of GATS Malaysia were:

- To determine the prevalence of tobacco use among adults in Malaysia aged 15 years and above;
- To determine the prevalence of e-cigarette use among adults in Malaysia aged 15 years and above; and
- To determine the prevalence of exposure to tobacco smoke among adults in Malaysia aged 15 years and above

The secondary objectives were to measure the prevalence of cessation, risk perceptions, knowledge and attitudes, exposure to media, and economic issues around tobacco products and e-cigarettes.

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02 METHODOLOGY

2.0 METHODOLOGY

2.1 Target Population

The target population for GATS 2023 in Malaysia includes all men and women 15 years of age or older, who consider Malaysia to be their usual place of residence, as per the GATS protocol. A 'usual' member of a sampled household is any otherwise eligible resident who has no other residence or has multiple residences but has been living in the selected household for at least half of the time during the past 12 months. The sampling did not include visitors (e.g., tourists), institutionalized in hospitals, assisted living facilities/ nursing homes, military bases, group quarters or prisons.

2.2 Sampling Design

A multi-stage stratified sampling was adopted for GATS 2023 in Malaysia. The sampling design of the survey was made to generate nationally representative estimates, by gender and geographical (urban/rural) localities and to allow for comparison of the estimates between different countries conducting the survey. (see **Appendix B** for details).

According to the GATS sampling protocol, a sample size of at least 4000 respondents is required (2000 males and 2000 females, and 2000 from each urban and rural area). The GATS sample size was then adjusted for potential ineligibility and non-response in determining the number of households to be selected in order to get the required number of respondents. After the adjustment, the final sample size is 5780 respondents. Of this number, 3060 were from urban areas, while 2720 were from rural areas. There was no specific allocation of household samples by gender, and the probability was expected to be equal between genders as the population ratio between men and women is almost equal in Malaysia.

The sample weight calculation was done according to the standard procedures in the GATS Sample Design and Sample Weight manuals. It involved three steps: (1) base weight, calculated from the probability of selection of all steps in the sample design; (2) non-response adjustment for household and individual samples; (3) a post-stratification calibration for the population size age 15 and above by residence, gender, and age groups (see **Appendix B** for details).

2.3 Questionnaire

GATS Malaysia administered a household questionnaire and an individual questionnaire, both of which were based on the GATS Core Questionnaire with Optional Questions [GTSS 2020], which was designed for use in countries implementing GATS. The GATS Malaysia 2023 Questionnaire was finalized based on the results of a pretest conducted in March 2022. Informed consent was included separately. The added optional and additional country-specific questions are as shown in **Appendix A**.

Household questionnaire

The household questionnaire provided information on the household members who consider the selected household as their usual place of residence. It was used to randomly select an eligible household member (15 years of age and older) to complete the Individual Questionnaire. The respondent for this questionnaire was preferably the head of the household. However, any adult who had sufficient knowledge of all the members of the household was interviewed in the absence of the head of the household. The Household questionnaire included the basic information on age, gender, current smoking status and relationship with the head of household.

Individual Questionnaire

The individual questionnaire was administered to the randomly selected individual through tablets and consisted of 11 sections:

- *Background Characteristics*: Questions on gender, age, education, occupation, possession of household items, ethnicity, religion, and marital status.

- *Tobacco Smoking:* Questions covering patterns of use (daily consumption, less than daily consumption, not at all), former/past tobacco consumption, age of initiation, age of initiation of daily smoking, consumption of different tobacco products, (manufactured cigarettes, hand-rolled cigarettes, kreteks, pipes, cigars, shisha / hookah, bidis, and other smoked tobacco), nicotine dependence, quit attempts and visitation to a doctor or health care provider.

- *Electronic cigarettes:* Questions on pattern of use (daily consumption, less than daily consumption, not at all), age of initiation, reason for using, nicotine content, type of devices, brand and flavor, questions on electronic cigarettes or vaping devices purchased, quit attempts and comparisons between using electronic cigarettes and smoking ordinary cigarettes in term of satisfaction and price.

- *Heated Tobacco Products:* Questions on pattern of use (daily consumption, less than daily consumption, not at all), duration of using, reason for using, and brand.

- *Smokeless Tobacco:* Questions include patterns of use (daily consumption, less than daily consumption, not at all), former/past use of smokeless tobacco and consumption of different smokeless tobacco products (snuff, chewing tobacco, betel quid, etc.).

- *Cessation:* Questions related to quit attempt, advice to quit smoking by a health care provider and method used to try to stop smoking.

- *Secondhand Smoke:* Questions about rules of smoking in the home; exposure to secondhand smoke at home, indoor smoking policy at workplace, exposure in the last 30 days in public places (workplace, government buildings/offices, health care facilities, eateries or restaurants, bars / nightclubs, public transportation, universities, and schools), as well as knowledge about the harms of secondhand smoke. Questions assessing respondents' opinion on smoking bans in public places were also included.

- *Economics:* Questions covering the most recent purchase of manufactured cigarettes, including the quantity bought, cost, brand, and the source of purchase.

- *Media:* Questions on exposure to information on the danger of smoking, using e-cigarettes, and heated tobacco products through various media: newspapers/magazines, television, radio, billboards, internet, posters, cinemas, public walls, and others; reaction to health warning labels on cigarette packages; exposure

to advertisement and promotion. The reference period for the questions on media was 30 days.

- ***Knowledge, Attitudes and Perceptions:*** Questions regarding knowledge or believe about health effects of both smoking and smokeless tobacco; questions regarding restrictions of sales of tobacco products and anti-smoking actions.

2.4 Programming of Questionnaire and Preparation of Handheld Computers

GATS Malaysia 2023 used electronic data collection for both the household and individual questionnaires. The software used was the General Survey System (GSS) software, which CDC developed. GSS software includes various software tools developed to facilitate the design, administration, collection, and management of survey data on tablets. The software system is designed to support data collection in the field where interviewers collect data using tablets. The GATS Malaysia systems were developed and tested using Lenovo M8 tablets (Android 12) before being used for the data collection. As for the central system and data management, a single Microsoft Windows 10-based computer was used. Collecting data electronically facilitated the complex skip patterns used in the GATS Malaysia questionnaire as well as the use of some built-in validity checks during the process of data collection.

RTI International and WHO provided the technical support to the focal GATS Malaysia's information technology personnel in programming the questionnaire using GSS. Repeated quality control mechanisms were conducted in accordance to the GATS Programmer's Guide to General Survey System manual (September 2020).

The quality control process comprised several key steps, including verifying the versions of household and individual questionnaires, confirming dates and times, ensuring skip patterns were accurate, and conducting validation checks. Additionally, supplementary prompts were integrated into the system to mitigate errors as part of the data quality control measures. Prior to commencing the survey, the entire process, encompassing questionnaire administration, tablet-based data collection, and preparation of raw data for analysis through data management and aggregation, underwent pretesting.

The tablets programming was completed, and the finalized questionnaire for data collection was transferred to the tablets in April 2023. In May 2023, the electronic case file, utilized to pinpoint selected household addresses, was finalized and subsequently uploaded to the handheld devices for field staff training.

2.5 Data Collection

2.5.1 Implementing Agency for GATS Malaysia

The Institute for Public Health (IPH) was chosen as the implementing agency to carry out GATS Malaysia 2023. This was the second time GATS Malaysia was conducted, the first being in the year 2011. GATS Malaysia 2023 was done in collaboration with the Disease Control Division, Ministry of Health Malaysia. Technical assistance was provided by the U.S. Centers for Disease Control and Prevention (CDC), RTI International, and the World Health Organization (WHO). Program support was provided by the CDC Foundation. Funding was provided by the Ministry of Health of Malaysia and the Bloomberg Initiative to Reduce Tobacco Use through the CDC Foundation with a grant from Bloomberg Philanthropies.

2.5.2 Pretest

The GATS Malaysia pretest was successfully conducted between 21st to 27th March 2022 in Selangor, Malaysia. A 3-day training for field supervisors and field interviewers from 21st March to 23rd March 2022 was conducted, followed by fieldwork from 24th March to 26th March 2022. Prior to visiting the study site, team meetings were held to plan logistics and coordinate the implementation of data collection. We used two approaches for the fieldwork. On 24th March, the fieldwork was conducted using a random sampling selected from the pre-test mapping and listing. On March 25th and 26th, the field team went door to door in the two areas chosen for the pre-test to cover different age groups, gender, and tobacco users. A total of 120 interviews were targeted: 60 in the urban area and 60 interviews in the rural area. In each locality, 30 males and 30 females were targeted. A total of 109 household and 106 individual questionnaires were completed.

2.5.3 Training

To effectively train field interviewers that were hired for data collection, several manuals were used. These manuals were adapted from CDC and made to suit local requirements.

1. Field Interviewer's Manual

The field interviewer's manual provided instructions to interviewers regarding interviewing techniques, procedures in the field, methods of asking questions, and the use of handheld devices.

2. Field Supervisor's Manual

The field supervisor's manual, which was intended to help field supervisors in supervising the collection of data contained a detailed description of supervisors' roles and responsibilities as well as information on data aggregation and transfer procedures.

3. Question-by-Question Specification

A third manual provided question-specific instructions to the field interviewers for administering the GATS household and individual questionnaires using the handheld devices. This manual also provided information on range checks, response options, purpose, and instructions for each survey question.

4. Picture Book

The picture book offered visual representations of various tobacco products, both smoking and smokeless varieties, as well as methods for quitting smoking, and pictorial health warnings. The content of the book was tailored to reflect the assortment of local tobacco products available in our region.

2.5.4 Fieldwork

Field interviewer training took place from June 7th to June 14th, 2023, at the Lexis Hotel in Port Dickson. On the second last day of the training, a launch event was held for GATS Malaysia 2023, officiated by YB. Dr. Zaliha Mustafa, the Minister of Health Malaysia, on June 11th, 2023. Representatives from WHO Malaysia and the CDC were also in attendance. Throughout the workshop, field interviewers received coaching on effective interviewing techniques and familiarized themselves with the GATS questionnaire. Throughout the workshop, field interviewers received coaching on effective interviewing techniques and familiarised themselves with the GATS questionnaire. A demonstration of various tobacco

products available in Malaysia was conducted to enhance the interviewers' understanding. Subsequently, data collection activities were conducted from June to July 2023, encompassing all states in Malaysia. All field interviewers and field supervisors who had participated in the training workshop were posted throughout the country as stated in **Appendix D.**

The field interviewers were tasked with gathering survey data using tablets and transmitting it to a secure File Transfer Protocol (FTP) server whenever an internet connection was available. Oversight of the field team's operations and adherence to the data collection schedule fell under the responsibility of the field supervisors. Technical support during fieldwork and resolution of tablet-related issues were managed by the central IT and data management team at the Institute for Public Health. Daily aggregation and biweekly analysis of field-level data were conducted to detect data collection errors, skip pattern issues, and ensure consistency.

2.6 Statistical Analysis

A complex survey analysis was used to obtain the prevalence, and population estimates with a 95% confidence interval. Prior to the analysis, sample weights were calculated to improve the representativeness of the sample to the main characteristics of the population. The analysis was carried out using SAS and SPSS version 28 software.

03 SAMPLE AND POPULATION CHARACTERISTICS

3.0 Sample and Population Characteristics

This chapter presents the characteristics of the selected sample and population. The population estimates were based on the latest data from the Department of Statistics Malaysia.

3.1 Household and Person-Level Response Rate

Table 3.1 presents the number of households and persons interviewed and the response rate by type of residence. Of the 5,780 sampled households, 4,390 completed household screening, and the calculated total Household Response Rate (HRR) was 83.8% (see footnotes to Table 3.1 for methods of calculating response rates). In urban areas, 2,062 of 3,060 sampled households (calculated HRR: 74.8%) completed the household screening. In rural areas, the response rate was higher: 2,328 of 2,720 sampled households completed the household screening, and the calculated HRR was 93.7%.

A total of 4,390 persons completed the household screening, and 4,269 persons completed the interview (the calculated Person-level Response Rate (PRR) was 97.3%). From 2,062 persons who completed household screening in urban areas, 1,990 persons completed the interviews (calculated PRR of 96.6%). Similarly, the response rate was higher in rural areas, where 2,279 persons completed the individual questionnaire after 2,328 persons had completed the household screening (PRR of 97.9%).

The Total Response Rate (TRR) was computed as the product of the HRR and the PRR. The TRR was 81.5%; 72.2% and 91.8% for urban and rural areas, respectively.

3.2 Sample and Population Characteristics

Table 3.2 presents the unweighted sample, and the weighted population estimates by selected demographic characteristics among adults aged 15 years and above. The total unweighted sample was 4,269. Based on the population census in 2020, the weighted number of adults aged 15 years or above was 25.1 million. Overall, 2,135 men and 2,134 women completed the survey, but the weighted proportions by gender were 51.3% male (12.9 million) and 48.7% female (12.3 million). The number of unweighted samples by type of residence was 1,990 for urban areas and 2,279 for rural areas, but the weighted population was much higher in urban areas (19.5 million) than in rural areas (5.6 million). The number of unweighted samples was 577 for ages 15 to 24 years, 1,699 for 25 to 44 years, 1,328 for 45 to 64 years, and 665 for ages 65 years and above, but the weighted percentages for these age groups were 23.3%, 42.7%, 24.4%, and 9.6%, respectively.

Table 3.1: Number and percentage of households and persons interviewed and response rates, by residence (unweighted) – GATS Malaysia, 2023.

	Residence				Total	
	Urban		Rural			
	Number	Percent	Number	Percent	Number	Percent
SELECTED HOUSEHOLD						
Completed (HC)	2062	67.4	2328	85.6	4390	76.0
Completed – No one eligible (HCNE)	2	0.1	0	0.0	2	0.0
Incomplete (HINC)	2	0.1	0	0.0	2	0.0
No screening respondent (HNS)	2	0.1	3	0.1	5	0.1
Nobody home (HNH)	309	10.1	81	3.0	390	6.7
Refused (HR)	369	12.1	63	2.3	432	7.5
Unoccupied (HUO)	279	9.1	210	7.7	489	8.5
Address not a dwelling (HAND)	22	0.7	26	1.0	48	0.8
Other[1] (HO)	13	0.4	9	0.3	22	0.4
Total Households Selected	3060	100.0	2720	100.0	5780	100.0
Household Response Rate (HRR) (%)[2]	74.8%		93.7%		83.8%	
SELECTED PERSON						
Completed (PC)	1990	96.5	2279	97.9	4269	97.2
Incomplete (PINC)	7	0.3	1	0.0	8	0.2
Not eligible (PNE)	2	0.1	1	0.0	3	0.1
Not at home (PNH)	6	0.3	6	0.3	12	0.3
Refused (PR)	41	2.0	7	0.3	48	1.1
Incapacitated (PI)	16	0.8	34	1.5	50	1.1
Other[1] (PO)	0	0.0	0	0.0	0	0.0
Total Number of Sampled Persons	2062	100.0	2328	100.0	4390	100.0
Person-level Response Rate (PRR) (%)[3]	96.6%		97.9%		97.3%	
Total Response Rate (TRR) (%)[4]	72.2%		91.8%		81.5%	

[1] Other includes any other result not listed.

[2] The Household Response Rate (HRR) is calculated as: (HC * 100) / HC + HINC + HNS + HNH + HR + HO

[3] The Person-level Response Rate (PRR) is calculated as: (PC * 100) / PC + PINC + PNH + PR+ PI + PO

[4] The Total Response Rate (TRR) is calculated as: (HRR x PRR) / 100

Notes:

An incomplete household interview (i.e., roster could not be finished) was considered a nonrespondent to the GATS. Thus, these cases (HINC) were not included in the numerator of the household response rate.

The Total Number of Sampled Persons should be equal to the number of Completed [HC] household interviews.

A completed person interview [PC] includes respondents who had completed at least question E01 and who provided valid answers to questions B01/B02/B03. Respondents who did not meet these criteria were considered as incomplete (PINC) nonrespondents to GATS and thus, were not included in the numerator of the person-level response rate.

Table 3.2: Distribution of adults ≥ 15 years old by selected demographic characteristics – GATS Malaysia, 2023.

Demographic Characteristics	Weighted			Unweighted Number of Adults
	Percentage (95% CI[1])		Number of Adults (in thousands)	
Overall	100.0		25,142.4	4,269
Gender				
Male	51.3	(48.9, 53.6)	12,890.0	2,135
Female	48.7	(46.4, 51.1)	12,252.4	2,134
Age (years)				
15-24	23.3	(21.0, 25.8)	5,862.1	577
25-44	42.7	(40.1, 45.3)	10,730.8	1,699
45-64	24.4	(22.5, 26.5)	6,145.7	1,328
65+	9.6	(8.2, 11.1)	2,403.8	665
Residence				
Urban	77.7	(75.3, 80.0)	19,538.0	1,990
Rural	22.3	(20.0, 24.7)	5,604.4	2,279
Education Level [2,3]				
Less than primary	6.2	(5.1, 7.5)	1,178.5	371
Primary	20.8	(18.8, 23.1)	3,965.5	992
Secondary/High School	43.8	(40.9, 46.8)	8,341.4	1,566
College or above	29.2	(25.8, 32.7)	5,552.1	735
Ethnicity				
Malay	56.7	(52.1, 61.3)	14,258.7	2,506
Chinese	21.0	(17.1, 25.6)	5,284.2	602
Indian	8.1	(6.2, 10.5)	2,042.0	170
Others	14.1	(12.2, 16.2)	3,541.1	988

Note: The following observations were missing: 0 for age, 0 for gender, 0 for residence, and 33 for education

[1] 95 % Confidence Interval

[2] Primary or less includes "No formal schooling", and "Less than primary school completed"; Primary includes "Primary school completed" and "Less than secondary school completed"; Secondary/High include "Secondary school completed, and "Form 6/Certificate completed"; College or above includes "College/University completed" and "Post graduate degree completed".

[3] Education level is reported only among persons aged ≥ 25 years.

04 TOBACCO USE

KEY FINDINGS

- Overall, 19.0% of adults (4.8 million) currently smoked tobacco; 35.7% of men and 1.5% of women.
- Overall, 16.8% of adults (4.2 million) currently smoked cigarettes (manufactured, hand-rolled cigarettes and kreteks); 31.9% of men and 0.9% of women. Overall, 14.6% of adults (3.7 million) currently smoked tobacco on a daily basis; 27.2% of men, 1.4% of women.
- Daily cigarette smokers smoked an average of 13.1 cigarettes per day.
- Among those who had ever smoked on a daily basis, 8.4% stopped smoking daily.
- The average age of smoking initiation was 17.0 years old while the average age of daily smoking initiation was 18.2 years old.
- Almost one thirds of all current daily smokers had their first smoke of the day within 30 minutes of waking up.

4.0 Tobacco Use

National estimates of the general population's tobacco usage are crucial for tracking the tobacco epidemic in a nation and for providing fact-based, practical analysis required to create policies for the successful execution of an all-encompassing tobacco control program.

In Malaysia, smoking tobacco is very common. Tobacco products are used by smokers in a variety of ways, such as manufactured cigarettes, hand-rolled cigarettes, kreteks, pipes filled with tobacco, cu rut, cigars or cigarillos, and shisha/hookah. There is minimal use of smokeless tobacco among adults. Smokeless tobacco is used by either chewing or applying it to the teeth and gums or by sniffing it.

The prevalence of smoking and smokeless tobacco use in Malaysia is discussed in this chapter. Along with describing smoking behaviors, this chapter also discusses the following aspects of adult smoking behavior: 1) tobacco use status; 2) use of various tobacco products; and 3) demographic and behavioral patterns of smoking, such as average age and distribution of daily smoking initiation age, number of cigarettes smoked daily, percentage of quitting tobacco use, and indicators of tobacco.

4.1 Tobacco Smoking

Table 4.1 presents percentage distribution of adults in Malaysia by tobacco use status, current tobacco smokers and non-smokers. Current tobacco smokers included current daily and current occasional (less than daily) smokers, with occasional smokers subclassified as former daily smokers and never daily smokers. Non-smokers were divided into former daily and never daily tobacco smokers, with the latter subdivided into former occasional smokers and never smokers.

A total of 19.0% of adults in Malaysia smoked tobacco in some form: manufactured cigarettes (not including kreteks), hand-rolled cigarettes, kreteks, tobacco-filled pipes, curut, cigars or cigarillos, shisha/hookah and bidis. Most current smokers (14.6% of adults in Malaysia) smoked tobacco daily and 4.4% smoked tobacco occasionally. The prevalence of men who currently smoked tobacco was 35.7%, while for women it was 1.5%.

The prevalence of non-smokers among adults in Malaysia was 81.0%, where 1.6% were former daily smokers (3.1% of men and 0.1% of women) and 1.3% were former occasional smokers (2.4% of men and 0.2% of women). The prevalence of those who never smoked tobacco was 78.0%; 58.8% of men and 98.2% of women.

4.2 Smokeless Tobacco

Table 4.2 presents the percentage of adults aged 15 years or older who currently used smokeless tobacco. The use of such products was very low, just 0.9% overall, 1.1% of men, and 0.7% of women. The majority of smokeless tobacco users were daily users (0.6% of adults in Malaysia).

4.3 The Prevalence of Various Smoked Tobacco Products

Table 4.3 presents the prevalence of different types of smoked tobacco products by gender and selected demographic characteristics. These products consisted of cigarettes (manufactured, hand-rolled, and kreteks) and other smoked tobacco products (including pipes, curut, cigars or cigarillos, shisha/hookah, and bidis. The corresponding population estimates can be found in **Table 4.4**, which presents the number of current smokers aged 15 years or above by the same characteristics.

Overall, 19.0% of adults in Malaysia currently smoked any tobacco product. Among these adults, 16.8% reported smoking any type of cigarette; 15.1% smoked manufactured cigarettes, 2.3% smoked hand-rolled cigarettes, and 1.6% smoked kreteks. Among men, 35.7% smoked any tobacco product, with 31.9% smoked any type of cigarette (28.6% smoked manufactured cigarettes, 4.4% smoked hand-rolled cigarettes, and 3.0% smoked kreteks), 1.5% smoked waterpipes and 1.6% smoked other tobacco products. Among women, 1.5% smoked any tobacco product and among these adults 0.9% smoked any type of cigarette (0.8% smoked manufactured cigarettes; 0.1% smoked hand-rolled cigarettes and kreteks respectively) and 0.1 % smoked waterpipes and other tobacco products, respectively.

By age, overall, the 25-44 age group had the highest percentage of smokers of any smoked tobacco product (24.9%) and any type of cigarette (22.0%). This age group also had the highest percentage of smoking manufactured cigarettes (19.7%). Among men who smoked any tobacco product, the highest percentage was also found in the 25-44 age group (45.4%). Similarly, this age group also had the highest percentage of smoking any type of cigarette (41.2%). The next highest percentage of male tobacco smokers were those aged 45-64 years, where 36.0% smoked tobacco. Among women who smoked any tobacco product, those aged 25-44 years had the highest prevalence (2.6%) while those who smoked any type of cigarette and manufactured cigarettes were1.2%, respectively.

Overall, the percentage of adults who smoked tobacco products was higher in rural areas (21.7%) compared to urban areas (18.3%). Those who smoked any type of cigarette was also higher in rural areas (20.6%) with 18.5% smoking manufactured cigarettes, 4.0% smoking hand-rolled cigarettes and 1.5% smoking kreteks. In contrast, in urban areas, 15.7% smoked any type of cigarette with 14.1% smoking manufactured cigarettes, and 1.8% smoking hand-rolled cigarettes and 1.6% smoking kreteks. By education level, overall, the highest prevalence of smoking any smoked tobacco product was among those with primary education (25.8%). By ethnicity, adults who were categorised as 'others' had the highest percentage of smoking (28.0%).

4.4 Number of users of Various Smoked Tobacco Products

Table 4.4 presents the number of adults who are current smokers of various tobacco products by gender and selected demographic characteristics. There were 4.8 million current tobacco smokers in Malaysia, 4.6 million men and 188,000 women. Most current smokers smoked manufactured cigarettes (3.8 million). A total of 220,000 current smokers used other forms of smoked tobacco, which included pipes, curut, cigars or cigarillos, shisha/hookah, and bidis.

Overall, the 25-44 age group had the highest number of current smokers in all categories with estimates of 2.7 million for any smoked tobacco product, 2.1 million for manufactured cigarettes, 293,000 for hand-rolled cigarettes, and 213,000 for kreteks except for waterpipes where the highest number (98,000) was among the 15-24 age group. A similar pattern was observed among male smokers.

By residence, the overall number of smokers was almost three times higher in urban areas compared to rural areas, for any smoked tobacco product (3.6 million vs. 1.2 million), for any cigarette (3.1 million vs. 1.2 million), and for manufactured cigarettes (2.7 million vs. 1.0 million).

In terms of education, the highest numbers of users of any type of smoked tobacco product, any cigarette, manufactured cigarettes, and kreteks were found among those with a secondary/high school education.

By ethnicity, the highest numbers for any type of smoked tobacco product was found among Malay (2.8 million), followed by 992,000 for other ethnicities, 607,000 for Chinese, and 372,000 for Indian.

4.5 Frequency of Smoking

Table 4.5 presents the percentage distribution of adult population by tobacco smoking frequencies, gender and selected demographic characteristics. Among adults in Malaysia, 14.6% (27.2% of men and 1.4% of women) were daily smokers, 4.4% (8.4% of men and 0.1% of women) were occasional smokers, and the remaining 81.0% (64.3% of men and 98.5% of women) were non-smokers.

The prevalence of daily smoking among men was higher in the 25-44 and 45-64 age groups, at 36.1% and 29.8%, respectively, compared to 13.5% in the 15–24 age group and 13.9% in those aged 65 and above. Among women, the prevalence of daily smoking exceeded 1.0% only in the 25-44 age group (2.5%) and 45-64 age group (1.2%).

The percentage of daily smoking was 17.1% in rural areas and 13.9% in urban areas. The percentage of non-smoking was 81.7% in urban areas and 78.3% in rural areas.

By education level, the prevalence of daily smoking with primary education was 20.8%, and those with secondary/high school education was 20.2%. A similar pattern was also observed among men who smoked daily. However, among the females, the prevalence was higher among those with a 'college or above' education level.

Among the three main ethnic groups in Malaysia, 15.5% of Malays, 12.2% of Indians, and 8.4% of Chinese reported daily smoking. Among those who smoked occasionally, the prevalence was 6.0% for Indian; 4.2% for Malay; and 3.1 % for Chinese ethnicities. The proportions of non-smokers were 88.5% among Chinese; 81.8% among Indian; and 80.3% among Malay ethnicities.

4.6 Number of Manufactured Cigarettes Smoked per Day

The daily frequency of cigarette smoking is an indicator of the degree of dependence on nicotine. **Table 4.6** presents the average number and percentage distribution of cigarettes smoked per day among daily cigarette smokers. A typical daily cigarette smoker in Malaysia smoked about 13 cigarettes per day. About 12.4% of daily cigarette smokers smoked fewer than 5 cigarettes a day, 21.6% smoked 5-9 cigarettes, 28.0% smoked 10-14 cigarettes, 33.5% smoked 15-24 cigarettes, and 4.4% smoked 25 or more cigarettes per day. By residence, the average number of cigarettes smoked per day was 13.1 in urban areas and 12.9 in rural areas.

Variations in the average number of cigarettes smoked daily were observed across different age groups. For instance, the 65 years and above age group smoked, on average, 17.9 cigarettes per day, while the 25-44 age group smoked fewer cigarettes on average, at 12.9 per day.

By education levels, those with lower education levels (less than primary and primary education), on average, smoked a higher number of cigarettes per day compared to those with secondary/high school education or, college or above education levels.

By ethnicity, the averages for daily smokers were closely clustered: 14.2 cigarettes per day among Chinese, 13.0 cigarettes per day among Malay, and 13.4 cigarettes per day among Indian ethnicities.

4.7 Average Age of Ever Tobacco Smoking and Distribution of Age of Initiation

Table 4.7 presents the average age and percentage distribution of ever tobacco smokers aged 20−34 years by age at smoking initiation, gender and residence. Overall, the mean age of smoking initiation was 17.0 years. Among the individuals studied, 16.6% started smoking before the age of 15, 43.4% at age 15–17, 22.4% at age 18−19, and 17.6% 20 years or older. More than half (60.0%) of ever tobacco smokers started smoking before the age of 18.

For men, the mean age at initiation was 16.9 years. By residence, there was no difference in the average age of smoking initiation between urban and rural residences; in both groups the average age of initiation was 17.0 years.

4.8 Average Age of Initiation of Daily Smoking and Distribution of Age of Initiation

Table 4.8 presents the age at daily smoking initiation of ever daily tobacco smokers aged 20-34 years by gender and residence. Overall, the average age of daily smoking initiation was 18.2 years. Most ever daily smokers initiated daily smoking at 15-17 years (37.1%). Almost half (46.4%) of ever daily smokers started smoking tobacco daily before the age of 18.

For men, the mean age of daily smoking initiation was 18.1 years. The average age of daily smoking initiation was similar among those who lived in urban (18.2 years) and rural (18.5 years) residences. Almost half (49.9%) of ever daily smokers in urban areas started smoking on a daily basis before the age of 18, compared with 33.9% of those in rural areas.

4.9 Prevalence of Former Daily Smoking and the Quit Ratio

Table 4.9 presents the prevalence of former daily smokers among all adults aged 15 years or older and the quit ratios, which reflect the success rate of former daily smokers in quitting tobacco smoking, based on selected demographic characteristics. In Malaysia, 1.6% of adults formerly smoked tobacco daily.

Given that most of the population in Malaysia do not smoke, the quit ratio – the percentage of former daily smokers among ever daily smokers — is a more relevant metric for understanding the extent of success in quitting. Among adults in Malaysia, the quit ratio was 8.4% (ever daily smokers who had completely stopped smoking).

The prevalence of former daily smokers increased with age, from 0.7% in the 15−24 age group to 4.3% among those aged 65 years and above. The youngest and oldest groups also had the lowest and highest quit ratios: 6.2% and 35.8%, respectively.

By residence, the prevalence of former daily smokers was 1.5% in rural areas and 1.7% in urban areas and the quit ratio was 7.3% in rural areas and 8.8% in urban areas.

The prevalence of former daily smokers was higher among those with lower education levels, at 3.4% among those with less than primary education and 4.5% among those with primary education compared to 0.8% among those with a college education or more.

By ethnicity, the prevalence of former daily smokers was highest among those categorized as 'Others'. The highest quit ratio was among the Chinese at 10.4%.

4.10 Time Since Quitting Smoking

An essential factor in quitting smoking is how long individuals can maintain their abstinence, as the risk of relapse remains a possibility over time.

Table 4.10 shows the percentage distribution of former daily smokers (current non-smokers) by duration (in years) since they quit. Almost half (48.8%) of former daily smokers had abstained from smoking for 10 years or more, 23.3% had quit for 5 to less than 10 years, 17.1% had stopped for 1 to less than 5 years, and 10.8% had quit for less than 1 year.

4.11 Prevalence of Current Tobacco Users by Type of Use

Table 4.11 presents the prevalence of current tobacco users by tobacco use pattern by sociodemographic characteristics. The overall prevalence of current tobacco use (including daily and occasional tobacco smokers and all smokeless tobacco users) was 19.5%, of whom 94.9% used smoked tobacco only; 0.9% used smokeless tobacco only; and 0.0% used heated tobacco products only, 3.8% used both smoked and smokeless tobacco, and 0.4% used both smoked tobacco and heated tobacco products. In all the sociodemographic subgroups examined, except for gender, over 85.0% of current tobacco users preferred smoked tobacco products (including cigarettes, curut, cigars or cigarillos, pipes, and shisha/hookah) and bidis over smokeless tobacco or a combination of both smoked and smokeless products.

By gender, the proportion of current tobacco users among men (36.2%) was 20 times that among women (1.8%). An almost negligible proportion of male tobacco users (0.3%) used smokeless tobacco only, but 13.1% of female tobacco users did.

In terms of age, the 25−44 (25.3%) and 45–64 (19.2%) age groups had higher percentages of tobacco use than those aged ≥65 years or 15–24 years. The prevalence of current tobacco use was slightly higher in rural (22.5%) than in urban areas (18.6%). Starting at the primary level, the prevalence of current tobacco use decreased with greater education, dropping from 26.1% for those with a primary education to 14.9% among those with a college education or more.

By ethnicity, the prevalence of current tobacco use was highest in the "other" group (29.1%). The prevalences of tobacco use for the three main ethnicities were 20.0% for the Malays, 11.6% for the Chinese, and 18.6% for the Indians.

4.12 Time to First Smoke After Awakening

Because the nicotine contained in tobacco products is highly addictive, the use of tobacco within a short time after awakening is an indirect indicator of nicotine dependence. **Table 4.12** presents the distribution of daily tobacco users by the amount of time between waking up and having the first smoke of the day. Almost one-third (29.2%) of daily smokers aged ≥15 years smoked within 30 minutes after waking up (8.3% of daily smokers smoked in the first 5 minutes and 20.9% of daily smokers smoked 6−30 minutes after awakening). Almost one-quarter (23.8%) started to smoke 31 to 60 minutes after waking up, and 47.0% first smoked more than 1 hour after awakening.

Table 4.13 shows the awareness and use of heated tobacco products among adults. About 8.1% of adults ever heard of heated tobacco products where males recorded 9.3% awareness compared with 7.0% of females. Awareness of heated tobacco products increased as education levels increased from less than primary to college or above levels with a range from 1.7-12.8%. Current heated tobacco users recorded a 0.1% prevalence.

4.13 Tobacco use: GATS 2011 compared to GATS 2023

Malaysia first implemented the Global Adult Tobacco Survey (GATS) in 2011, and it was repeated in 2023. The following were the relative changes computed from the two survey rounds.

- Tobacco use prevalence significantly decreased among adults from 24.0% in 2011 to 19.5% in 2023 (from 44.9% to 36.2% among males; . This represents a 18.9% relative decline of the tobacco use prevalence (19.4% decline for males) **(Table 4.14).**

- Current cigarette smoking prevalence significantly decreased among adults from 22.9% in 2011 to 16.8% in 2023. This represents a 26.8% relative decline of current cigarette smoking prevalence (26.8% decline for males; **(Table 4.15)**.

- Current use of smokeless tobacco increased among adults from 0.7% in 2011 to 0.9% in 2023. This represents a 18.1% non-significant relative increase of current use of smokeless tobacco (17.8% increase for males, 18.7% increase for females) **(Table 4.14)**.

- Average age at daily smoking initiation among ever daily smokers 20-34 years old did not significantly change from 17.2 years in 2011 to 18.2 years in 2023. This represents a 5.9% relative increase in the age of daily smoking initiation (5.3% increase for males)**(Table 4.16)**.

- Prevalence of former smokers among ever daily smokers decreased but not significantly among adults from 9.5% in 2011 to 8.4% in 2023. This represents a 11.0% relative decline of former daily smoker prevalence (9.04% decline for males) **(Table 4.17)**.

Overall, there was a significant decrease in the prevalence of current cigarette smokers from 2011 (22.9%) to 2023 (16.8%). Prevalence of male cigarette smokers was 43.6% in 2011 to 31.9% in 2023. The decline in prevalence was also significant across all age groups except

those in age group 15 - 24 years. The highest reduction in prevalence was reported for current cigarette smokers aged 65 and older (44.2%).

A significant decline in prevalence was also reported across the educational level with relative change among those with primary education (21.6%); secondary education (21.8%) and 36.8% for those with a higher level of education. The relative percentage of current cigarette smokers did not significantly change among those with educational level less than primary education (31.8%).

In both surveys, the percentage of current cigarette smokers was higher in rural areas than in urban areas, however the decline was significantly higher in urban areas (30.1%) than in rural areas (14.6%).

Among the different types of cigarettes, all three types reported significant decline in prevalence of use: with highest relative change for kretek (64.6%), followed by hand-rolled cigarettes (42.4%) and manufactured cigarettes (24.9%). **(Table 4.15)**

Table 4.1: Percentage and number of adults ≥15 years old, by detailed tobacco smoking status and gender – GATS Malaysia, 2023.

Smoking Status	Overall		Male		Female	
	Percentage (95% CI)	Number in thousands	Percentage (95% CI)	Number in thousands	Percentage (95% CI)	Number in thousands
Current tobacco smoker	19.0 (17.1, 21.1)	4,786.4	35.7 (32.0, 39.5)	4,598.4	1.5 (0.8, 3.1)	188.1
Daily smoker	14.6 (13.1, 16.4)	3,680.2	27.2 (24.0, 30.8)	3,510.4	1.4 (0.6, 3.0)	169.7
Occasional smoker	4.4 (3.4, 5.7)	1,106.2	8.4 (6.5, 10.9)	1,087.9	0.1 (0.0, 0.5)	18.3
Occasional smoker, formerly daily	3.2 (2.2, 4.6)	804.8	6.2 (4.4, 8.8)	803.5	0.0 (0.0, 0.1)	1.3
Occasional smoker, never daily	1.2 (0.9, 1.6)	301.5	2.2 (1.6, 3.0)	284.5	0.1 (0.0, 0.5)	17.0
Non-smoker	81.0 (78.9, 82.9)	20,356.0	64.3 (60.5, 68.0)	8,291.6	98.5 (96.9, 99.2)	12,064.3
Former daily smoker	1.6 (1.2, 2.2)	412.4	3.1 (2.3, 4.3)	405.6	0.1 (0.0, 0.2)	6.8
Never daily smoker	79.3 (77.2, 81.3)	19,943.5	61.2 (57.2, 65.0)	7,886.0	98.4 (96.9, 99.2)	12,057.5
Former occasional smoker	1.3 (0.9, 1.9)	334.2	2.4 (1.7, 3.5)	310.4	0.2 (0.1, 0.5)	23.8
Never smoker	78.0 (75.8, 80.0)	19,609.3	58.8 (54.8, 62.6)	7,575.6	98.2 (96.7, 99.0)	12,033.7

Note: Current tobacco smoking includes both daily and occasional (less than daily) smoking.

Table 4.2: Percentage and number of adults ≥15 years old, by detailed smokeless tobacco use status and gender – GATS Malaysia, 2023.

Smokeless Tobacco Use Status	Overall		Male		Female	
	Percentage (95% CI)	Number in thousands	Percentage (95% CI)	Number in thousands	Percentage (95% CI)	Number in thousands
Current smokeless tobacco user	0.9 (0.5, 1.7)	216.9	1.1 (0.5, 2.2)	133.0	0.7 (0.2, 2.6)	83.9
Daily user	0.6 (0.2, 1.5)	149.1	0.6 (0.2, 1.8)	71.0	0.6 (0.2, 2.7)	78.0
Occasional user	0.3 (0.1, 0.5)	67.8	0.5 (0.2, 1.0)	61.9	0.0 (0.0, 0.1)	5.8
Occasional user, formerly daily	0.1 (0.0, 0.2)	17.0	0.1 (0.0, 0.4)	12.6	0.0 (0.0, 0.1)	4.5
Occasional user, never daily	0.2 (0.1, 0.5)	50.7	0.4 (0.2, 0.9)	49.4	0.0 (0.0, 0.1)	1.4
Non-user of smokeless tobacco	99.1 (98.3, 99.5)	24,418.6	98.9 (97.8, 99.5)	12,446.6	99.3 (97.4, 99.8)	11,972.0
Former daily user	0.1 (0.0, 0.2)	15.3	0.1 (0.0, 0.4)	15.3	0.0 N/A	0.0
Never daily user	99.1 (98.3, 99.5)	24,403.3	98.8 (97.7, 99.4)	12,431.3	99.3 (97.4, 99.8)	11,972.0
Former occasional user	0.2 (0.1, 0.5)	58.0	0.5 (0.2, 1.0)	57.4	0.0 (0.0, 0.0)	0.6
Never user	98.8 (98.0, 99.3)	24,345.2	98.4 (97.2, 99.0)	12,373.9	99.3 (97.4, 99.8)	11,971.3

Note: Current smokeless tobacco use includes both daily and occasional (less than daily) use.
N/A - The estimate is "0.0".

Table 4.3: Percentage of adults ≥15 years old who are current smokers of various tobacco products, by gender and selected demographic characteristics – GATS Malaysia, 2023.

Demographic Characteristics	Any smoked tobacco product		Type of Cigarette								Waterpipe		Other smoked tobacco[2]	
			Any cigarette[1]		Manufactured		Hand-rolled		Kretek					
					Percentage (95% CI)									
Overall	19.0	(17.1, 21.1)	16.8	(15.1, 18.6)	15.1	(13.4, 16.8)	2.3	(1.8, 2.9)	1.6	(1.0, 2.4)	0.8	(0.4, 1.6)	0.9	(0.6, 1.4)
Age (years)														
15-24	12.7	(9.5, 16.8)	12.4	(9.2, 16.6)	12.0	(8.8, 16.2)	1.1	(0.5, 2.1)	1.0	(0.4, 2.7)	1.7	(0.5, 5.8)	0.5	(0.2, 1.6)
25-44	24.9	(21.8, 28.2)	22.0	(19.0, 25.4)	19.7	(16.9, 22.9)	2.7	(2.0, 3.8)	2.0	(1.0, 3.7)	0.7	(0.3, 1.5)	1.1	(0.6, 2.0)
45-64	18.7	(15.3, 22.5)	15.3	(12.5, 18.5)	13.4	(11.0, 16.4)	2.4	(1.5, 3.7)	1.3	(0.7, 2.6)	0.2	(0.1, 0.6)	0.8	(0.3, 1.7)
65+	9.3	(6.7, 12.6)	7.7	(5.6, 10.5)	5.7	(3.8, 8.4)	3.1	(1.8, 5.3)	1.4	(0.6, 3.7)	0.8	(0.3, 2.4)	1.0	(0.4, 2.5)
Residence														
Urban	18.3	(15.9, 20.9)	15.7	(13.6, 18.0)	14.1	(12.1, 16.3)	1.8	(1.3, 2.6)	1.6	(0.9, 2.7)	0.9	(0.4, 1.9)	0.9	(0.5, 1.5)
Rural	21.7	(19.1, 24.6)	20.6	(18.1, 23.4)	18.5	(16.1, 21.1)	4.0	(3.1, 5.0)	1.5	(1.0, 2.3)	0.6	(0.3, 1.1)	0.9	(0.5, 1.5)
Education Level[3]														
Less than primary	13.2	(8.6, 19.7)	13.1	(8.5, 19.6)	11.4	(7.0, 18.1)	2.6	(1.3, 5.1)	0.5	(0.1, 1.6)	0.1	(0.0, 0.8)	0.1	(0.0, 0.8)
Primary	25.8	(21.2, 30.9)	22.4	(18.3, 27.2)	19.3	(15.5, 23.9)	3.2	(2.1, 4.9)	2.3	(1.1, 4.7)	0.3	(0.1, 0.9)	1.2	(0.5, 2.9)
Secondary/High School	24.0	(20.5, 27.9)	20.9	(17.9, 24.4)	18.4	(15.6, 21.5)	3.0	(2.0, 4.6)	2.4	(1.3, 4.3)	0.7	(0.3, 1.8)	1.3	(0.7, 2.5)
College or above	14.5	(11.2, 18.5)	11.7	(8.6, 15.7)	10.8	(7.8, 14.7)	1.9	(0.9, 3.8)	0.6	(0.3, 1.6)	0.5	(0.2, 1.6)	0.5	(0.2, 1.3)
Ethnicity														
Malay	19.7	(17.6, 21.9)	17.3	(15.4, 19.3)	15.6	(13.8, 17.6)	3.1	(2.4, 3.9)	1.4	(0.9, 2.2)	1.2	(0.6, 2.5)	1.0	(0.6, 1.7)
Chinese	11.5	(8.4, 15.4)	8.8	(6.2, 12.3)	8.7	(6.1, 12.2)	0.8	(0.2, 3.0)	0.1	(0.0, 0.5)	0.1	(0.0, 0.5)	0.7	(0.2, 2.0)
Indian	18.2	(11.8, 27.1)	15.1	(9.2, 23.8)	13.6	(7.8, 22.5)	1.0	(0.3, 2.6)	1.5	(0.4, 5.8)	1.2	(0.2, 7.6)	1.2	(0.2, 7.6)
Others	28.0	(22.6, 34.2)	27.5	(22.1, 33.7)	23.2	(18.1, 29.1)	2.1	(1.2, 3.8)	4.3	(2.0, 8.9)	0.1	(0.0, 0.4)	0.2	(0.1, 0.8)

Note: Current tobacco smoking includes both daily and occasional (less than daily) smoking.

[1] Includes manufactured, kreteks, and hand-rolled cigarettes.

[2] Includes pipes, bidis, cigars/cheroots/cigarillos, and any other reported smoking tobacco products.

[3] Education level is reported only among persons aged ≥ 25 years.

Table 4.3 (cont.): Percentage of adults ≥15 years old who are current smokers of various tobacco products, by gender and selected demographic characteristics – GATS Malaysia, 2023.

Demographic Characteristics	Any smoked tobacco product [2]		Any cigarette [1]		Type of Cigarette					Waterpipe		Other smoked tobacco [2]	
					Manufactured		Hand-rolled		Kretek					
					Percentage (95% CI)									
Male	35.7	(32.0, 39.5)	31.9	(28.9, 35.1)	28.6	(25.9, 31.6)	4.4	(3.4, 5.6)	3.0	(1.9, 4.6)	1.5	(0.7, 3.0)	1.6	(1.0, 2.5)
Age (years)														
15-24	24.3	(18.6, 31.2)	23.8	(18.0, 30.7)	23.1	(17.4, 30.0)	2.1	(1.0, 4.1)	2.0	(0.8, 5.1)	3.2	(0.9, 10.6)	1.0	(0.3, 3.0)
25-44	45.4	(40.0, 51.0)	41.2	(36.2, 46.4)	36.8	(32.1, 41.7)	5.2	(3.7, 7.2)	3.7	(1.9, 7.0)	1.3	(0.6, 2.8)	2.1	(1.2, 3.8)
45-64	36.0	(29.8, 42.7)	29.3	(24.2, 34.9)	25.8	(21.2, 30.9)	4.5	(2.8, 7.1)	2.6	(1.3, 5.2)	0.4	(0.1, 1.1)	1.5	(0.7, 3.3)
65+	17.7	(12.7, 24.1)	15.4	(11.2, 20.8)	11.5	(7.7, 16.7)	6.0	(3.4, 10.4)	2.9	(1.1, 7.3)	0.7	(0.2, 2.3)	1.0	(0.4, 2.7)
Residence														
Urban	34.1	(29.5, 38.9)	29.8	(26.1, 33.8)	26.7	(23.3, 30.4)	3.5	(2.4, 5.0)	3.0	(1.7, 5.2)	1.6	(0.7, 3.6)	1.6	(0.9, 2.8)
Rural	41.3	(36.5, 46.2)	39.2	(34.5, 44.1)	35.3	(30.9, 39.9)	7.4	(5.8, 9.4)	2.8	(1.9, 4.3)	1.1	(0.6, 2.1)	1.7	(1.0, 2.9)
Education Level[3]														
Less than primary	33.5	(22.1, 47.2)	33.3	(21.9, 47.0)	29.7	(18.8, 43.5)	5.6	(2.4, 12.6)	0.9	(0.2, 4.2)	0.0	N/A	0.0	N/A
Primary	45.2	(37.9, 52.8)	39.3	(32.2, 46.9)	34.0	(27.3, 41.4)	5.4	(3.5, 8.4)	3.8	(1.7, 8.2)	0.6	(0.2, 1.6)	2.2	(0.9, 5.2)
Secondary/High School	43.7	(37.6, 50.0)	37.9	(32.6, 43.6)	33.1	(28.4, 38.1)	5.6	(3.7, 8.5)	4.4	(2.4, 7.9)	1.4	(0.6, 3.3)	2.4	(1.3, 4.6)
College or above	27.0	(20.8, 34.2)	24.2	(18.1, 31.6)	22.2	(16.2, 29.6)	4.0	(1.9, 7.9)	1.4	(0.5, 3.4)	0.8	(0.2, 2.7)	0.7	(0.2, 2.0)
Ethnicity														
Malay	40.0	(35.9, 44.3)	35.2	(31.7, 38.8)	31.8	(28.5, 35.3)	6.2	(4.8, 8.0)	2.8	(1.7, 4.4)	2.3	(1.0, 5.0)	2.0	(1.1, 3.4)
Chinese	17.7	(12.7, 24.0)	15.3	(10.9, 21.1)	15.1	(10.7, 20.8)	1.4	(0.4, 5.1)	0.2	(0.1, 1.0)	0.2	(0.1, 1.0)	1.3	(0.4, 3.6)
Indian	36.6	(23.7, 51.7)	29.8	(18.0, 45.1)	26.7	(15.4, 42.0)	2.0	(0.7, 5.8)	3.2	(0.8, 12.6)	2.6	(0.4, 15.3)	2.6	(0.4, 15.3)
Others	46.8	(38.6, 55.2)	46.1	(37.9, 54.5)	38.5	(30.8, 46.8)	3.6	(1.9, 6.5)	7.4	(3.5, 15.3)	0.2	(0.0, 0.6)	0.4	(0.1, 1.3)
Female	1.5	(0.8, 3.1)	0.9	(0.4, 1.7)	0.8	(0.4, 1.6)	0.1	(0.0, 0.3)	0.1	(0.0, 0.3)	0.1	(0.0, 0.5)	0.1	(0.0, 0.5)
Age (years)														
15-24	0.0	N/A	0.0	N/A	0.0	N/A	0.0	N/A	0.0	N/A	0.0	N/A	0.0	N/A
25-44	2.6	(1.0, 6.3)	1.2	(0.5, 2.8)	1.2	(0.5, 2.8)	0.1	(0.0, 0.4)	0.1	(0.0, 0.8)	0.0	N/A	0.0	N/A

45-64	1.3 (0.4, 3.9)	1.2 (0.4, 3.9)	1.1 (0.3, 4.0)	0.2 (0.1, 0.9)	0.0 (0.0, 0.3)	0.0 (0.0, 0.3)	0.0 (0.0, 0.3)
65+	1.5 (0.4, 4.6)	0.6 (0.2, 1.7)	0.3 (0.1, 1.0)	0.4 (0.1, 1.5)	0.1 (0.0, 0.8)	0.9 (0.2, 5.1)	0.9 (0.2, 5.1)
Residence							
Urban	1.8 (0.8, 3.8)	0.9 (0.4, 2.0)	0.9 (0.4, 2.0)	0.1 (0.0, 0.3)	0.1 (0.0, 0.4)	0.1 (0.0, 0.7)	0.1 (0.0, 0.7)
Rural	0.7 (0.4, 1.2)	0.6 (0.3, 1.2)	0.5 (0.2, 0.9)	0.2 (0.1, 0.7)	0.0 (0.0, 0.3)	0.0 (0.0, 0.3)	0.0 (0.0, 0.3)
Education Level[3]							
Less than primary	0.9 (0.3, 2.7)	0.9 (0.3, 2.7)	0.3 (0.1, 1.4)	0.7 (0.2, 2.6)	0.2 (0.0, 1.3)	0.2 (0.0, 1.3)	0.2 (0.0, 1.3)
Primary	1.2 (0.5, 2.7)	1.2 (0.5, 2.7)	0.9 (0.3, 2.3)	0.4 (0.1, 1.6)	0.3 (0.0, 2.4)	0.0 N/A	0.0 N/A
Secondary/High School	1.6 (0.6, 4.1)	1.6 (0.6, 4.1)	1.6 (0.6, 4.1)	0.0 (0.0, 0.2)	0.0 (0.0, 0.2)	0.0 (0.0, 0.2)	0.0 (0.0, 0.2)
College or above	3.4 (1.0, 10.3)	0.6 (0.1, 2.2)	0.6 (0.1, 2.2)	0.0 N/A	0.0 N/A	0.4 (0.0, 2.5)	0.4 (0.0, 2.5)
Ethnicity							
Malay	0.7 (0.3, 1.5)	0.5 (0.2, 1.3)	0.4 (0.1, 1.2)	0.1 (0.1, 0.4)	0.1 (0.0, 0.5)	0.2 (0.0, 0.8)	0.2 (0.0, 0.8)
Chinese	3.5 (0.9, 13.0)	0.4 (0.1, 2.2)	0.4 (0.1, 2.2)	0.0 N/A	0.0 N/A	0.0 N/A	0.0 N/A
Indian	2.0 (0.3, 12.7)	2.0 (0.3, 12.7)	2.0 (0.3, 12.7)	0.0 N/A	0.0 N/A	0.0 N/A	0.0 N/A
Others	2.6 (0.9, 7.4)	2.5 (0.8, 7.4)	2.4 (0.8, 7.4)	0.2 (0.1, 1.1)	0.0 N/A	0.0 N/A	0.0 N/A

[1] Includes manufactured and hand-rolled cigarettes.

[2] Includes pipes, cigars/cheroots/cigarillos, and any other reported smoking tobacco products.

[3] Education level is reported only among persons aged ≥ 25 years.

N/A - The estimate is "0.0".

Table 4.4: Number of adults ≥15 years old who are current smokers of various tobacco products, by gender and selected demographic characteristics – GATS Malaysia, 2023.

Demographic Characteristics	Any smoked tobacco product	Any cigarette[1]	Type of Cigarette			Waterpipe	Other smoked tobacco[2]
			Manufactured	Hand-rolled	Kretek		
Number in thousands							
Overall	4,786.4	4,218.4	3,785.5	575.5	390.0	204.3	219.6
Age (years)							
15-24	744.5	728.1	706.0	62.9	61.3	98.1	31.2
25-44	2,671.4	2,363.8	2,116.7	293.0	212.9	73.3	117.9
45-64	1,147.5	940.4	825.9	145.3	81.1	13.1	47.2
65+	223.0	186.1	136.9	74.3	34.6	19.8	23.3
Residence							
Urban	3,569.8	3,062.6	2,748.5	353.9	305.9	170.6	168.5
Rural	1,216.6	1,155.8	1,037.0	221.6	84.1	33.7	51.1
Education Level[3]							
Less than primary	155.6	154.6	134.7	30.2	5.6	1.4	1.4
Primary	1,021.3	889.9	766.5	128.1	90.2	12.2	49.2
Secondary/High School	2,002.3	1,746.8	1,530.9	250.6	197.1	62.4	109.8
College or above	804.5	648.9	597.2	103.7	35.8	30.2	28.0
Ethnicity							
Malay	2,807.9	2,461.3	2,222.9	437.4	200.7	169.3	148.9
Chinese	606.9	466.2	457.6	42.4	7.1	7.1	37.4
Indian	372.3	307.7	277.2	19.6	31.0	24.9	24.9
Others	991.7	975.5	820.1	76.1	151.2	3.1	8.4

Note: Current tobacco smoking includes both daily and occasional (less than daily) smoking.

[1] Includes manufactured and hand-rolled cigarettes, and kreteks

[2] Includes pipes, cigars/cheroots/cigarillos, and any other reported smoking tobacco products.

[3] Education level is reported only among persons aged ≥ 25 years.

Demographic Characteristics	Any smoked tobacco product	Any cigarette[1]	Type of Cigarette			Waterpipe	Other smoked tobacco[2]
			Manufactured	Hand-rolled	Kretek		
Number in thousands							
Male	4,598.4	4,113.3	3,689.5	561.2	381.3	191.2	206.5
Age (years)							
15-24	744.5	728.1	706.0	62.9	61.3	98.1	31.2
25-44	2,540.3	2,304.5	2,057.3	290.4	206.9	73.3	117.9
45-64	1,108.8	902.3	793.3	138.6	79.8	11.8	45.9
65+	204.9	178.4	132.9	69.2	33.3	8.0	11.5
Residence							
Urban	3,399.5	2,974.5	2,664.8	345.5	298.6	158.8	156.7
Rural	1,198.8	1,138.8	1,024.6	215.6	82.7	32.4	49.8
Education Level[3]							
Less than primary	149.1	148.0	132.2	24.8	4.2	0.0	0.0
Primary	1,000.0	869.3	751.1	120.4	84.3	12.2	49.2
Secondary/High School	1,940.5	1,685.1	1,469.1	249.3	195.8	61.1	108.4
College or above	706.0	632.6	580.9	103.7	35.8	19.8	17.6
Ethnicity							
Malay	2,759.7	2,423.5	2,193.2	426.6	192.0	156.2	135.8
Chinese	526.8	457.9	449.3	42.4	7.1	7.1	37.4
Indian	351.0	286.5	256.0	19.6	31.0	24.9	24.9
Others	953.1	937.7	783.3	72.5	151.2	3.1	8.4
Female	188.1	105.1	96.0	14.3	8.6	13.1	13.1
Age (years)							
15-24	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25-44	131.2	59.4	59.4	2.6	6.0	0.0	0.0
45-64	38.8	38.0	32.6	6.7	1.3	1.3	1.3
65+	18.1	7.7	4.0	5.0	1.4	11.8	11.8
Residence							
Urban	170.3	88.1	83.7	8.4	7.3	11.8	11.8
Rural	17.8	17.0	12.4	6.0	1.3	1.3	1.3
Education Level[3]							
Less than primary	6.5	6.5	2.5	5.3	1.4	1.4	1.4
Primary	21.3	20.6	15.5	7.7	6.0	0.0	0.0
Secondary/High School	61.7	61.7	61.7	1.3	1.3	1.3	1.3
College or above	98.5	16.3	16.3	0.0	0.0	10.4	10.4
Ethnicity							
Malay	48.2	37.7	29.7	10.8	8.6	13.1	13.1
Chinese	80.1	8.3	8.3	0.0	0.0	0.0	0.0
Indian	21.2	21.2	21.2	0.0	0.0	0.0	0.0
Others	38.6	37.9	36.9	3.6	0.0	0.0	0.0

[1] Includes manufactured, hand-rolled cigarettes, and kretek.

[2] Includes pipes, cigars/cheroots/cigarillos, and any other reported smoking tobacco products.

[3] Education level is reported only among persons aged ≥ 25 years.

Table 4.5: Percentage distribution of adults ≥15 years old, by tobacco smoking frequency, gender and selected demographic characteristics – GATS Malaysia, 2023.

Demographic Characteristics	Tobacco Smoking Frequency						Total
	Daily		Occasional[1]		Non-smoker		
	Percentage (95% CI)						
Overall	14.6	(13.1, 16.4)	4.4	(3.4, 5.7)	81.0	(78.9, 82.9)	100
Age (years)							
15-24	7.1	(4.8, 10.3)	5.6	(3.3, 9.4)	87.3	(83.2, 90.5)	100
25-44	20.0	(17.3, 23.0)	4.9	(3.3, 7.2)	75.1	(71.8, 78.2)	100
45-64	15.5	(12.4, 19.3)	3.1	(2.0, 4.8)	81.3	(77.5, 84.7)	100
65+	6.9	(4.6, 10.2)	2.3	(1.2, 4.5)	90.7	(87.4, 93.3)	100
Residence							
Urban	13.9	(12.0, 16.1)	4.3	(3.1, 6.1)	81.7	(79.1, 84.1)	100
Rural	17.1	(14.8, 19.6)	4.6	(3.6, 5.9)	78.3	(75.4, 80.9)	100
Education Level[2]							
Less than primary	11.2	(6.8, 17.9)	2.0	(0.9, 4.5)	86.8	(80.3, 91.4)	100
Primary	20.8	(16.8, 25.6)	4.9	(3.1, 7.8)	74.2	(69.1, 78.8)	100
Secondary/High School	20.2	(17.0, 23.7)	3.8	(2.6, 5.5)	76.0	(72.1, 79.5)	100
College or above	11.2	(8.4, 14.6)	3.3	(1.7, 6.4)	85.5	(81.5, 88.8)	100
Ethnicity							
Malay	15.5	(13.5, 17.6)	4.2	(3.2, 5.6)	80.3	(78.1, 82.4)	100
Chinese	8.4	(5.9, 11.8)	3.1	(1.7, 5.6)	88.5	(84.6, 91.6)	100
Indian	12.2	(7.1, 20.2)	6.0	(2.3, 14.7)	81.8	(72.9, 88.2)	100
Others	21.9	(17.3, 27.3)	6.1	(3.2, 11.5)	72.0	(65.8, 77.4)	100

[1] Occasional refers to less than daily smoking.
[2] Education level is reported only among persons aged ≥ 25 years.

Table 4.5 (cont.): Percentage distribution of adults ≥15 years old, by tobacco smoking frequency, gender and selected demographic characteristics – GATS Malaysia, 2023.

Demographic Characteristics	Tobacco Smoking Frequency						Total
	Daily		Occasional[1]		Non-smoker		
	Percentage (95% CI)						
Male	27.2	(24.0, 30.8)	8.4	(6.5, 10.9)	64.3	(60.5, 68.0)	100
Age (years)							
15-24	13.5	(9.1, 19.5)	10.8	(6.5, 17.4)	75.7	(68.8, 81.4)	100
25-44	36.1	(31.1, 41.3)	9.3	(6.4, 13.5)	54.6	(49.0, 60.0)	100
45-64	29.8	(23.9, 36.5)	6.2	(4.0, 9.4)	64.0	(57.3, 70.2)	100
65+	13.9	(9.3, 20.2)	3.9	(1.9, 7.6)	82.3	(75.9, 87.3)	100
Residence							
Urban	25.7	(21.7, 30.2)	8.4	(6.0, 11.6)	65.9	(61.1, 70.5)	100
Rural	32.5	(28.5, 36.8)	8.7	(6.8, 11.1)	58.7	(53.8, 63.5)	100
Education Level[2]							
Less than primary	28.4	(17.7, 42.4)	5.1	(2.1, 12.0)	66.5	(52.8, 77.9)	100
Primary	36.6	(29.6, 44.1)	8.7	(5.5, 13.5)	54.8	(47.2, 62.1)	100
Secondary/High School	36.6	(31.1, 42.5)	7.1	(4.9, 10.2)	56.3	(50.0, 62.4)	100
College or above	20.3	(15.1, 26.7)	6.7	(3.3, 12.9)	73.0	(65.8, 79.2)	100
Ethnicity							
Malay	31.5	(27.5, 35.8)	8.5	(6.4, 11.2)	60.0	(55.7, 64.1)	100
Chinese	12.1	(8.4, 17.1)	5.5	(3.1, 9.7)	82.3	(76.0, 87.3)	100
Indian	23.8	(13.5, 38.4)	12.8	(5.0, 29.1)	63.4	(48.3, 76.3)	100
Others	36.5	(28.9, 44.8)	10.4	(5.4, 19.0)	53.2	(44.8, 61.4)	100
Female	1.4	(0.6, 3.0)	0.1	(0.0, 0.5)	98.5	(96.9, 99.2)	100
Age (years)							
15-24	0.0	N/A	0.0	N/A		N/A	100
25-44	2.5	(1.0, 6.2)	0.1	(0.0, 0.3)	97.4	(93.7, 99.0)	100
45-64	1.2	(0.3, 4.0)	0.1	(0.0, 0.4)	98.7	(96.1, 99.6)	100
65+	0.5	(0.2, 1.6)	0.9	(0.2, 5.1)	98.5	(95.4, 99.6)	100
Residence							
Urban	1.7	(0.7, 3.7)	0.1	(0.0, 0.7)	98.2	(96.2, 99.2)	100
Rural	0.4	(0.2, 0.9)	0.2	(0.1, 0.6)	99.3	(98.8, 99.6)	100
Education Level[2]							
Less than primary	0.7	(0.2, 2.5)	0.2	(0.0, 1.3)	99.1	(97.3, 99.7)	100
Primary	1.0	(0.4, 2.6)	0.2	(0.0, 0.7)	98.8	(97.3, 99.5)	100
Secondary/High School	1.5	(0.5, 4.0)	0.1	(0.0, 0.4)	98.4	(95.9, 99.4)	100
College or above	3.0	(0.8, 0.4)	0.4	(0.0, 2.5)	96.6	(89.7, 99.0)	100
Ethnicity							
Malay	0.5	(0.2, 1.2)	0.2	(0.0, 0.8)	99.3	(98.5, 99.7)	100
Chinese	3.5	(0.9, 13.0)	0.0	N/A	96.5	(87.0, 99.1)	100
Indian	2.0	(0.3, 12.7)	0.0	N/A	98.0	(87.3, 99.7)	100
Others	2.2	(0.6, 7.4)	0.3	(0.1, 1.1)	97.4	(92.6, 99.1)	100

[1] Occasional refers to less than daily smoking.
[2] Education level is reported only among persons aged ≥ 25 years.
N/A - The estimate is "0.0", or "100.0".

Table 4.6: Average number and percentage distribution of cigarettes smoked per day among daily cigarette smokers ≥15 years old, by gender and selected demographic characteristics – GATS Malaysia, 2023.

Demographic Characteristics	Average number of cigarettes smoked per day[1] Mean (95% CI)	Distribution of number of cigarettes smoked on average per day[1] Percentage (95% CI)					Total
		<5	5-9	10-14	15-24	≥25	
Overall	13.1 (11.8, 14.3)	12.4 (8.8, 17.3)	21.6 (17.0, 27.2)	28.0 (22.5, 34.3)	33.5 (27.8, 39.9)	4.4 (2.7, 7.2)	100
Gender							
Male	13.2 (11.9, 14.5)	12.1 (8.4, 17.0)	21.1 (16.3, 26.8)	28.0 (22.3, 34.5)	34.5 (28.6, 40.9)	4.3 (2.6, 7.2)	100
Female	-	-	-	-	-	-	100
Age (years)							
15-24	13.4 (8.0, 18.8)	16.1 (6.6, 34.5)	29.4 (16.6, 46.6)	17.3 (8.6, 31.8)	31.8 (17.9, 50.0)	5.4 (1.1, 22.7)	100
15-17	-	-	-	-	-	-	100
18-24	13.6 (7.9, 19.3)	15.5 (5.8, 35.0)	28.5 (15.5, 46.4)	18.3 (9.1, 33.6)	33.1 (18.3, 52.3)	4.5 (0.6, 26.1)	100
25-44	12.9 (11.4, 14.5)	11.2 (7.3, 16.8)	23.0 (16.2, 31.6)	29.9 (22.0, 39.2)	31.6 (24.2, 39.9)	4.4 (2.2, 8.7)	100
45-64	12.4 (10.9, 13.9)	13.5 (8.0, 21.7)	15.9 (9.7, 25.1)	31.4 (21.8, 42.9)	37.2 (26.8, 48.8)	2.1	100
65+	17.9 (12.4, 23.4)	13.7 (6.0, 28.5)	14.1 (5.0, 34.0)	12.4 (4.4, 30.4)	44.9 (28.9, 62.1)	14.9 (7.5, 27.2)	100
Residence							
Urban	13.1 (11.4, 14.9)	11.1 (6.5, 18.3)	22.9 (16.6, 30.6)	29.7 (22.2, 38.4)	32.9 (25.1, 41.7)	3.5 (1.5, 7.7)	100
Rural	12.9 (12.0, 13.9)	15.5 (11.8, 20.0)	18.7 (14.7, 23.6)	24.2 (19.4, 29.7)	35.1 (29.8, 40.7)	6.5 (4.2, 10.1)	100
Education Level[2]							
Less than primary	14.6 (11.5, 17.7)	6.8 (2.2, 18.8)	5.7 (1.8, 16.7)	45.4 (21.1, 72.2)	34.9 (16.7, 59.1)	7.2 (2.5, 18.9)	100
Primary	15.2 (12.5, 17.9)	10.7 (5.6, 19.4)	14.0 (8.5, 22.1)	26.6 (16.7, 39.4)	43.6 (32.9, 55.0)	5.1 (2.7, 9.7)	100
Secondary/High School	12.0 (10.5, 13.5)	11.4 (7.2, 17.5)	28.0 (19.4, 38.6)	25.2 (18.2, 33.9)	32.7 (24.6, 41.9)	2.7 (1.4, 5.1)	100
College or above	12.1 (9.3, 14.8)	16.8 (8.8, 29.6)	13.6 (5.9, 28.2)	41.7 (26.5, 58.8)	21.3 (11.3, 36.5)	6.6 (1.5, 25.1)	100
Ethnicity							
Malay	13.0 (11.5, 14.6)	14.8 (9.6, 22.2)	19.7 (14.8, 25.7)	25.7 (19.2, 33.6)	34.9 (27.4, 43.2)	4.8 (2.5, 8.9)	100
Chinese	14.2 (11.3, 17.1)	2.0 (0.6, 6.6)	20.0 (8.3, 40.8)	35.5 (18.4, 57.5)	40.2 (23.1, 60.1)	2.3 (0.4, 12.6)	100
Indian	-	-	-	-	-	-	100
Others	13.4 (10.5,16.4)	11.1 (6.3, 19.0)	26.7 (14.7, 43.5)	25.5 (14.6, 40.8)	31.3 (21.6, 43.0)	5.4 (2.9, 9.8)	100

[1] Among daily cigarette smokers. Cigarettes include manufactured, hand-rolled ad kreteks

[2] Education level is reported only among persons aged ≥ 25 years.

- Indicates estimate is suppressed due to unweighted sample size less than 25.

Table 4.7: Average age and percentage distribution of ever tobacco smokers 20-34 years old by age at smoking initiation, gender and residence – GATS Malaysia, 2023.

Demographic Characteristics	Average age of smoking initiation (years)[1]		Age at smoking initiation (years)[1]					Total
	Mean (95% CI)		Percentage (95% CI)					
			<15	15-17	18-19	20+		
Overall	17.0	(16.1, 17.9)	16.6 (10.6, 24.9)	43.4 (33.4, 54.0)	22.4 (16.4, 29.8)	17.6 (11.4, 26.3)		100
Gender								
Male	16.9	(16.0, 17.9)	17.2 (11.0, 25.8)	41.8 (32.2, 52.1)	23.7 (17.5, 31.2)	17.4 (11.0, 26.3)		100
Female	-	-	-	-	-	-		100
Residence								
Urban	17.0	(15.9, 18.2)	18.4 (10.8, 29.5)	42.9 (30.2, 56.5)	21.8 (14.5, 31.4)	16.9 (9.4, 28.5)		100
Rural	17.0	(16.5, 17.6)	11.0 (6.9, 17.0)	44.9 (35.3, 54.8)	24.4 (17.8, 32.4)	19.8 (13.0, 28.8)		100

[1] Among respondents 20-34 years of age who are ever tobacco smokers.
- Indicates estimate is suppressed due to unweighted sample size less than 25.

Table 4.8: Average age and percentage distribution of ever-daily tobacco smokers 20-34 years old by age at daily smoking initiation, gender and residence – GATS Malaysia, 2023.

Demographic Characteristics	Average age of daily smoking initiation (years)[1]		Age at daily smoking initiation (years)[1]							Total
			<15		15-17		18-19		20+	
	Mean (95% CI)		*Percentage (95% CI)*							
Overall	18.2	(17.3, 19.2)	9.3	(4.9, 16.9)	37.1	(27.5, 47.8)	24.2	(17.5, 32.3)	29.5	(21.8, 38.6)	100
Gender										
Male	18.1	(17.1, 19.1)	9.8	(5.2, 17.7)	35.7	(26.2, 46.6)	25.5	(18.7, 33.8)	29.0	(21.1, 38.5)	100
Female	-	-	-	-	-	-	-	-	-	-	100
Residence										
Urban	18.2	(16.9, 19.4)	11.0	(5.5, 20.9)	38.9	(26.9, 52.3)	20.9	(13.2, 31.3)	29.2	(19.8, 40.8)	100
Rural	18.5	(18.0, 19.0)	3.2	(1.4, 6.9)	30.7	(23.2, 39.5)	35.6	(27.8, 44.2)	30.5	(22.5, 39.9)	100

[1] Among respondents 20-34 years of age who are ever daily tobacco smokers.

- Indicates estimate is suppressed due to unweighted sample size less than 25.

Table 4.9: Percentage of all adults and ever daily smokers ≥15 years old who are former daily smokers, by selected demographic characteristics – GATS Malaysia, 2023.

Demographic Characteristics	Former Daily Smokers[1] (Among All Adults)		Former Daily Smokers[1] (Among Ever Daily Smokers)[2]	
	Percentage (95% CI)			
Overall	1.6	(1.2, 2.2)	8.4	(6.1, 11.4)
Gender				
Male	3.1	(2.3, 4.3)	8.6	(6.2, 11.7)
Female	0.1	(0.0, 0.2)	-	-
Age (years)				
15-24	0.7	(0.2, 2.9)	6.2	(1.5, 22.6)
25-44	1.1	(0.7, 1.9)	4.4	(2.6, 7.4)
45-64	2.4	(1.4, 4.0)	12.2	(7.3, 19.6)
65+	4.3	(2.6, 7.2)	35.8	(22.6, 51.6)
Residence				
Urban	1.7	(1.1, 2.5)	8.8	(6.0, 12.8)
Rural	1.5	(1.0, 2.3)	7.3	(5.0, 10.5)
Education Level[3]				
Less than primary	3.4	(1.4, 7.8)	21.1	(9.0, 41.8)
Primary	4.5	(2.6, 7.5)	15.8	(9.5, 25.2)
Secondary/High School	1.3	(0.7, 2.3)	5.2	(3.0, 9.0)
College or above	0.8	(0.3, 2.1)	5.6	(2.2, 13.3)
Ethnicity				
Malay	1.5	(1.0, 2.3)	7.6	(4.9, 11.6)
Chinese	1.2	(0.4, 3.7)	10.4	(3.5, 27.0)
Indian	1.9	(0.5, 7.0)	10.2	(3.1, 28.7)
Others	2.6	(1.6, 4.2)	8.9	(5.3, 14.5)

[1] Current non-smokers.

[2] Also known as the quit ratio for daily smoking.

[3] Education level is reported only among persons aged ≥ 25 years.

- Indicates estimate is suppressed due to unweighted sample size less than 25.

Table 4.10: Percentage distribution of former daily smokers ≥15 years old, by time since quitting smoking and selected demographic characteristics – GATS Malaysia, 2023.

Demographic Characteristics	Time since quitting smoking (years)[1]								Total
	<1		1 to <5		5 to <10		≥10		
	Percentage (95% CI)								
Overall	10.8	(4.9, 22.1)	17.1	(8.5, 31.5)	23.3	(11.1, 42.5)	48.8	(32.1, 65.8)	100
Gender									
Male	10.9	(4.9, 22.5)	17.4	(8.6, 32.1)	23.4	(11.0, 42.9)	48.2	(31.4, 65.6)	100
Female	-	-	-	-	-	-	-	-	100
Age (years)									
15-24	-	-	-	-	-	-	-	-	100
25-44	-	-	-	-	-	-	-	-	100
45-64	7.2	(2.3, 20.2)	8.3	(2.9, 21.7)	7.0	(1.4, 27.9)	77.5	(57.0, 89.9)	100
65+	-	-	-	-	-	-	-	-	100
Residence									
Urban	8.5	(2.8, 23.2)	14.9	(5.8, 33.1)	24.3	(10.2, 47.6)	52.3	(32.1, 71.8)	100
Rural	20.5	(9.0, 40.4)	27.0	(13.8, 46.1)	19.0	(7.8, 39.3)	33.5	(21.2, 48.5)	100
Education Level[2]									
Less than primary	-	-	-	-	-	-	-	-	100
Primary	8.6	(3.1, 21.6)	11.9	(4.6, 27.6)	11.8	(2.3, 43.9)	67.6	(42.3, 85.6)	100
Secondary/High School	6.6	(1.5, 24.4)	8.6	(2.1, 29.1)	20.3	(6.1, 50.2)	64.4	(36.1, 85.3)	100
College or above	-	-	-	-	-	-	-	-	100
Ethnicity									
Malay	9.0	(1.8, 34.3)	28.0	(12.2, 52.0)	28.2	(10.3, 57.3)	34.9	(18.0, 56.5)	100
Chinese	-	-	-	-	-	-	-	-	100
Indian	-	-	-	-	-	-	-	-	100
Others	26.7	(11.7, 50.2)	11.1	(4.1, 26.4)	16.4	(6.0, 37.8)	45.8	(26.5, 66.4)	100

[1] Among former daily smokers (current non-smokers).

[2] Education level is reported only among persons aged ≥ 25 years.

- Indicates estimate is suppressed due to unweighted sample size less than 25.

Table 4.11: Percentage distribution of current tobacco users ≥15 years old, by tobacco use pattern and selected demographic characteristics – GATS Malaysia, 2023.

Demographic Characteristics	Current Tobacco Users[1] Percentage (95% CI)	Number in thousands	Type of Current Tobacco Use[2] Smoked only	Smokeless only	Heated tobacco products only	Both smoked and smokeless	Both smoked and heated tobacco products	Both smokeless and heated tobacco products	Smoked, smokeless, and heated tobacco products	Total
			Percentage (95% CI)							
Overall	19.5 (17.5, 21.6)	4,826.1	94.9 (90.7, 97.3)	0.9 (0.5, 1.6)	0.0 N/A	3.8 (1.7, 8.4)	0.4 (0.1, 1.6)	0.0 N/A	0.0 (0.0, 0.3)	100
Gender										
Male	36.2 (32.5, 40.1)	4,612.8	96.6 (93.6, 98.2)	0.3 (0.1, 1.1)	0.0 N/A	2.6 (1.2, 5.7)	0.4 (0.1, 1.7)	0.0 N/A	0.0 (0.0, 0.3)	100
Female	1.8 (1.0, 3.3)	213.4	56.4 (21.9, 85.7)	13.1 (4.9, 30.6)	0.0 N/A	30.4 (5.5, 76.7)	0.0 N/A	0.0 N/A	0.0 N/A	100
Age (years)										
15-24	13.0 (9.7, 17.2)	749.2	97.1 (89.3, 99.3)	0.6 (0.1, 4.5)	0.0 N/A	2.3 (0.4, 10.9)	0.0 N/A	0.0 N/A	0.0 N/A	100
25-44	25.3 (22.2, 28.7)	2,680.8	93.7 (85.7, 97.4)	0.4 (0.1, 1.0)	0.0 N/A	5.2 (1.8, 13.9)	0.7 (0.2, 2.9)	0.0 N/A	0.0 N/A	100
45-64	19.2 (15.8, 23.2)	1,168.1	96.4 (92.2, 98.4)	1.8 (0.8, 4.5)	0.0 N/A	1.5 (0.3, 7.0)	0.1 (0.0, 0.4)	0.0 N/A	0.2 (0.0, 1.3)	100
65+	9.6 (7.0, 13.0)	228.1	93.4 (84.6, 97.3)	2.3 (0.8, 6.4)	0.0 N/A	4.3 (1.3, 13.9)	0.0 N/A	0.0 N/A	0.0 N/A	100
Residence										
Urban	18.6 (16.2, 21.2)	3,584.4	94.8 (88.7, 97.7)	0.4 (0.1, 1.4)	0.0 N/A	4.2 (1.6, 10.8)	0.5 (0.1, 2.2)	0.0 N/A	0.1 (0.0, 0.4)	100
Rural	22.5 (19.7, 25.5)	1,241.7	95.3 (92.7, 97.0)	2.1 (1.0, 4.3)	0.0 N/A	2.5 (1.3, 4.8)	0.1 (0.0, 0.4)	0.0 N/A	0.0 N/A	100
Education Level[3]										
Less than primary	14.3 (9.6, 20.9)	167.4	89.7 (78.2, 95.5)	7.5 (2.8, 18.8)	0.0 N/A	2.7 (0.8, 9.4)	0.0 N/A	0.0 N/A	0.0 N/A	100
Primary	26.1 (21.5, 31.4)	1,028.8	97.7 (93.7, 99.2)	0.8 (0.3, 2.0)	0.0 N/A	0.2 (0.0, 1.3)	1.2 (0.2, 7.2)	0.0 N/A	0.2 (0.0, 1.4)	100
Secondary/High School	24.3 (20.8, 28.2)	2,014.5	95.0 (87.9, 98.0)	0.6 (0.2, 2.2)	0.0 N/A	4.4 (1.5, 11.9)	0.0 N/A	0.0 N/A	0.0 N/A	100

College or above	14.9	(11.5, 19.0)	807.9	90.5	(66.0,97.9)	0.4	(0.1,3.1)	0.0	N/A	8.0	(1.4,35.6)	1.0	(0.1, 7.1)	0.0	N/A	100
Ethnicity																
Malay	20.0	(17.9, 22.3)	2,812.6	97.6	(95.3,98.8)	0.2	(0.0,1.2)	0.0	N/A	1.9	(0.9, 4.1)	0.3	(0.0, 2.1)	0.0	N/A	100
Chinese	11.6	(8.5, 15.6)	606.9	84.8	(59.1,95.6)	0.0	N/A	0.0	N/A	13.0	(3.0,41.4)	1.9	(0.3, 11.8)	0.3	(0.0, 2.4)	100
Indian	18.6	(12.2, 27.3)	379.0	97.9	(87.7,99.7)	1.9	(0.3,13.0)	0.0	N/A	0.0	N/A	0.2	(0.0, 1.3)	0.0	N/A	100
Others	29.1	(23.6, 35.4)	1,020.0	92.4	(80.0,97.4)	2.8	(1.5, 5.5)	0.0	N/A	4.7	(0.9,21.7)	0.0	N/A	0.0	N/A	100

[1] Among all adults. Includes daily and occasional (less than daily) smokers, smokeless users, or heated tobacco products.

[2] Among current tobacco users.

[3] Education level is reported only among persons aged ≥ 25 years.

N/A - The estimate is "0.0".

Table 4.12: Percentage distribution of daily smokers ≥15 years old, by time to first smoke upon waking and selected demographic characteristics – GATS Malaysia, 2023.

Demographic Characteristics	Time to first smoke								Total
	≤5 minutes		6-30 minutes		31-60 minutes		>60 minutes		
	Percentage (95% CI)								
Overall	8.3	(5.6,12.1)	20.9	(16.9,25.5)	23.8	(19.0,29.5)	47.0	(41.3,52.8)	100
Gender									
Male	8.1	(5.4, 12.0)	21.1	(17.1, 25.7)	24.2	(19.1, 30.0)	46.7	(40.9, 52.5)	100
Female	-	-	-	-	-	-	-	-	100
Age (years)									
15-24	10.7	(3.3, 29.5)	16.8	(8.1, 31.7)	37.7	(19.0, 61.1)	34.7	(18.9, 54.9)	100
25-44	10.1	(6.2, 16.0)	17.5	(13.0, 23.1)	20.7	(15.0, 27.7)	51.8	(44.1, 59.4)	100
45-64	4.0	(1.8, 8.8)	28.9	(20.8, 38.6)	24.3	(17.0, 33.4)	42.8	(33.3, 52.9)	100
65+	4.4	(1.2, 15.5)	27.2	(14.9, 44.2)	27.0	(15.3, 43.2)	41.4	(23.2, 62.3)	100
Residence									
Urban	7.7	(4.5, 13.0)	18.7	(13.9, 24.8)	24.2	(18.0, 31.7)	49.3	(42.0, 56.6)	100
Rural	9.8	(6.6, 14.3)	26.8	(22.2, 32.1)	22.8	(17.8, 28.8)	40.5	(34.3, 47.0)	100
Education Level[1]									
Less than primary	5.7	(1.4, 20.1)	28.7	(13.9, 50.2)	29.8	(14.3, 52.0)	35.8	(13.0, 67.6)	100
Primary	9.6	(5.3, 16.7)	21.5	(14.6, 30.5)	15.8	(9.7, 24.7)	53.1	(42.2, 63.8)	100
Secondary/High School	8.4	(4.3, 16.0)	22.0	(15.9, 29.6)	23.6	(18.1, 30.0)	46.0	(38.0, 54.3)	100
College or above	4.8	(1.9, 11.8)	18.0	(10.0, 30.3)	24.4	(14.1, 38.8)	52.8	(39.4, 65.8)	100
Ethnicity									
Malay	9.3	(5.6, 15.1)	19.5	(14.5, 25.6)	26.3	(20.0, 33.9)	44.8	(37.9, 52.0)	100
Chinese	4.4	(1.1, 16.0)	41.1	(25.9, 58.2)	22.7	(12.6, 37.2)	31.8	(17.0, 51.5)	100
Indian	-	-	-	-	-	-	-	-	100
Others	9.2	(5.0, 16.3)	20.3	(14.0, 28.5)	17.3	(10.2, 27.9)	53.2	(41.2, 64.8)	100

[1] Education level is reported only among persons aged ≥ 25 years.

- Indicates estimate is suppressed due to unweighted sample size less than 25.

Table 4.13: Heated Tobacco Products awareness and use among adults ≥ 15 years old, by selected demographic characteristics - GATS Malaysia, 2023.

Demographic Characteristics	Ever heard of Heated Tobacco Products [1]		Ever users [1]		Ever daily users [1]		Current users [1,2]		Current daily users [1]		Current occasional users [1]		Current users among those who were aware [3]	
	*Percentage (95% CI)*													
Overall	8.1	(6.8, 9.7)	0.5	(0.3, 1.1)	0.2	(0.1, 0.5)	0.1	(0.0, 0.3)	0.1	(0.0, 0.3)	0.0	(0.0, 0.2)	1.5	(0.6, 4.0)
Gender														
Male	9.3	(7.5, 11.4)	0.5	(0.2, 1.0)	0.2	(0.0, 0.6)	0.2	(0.1, 0.7)	0.2	(0.0, 0.6)	0.1	(0.0, 0.4)	2.6	(1.0, 6.7)
Female	7.0	(5.3, 9.1)	0.6	(0.2, 2.0)	0.2	(0.0, 1.2)	0.0	N/A	0.0	N/A	0.0	N/A	0.0	N/A
Age (years)														
15-24	9.4	(6.7, 13.0)	0.4	(0.1, 2.7)	0.0	N/A	0.0	N/A	0.0	N/A	0.0	N/A	0.0	N/A
25-44	8.4	(6.5, 10.9)	1.0	(0.5, 2.0)	0.4	(0.1, 1.2)	0.2	(0.1, 0.8)	0.2	(0.0, 0.7)	0.1	(0.0, 0.5)	2.9	(1.0, 8.6)
45-64	7.3	(5.3, 10.0)	0.0	(0.0, 0.2)	0.0	(0.0, 0.2)	0.0	(0.0, 0.2)	0.0	(0.0, 0.2)	0.0	(0.0, 0.1)	0.6	(0.1, 2.9)
65+	5.8	(3.0, 11.2)	0.3	(0.1, 1.3)	0.0	N/A	0.1	(0.0, 0.5)	0.0	N/A	0.1	(0.0, 0.5)	1.2	(0.2, 9.1)
Residence														
Urban	8.6	(6.9, 10.6)	0.7	(0.3, 1.4)	0.2	(0.1, 0.7)	0.1	(0.0, 0.4)	0.1	(0.0, 0.4)	0.0	(0.0, 0.3)	1.7	(0.6, 4.8)
Rural	6.7	(5.4, 8.3)	0.1	(0.0, 0.2)	0.0	(0.0, 0.1)	0.0	(0.0, 0.2)	0.0	N/A	0.0	(0.0, 0.2)	0.6	(0.1, 2.8)
Education Level [4]														
Less than primary	1.7	(0.6, 4.4)	0.1	(0.0, 1.0)	0.0	N/A	0.1	(0.0, 1.0)	0.0	N/A	0.1	(0.0, 1.0)	-	-
Primary	4.9	(3.2, 7.4)	0.5	(0.1, 1.7)	0.3	(0.1, 1.8)	0.3	(0.1, 1.7)	0.3	(0.1, 1.8)	0.0	(0.0, 0.1)	7.0	(1.4, 29.2)
Secondary/High School	6.7	(5.1, 8.8)	0.1	(0.0, 0.6)	0.1	(0.0, 0.6)	0.1	(0.0, 0.6)	0.1	(0.0, 0.6)	0.0	N/A	1.4	(0.2, 8.5)
College or above	12.8	(9.5, 16.9)	1.5	(0.6, 3.5)	0.4	(0.1, 2.5)	0.1	(0.0, 1.0)	0.0	N/A	0.1	(0.0, 1.0)	1.1	(0.2, 7.8)
Ethnicity														
Malay	7.5	(5.9, 9.4)	0.5	(0.2, 1.4)	0.1	(0.0, 0.4)	0.1	(0.0, 0.4)	0.1	(0.0, 0.4)	0.1	(0.0, 0.4)	1.5	(0.4, 5.4)
Chinese	8.6	(5.7, 12.8)	0.7	(0.2, 2.8)	0.2	(0.0, 1.3)	0.2	(0.0, 1.3)	0.2	(0.0, 1.3)	0.0	N/A	2.9	(0.6, 13.5)
Indian	4.9	(1.9, 12.1)	0.0	(0.0, 0.2)	0.0	N/A	0.0	(0.0, 0.2)	0.0	N/A	0.0	(0.0, 0.2)	-	-
Others	12.0	(8.3, 17.1)	0.7	(0.1, 3.7)	0.6	(0.1, 3.9)	0.0	(0.0, 0.4)	0.0	N/A	0.0	(0.0, 0.4)	0.4	(0.1, 3.0)

[1] Among all adults.
[2] Current use includes daily or less than daily use.
[3] Among those who had ever heard of electronic cigarettes.
[4] Education level is reported only among persons aged ≥ 25 years.
N/A - The estimate is "0.0".
- Indicates estimate is suppressed due to unweighted sample size less than 25.

Table 4.14: Percentage of adults ≥15 years old, by current tobacco use status and gender – GATS Malaysia, 2011 and 2023.

Tobacco Use Status	2011	2023	Relative change
	Percentage (95% CI)		Percentage
Smoking Tobacco			
Overall			
Current smoker	23.1 (21.2, 25.2)	19.0 (17.1, 21.1)	17.7*
Daily smoker	20.9 (19.0, 22.9)	14.6 (13.1, 16.4)	29.8*
Occasional smoker	2.3 (1.7, 3.0)	4.4 (3.4, 5.7)	94.7*
Male			
Current smoker	43.9 (40.6, 47.3)	35.7 (32.0, 39.5)	18.8*
Daily smoker	39.9 (36.6, 43.3)	27.2 (24.0, 30.8)	31.7*
Occasional smoker	4.1 (3.1, 5.3)	8.4 (6.5, 10.9)	108.1*
Female			
Current smoker	1.0 (0.7, 1.6)	1.5 (0.8,	46.5
Daily smoker	0.7 (0.4, 1.2)	1.4 (0.6, 3.0)	100.1
Occasional smoker	0.4 (0.2, 0.8)	0.1 (0.0, 0.5)	57.9
Smokeless Tobacco			
Overall			
Current smokeless tobacco user	0.7 (0.5, 1.2)	0.9 (0.5, 1.7)	18.1
Daily smokeless tobacco user	0.5 (0.3, 0.8)	0.6 (0.2, 1.5)	28.0
Occasional smokeless tobacco user	0.3 (0.1, 0.7)	0.3 (0.1, 0.5)	1.0
Male			
Current smokeless tobacco user	0.9 (0.5, 1.7)	1.1 (0.5, 2.2)	17.8
Daily smokeless tobacco user	0.4 (0.2, 1.0)	0.6 (0.2, 1.8)	32.8
Occasional smokeless tobacco user	0.5 (0.2, 1.2)	0.5 (0.2, 1.0)	4.3
Female			
Current smokeless tobacco user	0.6 (0.3, 1.0)	0.7 (0.2, 2.6)	18.7
Daily smokeless tobacco user	0.5 (0.3, 1.0)	0.6 (0.2, 2.7)	23.8
Occasional smokeless tobacco user	(0.0, 0.3)	0.0 (0.0, 0.1)	- 23.7
Tobacco Use			
Overall			
Current tobacco user	24.0 (22.0, 26.1)	19.5 (17.5, 21.6)	- 18.9*
Daily tobacco user	21.6 (19.7, 23.7)	14.9 (13.3, 16.7)	- 30.8*
Occasional tobacco user	2.4 (1.8, 3.1)	4.5 (3.5, 5.9)	90.0*
Male			
Current tobacco user	44.9 (41.5, 48.3)	36.2 (32.5, 40.1)	- 19.4*
Daily tobacco user	40.7 (37.4, 44.2)	27.6 (24.3, 31.2)	- 32.1*
Occasional tobacco user	4.2 (3.2, 5.5)	8.6 (6.6, 11.1)	105.0*
Female			
Current tobacco user	1.7 (1.2, 3)	1.8 (1.0, 3.3)	6.4
Daily tobacco user	1.2 (0.8, 1.8)	1.6 (0.8, 3.1)	28.0
Occasional tobacco user	0.4 (0.2, 0.9)	0.2 (0.1, 0.5)	- 55.9*

Notes: Current tobacco use includes current tobacco smoking, current smokeless tobacco use, or current heated tobacco product use (included in the 2023 questionnaire but not in 2011).

* $p < 0.05$

NOTE: Results for prevalence estimates / averages and 95% CIs are rounded to the nearest tenth (0.1). The relative changes are calculated using un-rounded prevalence estimates and might be different if calculated using rounded prevalence estimates shown in this table.

Table 4.15: Percentage of adults ≥15 years old who are current tobacco smokers of various tobacco products, by selected demographic characteristics – GATS Malaysia, 2011 and 2023.

2011 — Percentage (95% CI)

Demographic Characteristics	Any smoked tobacco product	Any cigarette[1]	Type of Cigarette: Manufactured	Type of Cigarette: Hand-rolled Kretek	Waterpipe	Other smoked tobacco[2]	Type of Cigarette
Overall	23.1 (21.2, 25.2)	22.9 (21.0, 25.0)	20.1 (18.2, 22.0)	4.0 (3.2, 5.0)	4.4 (3.6, 5.4)	0.6 (0.3, 1.1)	0.5 (0.3, 1.0)
Gender							
Male	43.9 (40.6, 47.3)	43.6 (40.3, 46.9)	38.3 (35.1, 41.7)	7.4 (5.8, 9.3)	8.4 (6.9, 10.2)	1.0 (0.5, 2.0)	1.0 (0.5, 1.9)
Female	1.0 (0.7, 1.6)	1.0 (0.6, 1.6)	0.7 (0.4, 1.2)	0.4 (0.2, 0.6)	0.1 (0.0, 0.6)	0.1 (0.0, 0.3)	0.0 (0.0, 0.1)
Age (years)							
15-24	16.7 (13.6, 20.3)	16.6 (13.5, 20.3)	15.3 (12.2, 18.9)	3.3 (2.1, 5.1)	4.3 (2.8, 6.3)	1.3 (0.6, 2.9)	0.7 (0.2, 2.6)
25-44	29.0 (26.1, 32.2)	28.9 (25.9, 32.0)	26.2 (23.3, 29.2)	3.2 (2.3, 4.5)	4.7 (3.5, 6.5)	0.5 (0.2, 1.2)	0.4 (0.1, 0.9)
45-64	22.7 (19.8, 25.9)	22.5 (19.7, 25.7)	18.2 (15.6, 21.2)	5.4 (4.0, 7.3)	4.1 (3.0, 5.7)	0.0 (0.0, 0.1)	0.4 (0.2, 0.9)
65+	15.0 (11.2, 19.9)	13.9 (10.3, 18.5)	8.9 (5.9, 13.2)	6.1 (3.8, 9.5)	3.6 (1.8, 7.3)	0.1 (0.0, 0.6)	1.2 (0.2, 5.8)

2023 — Percentage (95% CI)

Demographic Characteristics	Any smoked tobacco product	Any cigarette[1]	Type of Cigarette: Manufactured	Type of Cigarette: Hand-rolled Kretek	Waterpipe	Other smoked tobacco[2]	Type of Cigarette
Overall	19.0 (17.1, 21.1)	16.8 (15.1, 18.6)	15.1 (13.4, 16.8)	2.3 (1.8, 2.9)	1.6 (1.0, 2.4)	0.8 (0.4, 1.6)	0.9 (0.6, 1.4)
Gender							
Male	35.7 (32.0, 39.5)	31.9 (28.9, 35.1)	28.6 (25.9, 31.6)	4.4 (3.4, 5.6)	3.0 (1.9, 4.6)	1.5 (0.7, 3.0)	1.6 (1.0, 2.5)
Female	1.5 (0.8, 3.1)	0.9 (0.4, 1.7)	0.9 (0.4, 1.6)	0.1 (0.0, 0.3)	0.1 (0.0, 0.5)	0.1 (0.0, 0.5)	0.1 (0.0, 0.5)
Age (years)							
15-24	12.7 (9.5, 16.8)	12.4 (9.2, 16.6)	12.0 (8.8, 16.2)	1.1 (0.5, 2.1)	1.0 (0.4, 2.7)	1.7 (0.5, 5.8)	0.5 (0.2, 1.6)
25-44	24.9 (21.8, 28.2)	22.0 (19.0, 25.4)	19.7 (16.9, 22.9)	2.7 (2.0, 3.8)	2.0 (1.0, 3.7)	0.7 (0.3, 1.5)	1.1 (0.6, 2.0)
45-64	18.7 (15.3, 22.5)	15.3 (12.5, 18.5)	13.4 (11.0, 16.4)	2.4 (1.5, 3.7)	1.3 (0.7, 2.6)	0.2 (0.1, 0.6)	0.8 (0.3, 1.7)
65+	9.3 (6.7, 12.6)	7.7 (5.6, 10.5)	5.7 (3.8, 8.4)	3.1 (1.8, 5.3)	1.4 (0.6, 3.7)	0.8 (0.4, 2.5)	1.0 (0.4, 2.5)

Relative change — Percentage

Demographic Characteristics	Any smoked tobacco product	Any cigarette[1]	Type of Cigarette: Manufactured	Type of Cigarette: Hand-rolled Kretek	Waterpipe	Other smoked tobacco[2]
Overall	-17.7*	-26.8*	-24.9*	-42.4*	-64.6*	42.9
Gender						
Male	-18.8*	-26.8*	-25.3*	-41.0*	-64.8*	41.7
Female	46.5	-14.0	15.4	-67.9*	-38.8	75.3
Age (years)						
15-24	-23.9	-25.2	-21.3	-67.4*	-75.4*	27.9
25-44	-14.2	-23.7*	-24.7*	-15.8	-58.1*	44.3
45-64	-17.9	-32.1*	-26.2*	-56.5*	-68.1*	1328.1
65+	-38.2*	-44.2*	-36.1*	-49.2*	-60.5*	890.5

Residence																				
Urban	22.7 (20.2, 25.4)	22.4 (19.9, 25.1)	20.3 (17.9, 22.9)	3.0 (2.0, 4.3)	3.9 (2.9, 5.2)	0.6 (0.3, 1.3)	0.5 (0.2, 1.3)	18.3 (15.9, 20.9)	15.7 (13.6, 18.0)	14.1 (12.1, 16.3)	1.8 (1.3, 2.6)	1.6 (0.9, 2.7)	0.9 (0.4, 1.9)	0.9 (0.5, 1.5)	- / 19.4*	-30.1*	-30.7*	-39.2*	-59.4*	36.1
Rural	24.3 (22.0, 26.7)	24.2 (21.9, 26.6)	19.4 (17.4, 21.7)	6.6 (5.1, 8.4)	5.8 (4.5, 7.3)	0.4 (0.2, 0.8)	0.5 (0.3, 0.9)	21.7 (19.1, 24.6)	20.6 (18.1, 23.4)	18.5 (16.1, 21.1)	4.0 (3.1, 5.0)	1.5 (1.0, 2.3)	0.6 (0.3, 1.1)	0.9 (0.5, 1.5)	-10.6	-14.6*	-4.8	-39.7*	-73.9*	58.3
Education Level³																				
Less than primary	19.6 (15.7, 24.2)	19.2 (15.4, 23.8)	13.2 (9.7, 17.7)	6.1 (4.2, 8.9)	5.8 (3.6, 9.2)	0.2 (0.1, 0.5)	0.5 (0.2, 1.1)	13.2 (8.6, 19.7)	13.1 (8.5, 19.6)	11.4 (7.0, 18.1)	2.6 (1.3, 5.1)	0.5 (0.1, 1.6)	0.1 (0.0, 0.8)	0.1 (0.0, 0.8)	- / 32.6*	-31.8	-13.6	-58.3*	-91.8*	-29.4
Primary	29.3 (25.4, 33.5)	28.6 (24.8, 32.8)	24.8 (21.2, 28.9)	5.4 (3.7, 7.8)	4.5 (3.2, 6.4)	0.5 (0.1, 2.3)	0.6 (0.2, 1.9)	25.8 (21.2, 30.9)	22.4 (18.3, 27.2)	19.3 (15.5, 23.9)	3.2 (2.1, 4.9)	2.3 (1.1, 4.7)	0.3 (0.1, 0.9)	1.2 (0.5, 2.9)	-12.2	-21.6*	-22.2*	-40.3*	-49.7*	-34.5
Secondary/High School	26.8 (23.7, 30.1)	26.8 (23.7, 30.1)	23.7 (20.8, 27.0)	3.5 (2.5, 4.9)	4.9 (3.4, 6.8)	0.3 (0.1, 0.8)	0.4 (0.2, 1.1)	24.0 (20.5, 27.9)	20.9 (17.9, 24.4)	18.4 (15.6, 21.5)	3.0 (2.0, 4.6)	2.4 (1.3, 4.3)	0.7 (0.3, 1.8)	1.3 (0.7, 2.5)	-10.4	-21.8*	-22.7*	-14.5	-51.5*	169.1
College or above	18.5 (13.9, 24.2)	18.5 (13.9, 24.2)	17.2 (12.6, 23.1)	2.0 (0.9, 4.3)	1.4 (0.5, 3.7)	0.0 (N/A)	0.0 (N/A)	14.5 (11.2, 18.5)	11.7 (8.6, 15.7)	10.8 (7.8, 14.7)	1.9 (0.9, 3.8)	0.6 (0.3, 1.6)	0.5 (0.2, 1.6)	0.5 (0.2, 1.3)	-21.7	-36.8*	-37.4*	-5.9	-52.3	
Ethnicity																				
Malay	24.6 (22.1, 27.3)	24.3 (21.9, 27.0)	20.9 (18.5, 23.4)	5.2 (4.0, 6.7)	5.2 (4.1, 6.5)	0.9 (0.4, 1.7)	0.5 (0.2, 1.2)	19.7 (17.6, 21.9)	17.3 (15.4, 19.3)	15.6 (13.8, 17.6)	3.1 (2.4, 3.9)	1.4 (0.9, 2.2)	1.2 (0.6, 2.5)	1.0 (0.6, 1.7)	- / 19.9*	-29.1*	-25.3*	-41.1*	-72.7*	35.8
Chinese	15.4 (12.0, 19.5)	15.3 (11.9, 19.4)	15.0 (11.7, 19.1)	1.0 (0.3, 3.1)	0.2 (0.0, 0.8)	0.0 (N/A)	0.7 (0.1, 3.8)	11.5 (8.4, 15.4)	8.8 (6.2, 12.3)	8.7 (6.1, 12.2)	0.8 (0.2, 3.0)	0.1 (0.0, 0.5)	0.1 (0.0, 0.5)	0.7 (0.2, 2.0)	-25.3	-42.3*	-42.4*	-19.0	-27.8	
Indian	19.6 (14.2, 26.4)	19.2 (13.9, 26.0)	18.4 (13.3, 24.7)	1.8 (0.6, 5.8)	1.7 (0.7, 4.2)	0.4 (0.1, 1.9)	0.3 (0.0, 2.2)	18.2 (11.8, 27.1)	15.1 (9.2, 23.8)	13.6 (7.8, 22.5)	1.0 (0.3, 2.6)	1.5 (0.4, 5.8)	1.2 (0.2, 7.6)	1.2 (0.2, 7.6)	-6.8	-21.7	-26.0	-47.5	-11.3	236.6
Others	30.0 (25.2, 35.3)	29.9 (25.1, 35.2)	24.7 (20.1, 29.9)	4.2 (2.6, 6.8)	8.7 (5.8, 12.9)	0.2 (0.0, 0.5)	0.5 (0.2, 1.3)	28.0 (22.6, 34.2)	27.5 (22.1, 33.7)	23.2 (18.1, 29.1)	2.1 (1.2, 3.8)	4.3 (2.0, 8.9)	0.1 (0.0, 0.4)	0.2 (0.1, 0.8)	-6.5	-7.8	-49.0*	-51.2*	-43.3	

Note: Current tobacco smoking includes both daily and occasional (less than daily) smoking.

¹ Includes manufactured cigarettes, hand rolled cigarettes and kretek.

² Includes pipes, bidis, cigars/cheroots/cigarillos, and any other reported smoking tobacco products.

³ Education level is reported only among persons aged ≥ 25 years.

* $p < 0.05$

. Indicates a statistically significant increase but since the estimate in the first year of the comparison was "0.0 (N/A)" (i.e., no respondents), the relative change estimate could not be computed.

NOTE: Results for prevalence estimates / averages and 95% CIs are rounded to the nearest tenth (0.1). The relative changes are calculated using un-rounded prevalence estimates and might be different if calculated using rounded prevalence estimates shown in this table.

N/A - The estimate is "0.0".

Table 4.16: Average and percentage distribution of age at daily smoking initiation among ever daily smokers 20-34 years old, by selected demographic characteristics – GATS Malaysia, 2011 and 2023.

Demographic Characteristics	Age at Daily Smoking Initiation (years)[1]														
	2011					**2023**					**Relative change**				
	Average Age	Percentage (95% CI)				Average Age	Percentage (95% CI)				Average Age	Percentage			
	Mean (95% CI)	<15	15-17	18-19	20+	Mean (95% CI)	<15	15-17	18-19	20+		<15	15-17	18-19	20+
Overall	17.2 (16.6,17.8)	12.7 (8.7,18.3)	39.1 (32.9,45.7)	28.6 (22.7,35.3)	19.6 (14.7,25.5)	18.2 (17.3,19.2)	9.3 (4.9,16.9)	37.1 (27.5,47.8)	24.2 (17.5,32.3)	29.5 (21.8,38.6)	5.9	-27.2	-5.2	15.5	50.7
Gender															
Male	17.2 (16.6,17.8)	12.0 (8.0,17.7)	39.8 (33.5,46.4)	28.8 (22.9,35.7)	19.4 (14.5,25.5)	18.1 (17.1,19.1)	9.8 (5.2,17.7)	35.7 (26.2,46.6)	25.5 (18.7,33.8)	29.0 (21.1,38.5)	5.3	-18.7	10.2	11.6	49.8
Female	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Residence															
Urban	17.0 (16.3,17.7)	14.2 (9.2,21.3)	42.0 (34.3,50.1)	25.2 (18.4,33.6)	18.5 (12.8,25.9)	18.2 (16.9,19.4)	11.0 (5.5,20.9)	38.9 (26.9,52.3)	20.9 (13.2,31.3)	29.2 (19.8,40.8)	6.9	-22.6	-7.4	17.3	57.8
Rural	18.0 (17.2,18.8)	7.6 (3.9,14.5)	29.3 (21.6,38.5)	39.9 (31.2,49.2)	23.1 (16.0,32.3)	18.5 (18.0,19.0)	3.2 (1.4,6.9)	30.7 (23.2,39.5)	35.6 (27.8,44.2)	30.5 (22.5,39.9)	3.0	58.8*	4.8	10.8	31.9

[1] Among respondents 20-34 years of age who are ever daily tobacco smokers.

* $p<0.05$

NOTE: Results for prevalence estimates / averages and 95% CIs are rounded to the nearest tenth (0.1). The relative changes are calculated using un-rounded prevalence estimates and might be different if calculated using rounded prevalence estimates shown in this table.

- Indicates estimates based on less than 25 unweighted cases and has been suppressed.

Table 4.17: Percentage of former daily smokers among all adults and ever daily smokers ≥15 years old, by selected demographic characteristics – GATS Malaysia, 2011 and 2023.

Demographic Characteristics	Former Daily Smokers (Among All Adults)[1]			Former Daily Smokers (Among Ever Daily Smokers)[1,2]		
	2011	2023	Relative change	2011	2023	Relative change
	Percentage (95% CI)		Percentage	Percentage (95% CI)		Percentage
Overall	2.3 (1.8, 2.9)	1.6 (1.2, 2.2)	-29.4*	9.5 (7.5, 11.9)	8.4 (6.1, 11.4)	-11.0
Gender						
Male	4.4 (3.5, 5.6)	3.1 (2.3, 4.3)	-28.6*	9.4 (7.5, 11.9)	8.6 (6.2, 11.7)	-9.0
Female	0.1 (0.0, 0.3)	0.1 (0.0, 0.2)	-50.0	10.0 (4.2, 22.4)	-	-
Age (years)						
15-24	0.5 (0.2, 1.3)	0.7 (0.2, 2.9)	33.1	3.4 (1.3, 8.3)	6.2 (1.5, 22.6)	84.9
25-44	1.7 (1.1, 2.7)	1.1 (0.7, 1.9)	-34.0	5.7 (3.6, 9.1)	4.4 (2.6, 7.4)	-23.2
45-64	4.0 (2.7, 5.7)	2.4 (1.4, 4.0)	-40.5*	15.1 (10.5, 21.1)	12.2 (7.3, 19.6)	-19.2
65+	7.4 (5.0, 10.8)	4.3 (2.6, 7.2)	-41.4*	34.0 (23.5, 46.2)	35.8 (22.6, 51.6)	5.5
Residence						
Urban	2.2 (1.6, 2.9)	1.7 (1.1, 2.5)	-22.9	9.0 (6.5, 12.3)	8.8 (6.0, 12.8)	-2.6
Rural	2.7 (2.0, 3.6)	1.5 (1.0, 2.3)	-43.6*	10.5 (7.9, 13.9)	7.3 (5.0, 10.5)	-30.6
Education Level[3]						
Less than primary	4.4 (2.9, 6.8)	3.4 (1.4, 7.8)	-23.6	18.6 (12.4, 27.2)	21.1 (9.0, 41.8)	13.0
Primary	3.7 (2.4, 5.7)	4.5 (2.6, 7.5)	22.6	11.5 (7.5, 17.4)	15.8 (9.5, 25.2)	37.5
Secondary/High School	2.4 (1.6, 3.5)	1.3 (0.7, 2.3)	-46.2*	8.3 (5.7, 12.0)	5.2 (3.0, 9.0)	-37.0
College or above	2.3 (1.0, 5.3)	0.8 (0.3, 2.1)	-63.6*	11.3 (4.7, 24.6)	5.6 (2.2, 13.3)	-50.4
Ethnicity						
Malay	2.8 (2.2, 3.6)	1.5 (1.0, 2.3)	-45.8*	10.5 (8.1, 13.5)	7.6 (4.9, 11.6)	-27.5
Chinese	1.8 (0.9, 3.4)	1.2 (0.4, 3.7)	-31.1	11.0 (5.7, 20.2)	10.4 (3.5, 27.0)	-5.1
Indian	2.7 (1.0, 6.7)	1.9 (0.5, 7.0)	-28.8	12.6 (4.7, 29.5)	10.2 (3.1, 28.7)	-18.9
Others	0.7 (0.3, 1.7)	2.6 (1.6, 4.2)	252.9	2.5 (1.1, 5.8)	8.9 (5.3, 14.5)	250.7

[1] Current non-smokers.

[2] Also known as the quit ratio for daily smoking.

[3] Education level is reported only among persons aged ≥ 25 years.

* $p<0.05$

NOTE: Results for prevalence estimates / averages and 95% CIs are rounded to the nearest tenth (0.1). The relative changes are calculated using un-rounded prevalence estimates and might be different if calculated using rounded prevalence estimates shown in this table.

- Indicates estimates based on less than 25 unweighted cases and has been suppressed.

05 ELECTRONIC CIGARETTES

KEY FINDINGS

- Almost 7 out of 10 adults (68.1%) had ever heard of e-cigarettes.
- E-cigarettes were more familiar to younger adults, especially among those aged 15–24 years (75.7%).
- The prevalence of current users of e-cigarettes among all adults was 5.8%.

5.0 Electronic Cigarettes

Introduction

Electronic nicotine delivery systems (ENDS) have increased in usage, with electronic cigarettes (e-cigarettes) being the most common example. An e-cigarette, is a portable electronic device that heats a solution (e-liquid) to create an aerosol which frequently contains flavourants, usually dissolved into Propylene Glycol or/and Glycerin (1).

The World Health Organization (WHO) is concerned that these products are available on the open market and heavily marketed to young people. Currently, 88 countries have no minimum age at which e-cigarettes can be bought and 74 countries have no regulations in place for these harmful products (2). In Malaysia, the act of using e-cigarettes is commonly referred to as vaping. There is an increase in the awareness and prevalence of e-cigarette use among adults and adolescents alike in Malaysia according to the findings of national health surveys conducted (3) (4).

5.1 Prevalence of awareness and use of e-cigarettes

In Malaysia, almost 7 out of 10 adults (68.1%) had ever heard of e-cigarettes. E-cigarettes were more heard of among younger adults, especially among those aged 15–24 years (75.7%) **(Table 5.1).**

The overall prevalence of ever-users, ever daily users, current users, and current daily users of e-cigarettes among all adults was 8.9%, 6.5%, 5.8%, and 3.3%, respectively. More men used e-cigarettes compared with women (men: 10.5%; women: 0.8%). The prevalence of current e-cigarette use was 6.2% among urban dwellers and 4.2% among rural dwellers. Across educational levels, survey results showed that current e-cigarette use was highest among those in secondary/high school (5.8%).

5.2 Percentage distribution of ever daily electronic cigarette users

Overall, the percentage distribution of ever daily e-cigarette users was 10.1% for less than 1 month, 11.6% for 1 to 3 months, 8.0% for 4 to 11 months, 22.4% for 1 to 2 years, and 47.9% for more than 2 years. The percentage distribution of ever daily e-cigarette use for more than 1 year was accordingly higher in urban areas than in rural areas **(Table 5.2)**.

5.3 Percentage of all adults and ever daily electronic cigarette users ≥ 15 years old who are former daily electronic cigarette users

The overall percentage of former daily e-cigarette users among all adults was 1.4%. Meanwhile, among those who ever daily used e-cigarettes, the percentage was 21.4%. Significantly more males (2.4%) than females (0.3%), were former daily e-cigarettes users among all adults. **(Table 5.3)**

5.4 Age at electronic cigarette use initiation

Overall, the average age of e-cigarette use initiation was 26.2 years. About 14.9% of ever e-cigarette users initiated the use of e-cigarettes when they were 15 to 17 years old. As much as 42.9% started the habit at the age of 25 to 44 years. Men started to use e-cigarettes earlier (mean age of 26.0 years) than women (mean age of 26.0 years). Across educational levels, those with college or higher

education levels started to use e-cigarettes at a younger age, about 28.7 years old. A similar average age of e-cigarette use initiation was observed among adults from urban and rural areas **(Table 5.4).**

5.5 Type of electronic cigarette flavour currently used

Among those who currently used e-cigarettes, about 62.8% of them preferred fruit flavours, followed by chocolate, candy, desserts, or other sweets (6.9%) and non-alcoholic drinks (5.8%). Meanwhile, another 16.6% chose not to have any flavour when they used e-cigarettes **(Table 5.5)**.

5.6 Type of electronic cigarette device currently used

About half of those who used e-cigarettes (50.4%) chose a closed vaping disposable device that was not rechargeable. In comparison, another one-third (34.2%) used a device with replaceable pre-filled pods or rechargeable cartridges. Those aged 15 to 24 years old often used devices with replaceable pre-filled pods or cartridges (44.0%) compared to other devices. While those aged 25 to 44 years old (65.4%) frequently used closed vaping disposable devices **(Table 5.6).**

5.7 Reasons for using electronic cigarettes among current electronic cigarette users

Among current e-cigarette users, 74.3% said it came in likeable flavours, 70.0% said it is less harmful than smoking tobacco, 69.6% said they enjoyed using it, 64.8% said they used e-cigarettes to quit smoking tobacco, 57.4% said that it could be used where smoking is not allowed, 54.8% said their friend or family uses e-cigarettes, and 52.2% said they were addicted to it **(Table 5.7)**.

5.8 Product use pattern of current tobacco smokers and electronic cigarette users

Among all adults, 21.0% currently smoked tobacco or currently used e-cigarettes. Among those who currently smoked tobacco or currently used e-cigarettes, 18.6% smoked cigarettes and used e-cigarettes **(Table 5.8)**.

The prevalence of both tobacco smokers and e-cigarette users (dual use) was 3.9%. Males had a higher prevalence at 7.4% compared with females at 0.2% **(Table 5.8a)**.

The prevalence of those who used tobacco or e-cigarettes was 21.4%. Males (39.3%) had a higher prevalence than females (2.4%). The prevalence among the Malay ethnic group (21.7%) was higher than other ethnic groups **(Table 5.8b).**

5.9 Comparative changes between 2011 and 2023: Electronic cigarettes Awareness and use (Table 5.9)

- The awareness of electronic cigarettes increased by threefold from 21.0% in 2011 to 68.1% in 2023.
- As awareness increases, the current use of e-cigarettes significantly increased from 0.8% in 2011 to 5.8% in 2023.
- The prevalence of current e-cigarette use among those who were aware, also increased nearly three-fold but not significantly from 3.9% in 2011 to 8.5% in 2023.

Overall, the awareness of electronic cigarettes increases significantly across both genders, all ages, residential areas, ethnicities and education levels.

Current user of electronic cigarettes was significantly increased in males, those in the age group 25 - 44 years and urban dwellers **(Table 5.9)**.

References

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Table 5.1: Electronic cigarette awareness and use among adults ≥ 15 years old, by selected demographic characteristics - GATS Malaysia, 2023.

Demographic Characteristics	Ever heard of electronic cigarettes[1]		Ever users[1]		Ever daily users[1]		Current users[1,2]		Current daily users[1]		Current occasional users[1]		Current users among those who were aware[3]	
							Percentage (95% CI)							
Overall	68.1	(64.4, 71.5)	8.9	(7.5, 10.5)	6.5	(5.2, 8.0)	5.8	(4.6, 7.2)	3.3	(2.4, 4.7)	2.4	(1.8, 3.3)	8.5	(6.9, 10.5)
Gender														
Male	69.9	(65.6, 73.9)	15.7	(13.3, 18.5)	11.6	(9.3, 14.2)	10.5	(8.4, 13.1)	6.2	(4.4, 8.7)	4.3	(3.1, 6.0)	15.1	(12.1, 18.5)
Female	66.2	(61.4, 70.7)	1.6	(1.0, 2.8)	1.1	(0.5, 2.2)	0.8	(0.4, 1.7)	0.3	(0.1, 1.1)	0.5	(0.2, 1.0)	1.2	(0.5, 2.6)
Age (years)														
15-24	75.7	(69.7, 80.9)	11.1	(7.8, 15.6)	8.1	(5.1, 12.7)	8.6	(5.5, 13.0)	4.1	(1.9, 8.4)	4.5	(2.6, 7.5)	11.3	(7.3, 17.1)
25-44	71.3	(66.8, 75.5)	12.2	(9.9, 14.9)	9.4	(7.3, 11.9)	7.1	(5.4, 9.2)	4.9	(3.4, 6.9)	2.2	(1.5, 3.3)	9.9	(7.7, 12.8)
45-64	63.3	(58.0, 68.3)	4.0	(2.6, 6.3)	2.2	(1.2, 4.1)	2.8	(1.6, 5.0)	1.2	(0.4, 3.3)	1.6	(0.8, 3.3)	4.4	(2.5, 7.8)
65+	46.8	(40.1, 53.6)	1.4	(0.5, 3.5)	0.7	(0.2, 2.4)	0.7	(0.2, 2.4)	0.1	(0.0, 0.4)	0.6	(0.2, 2.5)	1.5	(0.4, 5.1)
Residence														
Urban	67.8	(63.3, 72.1)	9.3	(7.6, 11.3)	7.1	(5.5, 9.0)	6.2	(4.8, 8.0)	3.9	(2.6, 5.6)	2.4	(1.6, 3.5)	9.2	(7.2, 11.7)
Rural	68.9	(64.8, 72.8)	7.6	(6.3, 9.1)	4.4	(3.4, 5.6)	4.2	(3.2, 5.4)	1.5	(1.0, 2.3)	2.7	(2.0, 3.6)	6.1	(4.7, 7.9)
Education Level[4]														
Less than primary	43.5	(35.5, 51.8)	1.9	(1.0, 3.8)	1.5	(0.7, 3.4)	0.8	(0.2, 2.6)	0.6	(0.2, 2.6)	0.1	(0.0, 1.0)	1.8	(0.5, 6.0)
Primary	61.7	(56.0, 67.0)	7.5	(5.1, 10.9)	3.4	(1.8, 6.2)	4.5	(2.6, 7.7)	2.0	(0.8, 5.1)	2.5	(1.3, 4.8)	7.3	(4.2, 12.5)
Secondary/High School	64.4	(59.8, 68.7)	8.8	(6.6, 11.7)	6.7	(4.6, 9.5)	5.8	(3.9, 8.6)	3.8	(2.2, 6.6)	2.0	(1.2, 3.3)	9.1	(6.1, 13.3)
College or above	75.6	(69.6, 80.8)	9.4	(6.8, 12.9)	8.1	(5.7, 11.4)	5.0	(3.3, 7.5)	3.5	(2.2, 5.5)	1.5	(0.7, 3.1)	6.6	(4.4, 9.8)
Ethnicity														
Malay	72.8	(69.3, 76.1)	9.6	(7.7, 11.8)	7.0	(5.3, 9.2)	6.0	(4.5, 8.0)	3.7	(2.3, 5.9)	2.3	(1.6, 3.2)	8.2	(6.2, 11.0)
Chinese	55.9	(48.2, 63.3)	5.5	(3.3, 9.1)	5.2	(3.1, 8.6)	4.3	(2.3, 7.6)	3.6	(1.9, 6.7)	0.6	(0.2, 1.9)	7.6	(4.2, 13.5)
Indian	64.1	(52.1, 74.5)	7.2	(2.9, 16.9)	4.7	(1.4, 14.7)	7.0	(2.8, 16.5)	1.2	(0.2, 8.3)	5.8	(2.0, 15.5)	11.0	(4.5, 24.2)
Others	69.7	(62.7, 76.0)	12.1	(9.5, 15.3)	7.3	(5.2, 10.3)	6.5	(4.6, 9.0)	2.6	(1.5, 4.5)	3.9	(2.7, 5.5)	9.3	(6.6, 12.8)

[1] Among all adults.
[2] Current use includes daily or less than daily use.
[3] Among those who had ever heard of electronic cigarettes.
[4] Education level is reported only among persons aged ≥ 25 years.

Table 5.1 (cont): Electronic cigarette awareness and use among adults ≥ 15 years old, by selected demographic characteristics - GATS Malaysia, 2023.

Demographic Characteristics	Ever heard of electronic cigarettes[1]	Ever users[1]	Ever daily users[1]	Current users[1,2]	Current daily users[1]	Current occasional users[1]
		Numbers in thousands				
Overall	17,091.4	2,139.7	1,560.4	1,448.4	834.6	613.8
Gender						
Male	9,001.1	1,949.4	1,434.3	1,351.1	794.7	556.4
Female	8,090.4	190.4	126.0	97.2	39.9	57.4
Age (years)						
15-24	4,433.1	630.7	461.1	501.0	238.3	262.7
25-44	7,653.9	1,235.2	949.2	758.0	521.3	236.7
45-64	3,891.2	241.5	132.9	173.0	73.8	99.3
65+	1,113.2	32.3	17.2	16.3	1.2	15.1
Residence						
Urban	13,229.8	1,723.4	1,317.6	1,214.1	750.7	463.4
Rural	3,861.6	416.3	242.8	234.2	83.9	150.4
Education Level[3]						
Less than primary	512.2	22.5	18.0	9.4	7.7	1.7
Primary	2,445.0	295.0	133.2	179.1	81.3	97.9
Secondary/High School	5,354.2	704.9	530.6	482.9	315.3	167.6
College or above	4,199.1	486.6	417.5	276.0	192.1	83.8
Ethnicity						
Malay	10,367.9	1,299.7	952.0	852.7	527.4	325.3
Chinese	2,951.6	283.6	265.7	224.6	190.5	34.2
Indian	1,302.5	142.6	93.7	142.6	25.1	117.5
Others	2,469.4	413.9	248.9	228.5	91.6	136.9

[1] Among all adults.
[2] Current use includes daily or less than daily use.
[3] Education level is reported only among persons aged ≥ 25 years.

Table 5.2: Percentage distribution of ever daily electronic cigarette users ≥15 years old, by duration of daily use and selected demographic characteristics – GATS Malaysia, 2023.

Demographic Characteristics	Duration of daily electronic cigarette use[1]										Total
	Less than 1 month		1 to 3 Months		4 to 11 months		1 to 2 years		More than 2 years		
	Percentage (95% CI)										
Overall	10.1	(6.1,16.4)	11.6	(5.7,22.1)	8.0	(4.4,14.0)	22.4	(14.6,32.8)	47.9	(37.0,59.0)	100
Gender											
Male	10.1	(5.8,16.9)	12.5	(6.1,23.9)	7.8	(4.2,14.2)	21.2	(13.4,31.9)	48.4	(36.9,60.2)	100
Female	-	-	-	-	-	-	-	-	-	-	100
Age (years)											
15-24	3.5	(1.2, 9.4)	19.4	(5.8,48.5)	10.5	(3.3,29.1)	18.9	(9.0, 35.5)	47.6	(25.8,70.4)	100
25-44	12.3	(6.5,21.9)	8.3	(3.9,16.8)	7.3	(3.7,13.8)	24.2	(14.3,37.9)	47.9	(35.7,60.3)	100
45-64	-	-	-	-	-	-	-	-	-	-	100
65+	-	-	-	-	-	-	-	-	-	-	100
Residence											
Urban	7.7	(3.7,15.1)	11.2	(4.7,24.3)	6.8	(3.1,14.3)	24.1	(15.1,36.3)	50.1	(37.5,62.7)	100
Rural	23.9	(14.2,37.4)	13.6	(7.3,23.9)	14.2	(8.2,23.4)	12.7	(6.4, 23.5)	35.6	(23.9,49.3)	100
Education Level[2]											
Less than primary	-	-	-	-	-	-	-	-	-	-	100
Primary	-	-	-	-	-	-	-	-	-	-	100
Secondary/High School	15.2	(8.1, 26.7)	6.2	(2.1,17.1)	4.8	(1.6,13.8)	25.4	(12.1,45.8)	48.4	(28.8,68.5)	100
College or above	13.1	(4.5, 32.6)	8.1	(2.0,27.2)	7.6	(3.1,17.1)	17.2	(7.2, 35.8)	53.9	(36.8,70.2)	100
Ethnicity											
Malay	10.6	(5.8, 18.6)	16.6	(7.6,32.5)	8.4	(3.8,17.7)	20.7	(11.3,34.9)	43.8	(30.6,57.8)	100
Chinese	-	-	-	-	-	-	-	-	-	-	100
Indian	-	-	-	-	-	-	-	-	-	-	100
Others	10.5	(4.8, 21.2)	6.2	(2.3,15.3)	11.5	(3.9,29.2)	39.2	(23.9,57.0)	32.7	(19.6,49.2)	100

[1] Among ever daily electronic cigarette users (current daily and former daily).

[2] Education level is reported only among persons aged ≥ 25 years.

- Indicates estimate is suppressed due to unweighted sample size less than 25.

Table 5.3: Percentage of all adults and ever daily electronic cigarette users ≥15 years old who are former daily electronic cigarette users, by selected demographic characteristics – GATS Malaysia, 2023.

Demographic Characteristics	Former Daily Electronic Cigarette Users[1] (Among All Adults)		Former Daily Electronic Cigarette Users[1] (Among Ever Daily Users)[2]	
	Percentage (95% CI)			
Overall	1.4	(0.9, 2.0)	21.4	(14.5, 30.4)
Gender				
Male	2.4	(1.6, 3.5)	20.7	(13.7, 29.9)
Female	0.3	(0.1, 1.2)	-	-
Age (years)				
15-24	0.5	(0.2, 1.4)	6.6	(2.4, 16.9)
25-44	2.8	(1.9, 4.3)	30.4	(20.7, 42.2)
45-64	0.2	(0.1, 0.5)	-	-
65+	0.0	(0.0, 0.3)	-	-
Residence				
Urban	1.4	(0.9, 2.3)	19.8	(12.1, 30.5)
Rural	1.3	(0.9, 2.0)	30.2	(21.3, 40.7)
Education Level[3]				
Less than primary	0.7	(0.3, 1.9)	-	-
Primary	0.6	(0.2, 1.8)	-	-
Secondary/High School	1.4	(0.8, 2.5)	21.6	(11.8, 36.2)
College or above	3.0	(1.5, 5.8)	37.2	(20.6, 57.6)
Ethnicity				
Malay	1.6	(1.0, 2.5)	22.4	(13.6, 34.6)
Chinese	1.0	(0.3, 3.6)	-	-
Indian	0.0	N/A	-	-
Others	2.0	(1.1, 3.6)	27.1	(14.5, 44.8)

[1] Current non-users of electronic cigarettes.

[2] Also known as the quit ratio for daily electronic cigarette use.

[3] Education level is reported only among persons aged ≥ 25 years.

Table 5.4 Average age and percentage distribution of ever electronic cigarette users ≥ 15 years old, by age at e-cigarette use initiation and selected demographic characteristics – GATS Malaysia, 2023.

Demographic Characteristics	Average age of electronic cigarette uses initiation (years)[1] Mean (95% CI)	Age at electronic cigarette use initiation (years)[1] Percentage (95% CI)					Total
		<15	15-17	18-24	25-44	45+	
Overall	26.2 (24.6, 27.9)	1.7 (0.7, 4.1)	14.9 (7.9, 26.2)	34.8 (26.9,43.8)	42.9 (34.8,51.3)	5.7 (3.5, 9.1)	100
Gender							
Male	26.0 (24.3, 27.8)	1.4 (0.5, 3.4)	16.4 (8.7, 28.7)	36.3 (27.8,45.7)	39.8 (31.3,48.9)	6.2 (3.8, 10.0)	100
Female	28.2 (24.2, 32.1)	5.3 (0.7,30.8)	0.0 N/A	20.7 (5.9, 52.2)	73.4 (44.3,90.6)	0.6 (0.1, 4.2)	100
Age (years)							
15-24	18.0 (17.3, 18.7)	4.7 (1.7,12.5)	45.8 (27.3,65.5)	49.5 (31.1,68.0)	0.0 N/A	0.0 N/A	100
25-44	27.7 (26.2, 29.3)	0.4 (0.1, 2.8)	0.0 N/A	31.8 (21.3,44.6)	67.8 (55.0,78.3)	0.0 N/A	100
45-64	40.4 (35.6, 45.1)	0.0 N/A	5.6 (0.8, 31.2)	8.9 (2.2, 29.9)	38.1 (19.1,61.8)	47.4 (27.1,68.5)	100
65+	- -	-	-	-	-	-	100
Residence							
Urban	26.3 (24.2, 28.3)	0.6 (0.1, 4.2)	17.8 (9.3, 31.4)	32.8 (23.4,43.7)	43.3 (33.6,53.6)	5.6 (3.0, 9.9)	100
Rural	26.1 (24.3, 27.9)	6.2 (2.4,15.1)	3.1 (1.0, 9.3)	43.3 (32.5,54.8)	41.1 (31.6,51.2)	6.2 (3.4, 11.1)	100
Education Level[3]							
Less than primary	- -	-	-	-	-	-	100
Primary	30.7 (27.0, 34.5)	0.0 N/A	3.6 (0.5, 21.8)	16.7 (5.5, 40.6)	66.4 (44.2,83.2)	13.4 (4.9, 31.7)	100
Secondary/High School	30.4 (28.2, 32.6)	0.8 (0.1, 5.5)	0.0 N/A	28.6 (16.2,45.3)	61.3 (45.0,75.3)	9.4 (5.0, 16.9)	100
College or above	28.7 (25.8, 31.7)	0.0 N/A	0.0 N/A	35.4 (22.3,51.2)	60.8 (45.3,74.4)	3.7 (1.0, 13.0)	100
Ethnicity							
Malay	25.8 (23.6, 28.0)	1.3 (0.4, 4.5)	15.5 (6.8, 31.6)	41.8 (30.6,53.9)	35.0 (25.6,45.6)	6.4 (3.4, 11.8)	100
Chinese	- -	-	-	-	-	-	100
Indian	- -	-	-	-	-	-	100
Others	26.9 (24.7, 29.2)	4.4 (1.2,14.6)	9.8 (3.7, 23.5)	27.0 (16.5,40.8)	52.9 (39.7,65.8)	5.9 (2.9, 11.5)	100

[1] Among ever electronic cigarette users.

- Indicates estimate based on less than 25 unweighted cases and has been suppressed.

N/A - The estimate is "0.0".

Table 5.5: Percentage of current electronic cigarette users ≥15 years old, by current flavor used and selected demographic characteristics – GATS Malaysia, 2023.

Demographic Characteristics	Electronic cigarette flavor currently used																			Total
	Tobacco		Menthol or Mint		Clove or Spice		Fruit Flavor		Chocolate, Candy, Desserts, or Other Sweets		An Alcoholic Drink[1]		A Non-Alcoholic Drink[2]		No Flavor		Other		
	*Percentage (95% CI)*																		
Overall	4.1	(1.6, 10.3)	3.8	(1.7, 8.4)	0.0	N/A	62.8	(50.1, 74.0)	6.9	(3.0, 15.2)	0.0	N/A	5.8	(2.9, 11.0)	16.6	(8.9, 28.9)	0.0	N/A	100
Gender																			
Male	4.4	(1.7, 11.1)	2.4	(1.0, 6.0)	0.0	N/A	63.4	(50.2, 74.9)	5.7	(3.0, 10.6)	0.0	N/A	6.2	(3.2, 11.8)	17.9	(9.6, 30.8)	0.0	N/A	100
Female	-		-		-		-		-		-		-		-		-		100
Age (years)																			
15-24	5.5	(1.0, 24.7)	0.0	N/A	0.0	N/A	64.4	(40.5, 82.8)	7.0	(2.9, 15.8)	0.0	N/A	1.1	(0.2, 8.1)	21.9	(7.3, 50.0)	0.0	N/A	100
25-44	3.7	(1.2, 10.9)	5.8	(2.4, 13.3)	0.0	N/A	58.9	(43.0, 73.1)	6.3	(1.3, 25.7)	0.0	N/A	9.0	(3.8, 19.6)	16.4	(7.2, 33.1)	0.0	N/A	100
45-64	-		-		-		-		-		-		-		-		-		100
65+	-		-		-		-		-		-		-		-		-		100
Residence																			
Urban	3.7	(1.1, 11.7)	3.7	(1.5, 9.2)	0.0	N/A	62.7	(47.9, 75.5)	5.9	(1.9, 16.7)	0.0	N/A	5.9	(2.8, 11.9)	18.1	(9.3, 32.3)	0.0	N/A	100
Rural	6.5	(2.3, 16.9)	4.0	(1.0, 14.8)	0.0	N/A	63.6	(49.1, 75.9)	12.8	(6.2, 24.5)	0.0	N/A	5.1	(1.3, 18.7)	8.0	(2.8, 20.8)	0.0	N/A	100
Education Level[3]																			
Less than primary	-		-		-		-		-		-		-		-		-		100
Primary	-		-		-		-		-		-		-		-		-		100
Secondary/High School	2.1	(0.3, 14.4)	5.9	(1.4, 21.7)	0.0	N/A	69.1	(47.3, 84.8)	4.6	(1.4, 14.6)	0.0	N/A	3.8	(0.9, 15.1)	14.5	(4.6, 37.3)	0.0	N/A	100
College or above	0.0	N/A	2.0	(0.3, 12.9)	0.0	N/A	55.4	(32.5, 76.1)	13.2	(2.0, 52.5)	0.0	N/A	19.3	(7.6, 41.0)	10.2	(2.4, 34.0)	0.0	N/A	100
Ethnicity																			
Malay	4.9	(1.4, 16.0)	1.9	(0.6, 5.5)	0.0	N/A	57.6	(41.3, 72.4)	4.1	(1.6, 10.2)	0.0	N/A	9.7	(5.0, 17.9)	21.9	(11.0, 38.7)	0.0	N/A	100
Chinese	-		-		-		-		-		-		-		-		-		100
Indian	-		-		-		-		-		-		-		-		-		100
Others	2.1	(0.5, 8.1)	4.9	(1.4, 15.7)	0.0	N/A	65.9	(38.4, 85.7)	24.4	(7.2, 57.6)	0.0	N/A	0.0	N/A	2.7	(0.4, 16.8)	0.0	N/A	100

Note: Current electronic cigarette users includes daily and occasional (less than daily) users.

[1] include wine/cognac/margarita/other cocktails

[2] include coffee/soda/energy drinks/other

[3] Education level is reported only among persons aged ≥ 25 years.

N/A - The estimate is "0.0".

- Indicates estimate is suppressed due to unweighted sample size less than 25.

Table 5.6: Percentage distribution of current electronic cigarette users ≥15 years old, by type of electronic cigarette device currently used and selected demographic characteristics – GATS Malaysia, 2023.

Demographic Characteristics	Electronic cigarette device currently used						Total
	Closed vaping disposable device (not rechargeable)		Device with replaceable pre-filled pods/cartridges (rechargeable)		Device with a refillable liquid tank (rechargeable)		
	Percentage (95% CI)						
Overall	50.4	(37.6, 63.1)	34.2	(21.7, 49.2)	15.5	(8.3, 27.0)	100
Gender							
Male	49.8	(36.6, 62.9)	33.7	(20.9, 49.4)	16.6	(8.9, 28.7)	100
Female	-	-	-	-	-	-	100
Age (years)							
15-24	31.6	(15.8, 53.2)	44.0	(22.9, 67.5)	24.4	(8.9, 51.7)	100
25-44	65.4	(49.9, 78.2)	24.0	(12.9, 40.3)	10.6	(5.7, 18.9)	100
45-64	-	-	-	-	-	-	100
65+	-	-	-	-	-	-	100
Residence							
Urban	51.2	(36.3, 65.9)	35.6	(21.2, 53.1)	13.2	(5.6, 28.0)	100
Rural	46.0	(31.3, 61.5)	26.5	(15.9, 40.8)	27.5	(16.9, 41.3)	100
Education Level[1]							
Less than primary	-	-	-	-	-	-	100
Primary	-	-	-	-	-	-	100
Secondary/High School	67.9	(40.4, 86.8)	27.0	(9.2, 57.3)	5.2	(2.2, 11.6)	100
College or above	48.3	(27.9, 69.4)	39.2	(19.6, 63.0)	12.5	(4.7, 29.2)	100
Ethnicity							
Malay	49.6	(33.6, 65.6)	30.2	(15.9, 49.7)	20.3	(9.7, 37.7)	100
Chinese	-	-	-	-	-	-	100
Indian	-	-	-	-	-	-	100
Others	37.4	(18.6, 60.9)	52.1	(29.9, 73.5)	10.5	(4.8, 21.4)	100

Note: Current electronic cigarette users includes daily and occasional (less than daily) users.

[1] Education level is reported only among persons aged ≥ 25 years.

- Indicates estimate is suppressed due to unweighted sample size less than 25.

Table 5.7: Reasons for using electronic cigarettes among current electronic cigarettes users ≥15 years old, by selected demographic characteristics – GATS Malaysia, 2023.

Demographic Characteristics	Reasons for Using Electronic Cigarettes[1]							
	Quit smoking tobacco[2]	Avoid returning to smoking tobacco[3]	Enjoy using	Addicted	Can use where smoking tobacco is not allowed	Less harmful than smoking tobacco	Comes in likeable flavors	Friend or family uses
	Percentage (95% CI)							
Overall	64.8 (50.7, 76.7)	- -	69.6 (57.9, 79.3)	52.2 (39.7,64.4)	57.4 (45.7, 68.4)	70.0 (58.8, 79.2)	74.3 (61.9, 83.8)	54.8 (41.9, 67.2)
Gender								
Male	64.2 (49.9, 76.4)	- -	68.3 (55.8, 78.6)	54.4 (41.2,66.9)	59.5 (47.3, 70.7)	71.3 (59.7, 80.6)	72.9 (59.8, 82.9)	55.1 (41.3, 68.1)
Female	- -	- -	- -	- -	- -	- -	- -	- -
Age (years)								
15-24	58.6 (29.7, 82.6)	- -	64.6 (42.0, 82.2)	52.2 (30.9,72.7)	53.8 (32.4, 73.9)	65.5 (42.3, 83.1)	74.4 (49.8, 89.5)	37.4 (18.9, 60.5)
25-44	78.2 (62.3, 88.6)	- -	73.8 (60.4, 83.8)	53.2 (38.8,67.1)	61.7 (47.8, 74.0)	69.5 (55.8, 80.4)	77.5 (63.2, 87.3)	64.2 (50.4, 76.0)
45-64	- -	- -	- -	- -	- -	- -	- -	- -
65+	- -	- -	- -	- -	- -	- -	- -	- -
Residence								
Urban	70.1 (52.9, 83.0)	- -	71.0 (57.0, 81.9)	57.3 (42.6,70.8)	61.9 (48.1, 74.0)	74.1 (60.8, 84.1)	77.1 (62.0, 87.5)	55.0 (39.8, 69.4)
Rural	41.4 (26.6, 57.9)	- -	62.4 (50.5, 73.0)	25.9 (16.9,37.5)	34.0 (22.5, 47.8)	48.3 (35.7, 61.1)	60.1 (46.5, 72.2)	53.9 (39.9, 67.3)
Education Level[4]								
Less than primary	- -	- -	- -	- -	- -	- -	- -	- -
Primary	- -	- -	59.9 (33.4, 81.6)	47.4 (22.5,73.6)	57.9 (31.8, 80.3)	61.1 (35.0, 82.1)	66.0 (38.1, 86.0)	51.9 (26.0, 76.8)

	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
Secondary/High School	69.3	(51.9, 82.5)	-	-	84.2	(66.9, 93.3)	59.4	(39.7, 76.4)	57.0	(36.9, 75.0)	73.9	(56.2, 86.1)	71.1	(51.2, 85.3)	67.8	(49.2, 82.1)
College or above	-	-	-	-	58.7	(39.0, 75.9)	42.5	(23.4, 64.2)	64.2	(45.7, 79.2)	76.3	(58.0, 88.2)	84.7	(68.6, 93.3)	65.7	(47.0, 80.5)
Ethnicity																
Malay	66.3	(47.6, 81.0)	-	-	68.7	(55.6, 79.4)	62.3	(47.2, 75.4)	64.7	(51.7, 75.8)	74.0	(60.6, 84.0)	78.9	(67.0, 87.4)	56.6	(39.7, 72.0)
Chinese	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Indian	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Others	62.3	(39.0, 81.0)	-	-	77.3	(63.7, 86.8)	16.6	(7.0, 34.7)	39.1	(25.4, 54.8)	61.3	(48.1, 73.0)	80.2	(66.7, 89.1)	47.8	(32.0, 64.1)

[1] Among current electronic cigarette users.

[2] Among current tobacco smokers.

[3] Among former tobacco smokers.

[4] Education level is reported only among persons aged ≥ 25 years.

- Indicates estimate is suppressed due to unweighted sample size less than 25.

Table 5.8: Percentage distribution of current tobacco smokers and electronic cigarette users ≥15 years old, by product use pattern and selected demographic characteristics – GATS Malaysia, 2023.

Demographic Characteristics	Current tobacco smokers or electronic cigarette users[1]		Type of Current Use[2]							Total
			Smoked only		Electronic cigarette uses only		Both smoked and electronic cigarette use			
	Percentage (95%CI)	*Number in thousands*	*Percentage (95% CI)*							
Overall	21.0	(19.1,23.0)	5262.6	72.4	(67.0,77.2)	9.1	(6.6,12.4)	18.6	(14.2,23.8)	100
Gender										
Male	38.8	(35.3,42.4)	4999.5	72.9	(67.2,77.9)	8.1	(5.6,11.4)	19.1	(14.5,24.6)	100
Female	2.2	(1.2, 3.7)	263.1	63.0	(35.4,84.2)	28.5	(12.7,52.1)	8.4	(2.3, 27.0)	100
Age (years)										
15-24	15.5	(11.9,19.8)	905.0	44.6	(31.4,58.7)	17.7	(9.9, 29.7)	37.6	(23.6,54.0)	100
25-44	27.3	(24.4,30.5)	2932.4	74.0	(67.0,79.9)	9.0	(5.7, 13.7)	17.1	(12.3,23.3)	100
45-64	19.6	(16.3,23.3)	1202.2	85.6	(76.2,91.7)	4.5	(1.7, 11.8)	9.9	(4.9, 19.0)	100
65+	9.4	(6.8, 12.7)	223.0	92.7	(77.9,97.9)	0.0	N/A	7.3	(2.1, 22.1)	100
Residence										
Urban	20.4	(18.1,23.0)	3988.3	69.4	(62.5,75.6)	10.5	(7.4, 14.9)	20.0	(14.6,26.9)	100
Rural	22.8	(20.1,25.7)	1274.2	81.6	(77.0,85.4)	4.5	(2.9, 7.1)	13.9	(10.4,18.3)	100
Education Level[3]										
Less than primary	13.6	(8.9, 20.1)	159.8	94.1	(81.7,98.3)	2.6	(0.4, 17.1)	3.2	(0.7, 13.2)	100
Primary	26.7	(22.3,31.7)	1059.5	83.1	(72.9,90.0)	3.6	(1.5, 8.5)	13.3	(7.2, 23.3)	100
Secondary/High School	25.8	(22.3,29.7)	2148.4	77.3	(68.9,83.9)	6.9	(3.4, 13.3)	15.8	(10.0,24.1)	100
College or above	16.8	(13.3,21.0)	931.4	70.4	(58.5,80.0)	13.6	(7.8, 22.9)	16.0	(9.5, 25.6)	100
Ethnicity										
Malay	21.4	(19.2,23.7)	3040.5	71.8	(64.3,78.2)	7.7	(5.0, 11.6)	20.5	(14.6,28.1)	100
Chinese	13.8	(10.2,18.3)	726.7	69.1	(54.1,80.9)	16.5	(8.0, 31.0)	14.4	(6.8, 28.1)	100
Indian	18.8	(12.3,27.7)	382.0	62.6	(35.1,83.8)	2.6	(0.3, 16.8)	34.8	(14.2,63.3)	100
Others	31.3	(25.8,37.3)	1105.6	79.3	(71.0,85.8)	10.3	(6.2, 16.5)	10.4	(6.9, 15.3)	100

[1] Among all adults. Includes current daily and occasional (less than daily) tobacco smokers or electronic cigarette users.

[2] Among current tobacco smokers or electronic cigarette users.

[3] Education level is reported only among persons aged ≥ 25 years.

N/A - The estimate is "0.0".

Table 5.8a Percentage distribution of current tobacco smokers and electronic cigarette users ≥15 years old, by selected demographic characteristics – GATS Malaysia, 2023.

Demographic Characteristics	Both tobacco smokers and electronic cigarette users[1]		
	Percentage (95% CI)		*Number in thousands*
Overall	3.9	(2.9, 5.2)	972.3
Gender			
Male	7.4	(5.5, 9.9)	950.0
Female	0.2	(0.0, 0.7)	22.2
Age (years)			
15-24	5.8	(3.3, 10.2)	340.5
25-44	4.6	(3.3, 6.6)	497.1
45-64	1.9	(0.9, 4.1)	118.4
65+	0.7	(0.2, 2.4)	16.3
Residence			
Urban	4.1	(2.8, 5.8)	795.6
Rural	3.2	(2.3, 4.3)	176.6
Education Level[2]			
Less than primary	0.4	(0.1, 1.9)	5.1
Primary	3.6	(1.8, 6.7)	140.9
Secondary/High School	4.1	(2.5, 6.6)	336.7
College or above	2.7	(1.6, 4.5)	149.0
Ethnicity			
Malay	4.4	(3.0, 6.3)	620.0
Chinese	2.0	(0.9, 4.5)	104.7
Indian	6.5	(2.5, 16.2)	132.8
Others	3.2	(2.2, 4.8)	114.7

[1] Among all adults. Includes current daily and occasional (less than daily) tobacco smokers and electronic cigarette users.

[2] Education level is reported only among persons aged ≥ 25 years.

.

Table 5.8b: Percentage distribution of current tobacco users or electronic cigarette users ≥15 years old, by product use pattern and selected demographic characteristics – GATS Malaysia, 2023.

Demographic Characteristics	Current tobacco users or electronic cigarette users[1,2]		
	Percentage (95% CI)		Number in thousands
Overall	21.4	(19.5, 23.4)	5297.5
Gender			
Male	39.3	(35.8, 43.0)	5009.1
Female	2.4	(1.4, 4.0)	288.4
Age (years)			
15-24	15.8	(12.1, 20.2)	905.0
25-44	27.7	(24.7, 30.9)	2941.7
45-64	20.1	(16.8, 24.0)	1222.7
65+	9.7	(7.1, 13.1)	228.1
Residence			
Urban	20.8	(18.4, 23.3)	4002.9
Rural	23.4	(20.6, 26.5)	1294.6
Education Level[3]			
Less than primary	14.7	(9.9, 21.3)	171.6
Primary	27.1	(22.6, 32.1)	1067.1
Secondary/High School	26.1	(22.6, 30.0)	2160.6
College or above	17.2	(13.6, 21.5)	934.9
Ethnicity			
Malay	21.7	(19.5, 24.0)	3040.5
Chinese	13.9	(10.3, 18.5)	726.7
Indian	19.1	(12.6, 27.9)	388.8
Others	32.4	(26.8, 38.6)	1133.8

[1] Among all adults. Includes current daily and occasional (less than daily) tobacco users or electronic cigarette users.

[2] Current tobacco users include daily and occasional (less than daily) smokers, smokeless users, or heated tobacco products.

[3] Education level is reported only among persons aged ≥ 25 years.

Table 5.9: Electronic cigarette awareness and use among adults ≥ 15 years old, by selected demographic characteristics – GATS Malaysia, 2011 and 2023.

Demographic characteristics	2011			2023			Relative change		
	Ever heard of electronic cigarettes[1]	Current users[1,2]	Current users among those who were aware[3]	Ever heard of electronic cigarettes[1]	Current users[1,2]	Current users among those who were aware[3]	Ever heard of electronic cigarettes[1]	Current users[1,2]	Current users among those who were aware[3]
	Percentage (95% CI)			*Percentage (95% CI)*			*Percentage*		
Overall	21.0 (19.1,22.9)	0.8 (0.4,1.6)	3.9 (2.0,7.6)	68.1 (64.4,71.5)	5.8 (4.6,7.2)	8.5 (6.9,10.5)	224.8*	599.5*	115.4
Gender									
Male	29.0 (26.4,31.8)	1.6 (0.8,3.2)	5.5 (2.8,10.6)	69.9 (65.6,73.9)	10.5 (8.4,13.1)	15.1 (12.1,18.5)	141.0*	555.4*	172.2
Female	12.4 (10.4,14.8)	0.0 (N/A)	0.0 (N/A)	66.2 (61.4,70.7)	0.8 (0.4,1.7)	1.2 (0.5,2.6)	432.4*	.*	.*
Age (years)									
15-24	24.6 (20.6,29.0)	1.1 (0.4,2.8)	4.4 (1.7,10.9)	75.7 (69.7,80.9)	8.6 (5.5,13.0)	11.3 (7.3,17.1)	208.2*	699.3	159.4
25-44	25.4 (22.8,28.3)	1.3 (0.7,2.5)	5.0 (2.6,9.4)	71.3 (66.8,75.5)	7.1 (5.4,9.2)	9.9 (7.7,12.8)	180.3*	455.9*	98.5
45-64	13.1 (10.9,15.8)	0.0 (N/A)	0.0 (N/A)	63.3 (58.0,68.3)	2.8 (1.6,5.0)	4.4 (2.5,7.8)	382.5*	.*	.*
65+	6.7 (3.1, 13.7)	0.0 (N/A)	-	46.8 (40.1,53.6)	0.7 (0.2,2.4)	1.5 (0.4,5.1)	600.4*	.*	-
Residence									
Urban	23.0 (20.7,25.6)	1.1 (0.5,2.2)	4.6 (2.2,9.2)	67.8 (63.3,72.1)	6.2 (4.8,8.0)	9.2 (7.2,11.7)	194.3*	487.7*	99.8
Rural	15.5 (13.4,18.0)	0.2 (0.1,0.8)	1.4 (0.4,5.0)	68.9 (64.8,72.8)	4.2 (3.2,5.4)	6.1 (4.7,7.9)	343.3*	1817.0	332.7
Education Level4									
Less than primary	5.1 (2.7, 9.7)	0.0 (N/A)	-	43.5 (35.5,51.8)	0.8 (0.2,2.6)	1.8 (0.5, 6.0)	745.1*	.*	-
Primary	12.2 (9.3,15.7)	0.8 (0.2,3.6)	6.7 (1.5,25.0)	61.7 (56.0,67.0)	4.5 (2.6,7.7)	7.3 (4.2,12.5)	407.3*	455.0	9.4
Secondary/High School	22.5 (20.0,25.2)	0.9 (0.4,2.0)	4.0 (1.8,8.4)	64.4 (59.8,68.7)	5.8 (3.9,8.6)	9.1 (6.1,13.3)	186.0*	551.1	128.0
College or above	43.5 (36.4,50.9)	0.4 (0.1,2.0)	0.9 (0.2,4.6)	75.6 (69.6,80.8)	5.0 (3.3,7.5)	6.6 (4.4, 9.8)	73.9*	1147.8	617.7
Ethnicity									
Malay	24.4 (21.8,27.3)	1.2 (0.5,2.6)	4.7 (2.1,10.2)	72.8 (69.3,76.1)	6.0 (4.5,8.0)	8.2 (6.2,11.0)	198.2*	421.5	75.0
Chinese	19.6 (15.6,24.2)	0.3 (0.1,1.3)	1.6 (0.4,6.4)	55.9 (48.2,63.3)	4.3 (2.3,7.6)	7.6 (4.2,13.5)	185.2*	1247.5	372.5
Indian	16.6 (11.3,23.7)	0.8 (0.2,3.5)	5.1 (1.1,20.0)	64.1 (52.1,74.5)	7.0 (2.8,16.5)	11.0 (4.5,24.2)	285.5*	727.4	114.7
Others	10.5 (7.8,14.0)	0.1 (0.0,0.6)	0.8 (0.1,5.3)	69.7 (62.7,76.0)	6.5 (4.6,9.0)	9.3 (6.6,12.8)	561.7*	7866.6	1104.6

[1] Among all adults.

[2] Current use includes daily or less than daily use.

[3] Among those who had ever heard of electronic cigarettes.

[4] Education level is reported only among persons aged ≥ 25 years.

* p<0.05

.* Indicates a statistically significant increase but since the estimate in the first year of the comparison was "0.0 (N/A)" (i.e., no respondents), the relative change estimate could not be computed.

NOTE: Results for prevalence estimates / averages and 95% CIs are rounded to the nearest tenth (0.1). The relative changes are calculated using un-rounded prevalence estimates and might be different if calculated using rounded prevalence estimates shown in this table.

N/A - The estimate is "0.0".

- Indicates estimates based on less than 25 unweighted cases and has been suppressed.

06 CESSATION
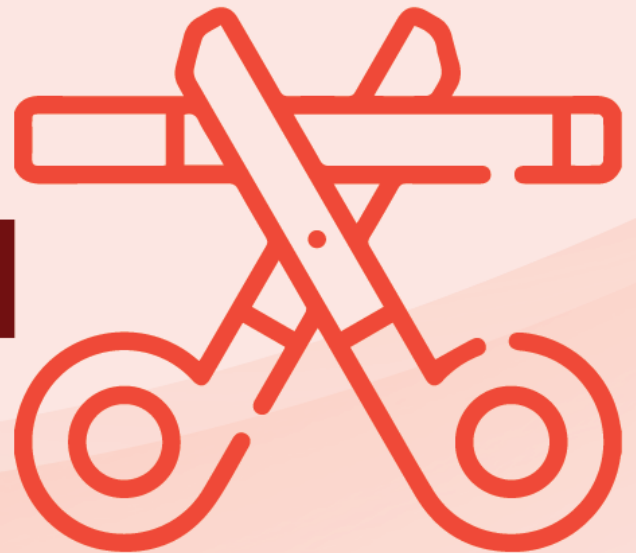
KEY FINDINGS

- Almost half of smokers aged 15 years or above made an attempt to quit smoking in the past 12 months.

- Majority of smokers (69.7%) who attempted to quit smoking in the past 12 months tried to quit without assistance

- About one in three smokers (30.5%) were not interested in quitting at all.

6.0 Cessation

Introduction

Under WHO's Framework Convention on Tobacco Control (FCTC), countries are required to address tobacco use and dependence. However, only 23 countries offer comprehensive cessation services with cost coverage, reaching just 32% of the global population (1). In the realm of public health, the challenge of smoking cessation is pivotal to the well-being of nations. As we navigate through the intricate tapestry of tobacco use and its cessation, it becomes imperative to acquire not just a situational analysis, but also local insights to understand individual characteristics and preferences in their journey of quitting smoking.

The smoking cessation module of GATS Malaysia 2023 serves as a foundation, and can help guide policy makers, healthcare professionals, and community leaders in formulating strategies that resonate with the needs and challenges of the Malaysian population

This section serves as a call for the government to continue concerted efforts to safeguard the younger generation from the hazards of tobacco products and to galvanize the formation of sustainable strategies to create a tobacco-free Malaysia.

6.1 Attempts to Quit Smoking and Receipt of Advice to Quit from Health Care Providers

Among those who currently smoke tobacco and former smokers who had abstained from smoking for less than 12 months, nearly half (49.3%) had attempted to quit smoking in the past 12 months (49.5% of men and 46.0% of women). The youngest group, those aged 15−24 years, recorded the highest percentage (57.5%) of making a quit attempt in the past 12 months. The percentages for the other age groups were as follows: 49.3% of those aged 25-44 years, 44.6% of those aged 45-64 years, and 45.8% of those aged ≥65 years.

Almost a quarter (23.3%) of those who currently smoke tobacco and former smokers who had abstained from smoking for less than 12 months had visited a health care provider (HCP) in the previous 12 months. Of this group, 77.9% had been asked by their HCP if they smoked and 66.6% were advised to quit by their HCP.

The prevalences of those who were asked about their smoking status by their HCP were 77.5% for urban residents and 79.2% for rural residents. The percentage of those who were advised to quit smoking by their HCP was 65.2% for urban residents and 70.8% for rural residents.

In terms of educational levels, smokers who had secondary education reported the highest percentage (54.1%) in attempting to quit smoking, followed by those who obtained a college education or above (50.0%). Among the ethnicities, individuals of Indian ethnicity recorded the highest prevalence (68.5%) of quit attempts, when compared with the Malay ethnicity (47.2%), and Chinese ethnicity (33.6%) **(Table 6.1)**.

6.2 Cessation Methods used by those who Attempted to Quit Smoking

Among all smokers who had attempted to quit smoking in the past 12 months and former smokers who had been abstinent for less than 12 months, 13.9% resorted to electronic cigarettes, 9.5% used pharmacotherapy (nicotine replacement and/or medications), 8.3% used counselling/advice, 4.1% used websites such as 'Jomquit', 1.0% tried heated tobacco products, 0.9% used traditional medications, while the vast majority (69.7%) attempted to quit without any assistance. By age, the percentage of using pharmacotherapy among the youngest age group (15-24 years) was 2.3%, 11.5% for those aged 25-44, 10.9% for those aged 45-64, and 8.4% for those aged 65 years and above. Pharmacotherapy and electronic cigarettes were the more popular methods used among urban dwellers (10.4% and 15.2% respectively) when compared to those from rural areas (6.9% and 10.1% respectively). Almost one-third of those with a college education or higher (29.6%) used pharmacotherapy, while only 7.6% of those with a secondary/high school education did so. (**Table 6.2)**

6.3 Interest in Quitting Smoking

Over one-third of current smokers (37.4%) planned to quit someday, but not in the next 12 months, while smaller percentages were planning to quit within the next month (9.0%) or within the next 12 months (13.3%). However, 30.5% were not interested in quitting at all. **(Table 6.3)**

6.4 Comparative change between 2011 and 2023: Smoking Cessation

- The percentage of smokers who made quit attempts in the last 12 months plateaued from 48.6% in 2009 to 49.3% in 2023.

- However, the percentage of smokers who were asked by HCP of their smoking status increased from 67.6% in 2011 to 77.9% in 2023.

- The percentage of smokers who received advice to quit smoking from HCP in the past 12 months also increased from 52.6% in 2011 to 66.6% 2023.

The relative increase in the percentage of smokers who made quit attempts was not significant for both sexes. The highest relative change in the percentage of smokers who made quit attempts were 65 years or more and other ethnicity. Among those with primary education, being asked by a HCP of their smoking status noted a significant increase, from 66.2% in 2011 to 88.3% in 2023 **(Table 6.4)**

References

1. World Health Organization (WHO). Quitting Tobacco. https://www.who.int/activities/quitting-tobacco (Accessed on 10 October 2024).

Table 6.1: Percentage of smokers ≥15 years old who made a quit attempt and received health care provider advice in the past 12 months, by selected demographic characteristics – GATS Malaysia, 2023.

Demographic Characteristics	Smoking cessation and health care seeking behavior							
	Made quit attempt[1]		Visited a HCP[1,2]		Asked by HCP if a smoker[2,3]		Advised to quit by HCP[2,3]	
	Percentage (95% CI)							
Overall	49.3	(43.4,55.2)	23.3	(18.8, 28.4)	77.9	(66.6, 86.2)	66.6	(54.1, 77.1)
Gender								
Male	49.5	(43.5,55.4)	23.4	(18.9, 28.6)	78.5	(66.8, 86.8)	66.8	(53.9, 77.5)
Female	46.0	(17.4,77.5)	20.2	(6.7, 47.3)	-	-	-	-
Age (years)								
15-24	57.5	(41.2,72.3)	19.3	(8.5, 38.2)	-	-	-	-
25-44	49.3	(42.2,56.4)	19.5	(13.9, 26.7)	69.9	(52.8, 82.8)	51.8	(34.4, 68.8)
45-64	44.6	(34.0,55.8)	32.4	(24.2, 41.8)	82.9	(68.5, 91.5)	74.3	(57.9, 85.8)
65+	45.8	(30.4,62.1)	35.8	(22.3, 52.0)	82.4	(58.2, 94.1)	82.4	(58.2, 94.1)
Residence								
Urban	50.3	(42.6,58.0)	23.5	(17.9, 30.3)	77.5	(62.3, 87.8)	65.2	(49.0, 78.5)
Rural	46.5	(41.0,52.1)	22.5	(18.0, 27.8)	79.2	(70.3, 85.9)	70.8	(61.3, 78.7)
Education Level[4]								
Less than primary	33.3	(17.3,54.4)	39.4	(19.2, 64.1)	-	-	-	-
Primary	39.3	(30.4,48.9)	31.4	(22.3, 42.1)	88.3	(75.6, 94.8)	74.2	(54.4, 87.4)
Secondary/High School	54.1	(45.6,62.4)	19.3	(13.9, 26.2)	71.4	(52.7, 84.9)	58.6	(43.5, 72.2)
College or above	50.0	(36.0,64.1)	19.0	(11.5, 29.8)	75.0	(48.2, 90.6)	54.3	(30.8, 76.1)
Ethnicity								
Malay	47.2	(40.0,54.6)	21.6	(16.5, 27.8)	77.4	(63.3, 87.1)	71.1	(56.9, 82.2)
Chinese	33.6	(19.7,51.1)	24.2	(12.3, 42.0)	-	-	-	-
Indian	68.5	(45.2,85.1)	21.2	(7.2, 48.1)	-	-	-	-
Others	57.5	(45.7,68.6)	28.2	(18.6, 40.3)	67.9	(41.6, 86.3)	61.3	(37.9, 80.3)

[1] Among current smokers and former smokers who have been abstinent for less than 12 months.

[2] HCP = health care provider.

[3] Among current smokers and former smokers who have been abstinent for less than 12 months, and who visited a HCP during the past 12 months.

[4] Education level is reported only among persons aged ≥ 25 years.

- Indicates estimate is suppressed due to unweighted sample size less than 25.

Table 6.2: Percentage of smokers ≥15 years old who attempted to quit smoking in the past 12 months, by methods used and selected demographic characteristics – GATS Malaysia, 2023.

Demographic Characteristics	Methods used to try to stop smoking tobacco[1]						
	Pharmacotherapy[2]	Counselling/Advice[3]	Electronic cigarettes	Heated tobacco products	Traditional medicines[4]	Website such as 'Jomquit'	Attempt to quit without assistance
	Percentage (95% CI)						
Overall	9.5 (4.8, 17.9)	8.3 (5.5, 12.3)	13.9 (9.1, 20.7)	1.0 (0.3, 3.3)	0.9 (0.3, 2.5)	4.1 (2.0, 8.3)	69.7 (61.8, 76.6)
Gender							
Male	9.9 (5.0, 18.5)	8.6 (5.8, 12.8)	14.2 (9.2, 21.5)	1.0 (0.3, 3.5)	0.9 (0.3, 2.6)	3.9 (1.8, 8.2)	68.6 (60.5, 75.7)
Female	- -	- -	- -	- -	- -	- -	- -
Age (years)							
15-24	2.3 (0.5, 9.1)	3.8 (1.0, 13.1)	29.3 (12.5, 54.6)	2.4 (0.3, 15.6)	0.0 N/A	1.3 (0.2, 8.8)	78.4 (59.6, 89.9)
25-44	11.5 (5.1, 23.7)	8.0 (4.4, 14.1)	13.5 (8.3, 21.3)	1.0 (0.2, 5.0)	1.4 (0.4, 4.5)	3.5 (1.5, 8.1)	64.8 (53.6, 74.5)
45-64	10.9 (4.7, 23.0)	12.2 (6.2, 22.6)	4.1 (1.4, 11.8)	0.0 N/A	0.5 (0.1, 2.2)	9.0 (2.8, 25.6)	74.4 (60.6, 84.6)
65+	8.4 (2.6, 24.2)	12.3 (5.1, 27.0)	2.2 (0.3, 14.7)	0.0 N/A	0.0 N/A	0.0 N/A	74.7 (56.0, 87.3)
Residence							
Urban	10.4 (4.6, 21.8)	8.1 (4.8, 13.5)	15.2 (9.2, 24.1)	1.2 (0.3, 4.4)	0.8 (0.2, 3.5)	4.2 (1.7, 10.0)	69.5 (59.2, 78.1)
Rural	6.9 (4.1, 11.4)	8.9 (5.5, 14.0)	10.1 (6.4, 15.5)	0.4 (0.1, 2.7)	1.2 (0.4, 3.0)	4.0 (1.8, 8.4)	70.3 (62.7, 76.9)
Education Level[5]							
Less than primary	- -	- -	- -	- -	- -	- -	- -
Primary	3.4 (1.4, 8.2)	10.0 (5.0, 19.2)	7.1 (2.8, 16.9)	2.8 (0.4, 17.6)	1.1 (0.3, 3.8)	3.7 (1.2, 10.6)	81.4 (70.0, 89.1)
Secondary/High School	7.6 (3.8, 14.7)	6.7 (3.6, 12.3)	10.1 (5.5, 18.0)	0.2 (0.0, 1.5)	0.4 (0.1, 2.9)	4.7 (1.5, 13.7)	62.4 (50.3, 73.1)
College or above	29.6 (12.0, 56.4)	16.5 (6.9, 34.5)	15.6 (5.8, 35.6)	0.0 N/A	3.0 (0.6, 14.2)	6.7 (2.4, 17.5)	65.3 (43.0, 82.4)
Ethnicity							
Malay	8.8 (4.4, 16.5)	8.7 (5.0, 14.5)	14.5 (8.8, 23.1)	1.0 (0.2, 4.9)	1.0 (0.2, 4.4)	4.2 (2.0, 8.6)	69.3 (60.5, 76.9)
Chinese	4.6 (1.3, 15.3)	9.6 (2.8, 27.8)	6.5 (1.0, 32.4)	5.3 (0.8, 27.5)	0.7 (0.1, 5.1)	13.1 (2.2, 50.4)	87.7 (72.7, 95.0)
Indian	- -	- -	- -	- -	- -	- -	- -
Others	14.4 (4.4, 38.2)	10.5 (5.1, 20.5)	11.8 (6.6, 20.3)	0.0 N/A	1.0 (0.2, 4.4)	1.6 (0.5, 4.7)	58.2 (41.0, 73.7)

Among current smokers who made a quit attempt in the past 12 months and former smokers who have been abstinent for less than 12 months.

[2] Pharmacotherapy includes nicotine replacement therapy and prescription medications such as varenicline, and bupropion

[3] Includes counselling at a cessation clinic and a telephone quit line/helpline.

[4] For example, herbal therapy, hypnotherapy, acupuncture and aromatherapy

[5] Education level is reported only among persons aged ≥ 25 years.

N/A - The estimate is "0.0".

- Indicates estimate is suppressed due to unweighted sample size less than 25.

Table 6.3: Percentage distribution of current smokers ≥15 years old by interest in quitting smoking and selected demographic characteristics – GATS Malaysia, 2023.

Demographic Characteristics	Interest in Quitting Smoking[1]									Total
	Planning to Quit Within Next Month		Thinking About Quitting Within Next 12 Months		Will Quit Someday, But Not in the Next 12 Months		Not Interested in Quitting		Don't Know		
	Percentage (95% CI)										
Overall	9.0	(5.5,14.5)	13.3	(9.6,18.1)	37.4	(32.1,42.9)	30.5	(26.1,35.4)	9.8	(7.3,13.0)	100
Gender											
Male	8.5	(5.2,13.4)	12.9	(9.2,17.8)	37.7	(32.3,43.5)	31.2	(26.7,36.0)	9.7	(7.2,13.0)	100
Female	27.4	(7.5,63.8)	26.6	(8.3, 59.3)	24.0	(9.8, 47.9)	9.1	(3.0, 24.5)	12.9	(3.3,39.4)	100
Age (years)											
15-24	15.5	(5.7,36.0)	16.9	(6.7, 36.5)	41.6	(26.7, 58.2)	22.6	(13.2,35.9)	3.3	(1.2, 8.9)	100
25-44	8.1	(4.4,14.4)	13.1	(9.2, 18.2)	37.3	(30.5, 44.7)	31.8	(25.4,39.0)	9.7	(6.3,14.8)	100
45-64	7.1	(3.0,15.8)	11.7	(6.7, 19.7)	33.1	(25.3, 42.0)	33.6	(23.9,44.9)	14.5	(9.2,22.1)	100
65+	7.3	(2.7,18.1)	12.6	(6.2, 23.8)	44.2	(28.6, 61.0)	27.0	(16.1,41.6)	8.9	(2.8,24.9)	100
Residence											
Urban	9.8	(5.3,17.4)	13.8	(9.2, 20.3)	36.7	(30.0, 43.9)	30.7	(25.1,37.0)	8.9	(5.9,13.3)	100
Rural	6.6	(4.4, 9.7)	11.9	(8.6, 16.1)	39.3	(33.6, 45.4)	30.0	(25.0,35.6)	12.2	(9.2,16.1)	100
Education Level[2]											
Less than primary	2.6	(0.7, 9.0)	8.7	(3.3, 21.4)	43.9	(22.4, 67.8)	37.9	(20.4,59.2)	6.9	(2.3,18.9)	100
Primary	6.3	(2.2,16.8)	15.7	(9.2, 25.6)	29.3	(21.1, 39.1)	40.9	(31.5,51.0)	7.8	(4.4,13.3)	100
Secondary/High School	5.9	(3.4,10.1)	11.1	(7.4, 16.4)	39.5	(32.6, 47.0)	28.3	(21.8,35.9)	15.1	(10.0,22.2)	100
College or above	16.1	(6.7,33.9)	14.2	(7.5, 25.2)	39.9	(26.4, 55.1)	24.4	(15.8,35.8)	5.4	(2.5,11.3)	100
Ethnicity											
Malay	12.2	(7.3,19.8)	15.3	(9.9, 22.8)	34.4	(28.9, 40.3)	27.5	(22.5,33.1)	10.6	(7.2, 15.3)	100
Chinese	3.2	(0.6,15.5)	12.2	(4.3, 30.0)	28.2	(17.4, 42.2)	46.4	(29.6,64.1)	10.0	(4.7, 20.1)	100
Indian	9.3	(2.2,31.9)	12.3	(4.3, 30.5)	48.9	(26.0, 72.3)	27.9	(12.1,52.3)	1.6	(0.2, 11.2)	100
Others	3.2	(1.5, 6.5)	8.9	(4.7, 16.0)	47.1	(35.4, 59.2)	31.4	(21.5,43.3)	9.5	(4.8, 17.7)	100

[1] Among current daily or occasional (less than daily) smokers.

[2] Education level is reported only among persons aged ≥ 25 years.

Table 6.4: Percentage of smokers ≥15 years old who made a quit attempt and received health care provider advice in the past 12 months, by selected demographic characteristics – GATS Malaysia, 2011 and 2023.

Demographic Characteristics	Smoking cessation and health care seeking behavior								
	Made quit attempt[1]			Asked by HCP if a smoker[1,2]			Advised to quit by HCP[1,2]		
	2011	2023	Relative change	2011	2023	Relative change	2011	2023	Relative change
	Percentage (95% CI)		*Percentage*	*Percentage (95% CI)*		*Percentage*	*Percentage (95% CI)*		*Percentage*
Overall	48.6 (44.1,53.2)	49.3 (43.4,55.2)	1.4	67.6 (60.0,74.3)	77.9 (66.6,86.2)	15.3	52.6 (43.8,61.2)	66.6 (54.1,77.1)	26.6
Gender									
Male	48.7 (44.0,53.4)	49.5 (43.5,55.4)	1.6	67.3 (59.6,74.2)	78.5 (66.8,86.8)	16.5	52.2 (43.2,61.0)	66.8 (53.9,77.5)	27.9
Female	45.7 (24.8,68.3)	46.0 (17.4,77.5)	0.6	-	-	-	-	-	-
Age (years)									
15-24	60.8 (50.1,70.6)	57.5 (41.2,72.3)	- 5.5	72.5 (47.7,88.4)	-	-	54.0 (32.3,74.3)	-	-
25-44	46.6 (39.9,53.4)	49.3 (42.2,56.4)	5.8	65.7 (53.8,75.8)	69.9 (52.8,82.8)	6.5	47.8 (35.4,60.5)	51.8 (34.4,68.8)	8.3
45-64	46.0 (37.2,55.0)	44.6 (34.0,55.8)	- 3.0	68.4 (53.7,80.2)	82.9 (68.5,91.5)	21.1	59.3 (45.8,71.6)	74.3 (57.9,85.8)	25.2
65+	30.4 (18.2,46.1)	45.8 (30.4,62.1)	51.0	65.5 (43.7,82.3)	82.4 (58.2,94.1)	25.8	56.5 (34.6,76.2)	82.4 (58.2,94.1)	45.8
Residence									
Urban	51.0 (45.0,56.9)	50.3 (42.6,58.0)	- 1.3	65.5 (55.7,74.2)	77.5 (62.3,87.8)	18.2	49.6 (38.4,61.0)	65.2 (49.0,78.5)	31.4
Rural	42.9 (37.5,48.5)	46.5 (41.0,52.1)	8.4	72.8 (64.7,79.7)	79.2 (70.3,85.9)	8.7	60.2 (51.9,68.1)	70.8 (61.3,78.7)	17.5
Education Level[3]									
Less than primary	37.2 (26.6,49.2)	33.3 (17.3,54.4)	-10.3	71.3 (52.4,84.8)	-	-	66.5 (45.7,82.5)	-	-
Primary	45.4 (37.6,53.4)	39.3 (30.4,48.9)	-13.5	66.2 (50.6,79.0)	88.3 (75.6,94.8)	33.3*	48.7 (35.3,62.2)	74.2 (54.4,87.4)	52.5
Secondary/High School	47.4 (40.7,54.3)	54.1 (45.6,62.4)	14.0	68.0 (55.4,78.4)	71.4 (52.7,84.9)	5.0	56.4 (44.0,68.1)	58.6 (43.5,72.2)	3.8
College or above	47.4 (33.4,61.9)	50.0 (36.0,64.1)	5.5	-	75.0 (48.2,90.6)	-	-	54.3 (30.8,76.1)	-
Ethnicity									
Malay	50.5 (45.0,56.0)	47.2 (40.0,54.6)	-6.5	77.2 (70.4,82.9)	77.4 (63.3,87.1)	0.2	59.9 (49.9,69.1)	71.1 (56.9,82.2)	18.8
Chinese	38.6 (25.3,53.9)	33.6 (19.7,51.1)	-12.9	43.4 (21.1,68.7)	-	-	33.1 (15.2,57.7)	-	-
Indian	60.6 (43.1,75.7)	68.5 (45.2,85.1)	13.1	-	-	-	-	-	-
Others	43.3 (34.7,52.5)	57.5 (45.7,68.6)	32.7	59.9 (33.6,81.6)	67.9 (41.6,86.3)	13.4	52.1 (26.8,76.4)	61.3 (37.9,80.3)	17.5

[1] Among current smokers and former smokers who have been abstinent for less than 12 months.

[2] Among current smokers and former smokers who have been abstinent for less than 12 months, and who visited a HCP during the past 12 months.

[3] Education level is reported only among persons aged ≥ 25 years.

* $p < 0.05$

NOTE: Results for prevalence estimates / averages and 95% CIs are rounded to the nearest tenth (0.1). The relative changes are calculated using un-rounded prevalence estimates and might be different if calculated using rounded prevalence estimates shown in this table.

- Indicates estimates based on less than 25 unweighted cases and has been suppressed.

07 SECONDHAND SMOKE

KEY FINDINGS

- 21.0% of adults who worked indoors (1.8 million adults) were exposed to tobacco smoke at their workplace.
- 19.4% of adults (4.8 million adults) were exposed to tobacco smoke inside their homes.
- 77.6% of adults (8.8 million adults) were exposed to tobacco smoke when visiting restaurants.

7.0 Secondhand Smoke

INTRODUCTION

Secondhand smoke (SHS), also known as passive smoke or environmental tobacco smoke (ETS), is a critical public health concern that poses significant risks to non-smokers (1). SHS is a complex mixture of gases and fine particles released from the burning end of a cigarette, cigar, or pipe, as well as the smoke exhaled by smokers. This smoke contains over 7,000 chemicals, including at least 70 carcinogens and numerous toxic agents (2). Most people are exposed to secondhand smoke in their homes or workplaces, but exposure can also occur in public places such as bars, restaurants, and open spaces.

The health effects of SHS are well-documented and extensive. Non-smokers exposed to SHS are at increased risk of a variety of adverse health outcomes, including respiratory infections, cardiovascular diseases, and lung cancer (3). Children are especially vulnerable, with SHS exposure linked to sudden infant death syndrome (SIDS), low birth weight, and asthma exacerbations. The burden of disease attributable to SHS represents a significant preventable cause of morbidity and mortality (4).

This chapter measures exposure to SHS at home, in the workplace, and in various public places, including government buildings, healthcare facilities, restaurants, bars/nightclubs, universities, schools, and public transportation, among adults aged 15 years or older.

7.1 Exposure to Secondhand Smoke in the Workplace

The prevalence and estimated numbers of adults exposed to SHS in the workplace (among those working exclusively indoors or both indoors and outdoors) over the past 30 days, by smoking status, are shown in **Table 7.1**. Exposure to SHS in the workplace was measured only among adults working outside their homes. Table 7.1 shows that, in Malaysia, 21.0% of adults overall had been exposed to SHS in the workplace in the past 30 days, compared to a lower 16.9% among non-smokers. More men (25.8% overall, 19.7% of non-smokers) were exposed to SHS in the workplace compared to women (15.1% overall, 14.6% of non-smokers).

The prevalence of SHS exposure in the workplace for residents of urban areas (19.5% overall, 15.3% of non-smokers) was lower than for those residing in rural areas (30.6% overall, 27.8% of non-smokers). Among ethnic groups, Malay workers had the highest overall SHS exposure at work (24.9%). Among non-smokers, the highest exposure was observed among the Indian ethnicity (20.8%).

7.2 Exposure to Secondhand Smoke at Home

The prevalence and estimated numbers of adults exposed to SHS at home are shown in **Table 7.2**, both overall and among non-smokers. Exposure to SHS at home was measured among adults who lived in a home where smoking occurred daily, weekly, or monthly. **Table 7.2** shows that 19.4% of adults in Malaysia (4.8 million people) were exposed to SHS at home. Men (23.6%, 3.0 million) had a higher prevalence of SHS exposure at home than women (15.0%, 1.8 million). Adults living in rural areas (25.1%, 1.4 million) had a higher prevalence of SHS exposure at home compared to those living in urban areas (17.8%, 3.4 million). By educational levels, adults with a college education or higher had the lowest prevalence of SHS exposure at home (11.4%, 600, 000).

Among non-smokers, 12.1% (2.4 million) were exposed to SHS at home. Female non-smokers (14.3%, 1.7 million) had a higher prevalence of SHS exposure at home than male non-smokers (8.8%, 700,000). Non-smokers living in rural areas (17.0%, 700,000) had a higher prevalence to SHS at home

than those in urban areas (10.7%, 1.7 million). By educational levels, 7.3% (300,000) of non-smokers with a college education or more were exposed to SHS at home, compared to 14.9% 150,000) of those with less than a primary education. Non-smokers of Chinese ethnicity (4.9%, 200,000) and Indian ethnicity (6.5%, 100,000) had a lower prevalence of SHS at home than non-smokers of Malay ethnicity (14.1%, 1.6 million) and other ethnicities (19.9%, 500,000).

7.3 Exposure to Secondhand Smoke in Public Places Among All Adults

Exposure to SHS was estimated in various public places such as government buildings, healthcare facilities, restaurants, bars/nightclubs, universities, schools, and public transportation.

Table 7.3 provides the prevalence of SHS exposure in various public places at the population level among all adults. From highest to lowest, the prevalence of population-level SHS exposure was as follows: 35.5% (34.8% for non-smokers) in restaurants, 6.6% (6.9% for non-smokers) in healthcare facilities, 5.7% (5.3% for non-smokers) in government buildings, 2.8% (3.1% for non-smokers) in schools, 1.9% (1.9% for non-smokers) in bars/nightclubs, 1.9% (2.1% for non-smokers) in public transportation, and 1.4% (1.7% for non-smokers) in universities.

7.4 Prevalence of SHS Exposure in Various Public Places Among Those Who Visited

Table 7.4 describes the prevalence of exposure to SHS among those who had visited various public places in the past 30 days. The population exposure rates in Table 7.3 are much lower than those shown in **Table 7.4** because many people did not visit the specific places of interest. This section shows the prevalence of SHS exposure among adults who had visited various public places during the last 30 days, both overall and for non-smokers **(Table 7.4)**. From highest to lowest, the prevalence of SHS exposure was as follows: 77.6% (76.4% for non-smokers) in restaurants, 67.9% (66.5% for non-smokers) in bars/nightclubs, 29.2% (28.3% for non-smokers) in government buildings, 24.3% (25.4% for non-smokers) in universities, 19.0% (18.9% for non-smokers) in public transportation, 18.6% (18.4% for non-smokers) in healthcare facilities, and 15.9% (16.6% for non-smokers) in schools.

7.5 Prevalence of SHS Exposure in Universities and Schools

This section presents the prevalence of SHS exposure among adults who visited universities or schools in the past 30 days, both overall and among non-smokers **(Table 7.5)**. The prevalence of SHS exposure on university grounds was 36.5% overall and 37.0% among non-smokers. On school grounds, the prevalence was 26.6% overall and 26.4% among non-smokers. Overall, SHS exposure on university grounds was higher in urban areas (37.3%) compared to rural areas (32.7%). Similarly, SHS exposure on school grounds was higher in urban areas (27.3%) than in rural areas (24.5%).

7.6 Comparative change between 2011 and 2023: Exposure to Secondhand Smoke (SHS)

- In homes, the exposure to SHS significantly declined from 38.4% in 2011 to 19.4% in 2023. Similarly, among non-smokers, the exposure significantly declined from 27.9% in 2011 to 12.1% in 2023. **(Table 7.6)**
- At workplaces, in general, the exposure significantly declined from 39.8% in 2011 to 21.0% in 2023. Similarly, among non-smokers, the exposure significantly declined from 33.9% in 2011 to 16.9% in 2023. **(Table 7.7)**
- Exposure to SHS in public places significantly increased. The exposure to SHS occurred in government buildings, increased from 20.0% in 2011 to 29.2% in 2023. In healthcare facilities, the exposure to SHS increased from 8.7% in 2011 to 18.6% in 2023. In restaurants, the exposure to SHS increased from 71.0% in 2011 to 77.6% in 2023. However, the exposure to SHS in public transport, decreased from 28.2% in 2011 to 19.0% in 2023**. (Table 7.8)**

Overall, across gender, areas of residence, educational levels and ethnicity, there was a significant decline in the percentage of adults exposed to SHS at home, workplaces and public transport (Table 7.6 – 7.8). The exposure to SHS significantly increased in government buildings, healthcare facilities and restaurants among the non-smokers and also among those of Malay ethnicity. Males, age 25 - 44 years and those who completed secondary/ high school had significant increases of exposure to SHS in government buildings and healthcare facilities. Meanwhile, females, age 45 – 64 years, rural dwellers and those who completed primary education had significant increases of exposure to SHS in healthcare facilities and restaurants.

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Table 7.1: Percentage and number of adults ≥15 years old who work indoors and are exposed to tobacco smoke at work, by smoking status and selected demographic characteristics – GATS Malaysia, 2023.

Demographic Characteristics	Adults Exposed to Tobacco Smoke at Work[1]					
	Overall			Non-smokers		
	Percentage (95% CI)		*Number in thousands*	*Percentage (95% CI)*		*Number in thousands*
Overall	21.0	(17.5, 25.1)	1,844.7	16.9	(13.6, 20.9)	1182.9
Gender						
Male	25.8	(20.6, 31.6)	1,257.4	19.7	(14.3, 26.5)	632.7
Female	15.1	(11.2, 19.9)	587.3	14.6	(10.8, 19.3)	550.2
Age (years)						
15-24	16.6	(9.4, 27.6)	286.2	14.3	(7.6, 25.3)	211.6
25-44	21.9	(17.9, 26.7)	1,145.0	19.0	(14.7, 24.1)	766.2
45-64	21.3	(14.8, 29.6)	362.5	14.2	(9.2, 21.2)	193.8
65+	-	-	-	-	-	-
Residence						
Urban	19.5	(15.7, 24.0)	1,487.2	15.3	(11.8, 19.5)	927.5
Rural	30.6	(24.0, 38.2)	357.5	27.8	(20.2, 36.9)	255.4
Education Level[2]						
Less than primary	-	-	-	-	-	-
Primary	24.8	(15.7, 37.0)	203.5	16.9	(9.2, 28.8)	94.1
Secondary/High School	28.3	(22.4, 35.1)	704.6	21.4	(15.6, 28.7)	367.4
College or above	16.3	(11.8, 22.0)	590.0	14.7	(10.3, 20.5)	457.6
Ethnicity						
Malay	24.9	(20.5, 29.8)	1,231.9	18.6	(14.4, 23.7)	702.9
Chinese	12.7	(7.7, 20.2)	292.3	11.8	(6.6, 20.4)	237.9
Indian	20.9	(8.9, 41.7)	136.3	20.8	(8.0, 44.3)	113.4
Others	21.3	(16.0, 27.7)	184.2	19.7	(13.6, 27.6)	128.7

[1] In the past 30 days. Among those respondents who work outside of the home who usually work indoors or both indoors and outdoors.

[2] Education level is reported only among persons aged ≥ 25 years.

- Indicates estimate is suppressed due to unweighted sample size less than 25.

Table 7.2: Percentage and number of adults ≥15 years old who are exposed to tobacco smoke at home, by smoking status and selected demographic characteristics – GATS Malaysia, 2023.

Demographic Characteristics	Adults Exposed to Tobacco Smoke at Home[1]					
	Overall			Non-smokers		
	Percentage (95% CI)		Number in thousands	Percentage (95% CI)		Number in thousands
Overall	19.4	(17.3, 21.7)	4,765.8	12.1	(10.6, 13.8)	2,401.9
Gender						
Male	23.6	(20.1, 27.4)	2,971.5	8.8	(7.0, 11.2)	717.3
Female	15.0	(12.9, 17.5)	1,794.3	14.3	(12.2, 16.8)	1,684.6
Age (years)						
15-24	20.9	(17.2, 25.2)	1,183.7	17.3	(13.6, 21.7)	851.4
25-44	19.9	(16.7, 23.4)	2,077.7	10.6	(8.5, 13.2)	831.7
45-64	19.5	(16.3, 23.1)	1,180.0	11.2	(8.6, 14.6)	554.5
65+	13.7	(10.7, 17.5)	324.5	7.7	(5.5, 10.7)	164.3
Residence						
Urban	17.8	(15.2, 20.6)	3,381.6	10.7	(8.9, 12.8)	1,663.5
Rural	25.1	(22.1, 28.3)	1,384.2	17.0	(14.3, 20.2)	738.4
Education Level[2]						
Less than primary	21.2	(15.7, 28.1)	249.3	14.9	(9.5, 22.5)	151.5
Primary	25.1	(20.3, 30.4)	978.1	13.4	(10.3, 17.3)	387.1
Secondary/High School	20.5	(17.3, 24.1)	1,678.1	10.7	(8.3, 13.8)	672.4
College or above	11.4	(8.5, 15.1)	618.2	7.3	(5.1, 10.5)	339.5
Ethnicity						
Malay	21.6	(19.1, 24.4)	2,994.3	14.1	(12.1, 16.5)	1,565.5
Chinese	9.3	(7.1, 12.3)	484.0	4.9	(3.2, 7.5)	226.4
Indian	12.1	(6.6, 21.0)	243.1	6.5	(2.3, 16.7)	106.7
Others	29.9	(24.4, 36.0)	1,044.5	19.9	(14.5, 26.7)	503.3

[1] Adults reporting that smoking inside their home occurs daily, weekly, or monthly.
[2] Education level is reported only among persons aged ≥ 25 years.

Table 7.3: Percentage of adults ≥15 years old who were exposed to tobacco smoke in various public places in the past 30 days, by smoking status and selected demographic characteristics – GATS Malaysia, 2023.

Demographic Characteristics	Adults Exposed to Tobacco Smoke[1] in…						
	Government buildings	Health care facilities	Restaurants[2]	Bars or nightclubs	Public transportation	Universities	Schools
	Percentage (95% CI)						
Overall	5.7 (4.5, 7.3)	6.6 (5.3, 8.1)	35.5 (32.8, 38.3)	1.9 (1.3, 2.8)	1.9 (1.3, 2.7)	1.4 (0.8, 2.4)	2.8 (2.1, 3.6)
Gender							
Male	7.0 (5.0, 9.7)	6.2 (4.5, 8.5)	36.0 (32.2, 39.9)	2.7 (1.7, 4.3)	2.1 (1.3, 3.3)	1.5 (0.8, 2.7)	3.2 (2.2, 4.6)
Female	4.4 (3.2, 6.2)	7.0 (5.3, 9.2)	35.0 (31.5, 38.6)	1.1 (0.5, 2.1)	1.7 (1.0, 3.1)	1.3 (0.6, 3.2)	2.4 (1.6, 3.4)
Age (years)							
15-24	4.4 (2.0, 9.5)	4.9 (2.4, 10.0)	38.4 (32.5, 44.8)	1.1 (0.3, 3.8)	4.2 (2.4, 7.3)	2.8 (1.4, 5.4)	5.5 (3.7, 8.2)
25-44	7.4 (5.7, 9.7)	6.5 (4.8, 8.7)	39.3 (35.5, 43.3)	2.4 (1.4, 3.9)	1.3 (0.7, 2.3)	1.4 (0.5, 3.5)	2.2 (1.4, 3.5)
45-64	5.0 (3.6, 6.9)	7.9 (6.0, 10.4)	31.5 (27.1, 36.3)	2.5 (1.5, 4.3)	1.1 (0.5, 2.1)	0.8 (0.4, 1.7)	2.0 (1.1, 3.4)
65+	3.3 (1.7, 6.2)	7.5 (5.2, 10.8)	21.5 (16.8, 27.2)	0.4 (0.1, 1.8)	1.3 (0.6, 2.9)	0.1 (0.0, 0.7)	0.7 (0.1, 3.0)
Residence							
Urban	6.4 (4.8, 8.4)	6.8 (5.3, 8.7)	37.6 (34.2, 41.1)	2.2 (1.5, 3.3)	2.0 (1.3, 3.0)	1.5 (0.8, 2.8)	2.6 (1.8, 3.6)
Rural	3.6 (2.6, 5.0)	5.8 (4.2, 7.8)	28.3 (25.2, 31.6)	0.8 (0.3, 2.4)	1.5 (0.8, 2.9)	1.1 (0.5, 2.5)	3.5 (2.5, 5.0)
Education Level							
Less than primary	1.6 (0.5, 4.8)	3.6 (2.0, 6.5)	19.2 (12.7, 27.9)	1.7 (0.2, 11.0)	1.1 (0.3, 3.2)	0.2 (0.0, 1.4)	0.4 (0.1, 3.0)
Primary	3.0 (1.8, 5.0)	7.1 (4.7, 10.5)	28.9 (23.9, 34.6)	1.8 (0.8, 3.7)	1.1 (0.6, 2.1)	0.5 (0.2, 1.4)	1.6 (0.7, 3.7)
Secondary/High School	5.5 (3.9, 7.7)	6.6 (5.1, 8.4)	31.8 (28.0, 35.9)	2.2 (1.2, 3.8)	1.0 (0.5, 1.9)	0.6 (0.3, 1.3)	2.1 (1.2, 3.5)
College or above	10.4 (7.6, 14.2)	8.8 (6.0, 12.9)	46.6 (41.8, 51.4)	2.7 (1.4, 5.1)	1.6 (0.7, 3.7)	2.3 (0.8, 6.6)	2.4 (1.4, 4.1)
Ethnicity							
Malay	7.2 (5.3, 9.6)	7.9 (6.1, 10.1)	37.7 (34.1, 41.3)	0.7 (0.3, 1.6)	1.8 (1.1, 3.0)	1.6 (0.7, 3.2)	3.2 (2.4, 4.2)
Chinese	2.6 (1.3, 5.0)	5.6 (3.1, 9.8)	35.4 (29.4, 42.0)	4.5 (2.6, 7.7)	2.0 (0.9, 4.5)	1.4 (0.5, 3.8)	2.5 (1.2, 5.3)
Indian	3.4 (1.4, 7.9)	6.9 (3.9, 12.0)	37.2 (27.0, 48.6)	2.4 (0.9, 6.4)	2.9 (0.9, 8.3)	0.9 (0.2, 3.3)	2.7 (0.6, 10.3)
Others	6.1 (3.5, 10.4)	2.9 (1.5, 5.5)	26.1 (20.7, 32.2)	2.3 (1.0, 5.4)	1.5 (0.8, 3.1)	1.3 (0.5, 3.4)	1.6 (0.9, 2.7)

	C1		C2		C3		C4		C5		C6		C7	
Non-smokers	5.3	(4.2, 6.8)	6.9	(5.6, 8.5)	34.8	(31.7, 38.0)	1.9	(1.2, 2.8)	2.1	(1.4, 3.1)	1.7	(1.0, 2.9)	3.1	(2.3, 4.1)
Gender														
Male	6.7	(4.9, 9.2)	6.8	(4.8, 9.4)	35.1	(30.3, 40.3)	3.0	(1.8, 5.1)	2.6	(1.5, 4.5)	2.2	(1.2, 4.1)	4.1	(2.6, 6.3)
Female	4.4	(3.1, 6.2)	7.0	(5.3, 9.2)	34.5	(31.0, 38.2)	1.1	(0.5, 2.1)	1.7	(1.0, 3.1)	1.4	(0.6, 3.2)	2.4	(1.7, 3.4)
Age (years)														
15-24	3.0	(1.5, 6.0)	4.2	(2.3, 7.5)	38.7	(32.2, 45.7)	1.2	(0.3, 4.3)	4.5	(2.5, 8.1)	3.2	(1.6, 6.1)	6.3	(4.1, 9.4)
25-44	7.2	(5.4, 9.7)	7.4	(5.3, 10.2)	39.6	(35.1, 44.2)	2.4	(1.4, 4.3)	1.4	(0.7, 2.7)	1.7	(0.6, 4.6)	2.6	(1.5, 4.2)
45-64	5.3	(3.7, 7.6)	8.6	(6.4, 11.6)	29.5	(24.8, 34.8)	2.3	(1.2, 4.3)	1.2	(0.6, 2.5)	0.9	(0.4, 2.1)	1.8	(0.9, 3.6)
65+	3.6	(1.9, 6.9)	7.4	(5.0, 11.0)	19.9	(15.0, 25.8)	0.5	(0.1, 2.0)	1.2	(0.6, 2.6)	0.1	(0.0, 0.8)	0.7	(0.2, 3.3)
Residence														
Urban	5.8	(4.4, 7.6)	7.1	(5.5, 9.1)	36.7	(32.9, 40.7)	2.2	(1.4, 3.3)	2.2	(1.4, 3.5)	1.8	(1.0, 3.3)	2.9	(2.0, 4.2)
Rural	3.8	(2.6, 5.3)	6.1	(4.4, 8.5)	27.8	(24.6, 31.3)	0.9	(0.3, 3.1)	1.6	(0.8, 3.3)	1.3	(0.5, 3.1)	3.8	(2.5, 5.6)
Education Level[3]														
Less than primary	1.0	(0.3, 3.7)	3.9	(2.0, 7.2)	17.3	(11.2, 25.7)	1.9	(0.3, 12.6)	1.2	(0.4, 3.7)	0.2	(0.0, 1.6)	0.5	(0.1, 3.5)
Primary	3.6	(2.1, 6.0)	7.7	(4.9, 12.1)	28.6	(22.6, 35.4)	1.4	(0.6, 3.6)	1.3	(0.6, 2.7)	0.4	(0.1, 1.8)	1.8	(0.7, 4.8)
Secondary/High School	4.6	(3.1, 6.6)	7.0	(5.4, 9.1)	29.8	(25.1, 34.8)	2.5	(1.4, 4.6)	1.3	(0.7, 2.4)	0.8	(0.3, 1.7)	2.4	(1.3, 4.2)
College or above	10.9	(7.9, 14.9)	9.9	(6.6, 14.6)	45.9	(40.1, 51.8)	2.1	(0.9, 4.5)	1.5	(0.6, 3.8)	2.6	(0.8, 7.6)	2.2	(1.2, 4.1)
Ethnicity														
Malay	6.5	(4.8, 8.7)	7.8	(6.0, 10.2)	37.1	(33.1, 41.3)	0.6	(0.2, 1.4)	1.9	(1.1, 3.4)	1.9	(0.9, 3.9)	3.5	(2.5, 4.8)
Chinese	2.9	(1.5, 5.6)	6.1	(3.4, 10.8)	35.2	(28.7, 42.3)	4.1	(2.3, 7.3)	2.3	(1.0, 5.1)	1.5	(0.5, 4.3)	2.9	(1.4, 5.9)
Indian	3.5	(1.3, 8.9)	8.5	(4.8, 14.6)	32.8	(21.6, 46.4)	2.9	(1.1, 7.6)	3.4	(1.1, 10.2)	1.0	(0.2, 4.0)	3.2	(0.8, 12.6)
Others	5.7	(3.3, 9.7)	3.1	(1.4, 6.8)	24.5	(18.6, 31.5)	2.9	(1.1, 7.3)	1.8	(0.8, 3.7)	1.6	(0.6, 4.7)	1.5	(0.7, 3.1)

[1] Among all adults in the past 30 days.

[2] Eateries or restaurants with air conditioning and eateries or restaurants without air conditioning

[3] Education level is reported only among persons aged ≥ 25 years.

Table 7.4: Percentage of adults ≥15 years old who visited various public places in the past 30 days and were exposed to tobacco smoke, by smoking status and selected demographic characteristics – GATS Malaysia, 2023.

Demographic Characteristics	Adults Exposed to Tobacco Smoke[1] in…													
	Government buildings		Health care facilities		Restaurants[2]		Bars or nightclubs		Public transportation		Universities		Schools	
	Percentage (95% CI)													
Overall	29.2	(23.7, 35.4)	18.6	(15.2, 22.5)	77.6	(74.3, 80.7)	67.9	(54.0, 79.1)	19.0	(13.2, 26.5)	24.3	(14.7, 37.4)	15.9	(12.3, 20.4)
Gender														
Male	33.3	(25.2, 42.6)	19.6	(14.5, 26.1)	76.7	(71.9, 81.0)	77.1	(61.9, 87.5)	22.9	(14.7, 33.9)	24.0	(13.2, 39.6)	20.5	(14.4, 28.4)
Female	24.2	(17.9, 31.8)	17.7	(13.7, 22.5)	78.7	(73.6, 83.0)	51.0	(28.6, 73.0)	15.6	(9.0, 25.6)	24.6	(11.1, 46.1)	12.1	(8.5, 17.0)
Age (years)														
15-24	27.2	(13.3, 47.6)	18.7	(9.4, 33.8)	78.1	(70.4, 84.2)	-	-	24.4	(14.3, 38.5)	22.9	(11.6, 40.2)	21.6	(14.7, 30.4)
25-44	31.7	(24.8, 39.5)	18.5	(13.8, 24.4)	76.8	(72.4, 80.7)	66.3	(45.6, 82.3)	13.2	(7.3, 22.5)	26.8	(11.0, 52.1)	11.9	(7.9, 17.6)
45-64	26.9	(20.2, 34.9)	19.9	(15.1, 25.6)	77.3	(70.1, 83.1)	72.7	(52.7, 86.4)	17.9	(8.7, 33.4)	27.3	(12.3, 50.2)	15.5	(8.9, 25.6)
65+	23.8	(12.5, 40.6)	15.7	(11.0, 22.1)	84.5	(73.9, 91.3)	-	-	28.5	(11.7, 54.7)	-	-	-	-
Residence														
Urban	30.3	(23.8, 37.7)	18.7	(14.7, 23.6)	76.6	(72.6, 80.2)	68.2	(53.2, 80.1)	17.5	(11.4, 25.8)	24.0	(13.3, 39.2)	15.3	(10.9, 21.0)
Rural	24.0	(17.9, 31.2)	17.9	(13.1, 24.0)	82.8	(77.8, 86.9)	-	-	30.5	(17.5, 47.7)	26.0	(11.2, 49.6)	17.9	(12.8, 24.5)
Education Level[3]														
Less than primary	12.6	(3.8, 34.4)	9.5	(5.3, 16.4)	85.7	(72.3, 93.3)	-	-	-	-	-	-	-	-
Primary	20.7	(12.5, 32.2)	18.4	(12.7, 25.9)	86.9	(80.1, 91.6)	-	-	18.5	(7.3, 39.6)	-	-	17.5	(7.8, 34.8)
Secondary/High School	30.3	(22.3, 39.7)	17.7	(13.9, 22.3)	75.0	(68.9, 80.3)	71.9	(52.7, 85.4)	16.8	(8.8, 29.6)	32.0	(14.7, 56.1)	14.4	(8.7, 22.9)
College or above	34.3	(26.0, 43.7)	22.4	(15.5, 31.3)	78.4	(73.0, 83.0)	60.4	(35.3, 81.0)	14.6	(7.1, 27.7)	28.4	(10.9, 56.2)	11.4	(7.0, 18.2)
Ethnicity														
Malay	33.5	(25.9, 42.0)	20.5	(15.9, 26.0)	81.1	(77.6, 84.1)	53.0	(28.8, 75.9)	22.8	(14.1, 34.6)	28.6	(14.7, 48.3)	16.1	(12.2, 20.9)
Chinese	17.3	(9.8, 28.8)	19.6	(11.8, 30.6)	69.5	(61.6, 76.4)	70.1	(47.8, 85.7)	20.6	(9.4, 39.4)	25.0	(8.6, 54.1)	32.5	(16.5, 54.0)
Indian	19.1	(7.7, 39.9)	17.4	(9.4, 29.9)	80.2	(64.6, 90.0)	-	-	-	-	-	-	15.5	(3.9, 45.2)
Others	28.9	(18.3, 42.5)	8.9	(4.6, 16.4)	75.2	(66.0, 82.5)	-	-	9.5	(4.6, 18.5)	26.8	(10.2, 54.1)	6.9	(3.8, 12.1)
Non-smokers	28.3	(23.0, 34.3)	18.4	(14.9, 22.4)	76.4	(72.5, 80.0)	66.5	(51.1, 79.0)	18.9	(12.8, 27.2)	25.4	(15.2, 39.3)	16.6	(12.3, 22.0)
Gender														
Male	34.2	(26.0, 43.4)	20.0	(14.5, 26.9)	73.9	(67.2, 79.6)	75.0	(55.9, 87.6)	23.3	(13.6, 36.8)	26.2	(13.7, 44.2)	24.1	(15.6, 35.3)
Female	23.9	(17.6, 31.6)	17.4	(13.4, 22.3)	78.3	(73.0, 82.8)	54.3	(30.7, 76.1)	15.9	(9.2, 26.0)	24.6	(11.1, 46.1)	12.2	(8.6, 17.1)

Age (years)														
15-24	20.9	(10.8, 36.5)	15.7	(8.7, 26.8)	78.0	(69.3, 84.8)	-	-	23.5	(13.4, 38.0)	24.5	(12.4, 42.7)	23.1	(15.2, 33.4)
25-44	31.6	(23.9, 40.5)	18.6	(13.3, 25.3)	76.2	(70.7, 80.9)	65.3	(41.1, 83.5)	13.1	(6.8, 23.7)	28.5	(11.0, 56.2)	12.4	(7.7, 19.5)
45-64	27.7	(20.0, 36.9)	21.3	(16.0, 27.8)	73.3	(64.9, 80.2)	-	-	18.5	(8.7, 35.2)	25.9	(11.1, 49.4)	13.7	(6.9, 25.4)
65+	27.4	(14.2, 46.2)	15.3	(10.4, 22.0)	82.7	(70.5, 90.6)	-	-	-	-	-	-	-	-
Residence														
Urban	29.3	(23.0, 36.5)	18.5	(14.4, 23.4)	75.3	(70.7, 79.4)	66.7	(50.1, 79.9)	17.6	(11.1, 26.6)	25.2	(13.9, 41.4)	16.3	(11.2, 23.3)
Rural	23.6	(17.0, 31.9)	17.8	(12.6, 24.5)	82.4	(76.3, 87.2)	-	-	31.1	(16.6, 50.6)	26.6	(10.9, 51.5)	17.4	(11.6, 25.3)
Education Level[3]														
Less than primary	8.2	(2.1, 27.4)	9.5	(5.1, 16.9)	83.6	(67.8, 92.4)	-	-	-	-	-	-	-	-
Primary	24.7	(15.6, 36.8)	19.1	(12.4, 28.3)	87.0	(78.1, 92.7)	-	-	18.9	(6.5, 43.6)	-	-	19.1	(7.4, 41.1)
Secondary/High School	26.6	(18.4, 36.7)	17.4	(13.4, 22.2)	72.4	(64.8, 78.9)	73.2	(52.1, 87.3)	19.8	(10.2, 34.9)	35.0	(16.0, 60.4)	15.4	(8.6, 25.9)
College or above	35.9	(26.9, 46.0)	23.4	(16.1, 32.8)	77.8	(71.9, 82.7)	-	-	12.9	(5.8, 26.2)	28.9	(10.7, 58.1)	10.2	(5.5, 17.9)
Ethnicity														
Malay	32.4	(25.1, 40.7)	19.3	(14.9, 24.7)	80.8	(76.7, 84.3)	-	-	21.7	(12.5, 34.9)	30.7	(15.7, 51.3)	16.9	(12.2, 23.1)
Chinese	19.2	(11.0, 31.5)	20.3	(12.1, 32.0)	68.8	(59.8, 76.6)	69.4	(44.6, 86.4)	20.9	(9.5, 39.9)	27.8	(9.6, 58.0)	33.5	(17.0, 55.3)
Indian	19.0	(7.1, 42.1)	21.7	(12.4, 35.0)	75.6	(57.2, 87.7)	-	-	-	-	-	-	-	-
Others	27.4	(17.6, 40.1)	8.4	(3.8, 17.9)	71.3	(59.3, 81.0)	-	-	9.4	(4.2, 19.6)	26.1	(9.0, 55.6)	5.7	(2.6, 11.7)

[1] Among those that visited the place in the past 30 days.

[2] Eateries or restaurants with air conditioning and eateries or restaurants without air conditioning

[3] Education level is reported only among persons aged ≥ 25 years.

- Indicates estimate is suppressed due to unweighted sample size less than 25.

Table 7.5: Percentage of adults ≥15 years old who visited universities or schools in the past 30 days and were exposed to tobacco smoke on the grounds, by smoking status and selected demographic characteristics – GATS Malaysia, 2023.

Demographic Characteristics	Adults Exposed to Tobacco Smoke[1] on…			
	University grounds		School grounds	
	Percentage (95% CI)			
Overall	36.5	(25.1, 49.7)	26.6	(22.0, 31.8)
Gender				
Male	41.9	(26.5, 59.0)	30.9	(23.3, 39.6)
Female	30.0	(15.7, 49.7)	23.0	(17.6, 29.5)
Age (years)				
15-24	30.7	(17.8, 47.4)	35.7	(26.4, 46.3)
25-44	45.0	(24.0, 67.9)	20.6	(14.9, 28.0)
45-64	30.3	(14.4, 52.9)	24.7	(15.4, 37.2)
65+	-	-	-	-
Residence				
Urban	37.3	(24.3, 52.3)	27.3	(21.5, 34.0)
Rural	32.7	(16.6, 54.4)	24.5	(18.8, 31.3)
Education Level[3]				
Less than primary	-	-	-	-
Primary	-	-	36.8	(22.2, 54.2)
Secondary/High School	54.1	(30.8, 75.8)	17.8	(11.8, 26.0)
College or above	29.9	(12.0, 57.1)	21.1	(14.4, 29.9)
Ethnicity				
Malay	33.9	(19.3, 52.3)	23.6	(18.5, 29.7)
Chinese	37.3	(18.7, 60.7)	33.4	(17.2, 54.6)
Indian	-	-	31.7	(13.7, 57.6)
Others	37.6	(19.5, 60.0)	31.1	(21.1, 43.4)
Non-smokers	37.0	(24.9, 51.1)	26.4	(21.5, 32.0)
Gender				
Male	43.8	(26.6, 62.6)	32.0	(22.8, 42.8)
Female	30.0	(15.7, 49.7)	23.1	(17.7, 29.7)
Age (years)				
15-24	31.2	(17.7, 48.9)	34.2	(24.7, 45.2)
25-44	46.6	(23.7, 71.1)	22.4	(15.7, 30.9)
45-64	28.9	(13.2, 52.1)	20.3	(11.0, 34.6)
65+	-	-	-	-
Residence				
Urban	38.3	(24.6, 54.3)	27.6	(21.4, 34.7)
Rural	30.3	(13.9, 53.9)	23.1	(17.0, 30.7)
Education Level[3]				
Less than primary	-	-	-	-
Primary	-	-	37.0	(20.1, 57.9)
Secondary/High School	48.5	(25.2, 72.4)	19.0	(11.8, 29.1)

College or above	31.6	(12.8, 59.2)	20.2	(13.1, 29.7)
Ethnicity				
Malay	34.8	(19.2, 54.7)	22.6	(17.4, 28.7)
Chinese	37.2	(17.0, 63.1)	33.5	(17.0, 55.3)
Indian	-	-	-	-
Others	37.7	(18.8, 61.4)	32.4	(21.7, 45.3)

[1] Among those that visited the place in the past 30 days.

- Indicates estimate is suppressed due to unweighted sample size less than 25.

Table 7.6: Percentage of adults ≥15 years old who are exposed to tobacco smoke at home, by smoking status and selected demographic characteristics – GATS Malaysia, 2011 and 2023.

Demographic Characteristics	Adults Exposed to Tobacco Smoke at Home[1]					
	2011		**2023**		**Relative change**	
	Overall	Non-smokers	Overall	Non-smokers	Overall	Non-smokers
	Percentage (95% CI)				*Percentage*	
Overall	38.4 (35.9, 41.1)	27.9 (25.5, 30.4)	19.4 (17.3, 21.7)	12.1 (10.6, 13.8)	-49.5*	-56.6*
Gender						
Male	43.3 (39.9, 46.8)	19.5 (16.2, 23.2)	23.6 (20.1, 27.4)	8.8 (7.0, 11.2)	-45.6*	-54.6*
Female	33.3 (30.2, 36.4)	32.8 (29.8, 36.0)	15.0 (12.9, 17.5)	14.3 (12.2, 16.8)	-54.8*	-56.4*
Age (years)						
15-24	39.3 (34.8, 44.0)	32.2 (27.5, 37.3)	20.9 (17.2, 25.2)	17.3 (13.6, 21.7)	-46.8*	-46.4*
25-44	41.1 (37.6, 44.7)	27.6 (24.2, 31.3)	19.9 (16.7, 23.4)	10.6 (8.5, 13.2)	-51.7*	-61.7*
45-64	35.2 (30.9, 39.7)	24.8 (21.0, 29.0)	19.5 (16.3, 23.1)	11.2 (8.6, 14.6)	-44.7*	-54.6*
65+	30.3 (24.0, 37.5)	21.6 (16.2, 28.2)	13.7 (10.7, 17.5)	7.7 (5.5, 10.7)	-54.7*	-64.4*
Residence						
Urban	35.7 (32.5, 39.1)	25.1 (22.1, 28.3)	17.8 (15.2, 20.6)	10.7 (8.9, 12.8)	-50.3*	-57.3*
Rural	45.4 (41.7, 49.1)	35.0 (31.5, 38.7)	25.1 (22.1, 28.3)	17.0 (14.3, 20.2)	-44.8*	-51.3*
Education Level[2]						
Less than primary	42.7 (36.7, 48.9)	32.2 (26.4, 38.5)	21.2 (15.7, 28.1)	14.9 (9.5, 22.5)	-50.3*	-53.8*
Primary	41.3 (36.7, 45.9)	29.0 (25.0, 33.5)	25.1 (20.3, 30.4)	13.4 (10.3, 17.3)	-39.3*	-53.8*
Secondary/High School	38.4 (34.7, 42.2)	25.3 (21.7, 29.2)	20.5 (17.3, 24.1)	10.7 (8.3, 13.8)	-46.6*	-57.6*
College or above	24.8 (19.3, 31.3)	16.0 (11.0, 22.8)	11.4 (8.5, 15.1)	7.3 (5.1, 10.5)	-54.2*	-54.3*
Ethnicity						
Malay	43.9 (40.8, 46.9)	33.8 (30.7, 37.1)	21.6 (19.1, 24.4)	14.1 (12.1, 16.5)	-50.7*	-58.2*
Chinese	22.5 (17.8, 28.1)	14.5 (10.8, 19.2)	9.3 (7.1, 12.3)	4.9 (3.2, 7.5)	-58.5*	-66.1*
Indian	23.1 (16.3, 31.7)	14.4 (9.2, 21.8)	12.1 (6.6, 21.0)	6.5 (2.3, 16.7)	-47.9*	-54.8*
Others	47.8 (41.6, 54.2)	33.5 (27.7, 39.9)	29.9 (24.4, 36.0)	19.9 (14.5, 26.7)	-37.5*	-40.7*

[1] Adults reporting that smoking inside their home occurs daily, weekly, or monthly.

[2] Education level is reported only among persons aged ≥ 25 years.

* $p<0.05$

NOTE: Results for prevalence estimates / averages and 95% CIs are rounded to the nearest tenth (0.1). The relative changes are calculated using un-rounded prevalence estimates and might be different if calculated using rounded prevalence estimates shown in this table.

Table 7.7: Percentage of adults ≥15 years old who work indoors and are exposed to tobacco smoke at work, by smoking status and selected demographic characteristics – GATS Malaysia, 2011 and 2023.

| Demographic Characteristics | Adults Exposed to Tobacco Smoke at Work[1] | | | | | |
| | 2011 | | 2023 | | Relative change | |
	Overall	Non-smokers	Overall	Non-smokers	Overall	Non-smokers
	Percentage (95% CI)				Percentage	
Overall	39.8 (35.9, 44.0)	33.9 (29.5, 38.6)	21.0 (17.5, 25.1)	16.9 (13.6, 20.9)	-47.3*	-50.1*
Gender						
Male	46.2 (41.1, 51.5)	39.1 (32.6, 46.0)	25.8 (20.6, 31.6)	19.7 (14.3, 26.5)	-44.3*	-49.6*
Female	30.1 (24.7, 36.1)	29.8 (24.4, 35.7)	15.1 (11.2, 19.9)	14.6 (10.8, 19.3)	-49.9*	-51.0*
Age (years)						
15-24	37.8 (28.8, 47.8)	30.6 (21.0, 42.3)	16.6 (9.4, 27.6)	14.3 (7.6, 25.3)	-56.1*	-53.5*
25-44	40.0 (35.0, 45.3)	34.5 (28.9, 40.5)	21.9 (17.9, 26.7)	19.0 (14.7, 24.1)	-45.1*	-45.0*
45-64	41.3 (33.8, 49.2)	35.6 (27.3, 44.8)	21.3 (14.8, 29.6)	14.2 (9.2, 21.2)	-48.5*	-60.2*
65+	-	-	-	-	-	-
Residence						
Urban	41.6 (36.9, 46.5)	35.6 (30.4, 41.3)	19.5 (15.7, 24.0)	15.3 (11.8, 19.5)	-53.1*	-57.1*
Rural	33.1 (27.2, 39.6)	27.4 (20.9, 35.0)	30.6 (24.0, 38.2)	27.8 (20.2, 36.9)	- 7.4	1.5
Education Level2						
Less than primary	69.2 (45.4, 85.9)	-	-	-	-	-
Primary	48.0 (38.9, 57.2)	48.3 (37.7, 59.0)	24.8 (15.7, 37.0)	16.9 (9.2, 28.8)	-48.2*	-65.1*
Secondary/High School	36.1 (30.6, 42.0)	30.6 (24.5, 37.4)	28.3 (22.4, 35.1)	21.4 (15.6, 28.7)	-21.5	-29.9*
College or above	40.8 (32.3, 49.8)	34.7 (26.2, 44.4)	16.3 (11.8, 22.0)	14.7 (10.3, 20.5)	-60.1*	-57.8*
Ethnicity						
Malay	39.9 (34.7, 45.4)	30.7 (25.0, 37.0)	24.9 (20.5, 29.8)	18.6 (14.4, 23.7)	-37.7*	-39.3*
Chinese	44.7 (37.2, 52.5)	41.2 (32.8, 50.0)	12.7 (7.7, 20.2)	11.8 (6.6, 20.4)	-71.7*	-71.3*
Indian	32.7 (21.7, 45.9)	36.8 (24.8, 50.7)	20.9 (8.9, 41.7)	20.8 (8.0, 44.3)	-36.0	-43.4
Others	36.2 (26.1, 47.8)	34.7 (21.7, 50.3)	21.3 (16.0, 27.7)	19.7 (13.6, 27.6)	-41.3*	-43.2*

[1] In the past 30 days. Among those respondents who work outside of the home who usually work indoors or both indoors and outdoors.

[2] Education level is reported only among persons aged ≥ 25 years.

* $p<0.05$

NOTE: Results for prevalence estimates / averages and 95% CIs are rounded to the nearest tenth (0.1). The relative changes are calculated using un-rounded prevalence estimates and might be different if calculated using rounded prevalence estimates shown in this table.

- Indicates estimates based on less than 25 unweighted cases and has been suppressed.

Table 7.8: Percentage of adults ≥15 years old who were exposed to tobacco smoke when visiting various public places in the past 30 days, by smoking status and selected demographic characteristics – GATS Malaysia, 2011 and 2023.

Demographic Characteristics	Adults exposed to tobacco smoke1 in…											
	2011				2023				Relative change			
	Government Buildings	Healthcare Facilities	Restaurants	Public Transportation	Government Buildings	Healthcare Facilities	Restaurants	Public Transportation	Government Buildings	Healthcare Facilities	Restaurants	Public Transportation
	Percentage (95% CI)				Percentage (95% CI)				Percentage			
Overall	20.0 (16.4,24.2)	8.7(6.9,10.8)	71.0(67.7,74.0)	28.2 (23.3, 33.5)	29.2 (23.7, 35.4)	18.6 (15.2,22.5)	77.6 (74.3,80.7)	19.0 (13.2, 26.5)	45.8*	114.2*	9.4*	-32.6*
Smoking Status												
Current smokers[2]	22.5 (15.9,31.0)	8.9 (5.1, 15.0)	79.4 (74.4,83.6)	29.2 (19.0, 42.1)	32.5 (20.3, 47.5)	19.8 (12.1,30.6)	82.7 (75.8,88.0)	19.2 (7.7, 40.2)	44.0	122.5	4.2	-34.4
Non-smokers[3]	19.0 (15.2,23.6)	8.6 (6.8, 10.8)	68.3 (64.6,71.7)	27.9 (22.5, 34.0)	28.3 (23.0, 34.3)	18.4(14.9,22.4)	76.4(72.5,80.0)	18.9 (12.8, 27.2)	48.5*	113.1*	11.9*	-32.1*
Gender												
Male	20.1 (16.0,25.0)	7.8 (5.4, 11.2)	73.1 (69.2,76.6)	32.1 (24.7, 40.6)	33.3 (25.2, 42.6)	19.6(14.5,26.1)	76.7 (71.9,81.0)	22.9 (14.7, 33.9)	65.6*	152.2*	5.0	-28.8
Female	19.8 (14.7,26.2)	9.4 (7.1, 12.4)	68.4 (63.8,72.8)	25.2 (19.5, 31.9)	24.2 (17.9, 31.8)	17.7 (13.7,22.5)	78.7 (73.6,83.0)	15.6 (9.0, 25.6)	22.0	87.4*	14.9*	-38.1*
Age (years)												
15-24	24.1 (16.2,34.3)	12.3 (7.9,18.7)	72.6 (66.7,77.8)	33.4 (25.5, 42.3)	27.2 (13.3, 47.6)	18.7 (9.4,33.8)	78.1 (70.4,84.2)	24.4 (14.3, 38.5)	12.9	51.9	7.5	-26.9
25-44	20.9 (16.3, 26.4)	8.4 (5.9, 11.6)	72.6 (68.4,76.3)	28.2 (21.1, 36.5)	31.7 (24.8, 39.5)	18.5 (13.8,24.4)	76.8 (72.4,80.7)	13.2 (7.3, 22.5)	51.5*	121.6*	5.9	-53.3*
45-64	14.4 (9.6, 20.9)	6.3 (4.3, 9.1)	67.6 (61.9,72.7)	15.9 (9.7, 25.0)	26.9 (20.2, 34.9)	19.9 (15.1,25.6)	77.3 (70.1,83.1)	17.9 (8.7, 33.4)	87.5	217.3*	14.3*	12.3
65+	23.7 (12.7, 39.7)	7.9 (3.6, 16.5)	55.4(39.9,70.0)	19.4 (8.5, 38.4)	23.8 (12.5, 40.6)	15.7 (11.0,22.1)	84.5 (73.9,91.3)	28.5 (11.7, 54.7)	0.6	98.9	52.4*	46.7
Residence												
Urban	21.5 (17.0, 26.9)	9.2 (7.0, 12.1)	71.3 (67.4,75.0)	27.8 (21.9, 34.7)	30.3 (23.8, 37.7)	18.7 (14.7,23.6)	76.6 (72.6,80.2)	17.5 (11.4, 25.8)	40.7	103.3*	7.4	-37.2*
Rural	15.4 (11.4, 20.6)	7.3 (5.3, 10.0)	69.6 (64.9,74.0)	29.0 (22.9, 36.0)	24.0 (17.9, 31.2)	17.9 (13.1,24.0)	82.8 (77.8,86.9)	30.5 (17.5, 47.7)	55.2	144.3*	19.0*	5.2
Education Level4												
Less than primary	16.0 (7.7, 30.2)	5.6 (3.1, 10.1)	68.8 (55.3,79.7)	17.4 (10.3, 27.8)	12.6 (3.8, 34.4)	9.5 (5.3,16.4)	85.7 (72.3,93.3)		-21.0	68.0	24.6	-
Primary	24.3 (16.6, 34.0)	7.4 (4.8, 11.3)	67.9 (61.6,73.5)	26.1 (17.4, 37.0)	20.7 (12.5, 32.2)	18.4 (12.7,25.9)	86.9 (80.1,91.6)	18.5 (7.3, 39.6)	-14.8	148.1*	28.1*	-29.1
Secondary/High School	17.5 (13.1, 22.9)	8.0 (5.4, 11.8)	72.3 (67.5,76.6)	26.1 (18.2, 35.8)	30.3 (22.3, 39.7)	17.7 (13.9,22.3)	75.0 (68.9,80.3)	16.8 (8.8, 29.6)	73.4*	119.7*	3.8	-35.6

College or above	18.4 (11.4, 28.3)	8.9 (4.9,15.7)	68.4 (60.4,75.5)	17.4 (6.2, 40.1)	34.3 (26.0, 43.7)	22.4 (15.5,31.3)	78.4(73.0,83.0)	14.6 (7.1, 27.7)	86.4	150.4	14.6*	-16.2
Ethnicity												
Malay	22.6 (18.2, 27.6)	8.8 (6.8, 11.4)	75.1(71.2,78.6)	27.9 (21.3, 35.6)	33.5 (25.9, 42.0)	20.5 (15.9,26.0)	81.1(77.6,84.1)	22.8 (14.1, 34.6)	48.4*	132.6*	7.9*	-18.4
Chinese	12.8 (6.8, 22.8)	7.7 (4.5, 12.7)	58.0(51.3,64.5)	21.8 (11.1, 38.4)	17.3 (9.8, 28.8)	19.6 (11.8,30.6)	69.5 (61.6,76.4)	20.6 (9.4, 39.4)	35.9	155.7	19.7*	-5.4
Indian	18.3 (9.5, 32.1)	14.9 (7.3,28.1)	74.8(65.0,82.7)	35.1 (22.6, 50.1)	19.1 (7.7, 39.9)	17.4 (9.4,29.9)	80.2(64.6,90.0)	-	4.4	16.7	7.2	-
Others	16.4 (8.9, 28.2)	3.8 (1.7, 8.6)	69.8(61.8,76.7)	28.0 (20.3, 37.4)	28.9 (18.3, 42.5)	8.9 (4.6,16.4)	75.2 (66.0,82.5)	9.5 (4.6, 18.5)	76.5	132.2	7.7	-66.1*

[1] Among those that visited the place in the past 30 days.

[2] Includes daily and occasional (less than daily) smokers.

[3] Includes former and never smokers.

[4] Education level is reported only among persons aged ≥ 25 years.

* $p < 0.05$

NOTE: Results for prevalence estimates / averages and 95% CIs are rounded to the nearest tenth (0.1). The relative changes are calculated using un-rounded prevalence estimates and might be different if calculated using rounded prevalence estimates shown in this table.

- Indicates estimates based on less than 25 unweighted cases and has been suppressed.

08 ECONOMICS

KEY FINDINGS

- The average (mean) amount spent on 20 manufactured cigarettes was RM10.8.

- The average (mean) monthly expenditure on manufactured cigarettes was RM177.7.

- Most adults who used e-cigarettes spent less than RM50.0 (38.6%) and RM50-RM99 (36.8%) to purchase e-cigarettes (not including the device) in the past 30 days.

8.0 Economics

Introduction

The prevalence of smoking in Malaysia remains a critical concern, with 21.3% of Malaysians reported as current smokers in 2019 (1). The impact of smoking on public health is evident, contributing to approximately 15.0% of hospitalizations and 35.0% of inpatient hospital deaths in Malaysia (2). In a study conducted in several Asia Pacific countries, smokers were spending annually more than the money they earned in one month to smoke one pack of cigarettes each day (3). In this section, we look at how much those who smoke in Malaysia spend for a pack of cigarettes and its monthly expenditure. GATS 2023 provides new data on the amount of money adults in Malaysia spend on e-cigarettes.

8.1 Source of Last Purchase of Cigarettes

Adults who currently smoke manufactured cigarettes (not including kreteks) were asked where the source of their last purchase of cigarette was. The most common sources were grocery stores (79.9%), followed by convenience stores (9.1%) and petrol stations (7.4%).

Most adults, both in urban and rural areas, reported buying their most recent cigarettes from grocery stores, with 77.8% of urban residents and 85.2% of rural residents doing so. For urban residents, convenience stores (11.4%) and petrol stations (9.0%) were also common sources. Meanwhile, rural residents frequently mentioned obtaining cigarettes from other individuals (4.2%), convenience stores (3.2%), and petrol stations (3.0%) as their sources of purchase. Adults living in rural residences reported to have bought their cigarettes from street vendors (1.6%) and supermarkets (1.4%), unlike adults living in urban residences **(Table 8.1)**.

8.2 Expenditure on Cigarettes

Current manufactured cigarette smokers aged 15 and above were asked regarding their expenditures on their last purchase of manufactured cigarettes (not including kreteks). Two indicators were calculated, including 1) the average money spent on 20 manufactured cigarettes (one pack), and 2) average expenditure on manufactured cigarettes per month. Average expenditure was calculated using the previously presented cost and consumption data (i.e., cigarettes smoked per day). **Table 8.2** presents the results for these two indicators.

Overall, the mean amount spent on a pack of 20 manufactured cigarettes was RM10.8. Within the demographic subgroups, several patterns were noticed. By age, the 15-24 years age group spent the lowest mean amount, at RM8.9, while the other age groups spent about similar amounts, with the mean amount spent ranging from RM10.0 to RM11.4.

Urban residents were noted to spend more, with an average of RM12.0, compared to rural residents who only spent RM8.0 on average. More money was spent on cigarettes with increasing education levels with averages ranging from RM 6.1 to RM 15.4.

A similar pattern could be seen in the monthly expenditure of manufactured cigarettes. Overall, the mean expenditure of manufactured cigarettes per month was RM177.7. The age group of 15-24 years spent the least, with mean monthly expenditure of manufactured cigarettes being RM123.7, while the other age group's mean monthly expenditure ranged from RM173.2 to RM192.5. On average, urban residents spent RM194.8 per month, rural residents spent RM136.3. Among those with college and above educational levels, the mean expenditure on cigarettes per month was RM226.6, the highest among all educational levels.

8.3 Expenditure on e-cigarettes

Table 8.3 shows the amount of money spent on e-cigarettes in the past 30 days not including the device. Most adults who used e-cigarettes spent less than RM50.0 (38.6%) and RM50-RM99 (36.8%) in the past 30 days. Most adults living in rural residences spent less than RM50.0 on e-cigarettes in the past 30 days (50.6%) compared to adults living in urban residences who spent more money on e-cigarettes (RM50-RM99); (38.1%).

8.4 Source of last purchase of e-cigarettes

Table 8.4 shows the source of last purchase of e-cigarettes. Most adults made their last purchase of e-cigarettes at an e-cigarette/vape shop (85.5%), followed by via the internet/online shopping (3.4%) and convenience stores (2.6%).

8.5 Comparative change between 2011 and 2023: Economics of Tobacco Smoking

- Among manufactured cigarette smokers, the average cigarette expenditure per month decreased from RM 234.0 in 2011 to RM 177.7 in 2023.
- Likewise, the average cost of a pack of 20 manufactured cigarettes also decreased during the same period from RM 13.2 in 2011 to RM 10.8 in 2023.

Average cost of 20 manufactured cigarettes and monthly expenditure, Malaysia 2011 and 2023 (in Ringgit Malaysia)
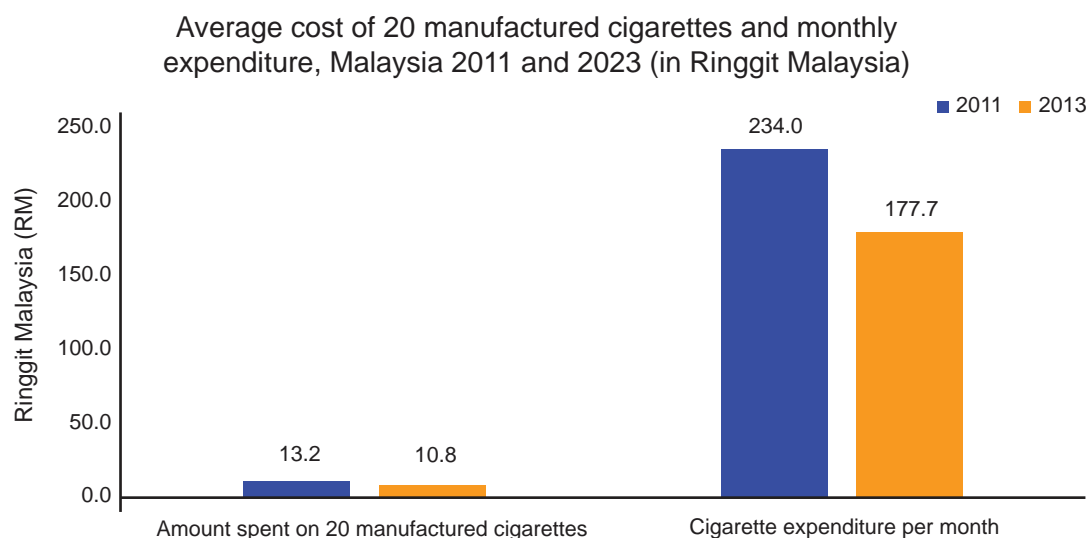
The average cost of a pack of 20 manufactured cigarettes has decreased significantly from RM 13.2 in 2011 to RM 10.8 representing a relative reduction of 18.0%. Moreover, the average cigarette expenditure per month significantly decreased from RM 234.0 in 2011 to RM 177.7 in 2023, representing a relative reduction of 24.0%. A similar trend was observed across all demographic

characteristics, especially younger age groups, urban population, and Malay ethnicity. **(Table 8.5 and 8.6)**

References

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3. Lee VW, Li A, Li JT. Burden of smoking in Asia-Pacific countries. Tobacco Induced Diseases. 2021;19(April):28. https://doi.org/10.18332/tid/133633 . (Accessed on 10 October 2024).

Table 8.1: Percentage distribution of current manufactured cigarette smokers ≥15 years old, by the source of last purchase of cigarettes and selected demographic characteristics – GATS Malaysia, 2023.

	Overall		Gender				Age (years)				Residence			
			Male		Female		15-24		25+		Urban		Rural	
Source							Percentage (95% CI)							
Vending machine	0.1	(0.0, 0.6)	0.1	(0.0, 0.6)	-	-	0.0	N/A	0.1	(0.0, 0.7)	0.1	(0.0, 0.8)	0.0	N/A
Grocery Store	79.9	(74.6, 84.2)	79.3	(74.1, 83.7)	-	-	76.8	(61.4, 87.4)	80.5	(75.0, 85.1)	77.8	(70.8, 83.5)	85.2	(79.0, 89.9)
Convenience store	9.1	(6.2, 13.2)	9.4	(6.4, 13.5)	-	-	10.8	(4.3, 24.5)	8.8	(5.9, 12.7)	11.4	(7.5, 16.9)	3.2	(1.7, 6.2)
Petrol station	7.4	(4.8, 11.2)	7.6	(4.9, 11.5)	-	-	9.5	(3.2, 25.1)	6.9	(4.2, 11.0)	9.0	(5.6, 14.3)	3.0	(1.3, 6.7)
Street vendor	0.5	(0.2, 1.2)	0.5	(0.2, 1.3)	-	-	0.0	N/A	0.6	(0.3, 1.5)	0.1	(0.0, 0.7)	1.6	(0.6, 3.9)
Newspaper stand/Kiosk	0.0	N/A	0.0	N/A	-	-	0.0	N/A	0.0	N/A	0.0	N/A	0.0	N/A
Duty-free shop	0.0	N/A	0.0	N/A	-	-	0.0	N/A	0.0	N/A	0.0	N/A	0.0	N/A
Outside of country	0.0	N/A	0.0	N/A	-	-	0.0	N/A	0.0	N/A	0.0	N/A	0.0	N/A
Supermarket	0.4	(0.2, 1.0)	0.4	(0.2, 1.1)	-	-	0.2	(0.0, 1.7)	0.4	(0.2, 1.2)	0.0	N/A	1.4	(0.5, 3.7)
Internet/online shopping	0.0	N/A	0.0	N/A	-	-	0.0	N/A	0.0	N/A	0.0	N/A	0.0	N/A
From another person	2.0	(1.0, 4.2)	2.1	(1.0, 4.3)	-	-	2.6	(0.8, 8.0)	1.9	(0.8, 4.4)	1.2	(0.4, 3.3)	4.2	(1.6, 10.7)
Night/Open market	0.1	(0.0, 1.0)	0.1	(0.0, 1.1)	-	-	0.0	N/A	0.2	(0.0, 1.3)	0.0	N/A	0.5	(0.1, 3.6)
Eateries	0.0	N/A	0.0	N/A	-	-	0.0	N/A	0.0	N/A	0.0	N/A	0.0	N/A
Other	0.5	(0.2, 1.4)	0.5	(0.2, 1.4)	-	-	0.0	N/A	0.6	(0.2, 1.7)	0.4	(0.1, 1.6)	0.8	(0.2, 3.2)
Total	100.0		100.0		100.0		100.0		100.0		100.0		100	

Note: Current manufactured cigarette smokers includes daily and occasional (less than daily) smokers.

N/A - The estimate is "0.0".

- Indicates estimate is suppressed due to unweighted sample size less than 25.

Table 8.2: Average amount spent for 20 manufactured cigarettes and average cigarette expenditure per month among current manufactured cigarette smokers ≥15 years old, by selected demographic characteristics – GATS Malaysia, 2023.

Demographic Characteristics	Amount spent on 20 manufactured cigarettes (*Malaysian Ringgit*)				Manufactured cigarette expenditure per month (*Malaysian Ringgit*)			
	Mean (95% CI)		Median (95% CI)		Mean (95% CI)		Median (95% CI)	
Overall	10.8	(9.7, 11.9)	8.2	(8.0, 10.8)	177.7	(156.5, 198.9)	112.8	(92.6, 142.7)
Gender								
Male	10.8	(9.7, 11.9)	8.0	(8.0, 10.5)	178.8	(157.8, 199.9)	112.8	(93.1, 137.9)
Female	-	-	-	-	-	-	-	-
Age (years)								
15-24	8.9	(4.8, 13.0)	6.5	(1.6, 12.9)	123.7	(67.8, 179.5)	56.1	(37.3, 95.7)
25-44	11.1	(10.0, 12.3)	9.5	(8.0, 11.5)	188.2	(163.0, 213.3)	121.5	(106.6, 171.2)
45-64	11.4	(9.5, 13.3)	8.0	(6.7, 12.9)	192.5	(150.5, 234.5)	133.3	(85.2, 183.0)
65+	10.0	(7.1, 12.9)	6.9	(4.4, 13.8)	173.2	(81.8, 264.6)	72.7	(14.9, 203.0)
Residence								
Urban	12.0	(10.4, 13.6)	11.0	(8.0, 14.6)	194.8	(165.7, 223.9)	119.7	(89.8, 178.5)
Rural	8.0	(7.1, 9.0)	5.9	(4.9, 6.9)	136.3	(118.5, 154.2)	91.1	(81.2, 112.8)
Education Level[1]								
Less than primary	6.1	(4.1, 8.1)	4.0	(3.0, 5.3)	131.4	(88.1, 174.6)	86.2	(64.3, 118.3)
Primary	9.6	(7.7, 11.6)	6.9	(4.7, 10.3)	188.5	(149.3, 227.8)	117.5	(78.0, 179.1)
Secondary/High School	11.3	(10.1, 12.5)	9.1	(8.0, 12.2)	180.5	(148.5, 212.5)	120.8	(83.8, 158.4)
College or above	15.4	(12.6, 18.2)	14.4	(10.6, 17.1)	226.6	(182.1, 271.0)	139.6	(106.1, 228.2)
Ethnicity								
Malay	11.0	(9.5, 12.5)	8.9	(7.7, 11.4)	181.9	(155.2, 208.6)	112.6	(91.6, 144.0)
Chinese	13.9	(10.9, 16.8)	14.5	(8.0, 17.0)	240.0	(177.5, 302.5)	193.3	(82.1, 262.6)
Indian	-	-	-	-	-	-	-	-
Others	8.1	(6.2, 10.0)	4.7	(3.9, 6.8)	138.9	(106.8, 171.0)	89.5	(66.6, 126.6)

Note: Current manufactured cigarette smokers includes daily and occasional (less than daily) smokers.

[1] Education level is reported only among persons aged ≥ 25 years.

- Indicates estimate is suppressed due to unweighted sample size less than 25.

Table 8.3: Percentage distribution of current electronic cigarette users ≥15 years old, by money spent on electronic cigarettes (not including the device) in the past 30 days and selected demographic characteristics – GATS Malaysia, 2023.

Money spent on electronic cigarettes in the past 30 days (Malaysian Ringgit)

Percentage (95% CI)

Demographic Characteristics	Did not spend any	Less than RM50	RM50-RM99	RM100-RM199	RM200-RM299	RM300 Or More	Total
Overall	5.5 (2.8, 10.4)	38.6 (27.8, 50.7)	36.8 (24.6, 51.0)	15.9 (8.4, 28.0)	2.8 (0.4, 17.6)	0.3 (0.0, 2.2)	100.0
Gender							
Male	5.1 (2.5, 10.0)	36.7 (25.9, 49.1)	37.8 (25.0, 52.7)	17.1 (9.1, 29.8)	3.0 (0.4, 18.7)	0.3 (0.0, 2.3)	100.0
Female	- -	- -	- -	- -	- -	- -	100.0
Age (years)							
15-24	5.1 (1.6, 15.1)	28.0 (13.7, 48.6)	47.9 (26.3, 70.3)	18.2 (5.3, 46.9)	0.0 N/A	0.8 (0.1, 5.6)	100.0
25-44	3.6 (1.2, 10.7)	51.1 (35.8, 66.2)	26.1 (16.2, 39.1)	13.5 (6.1, 27.3)	5.7 (0.8, 30.8)	0.0 N/A	100.0
45-64	- -	- -	- -	- -	- -	- -	100.0
65+	- -	- -	- -	- -	- -	- -	100.0
Residence							
Urban	5.4 (2.5, 11.1)	36.4 (24.2, 50.6)	38.1 (24.0, 54.6)	16.8 (8.3, 31.2)	3.3 (0.5, 20.5)	0.0 N/A	100.0
Rural	6.2 (1.8, 19.0)	50.6 (38.2, 62.9)	30.0 (20.3, 41.9)	11.3 (4.3, 26.6)	0.0 N/A	1.9 (0.3, 12.7)	100.0
Education Level[1]							
Less than primary	- -	- -	- -	- -	- -	- -	100.0
Primary	- -	- -	- -	- -	- -	- -	100.0
Secondary/High School	5.8 (2.0, 15.5)	43.8 (27.3, 61.8)	33.4 (19.6, 50.8)	7.8 (2.3, 23.3)	9.2 (1.3, 43.9)	0.0 N/A	100.0
College or above	3.5 (0.5, 21.9)	37.3 (18.3, 61.3)	32.9 (16.2, 55.4)	26.2 (11.2, 50.0)	0.0 N/A	0.0 N/A	100.0
Ethnicity							
Malay	3.6 (1.3, 9.4)	30.4 (18.1, 46.3)	44.2 (26.7, 63.3)	16.6 (8.3, 30.3)	4.7 (0.7, 27.1)	0.5 (0.1, 3.6)	100.0
Chinese	- -	- -	- -	- -	- -	- -	100.0
Indian	- -	- -	- -	- -	- -	- -	100.0
Others	13.7 (4.8, 33.3)	64.0 (45.0, 79.5)	18.7 (9.4, 33.7)	3.6 (0.9, 12.8)	0.0 N/A	0.0 N/A	100.0

Note: Current manufactured cigarette smokers include daily and occasional (less than daily) smokers.

[1] Education level is reported only among persons aged ≥ 25 years.

N/A - The estimate is "0.0".

- Indicates estimate is suppressed due to unweighted sample size less than 25.

Table 8.4: Percentage distribution of current e-cigarette users ≥15 years old, by the source of last purchase of e-cigarettes and selected demographic characteristics – GATS Malaysia, 2023.

Source	Overall		Gender			Age (years)				Residence			
			Male		Female	15-24		25+		Urban		Rural	
	Percentage	(95% CI)	Percentage	(95% CI)		Percentage	(95% CI)	Percentage	(95% CI)	Percentage	(95% CI)	Percentage	(95% CI)
E-cigarette/vape shop	85.5	(76.5, 91.5)	86.7	(77.3, 92.6)	-	92.8	(83.2, 97.1)	81.5	(69.1, 89.6)	88.3	(77.4, 94.3)	71.1	(56.8,82.1)
Vending machine	0.4	(0.1, 2.8)	0.4	(0.1, 3.0)	-	1.1	(0.1, 7.7)	0.0	N/A	0.0	N/A	2.4	(0.3, 15.6)
Grocery store	2.3	(1.0, 5.3)	2.4	(1.0, 5.6)	-	2.0	(0.6, 6.5)	2.4	(0.8, 7.2)	0.5	(0.1, 3.6)	11.7	(4.7, 26.2)
Convenience store	2.6	(0.5, 12.0)	2.7	(0.5, 12.8)	-	0.0	N/A	4.0	(0.8, 17.8)	2.4	(0.3, 15.6)	3.4	(0.5, 20.3)
Petrol station	1.6	(0.2, 10.5)	1.7	(0.2, 11.1)	-	0.0	N/A	2.4	(0.3, 15.6)	1.9	(0.3, 12.4)	0.0	N/A
Street vendor	0.0	N/A	0.0	N/A	-	0.0	N/A	0.0	N/A	0.0	N/A	0.0	N/A
Newspaper stand/Kiosk	0.0	N/A	0.0	N/A	-	0.0	N/A	0.0	N/A	0.0	N/A	0.0	N/A
Eateries	0.0	N/A	0.0	N/A	-	0.0	N/A	0.0	N/A	0.0	N/A	0.0	N/A
Outside the country	0.0	N/A	0.0	N/A	-	0.0	N/A	0.0	N/A	0.0	N/A	0.0	N/A
Supermarket	0.1	(0.0, 0.9)	0.1	(0.0, 1.0)	-	0.0	N/A	0.2	(0.0, 1.5)	0.0	N/A	0.8	(0.1, 5.3)
Internet/Online shopping	3.4	(1.2, 9.5)	3.4	(1.1, 10.0)	-	0.0	N/A	5.3	(1.8, 14.3)	3.4	(1.0, 11.1)	3.3	(0.7, 13.7)
From another person	2.1	(0.8, 5.2)	1.5	(0.6, 3.9)	-	4.1	(1.1, 13.6)	1.0	(0.4, 2.7)	1.4	(0.3, 5.8)	5.6	(2.3, 13.2)
Night/Open market	0.0	N/A	0.0	N/A	-	0.0	N/A	0.0	N/A	0.0	N/A	0.0	N/A
Delivery service	0.2	(0.0, 1.4)	0.2	(0.0, 1.5)	-	0.0	N/A	0.3	(0.0, 2.2)	0.0	N/A	1.2	(0.2, 8.3)
Other	1.8	(0.5, 6.8)	0.8	(0.1, 4.9)	-	0.0	N/A	2.8	(0.7, 10.3)	2.1	(0.5, 8.2)	0.5	(0.1, 3.4)
Total	100.0		100.0		100.0	100.0		100.0		100.0		100.0	

Percentage (95% CI)

Note: Current manufactured cigarette smokers include daily and occasional (less than daily) smokers.

N/A - The estimate is "0.0".

- Indicates estimate is suppressed due to unweighted sample size less than 25.

Table 8.5: Average amount spent for 20 manufactured cigarettes among current manufactured cigarette smokers ≥15 years old, by selected demographic characteristics – GATS Malaysia, 2011 and 2023.

Demographic Characteristics	Amount spent on 20 manufactured cigarettes *(Malaysian Ringgit))*				Relative change of mean	Relative change of median
	2011 [1]		2023			
	Mean (95% CI)	*Median (95% CI)*	*Mean (95% CI)*	*Median (95% CI)*	*Percentage*	
Overall	13.2 (10.4,16.0)	12.6 (12.5, 12.6)	10.8 (9.7, 11.9)	8.2 (8.0, 10.8)	-18.0	-34.9*
Gender						
Male	13.0 (10.5,16.0)	12.6 (12.5, 12.6)	10.8 (9.7, 11.8)	8.0 (8.0, 10.5)	-18.5	-35.9*
Female	-	-	-	-	-	-
Age (years)						
15-24	12.3 (7.6, 17.1)	11.4 (9.2, 11.8)	8.9 (4.8, 13.0)	6.5 (1.6, 13.0)	-28.1	-43.2
25-44	14.0 (9.3, 18.6)	12.6 (12.5, 12.6)	11.1 (10.0,12.3)	9.5 (8.0, 11.5)	-20.3	-24.3*
45-64	12.6 (10.1,15.2)	12.08 (11.86, 2.25)	11.4 (9.5, 13.3)	8.0 (6.7, 13.0)	-10.0	-34.0*
65+	8.1 (5.0, 11.2)	6.6 (3.0, 11.7)	10.0 (7.1, 13.0)	6.9 (4.4, 14.0)	23.4	4.1
Residence						
Urban	14.4 (10.8,18.1)	12.6 (12.5, 12.7)	12.0 (10.4,13.6)	11.0 (8.0, 14.6)	-16.7	-12.5
Rural	9.4 (8.0, 10.8)	11.0 (6.0, 11.7)	8.0 (7.1, 9.0)	5.9 (4.9, 6.9)	-14.6	-46.7*
Education Level2						
Less than primary	12.6 (7.9, 17.3)	11.56 (9.3, 12.1)	6.1 (4.1, 8.1)	4.0 (3.0, 5.3)	-51.7*	-65.6*
Primary	9.5 (8.0, 10.8)	11.0 (6.7, 12.5)	9.6 (7.7, 11.6)	7.0 (4.7, 10.3)	0.9	-37.4*
Secondary/High School	16.6 (10.0,23.3)	12.2 (12.0, 12.3)	11.3 (10.1,12.5)	9.1 (8.0, 12.2)	-32.1*	-24.9*
College or above	12.3 (10.3,14.3)	12.2 (., 12.4)	15.4 (12.6,18.2)	14.4 (10.6, 17.1)	24.6	18.3
Ethnicity						
Malay	14.9 (10.4,19.3)	12.1 (12.0, 12.2)	11.0 (9.5, 12.5)	8.9 (7.7, 11.5)	-26.0*	-26.5*
Chinese	12.3 (9.7, 14.9)	12.2 (., 12.4)	13.9 (11.0,16.8)	14.5 (8.0, 17.0)	12.9	19.4
Indian	11.1 (9.9, 12.3)	11.6 (11.1, 11.9)	-	-	-	-
Others	9.0 (4.3, 13.8)	4.7 (3.7, 6.0)	8.1 (6.2, 10.0)	4.7 (3.9, 6.8)	-10.6	0.7

[1] In adjusted constant 2023 Malaysian Ringgit using the Inflation Rate for Average Consumer Prices from the International Monetary Fund's World Economic Outlook Database.

[2] Education level is reported only among persons aged ≥ 25 years.

* $p<0.05$

NOTE: Results for prevalence estimates / averages and 95% CIs are rounded to the nearest tenth (0.1). The relative changes are calculated using un-rounded prevalence estimates and might be different if calculated using rounded prevalence estimates shown in this table.

- Indicates estimates based on less than 25 unweighted cases and has been suppressed.

Table 8.6: Average cigarette expenditure per month among current manufactured cigarette smokers ≥15 years old, by selected demographic characteristics - GATS Malaysia, 2011 and 2023.

Demographic Characteristics	Cigarette expenditure per month (Malaysian Ringgit)				Relative change of mean	Relative change of median
	2011 [1]		2023			
	Mean (95% CI)	Median (95% CI)	Mean (95% CI)	Median (95% CI)	Percentage	
Overall	234.0(183.7,284.0)	153.4(122.6,200.0)	177.7(156.5,198.9)	112.8(92.6,142.8)	-24.0*	-26.5*
Gender						
Male	236.4(185.3,287.5)	155.7(125.0,201.6)	178.8(157.8,199.9)	112.8(93.1,137.9)	-24.4*	-27.6*
Female	-	-	-	-	-	-
Age (years)						
15-24	170.8(100.5,241.2)	95.9 (52.3, 108.8)	123.7(67.8,179.6)	56.1 (37.3, 95.7)	-27.6	-41.4*
25-44	252.0(168.9,335.0)	198.3(149.9,198.6)	188.2(163.0,213.3)	121.5(106.7,171.2)	-25.3	-38.7*
45-64	264.7(198.9,330.6)	175.8(117.2,192.2)	192.5(150.5,234.6)	133.3(85.2,183.0)	-27.3*	-24.2
65+	131.3(67.0,195.7)	73.4 (46.7, 146.3)	173.2(81.9,264.6)	72.7 (14.9, 203.0)	32.0	-1.1
Residence						
Urban	264.3(196.0,332.7)	179.7(139.4,187.5)	194.8(165.7,223.9)	119.7(89.9,178.5)	-26.3*	-33.4*
Rural	152.0(125.5,178.5)	89.2 (72.7, 122.3)	136.3(118.5,154.2)	91.2 (81.2, 112.8)	-10.3	2.2
Education Level [2]						
Less than primary	273.9(138.3,409.5)	109.5 (53.3,341.7)	131.4(88.1,174.6)	86.2 (64.3, 118.3)	-52.0*	-21.3
Primary	176.6(145.1,208.1)	141.9(97.55,198.31)	188.5(149.3,227.8)	117.5(78.0,179.1)	6.8	-17.2
Secondary/High School	302.3(182.4,422.1)	184.5(163.6,192.8)	180.5(148.5,212.5)	120.8(83.9,158.4)	-40.3*	-34.5*
College or above	245.5(172.1,318.8)	189.3(106.4,338.3)	226.6(182.1,271.0)	139.6(106.1,228.2)	-7.7	-26.3
Ethnicity						
Malay	251.6(175.6,327.6)	159.0(127.5,207.8)	181.9(155.2,208.6)	112.6(91.6,144.0)	-27.7*	-29.2*
Chinese	272.3(205.1,339.5)	194.2(177.2,268.0)	240.0(177.5,302.5)	193.3(82.1,262.6)	-11.8	-0.5
Indian	187.1(142.0,232.2)	198.3 (74.3,198.8)	-	-	-	-
Others	160.3(74.2,246.5)	76.8 (54.0, 96.6)	138.9(106.9,171.0)	89.5 (66.6, 126.6)	-13.4	16.5

[1] In adjusted constant 2023 Malaysian Ringgit) using the Inflation Rate for Average Consumer Prices from the International Monetary Fund's World Economic Outlook Database.

[2] Education level is reported only among persons aged ≥ 25 years.

* $p < 0.05$

NOTE: Results for prevalence estimates / averages and 95% CIs are rounded to the nearest tenth (0.1). The relative changes are calculated using un-rounded prevalence estimates and might be different if calculated using rounded prevalence estimates shown in this table.

- Indicates estimates based on less than 25 unweighted cases and has been suppressed.

09 MEDIA

KEY FINDINGS

- 81.8% of adults noticed anti-cigarette smoking information at any location in the last 30 days.
- 18.3% of adults noticed cigarette advertisements, sponsorship, or promotions in the last 30 days.
- 8.3% of adults noticed cigarette advertising on the internet.
- 8.8% of adults noticed any in-store advertising or promotion of cigarettes.
- 70.9% of current smokers noticed health warnings on cigarette packages, and 33.2% thought about quitting because of those warning labels.
- 44.4% of adults noticed anti-electronic cigarette information in the last 30 days.
- 14.1% of adults noticed electronic cigarette advertisements, sponsorship, or promotion in the last 30 days.
- 35.5% of adults are aware of the "JOM QUIT/ M-quit" anti-smoking campaign.

9.0 Media

Introduction

Mass media plays a crucial role in discouraging the use of tobacco products by raising awareness about the health risks associated with smoking and promoting anti-smoking campaigns (1). The Malaysia Control of Tobacco Product Regulations (CTPR) 2004 prohibits direct and indirect advertising, except at point-of-sale for tobacco products. Additionally, the CTPR mandates that all tobacco product packaging must display 'pictorial health warning' covering 40% and 60% of the principal display area of the front and back panels, respectively (2). Malaysia's National Tobacco Control Programme utilises mass media campaigns to disseminate information on the ill effects of tobacco use including smoking and exposure to secondhand smoke.

9.1 Noticing Anti-Cigarette Information

The GATS Malaysia asked respondents whether they had noticed any anti-cigarette smoking information in various places during the last 30 days prior to the survey which is depicted in **Table 9.1**.

Table 9.1 shows that 81.8% of adults noticed anti-cigarette smoking information at any location in the last 30 days. The prevalence of adults who noticed such information was 82.6% among non-smokers and 78.5% among current smokers.

The percentage of adults who noticed anti-cigarette smoking information was slightly higher among rural residents (84.9%) than urban residents (80.9%). A small difference was also observed between current smokers and non-smokers: among smokers, 80.4% of rural and 77.9% of urban smokers reported noticing the information, while among non-smokers, 86.2% of rural and 81.6% of urban residents reported exposure.

The prevalence of adults noticing anti-cigarette smoking information differed by source location, with 59.3% noticing it online, 58.9% in healthcare facilities, and 54.0% on television or radio. Additionally, 49.8% noticed it on billboards, 49.4% on posters, 40.7% in newspapers or magazines, 37.1% on windows or inside shops or stalls where cigarettes are sold, and 22.4% at cinemas. A comparable percentage of men (81.1%) and women (82.6%) reported noticing anti-cigarette smoking information at any location. Among younger people (ages 15–24), 86.0% noticed the information compared to 80.5% of those aged 25 and older. Among current smokers, 79.2% of men and 63.3% of women noticed anti-cigarette smoking information, while among non-smokers, the prevalence was 82.1 % for men and 82.9% for women.

9.2 Health Warnings on Cigarette Packages and Thinking About Quitting

This section focuses on recognising health warnings on cigarette packages and their efficacy in encouraging smokers to consider quitting. The WHO MPOWER policy package advocates for the presentation of warnings on tobacco product packaging to dissuade users from tobacco consumption and inspire them to cease.

Table 9.2 presents the percentage of current smokers aged 15 years and above who, during the last 30 days, had noticed health warnings on cigarette packages and considered quitting because of these labels by selected demographic characteristics. Overall, 70.9% of current smokers had noticed health warnings on cigarette packages, but less than half (33.2%) of current smokers had thought about quitting because of those labels. More men (71.4%) than women (54.3%) noticed these warnings. Among all current smokers, the prevalence of those who noticed these warnings was 75.5% for the 25-44 age group but only 57.4% for those aged more than 65. The prevalence of noticing health warnings on cigarette packages increased with increasing education attainment 46.1% to 78.4%).

9.3 Adults Who Noticed Cigarette Marketing

Table 9.3 indicates that 18.3% of adults in Malaysia (18.3% of men and 18.2% of women) had noticed any cigarette advertisement, sponsorship, or promotion in the last 30 days. The prevalence among rural residents (19.9%) was higher than urban residents (17.8%). The top three places for noticing cigarette marketing were similar for both genders (men vs. women): on the internet (7.7% vs. 8.8%), stores (6.2% vs 7.5%), and posters (4.2% vs 5.8%).

9.4 Current Tobacco Smokers Who Noticed Cigarette Marketing

Table 9.4 indicates that 23.5% (23.5% of men, 23.6% of women) of current smokers had noticed any advertisement, promotion or sponsorship of cigarettes in the last 30 days. The prevalence was lower (22.0%) for current smokers aged 25 years and above compared to the 15−24 years age group (31.8%). A higher prevalence of urban (24.3%) compared to rural (21.3%) current smokers had noticed any advertisement or promotion of cigarettes in the last 30 days.

The three most common places for noticing cigarette advertisements by current smokers were the same as for male smokers: on the internet (8.1%), in stores where cigarettes are sold (7.8%), and on the radio (5.1%). For women, however, the top three were posters (10.1%), in stores where cigarettes are sold (10.0%), and on the internet (7.5%).

The two most common places where current smokers noticed cigarette promotion were clothing/items with brand name or logo related to tobacco (2.5%) and free samples (2.4%). For male smokers, the top two most common places where current smokers noticed cigarette promotion were clothing/items with brand name or logo (2.5%) and free gifts/discounts on other products (2.4%).

9.5 Current Non-Smokers of Tobacco Who Noticed Cigarette Marketing

As shown in **Table 9.5**, 17.1% (15.5% of men, 18.1% of women) of current non-smokers had noticed any advertisements, promotion and sponsorship of cigarettes during the last 30 days. The prevalence of noticing these marketing was 17.8% among those aged 25 years and above and 15.0% among those aged 15 to 24. The three most common places for non-smokers to notice advertisements were on the internet, in stores where cigarettes are sold, and on posters. The two sources of cigarette promotion seen most among non-smokers were free samples (1.4%) and sales prices (1.3%).

9.6 Adults Who Noticed Anti-Electronic Cigarette Information

Based on **Table 9.6**, 44.4% of adults in Malaysia noticed anti-electronic cigarette information in any location in the last 30 days prior to the survey. The prevalence of adults who noticed such information was (71.5%) among current users and 42.7% among non-users. The prevalence of adults who noticed anti-electronic cigarette information was 44.3% among urban residents and 44.7% among rural residents. In addition, 72.4% and 67.1% of current users noticed anti-electronic cigarette information in urban areas and in rural areas respectively. Among non-users, 42.5% and 43.7% noticed anti-electronic cigarette information in urban areas, and in rural areas respectively.

9.7 Adults Who Noticed Electronic Cigarette Marketing

Table 9.7 shows 14.1% of adults noticed electronic cigarette marketing (including advertisement, sponsorship, or promotion) during the last 30 days in various places. The prevalence of adults who noticed such information was found to be higher among men (15.3%) younger adults (17.4% among 15-24 years) and rural residents (14.8%).

The prevalence of noticing e-cigarette advertisements was 9.1% on the internet, 6.2% in stores where e-cigarettes were sold, 3.9% on posters, 2.6% on billboards, and followed by 2.0% on television. A total of 8.3% of adults noticed any in-store advertising or promotion of e-cigarettes during the last 30 days. A higher prevalence was reported among those aged 15-24 years compared to those aged 25+ (11.1% vs. 7.4%).

9.8 Current Electronic Cigarette Users Who Noticed Electronic Cigarette Marketing

As shown in **Table 9.8**, 40.5% of current e-cigarette users had noticed any advertisement, sponsorship or promotion of e-cigarettes in the last 30 days. The prevalence was lower (36.9%) for current e-cigarette users aged 25 years and above as compared to the younger group (46.9% of 15-24 years). A higher prevalence was noted in urban areas (41.8%) than rural areas (34.2%) for noticing advertisement, sponsorship or promotion of e-cigarettes in the last 30 days. As for noticing e-cigarette promotions, free gifts/discounts on other products (16.7%) were the most common type of promotion noticed by current e-cigarette users in the last 30 days.

9.9 Current non-electronic Cigarette User Who Noticed Electronic Cigarette Marketing

Table 9.9 presents the prevalence of current non-e-cigarette users who noticed e-cigarette marketing during the last 30 days. A total of 12.6% of current non-e-cigarette users noticed e-cigarette marketing. Patterns of noticing any advertisement, sponsorship or promotion between age groups and type of residence were similar to those observed for the overall population and current non-electronic cigarette users. The two main sources of e-cigarette advertisements seen most among non-e-cigarette users were on the internet (8.3%) and in stores where e-cigarettes were sold (5.8%). A total of 7.1% of non-e-cigarette users noticed any in-store advertising or promotion of e-cigarettes.

9.10 Awareness of the "JOM QUIT/ M-quit" Anti-smoking Campaign

This section discusses awareness among Malaysian adults of the JOM QUIT/M-quit anti-smoking campaign; a collaborative effort involving the Ministry of Health Malaysia, non-governmental organizations, and private entities which offers a comprehensive and accessible platform for smoking cessation, including online resources, mobile apps, and integration with healthcare service. The WHO Framework Convention on Tobacco Control, Article 12: Education, Communication, Training, and Public Awareness recommends using media to shape tobacco-related knowledge, opinions, attitudes, and behaviours, and these media can be extremely powerful in influencing both individuals and policymakers regarding tobacco use and tobacco control issues.

Anti-smoking campaigns discourage tobacco users from consumption of tobacco and motivate them to quit. Global evidence supports the fact that strong and effective anti-smoking campaigns comprise an essential component of any anti-tobacco strategy and have ultimately motivated tobacco users in many countries to quit.

Table 9.10 shows that 35.5% of adults have seen or heard about the JOM QUIT or M-quit anti-smoking campaign in the last 12 months. Among men, 33.6% had seen or heard about the campaign, while 37.5% of women had done the same. The estimate for all age groups was similar, with over 30% aware of the anti-smoking campaign. Among urban residents, 33.8% were aware of the campaign, while 41.3% of rural residents were aware as well. Among adult Malaysians, those with at least a college education and Malays had the highest levels of awareness of the JOM QUIT/M-quit anti-smoking campaign.

9.11 Comparative change between 2011 and 2023: Advertising, Promotion and Sponsorship

● The percentage of adults who noticed any in-store cigarette advertising or promotion has reduced tremendously (21.7% in 2011 to 8.8% in 2023)

● Similarly, the percentage of adults who noticed any cigarette advertisement, promotion, or sponsorship decreased significantly from 35.6% in 2011 to 18.3% in 2023.

Noticed any in-store cigarette advertisement or promotion, and any cigarette advertisements, promotion and sponsorship in the past 30 days, Malaysia 2011 and 2023
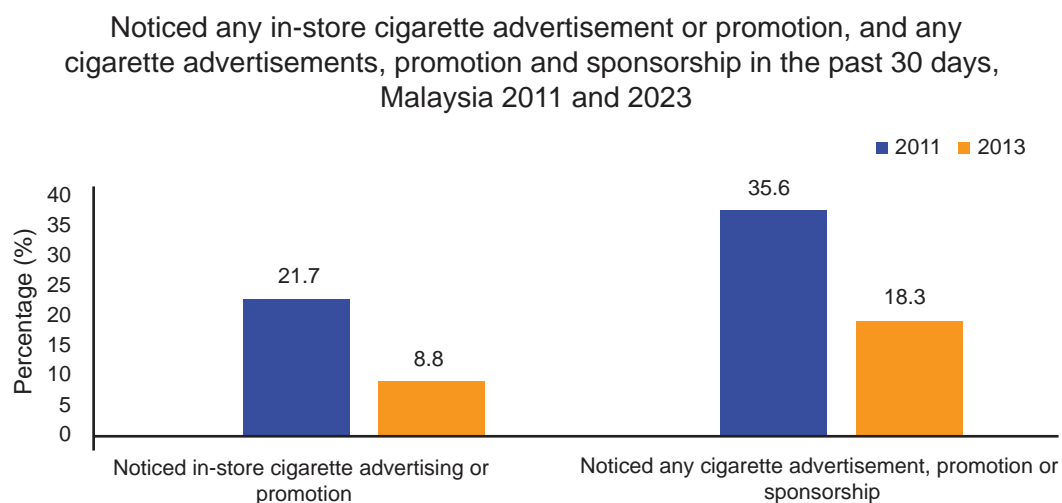
Survey results suggest that there was a significant reduction in the percentage of adults who noticed tobacco advertisements in stores (-59.6%), or who noticed any advertisement, sponsorship, or promotion of tobacco products (-48.7%). The decrease in the percentage of adults who noticed tobacco advertisements in stores was greater among males (-67.0%) than among females (-48.7%), and greater among those in urban areas (-64.1%) than in rural areas (-41.3%), highest among those aged 15-24 years old (-66.9%). Similar patterns were observed among adults noticing any advertisement, sponsorship, or promotion of tobacco products **(Table 9.11)**.

References

1. Bafunno, D., Catino, A., Lamorgese, V., Del Bene, G., Longo, V., Montrone, M., Pesola, F., Pizzutilo, P., Cassiano, S., Mastrandrea, A., Ricci, D., Petrillo, P., Varesano, N., Zacheo, A., & Galetta, D. (2020). Impact of tobacco control interventions on smoking initiation, cessation, and prevalence: a systematic review. Journal of thoracic disease, 12(7), 3844–3856. https://doi.org/10.21037/jtd.2020.02.23 (Accessed on 10 October 2024).

2. The Malaysia Control of Tobacco Product Regulations (CTPR). https://assets.tobaccocontrollaws.org/uploads/legislation/Malaysia/Malaysia-TC-Regs-2004.pdf (Accessed on 10 October 2024).

Table 9.1: Percentage of adults ≥15 years old who noticed anti-cigarette smoking information during the last 30 days in various places, by smoking status and selected demographic characteristics – GATS Malaysia, 2023.

Places	Overall	Gender		Age (years)		Residence	
		Male	Female	15-24	25+	Urban	Rural
	Percentage (95% CI)						
Overall							
In newspapers or magazines	40.7 (37.6,43.9)	42.1 (38.2,46.0)	39.2 (35.6,43.0)	42.3 (36.6,48.1)	40.2 (37.1,43.4)	41.0 (37.1,45.0)	39.7 (35.9,43.7)
On television or the radio	54.0 (50.7,57.3)	54.4 (50.2,58.5)	53.7 (49.7,57.6)	52.9 (46.5,59.1)	54.4 (51.0,57.8)	53.3 (49.2,57.3)	56.8 (52.7,60.8)
On television	52.2 (48.9,55.5)	52.3 (48.0,56.5)	52.2 (48.1,56.1)	51.7 (45.4,57.9)	52.4 (48.9,55.8)	51.5 (47.3,55.6)	54.8 (50.9,58.7)
On the radio	35.4 (32.3,38.6)	36.8 (33.1,40.7)	33.8 (30.2,37.6)	33.0 (27.3,39.2)	36.1 (33.0,39.3)	35.5 (31.6,39.5)	35.0 (31.3,38.9)
On billboards	49.8 (46.6,53.0)	50.6 (46.6,54.5)	49.0 (44.9,53.1)	51.3 (45.2,57.4)	49.3 (46.1,52.5)	48.3 (44.4,52.3)	54.9 (50.3,59.3)
Internet	59.3 (56.3,62.3)	58.9 (55.2,62.5)	59.8 (56.0,63.5)	70.6 (64.5,76.0)	55.9 (52.9,58.8)	58.9 (55.2,62.5)	60.9 (56.6,64.9)
Posters	49.4 (46.6,52.3)	50.8 (47.1,54.5)	48.0 (44.4,51.7)	50.7 (44.9,56.6)	49.0 (46.1,52.0)	48.2 (44.8,51.7)	53.6 (49.5,57.7)
At the cinemas	22.4 (20.0,24.9)	24.1 (21.0,27.5)	20.6 (17.8,23.8)	23.3 (18.6,28.7)	22.1 (19.6,24.9)	24.0 (21.1,27.2)	16.9 (14.4,19.8)
On windows or inside shops/stalls where you buy cigarettes	37.1 (34.7,39.5)	39.7 (36.6,42.8)	34.3 (31.2,37.5)	35.5 (30.7,40.5)	37.6 (35.0,40.2)	36.1 (33.2,39.1)	40.5 (37.0,44.1)
In healthcare facilities	58.9 (55.6,62.1)	58.7 (54.5,62.7)	59.2 (55.3,62.9)	58.0 (51.7,64.0)	59.2 (55.8,62.5)	57.1 (53.1,61.1)	65.1 (61.1,68.9)
Somewhere else	5.8 (4.7,7.1)	6.0 (4.5,7.9)	5.7 (4.2,7.6)	6.0 (4.1,8.6)	5.8 (4.6,7.2)	6.1 (4.8,7.7)	4.8 (3.5,6.7)
Any Location	81.8 (79.0,84.3)	81.1 (77.6,84.1)	82.6 (78.8,85.8)	86.0 (81.2,89.7)	80.5 (77.6,83.2)	80.9 (77.3,84.0)	84.9 (81.7,87.7)
Current smokers[1]							
In newspapers or magazines	39.4 (34.0,45.1)	39.2 (33.6,45.0)	46.0 (16.8,78.2)	51.0 (34.8,67.0)	37.3 (32.0,42.9)	39.3 (32.3,46.7)	39.9 (34.1,46.0)
On television or the radio	55.0 (48.4,61.4)	55.0 (48.3,61.6)	55.0 (20.4,85.4)	65.0 (48.3,78.7)	53.2 (46.4,59.8)	55.2 (46.6,63.4)	54.6 (48.1,61.0)
On television	52.6 (46.0,59.1)	52.9 (46.4,59.4)	44.5 (16.3,76.7)	64.3 (47.7,78.1)	50.4 (43.9,57.0)	52.8 (44.2,61.2)	52.1 (45.9,58.2)
On the radio	35.6 (30.2,41.4)	35.9 (30.2,42.0)	29.5 (9.3,63.0)	45.8 (30.2,62.3)	33.7 (28.2,39.8)	35.1 (28.1,42.7)	37.2 (32.0,42.8)
On billboards	48.3 (42.7,54.1)	48.8 (43.1,54.6)	36.7 (12.9,69.4)	67.0 (50.0,80.4)	44.9 (39.5,50.4)	47.1 (40.0,54.5)	51.9 (45.3,58.3)
Internet	59.1 (52.9,65.0)	59.7 (53.7,65.5)	43.2 (16.5,74.6)	79.3 (67.0,87.9)	55.4 (49.1,61.4)	60.5 (52.4,68.1)	54.9 (48.3,61.4)
Posters	48.8 (42.9,54.7)	49.6 (43.6,55.7)	27.5 (9.3,58.5)	68.6 (52.0,81.6)	45.1 (39.3,51.0)	48.5 (41.0,56.0)	49.6 (42.1,57.1)
At the cinemas	21.9 (17.3,27.2)	22.2 (17.5,27.7)	13.9 (3.5,42.0)	26.5 (15.6,41.4)	21.0 (16.3,26.7)	23.8 (18.0,30.9)	16.1 (11.9,21.3)
On windows or inside shops/stalls where you buy cigarettes	44.2 (38.6,49.9)	44.3 (38.6,50.2)	40.9 (15.1,72.9)	40.5 (25.8,57.1)	44.9 (38.9,51.0)	44.2 (37.1,51.5)	44.2 (37.6,51.0)
In healthcare facilities	56.3 (50.6,61.9)	57.2 (51.7,62.6)	34.0 (12.5,65.0)	60.6 (43.2,75.7)	55.5 (49.7,61.2)	54.6 (47.3,61.7)	61.3 (54.5,67.7)
Somewhere else	7.6 (5.3,10.7)	7.9 (5.6,11.1)	0.7 (0.1,5.7)	11.0 (4.9,22.7)	7.0 (4.7,10.3)	8.3 (5.5,12.4)	5.5 (3.2,9.5)
Any Location	78.5 (72.0,83.9)	79.2 (72.8,84.4)	63.3 (22.2,91.3)	86.9 (76.5,93.1)	77.0 (70.2,82.6)	77.9 (69.3,84.6)	80.4 (73.8,85.6)

Non-smokers[2]

In newspapers or magazines	41.0	(37.7,44.4)	43.7	(39.1,48.4)	39.1	(35.4, 42.9)	41.0	(35.0,47.3)	41.0	(37.5, 44.6)	41.3	(37.2,45.6)	39.7 (35.8, 43.7)
On television or the radio	53.8	(50.4,57.2)	54.0	(49.4,58.6)	53.7	(49.7, 57.6)	54.7	(44.7,57.5)	54.7	(51.1, 58.4)	52.8	(48.6,57.0)	57.4 (53.1, 61.6)
On television	52.1	(48.7,55.6)	51.9	(47.1,56.6)	52.3	(48.3, 56.2)	52.9	(43.5,56.2)	52.9	(49.2, 56.6)	51.2	(46.9,55.4)	55.6 (51.4, 59.7)
On the radio	35.3	(31.9,38.8)	37.4	(32.9,42.0)	33.9	(30.3, 37.7)	36.7	(25.3,37.5)	36.7	(33.2, 40.3)	35.6	(31.4,39.9)	34.3 (30.4, 38.5)
On billboards	50.1	(46.8,53.5)	51.5	(47.0,56.0)	49.2	(45.1, 53.3)	50.5	(42.8,55.3)	50.5	(46.9, 54.0)	48.6	(44.6,52.6)	55.7 (50.8, 60.5)
Internet	59.4	(56.2,62.5)	58.4	(53.9,62.7)	60.1	(56.4, 63.7)	56.0	(62.8,75.2)	56.0	(52.8, 59.2)	58.5	(54.7,62.3)	62.5 (58.1, 66.7)
Posters	49.6	(46.7,52.6)	51.4	(47.0,55.8)	48.3	(44.7, 52.0)	50.1	(41.7,54.6)	50.1	(46.9, 53.3)	48.2	(44.6,51.8)	54.7 (50.7, 58.7)
At the cinemas	22.5	(20.1,25.2)	25.1	(21.7,28.9)	20.7	(17.8, 24.0)	22.4	(18.0,28.4)	22.4	(19.7, 25.5)	24.0	(21.0,27.3)	17.1 (14.5, 20.1)
On windows or inside shops/stalls where you buy cigarettes?	35.4	(32.9,38.0)	37.1	(33.5,40.9)	34.2	(31.1, 37.5)	35.6	(29.7,40.1)	35.6	(32.8, 38.5)	34.3	(31.2,37.5)	39.4 (35.8, 43.2)
In healthcare facilities	59.5	(56.0,62.9)	59.5	(54.3,64.4)	59.5	(55.7, 63.3)	60.2	(51.1,63.8)	60.2	(56.4, 63.8)	57.7	(53.4,61.9)	66.1 (62.2, 69.9)
Somewhere else	5.4	(4.3, 6.8)	4.9	(3.3, 7.2)	5.7	(4.3, 7.7)	5.4	(3.4, 8.1)	5.4	(4.2, 7.1)	5.6	(4.2, 7.4)	4.6 (3.3, 6.4)
Any Location	82.6	(79.5,85.3)	82.1	(78.0,85.6)	82.9	(79.2, 86.0)	81.5	(80.7,89.9)	81.5	(78.1, 84.4)	81.6	(77.7,84.9)	86.2 (82.9, 89.0)

[1] Includes daily and occasional (less than daily) tobacco smokers.

[2] Includes former and never tobacco smokers.

Table 9.2: Percentage of current smokers ≥15 years old who noticed health warnings on cigarette packages and considered quitting because of the warning labels during the last 30 days, by selected demographic characteristics – GATS Malaysia, 2023.

Demographic Characteristics	Current smokers[1] who…			
	Noticed health warnings on cigarette package[2]		Thought about quitting because of warning label[2]	
	Percentage (95% CI)			
Overall	70.9	(64.6, 76.6)	33.2	(28.0, 38.7)
Gender				
Male	71.4	(64.9, 77.1)	32.9	(27.9, 38.3)
Female	54.3	(27.2, 79.0)	42.9	(19.3, 70.3)
Age (years)				
15-24	70.5	(52.9, 83.6)	27.3	(15.3, 43.9)
25-44	75.5	(68.6, 81.2)	36.4	(29.6, 43.9)
45-64	63.6	(52.0, 73.8)	29.8	(22.3, 38.6)
65+	57.4	(39.6, 73.5)	31.9	(18.5, 49.1)
Residence				
Urban	70.9	(62.4, 78.1)	33.4	(26.8, 40.7)
Rural	71.0	(65.3, 76.2)	32.5	(27.7, 37.6)
Education Level[3]				
Less than primary	46.1	(26.1, 67.4)	11.6	(5.4, 23.2)
Primary	67.4	(55.6, 77.3)	27.5	(20.0, 36.4)
Secondary/High School	73.4	(62.6, 82.0)	36.5	(29.0, 44.6)
College or above	78.4	(67.2, 86.6)	44.9	(31.4, 59.2)
Ethnicity				
Malay	75.7	(69.3, 81.2)	35.6	(29.6, 42.0)
Chinese	62.7	(47.6, 75.7)	18.1	(10.4, 29.6)
Indian	62.6	(37.7, 82.2)	46.5	(23.9, 70.7)
Others	65.4	(50.9, 77.5)	29.5	(18.7, 43.4)

[1] Includes daily and occasional (less than daily) tobacco smokers.
[2] During the last 30 days.
[3] Education level is reported only among persons aged ≥ 25 years.

Table 9.3: Percentage of adults ≥15 years old who noticed cigarette marketing during the last 30 days in various places, by selected demographic characteristics – GATS Malaysia, 2023.

Places	Overall		Gender				Age (years)						Residence			
			Male		Female		15-24		25+				Urban		Rural	
							Percentage (95% CI)									
Noticed cigarette advertisements																
In stores where cigarettes are sold	6.8	(5.6, 8.3)	6.2	(4.8, 8.0)	7.5	(5.8, 9.7)	6.2	(4.2, 9.0)	7.0	(5.7, 8.7)			6.8	(5.3, 8.6)	7.1	(5.7, 8.8)
On television	4.4	(3.5, 5.6)	3.7	(2.6, 5.2)	5.2	(3.8, 7.2)	2.8	(1.7, 4.7)	5.0	(3.8, 6.4)			4.5	(3.3, 6.0)	4.4	(3.3, 5.8)
On the radio	3.4	(2.5, 4.6)	3.5	(2.3, 5.3)	3.3	(2.1, 5.0)	3.3	(1.7, 6.6)	3.4	(2.4, 4.7)			3.4	(2.3, 5.0)	3.3	(2.3, 4.7)
On billboards	4.2	(3.2, 5.3)	4.1	(2.9, 5.8)	4.2	(3.0, 5.9)	3.5	(2.1, 5.7)	4.4	(3.3, 5.8)			4.1	(3.1, 5.6)	4.2	(3.1, 5.6)
On posters	5.0	(4.0, 6.1)	4.2	(3.1, 5.8)	5.8	(4.3, 7.7)	3.8	(2.4, 5.9)	5.3	(4.3, 6.7)			4.7	(3.6, 6.2)	5.8	(4.7, 7.3)
In newspapers or magazines	3.2	(2.4, 4.3)	3.0	(2.0, 4.5)	3.4	(2.3, 5.2)	2.2	(1.2, 4.0)	3.5	(2.6, 4.8)			3.1	(2.1, 4.5)	3.6	(2.7, 4.9)
In cinemas	2.0	(1.3, 3.1)	1.7	(0.9, 3.2)	2.4	(1.3, 4.1)	1.4	(0.7, 3.0)	2.2	(1.4, 3.5)			2.1	(1.3, 3.5)	1.7	(1.2, 2.5)
On the internet	8.3	(7.0, 9.8)	7.7	(6.1, 9.8)	8.8	(7.0, 11.1)	9.1	(6.4, 12.7)	8.0	(6.6, 9.7)			8.3	(6.7, 10.3)	8.1	(6.4, 10.2)
On public transportation	2.8	(1.9, 4.0)	2.2	(1.3, 3.7)	3.4	(2.1, 5.4)	1.6	(0.8, 3.1)	3.1	(2.1, 4.7)			2.9	(1.9, 4.5)	2.2	(1.6, 3.0)
On public walls	3.6	(2.8, 4.7)	3.2	(2.2, 4.8)	4.0	(2.8, 5.8)	2.5	(1.5, 4.2)	3.9	(2.9, 5.3)			3.7	(2.7, 5.1)	3.4	(2.4, 4.7)
Somewhere else	0.3	(0.1, 0.7)	0.3	(0.1, 0.9)	0.3	(0.1, 1.0)	0.2	(0.0, 1.6)	0.3	(0.1, 0.9)			0.4	(0.1, 0.9)	0.1	(0.0, 0.4)
Noticed any public event associated with manufactured cigarette brands or companies	1.4	(1.0, 2.1)	1.3	(0.8, 2.0)	1.6	(0.9, 2.8)	0.8	(0.4, 1.7)	1.6	(1.1, 2.4)			1.3	(0.8, 2.1)	1.9	(1.2, 3.1)
Noticed cigarette promotions																
Free samples	1.6	(1.1, 2.4)	1.5	(0.9, 2.4)	1.7	(1.0, 3.1)	1.4	(0.7, 2.7)	1.7	(1.0, 2.7)			1.6	(0.9, 2.6)	1.8	(1.1, 2.8)
Sale prices	1.3	(0.8, 2.0)	0.9	(0.6, 1.5)	1.7	(0.9, 3.2)	1.6	(0.8, 3.3)	1.2	(0.7, 2.1)			1.3	(0.7, 2.2)	1.4	(0.8, 2.3)
Coupons	0.3	(0.1, 0.6)	0.3	(0.1, 0.6)	0.3	(0.1, 1.1)	0.3	(0.1, 0.9)	0.3	(0.1, 0.7)			0.2	(0.0, 0.7)	0.8	(0.4, 1.6)
Free gifts/discounts on other products	1.4	(1.0, 2.0)	1.8	(1.1, 2.9)	1.0	(0.6, 1.7)	1.7	(0.8, 3.7)	1.4	(0.9, 2.0)			1.2	(0.7, 2.0)	2.2	(1.5, 3.2)
Clothing/item with brand name or logo	1.1	(0.7, 1.7)	1.7	(1.1, 2.7)	0.5	(0.2, 1.0)	2.2	(1.2, 4.1)	0.8	(0.5, 1.3)			0.9	(0.5, 1.7)	1.8	(1.2, 2.7)
Mail promoting cigarettes	0.2	(0.1, 0.4)	0.3	(0.1, 0.7)	0.0	(0.0, 0.1)	0.3	(0.1, 1.4)	0.1	(0.0, 0.2)			0.1	(0.0, 0.4)	0.2	(0.1, 0.7)
One-to-one sales promotion	0.8	(0.6, 1.3)	1.0	(0.6, 1.6)	0.7	(0.4, 1.2)	0.9	(0.4, 2.0)	0.8	(0.5, 1.3)			0.7	(0.4, 1.3)	1.2	(0.7, 1.9)
Noticed any in-store advertising or promotion of cigarettes[1]	8.8	(7.4, 10.4)	8.3	(6.6, 10.4)	9.3	(7.3, 11.7)	8.3	(5.9, 11.4)	8.9	(7.4, 10.7)			8.5	(6.9, 10.6)	9.5	(7.8, 11.5)
Noticed any advertisement, sponsorship, or promotion	18.3	(16.3,20.5)	18.3	(15.7,21.3)	18.2	(15.6,21.2)	17.1	(13.5,21.4)	18.6	(16.4,21.2)			17.8	(15.4,20.6)	19.9	(17.0,23.1)

[1] Includes those who noticed any advertisements in stores where cigarettes are sold, sale prices on cigarettes, or free gifts discount offers on other products when buying cigarettes.

Table 9.4: Percentage of current tobacco smokers ≥15 years old who noticed cigarette marketing during the last 30 days in various places, by selected demographic characteristics – GATS Malaysia, 2023.

Places	Overall		Gender				Age (years)				Residence			
			Male		Female		15-24		25+		Urban		Rural	
	Percentage (95% CI)													
Noticed cigarette advertisements														
In stores where cigarettes are sold	7.9	(5.5, 11.3)	7.8	(5.4, 11.3)	10.0	(2.7, 30.3)	3.4	(0.9, 11.5)	8.8	(6.0, 12.5)	8.4	(5.4, 12.9)	6.4	(4.1, 9.9)
On television	4.4	(2.8, 6.8)	4.3	(2.7, 6.9)	5.6	(0.9, 28.3)	3.0	(0.7, 11.5)	4.6	(2.9, 7.4)	4.4	(2.4, 7.8)	4.4	(2.8, 7.0)
On the radio	4.9	(2.7, 8.6)	5.1	(2.8, 9.0)	0.0	N/A	12.0	(3.3, 35.4)	3.6	(2.1, 6.0)	5.3	(2.6, 10.5)	3.6	(2.0, 6.2)
On billboards	4.5	(2.9, 7.0)	4.7	(3.0, 7.3)	0.0	N/A	4.7	(1.4, 14.7)	4.5	(2.8, 7.2)	4.9	(2.9, 8.1)	3.6	(2.0, 6.6)
On posters	5.2	(3.4, 7.9)	5.0	(3.3, 7.6)	10.1	(1.8, 40.1)	2.9	(0.6, 12.2)	5.7	(3.7, 8.6)	5.7	(3.4, 9.3)	4.0	(2.4, 6.6)
In newspapers or magazines	3.8	(2.3, 6.3)	4.0	(2.4, 6.6)	0.0	N/A	3.8	(0.9, 14.4)	3.8	(2.2, 6.6)	4.1	(2.2, 7.5)	3.2	(1.7, 5.7)
In cinemas	2.1	(1.0, 4.4)	2.2	(1.1, 4.6)	0.0	N/A	3.8	(0.9, 14.4)	1.8	(0.8, 4.3)	2.2	(0.9, 5.5)	1.9	(0.9, 4.0)
On the internet	8.1	(5.5, 11.8)	8.1	(5.4, 12.0)	7.5	(1.7, 27.6)	15.2	(5.7, 35.0)	6.8	(4.6, 10.0)	8.6	(5.4, 13.6)	6.6	(4.1, 10.4)
On public transportation	2.5	(1.2, 4.8)	2.6	(1.3, 5.0)	0.0	N/A	2.0	(0.3, 13.2)	2.6	(1.2, 5.2)	2.6	(1.1, 6.0)	2.2	(1.1, 4.2)
On public walls	4.1	(2.5, 6.6)	4.1	(2.5, 6.7)	3.2	(0.4, 19.5)	4.7	(1.4, 14.7)	4.0	(2.3, 6.6)	4.1	(2.2, 7.5)	4.0	(2.1, 7.5)
Somewhere else	0.8	(0.2, 2.4)	0.8	(0.2, 2.6)	0.0	N/A	1.9	(0.3, 12.4)	0.6	(0.1, 2.4)	1.0	(0.3, 3.3)	0.0	N/A
Noticed any public event associated with manufactured cigarette brands or companies	1.5	(0.8, 2.6)	1.4	(0.8, 2.6)	1.5	(0.2, 11.0)	1.3	(0.3, 4.6)	1.5	(0.8, 2.8)	1.1	(0.4, 2.7)	2.5	(1.3, 4.7)
Noticed cigarette promotions														
Free samples	2.4	(1.3, 4.1)	2.2	(1.2, 3.9)	6.3	(1.2, 27.5)	3.9	(1.6, 9.3)	2.1	(1.0, 4.1)	1.7	(0.6, 4.4)	4.3	(2.7, 6.8)
Sale prices	1.3	(0.7, 2.4)	1.4	(0.8, 2.5)	0.0	N/A	1.7	(0.4, 7.6)	1.2	(0.6, 2.4)	1.0	(0.4, 2.5)	2.3	(1.2, 4.2)

	%	(CI)	%	(CI)	%	(CI)	%	(CI)	%	(CI)	%	(CI)	%	(CI)
Coupons	0.5	(0.3, 1.2)	0.6	(0.3, 1.2)	0.0	N/A	1.1	(0.3, 4.5)	0.4	(0.2, 1.0)	0.0	N/A	2.2	(1.0, 4.5)
Free gifts/discounts on other products	2.3	(1.2, 4.5)	2.4	(1.2, 4.7)	0.0	N/A	3.2	(0.9, 10.6)	2.2	(1.0, 4.7)	2.0	(0.8, 5.3)	3.2	(1.6, 6.2)
Clothing/item with brand name or logo	2.5	(1.3, 4.6)	2.5	(1.3, 4.8)	1.5	(0.2, 11.0)	4.7	(1.8, 11.9)	2.1	(1.1, 3.7)	1.5	(0.4, 5.1)	5.3	(3.1, 8.7)
Mail promoting cigarettes	0.4	(0.1, 1.7)	0.5	(0.1, 1.7)	0.0	N/A	2.3	(0.5, 10.9)	0.1	(0.0, 0.3)	0.4	(0.1, 2.7)	0.6	(0.2, 2.0)
One-to-one sales promotion	1.6	(0.7, 3.4)	1.6	(0.8, 3.5)	0.0	N/A	1.8	(0.4, 7.6)	1.5	(0.6, 3.7)	1.7	(0.6, 4.3)	1.4	(0.6, 3.1)
Noticed any in-store advertising or promotion of cigarettes[1]	10.5	(7.6, 14.2)	10.5	(7.6, 14.3)	10.0	(2.7, 30.3)	6.7	(2.6, 16.1)	11.2	(8.0, 15.3)	10.8	(7.3, 15.8)	9.4	(6.5, 13.6)
Noticed any advertisement, sponsorship, or promotion	23.5	(19.1, 28.5)	23.5	(19.0, 28.7)	23.6	(8.3, 51.4)	31.8	(17.3, 51.1)	22.0	(17.8, 26.8)	24.3	(18.7, 30.9)	21.3	(17.0, 26.3)

Note: Current tobacco smokers includes daily and occasional (less than daily) smokers.

[1] Includes those who noticed any advertisements in stores where cigarettes are sold, sale prices on cigarettes, or free gifts/discount offers on other products when buying cigarettes.

N/A - The estimate is "0.0".

Table 9.5: Percentage of current non-smokers of tobacco ≥15 years old who noticed cigarette marketing during the last 30 days in various places, by selected demographic characteristics – GATS Malaysia, 2023.

Percentage (95% CI)

Places	Overall		Gender				Age (years)				Residence			
			Male		Female		15-24		25+		Urban		Rural	
Noticed cigarette advertisements														
In stores where cigarettes are sold	6.6	(5.3, 8.1)	5.3	(3.8, 7.4)	7.5	(5.7, 9.7)	6.6	(4.4, 9.8)	6.6	(5.1, 8.4)	6.4	(4.9, 8.4)	7.3	(5.8, 9.2)
On television	4.5	(3.5, 5.7)	3.4	(2.3, 5.0)	5.2	(3.7, 7.2)	2.8	(1.6, 4.8)	5.0	(3.8, 6.6)	4.5	(3.3, 6.1)	4.4	(3.2, 5.9)
On the radio	3.0	(2.2, 4.2)	2.6	(1.6, 4.0)	3.3	(2.1, 5.1)	2.1	(1.1, 3.9)	3.3	(2.3, 4.8)	3.0	(2.0, 4.4)	3.2	(2.2, 4.6)
On billboards	4.1	(3.1, 5.3)	3.8	(2.5, 5.7)	4.3	(3.0, 6.0)	3.3	(1.9, 5.7)	4.3	(3.2, 5.9)	4.0	(2.8, 5.6)	4.3	(3.2, 5.9)
On posters	4.9	(3.9, 6.2)	3.8	(2.6, 5.5)	5.7	(4.2, 7.6)	4.0	(2.5, 6.3)	5.2	(4.1, 6.7)	4.5	(3.3, 6.1)	6.3	(5.0, 8.0)
In newspapers or magazines	3.1	(2.2, 4.2)	2.5	(1.5, 4.0)	3.5	(2.3, 5.3)	1.9	(1.0, 3.8)	3.5	(2.4, 4.9)	2.9	(1.9, 4.4)	3.8	(2.7, 5.3)
In cinemas	2.0	(1.3, 3.1)	1.4	(0.7, 2.8)	2.4	(1.4, 4.2)	1.1	(0.5, 2.6)	2.3	(1.4, 3.7)	2.1	(1.2, 3.5)	1.7	(1.1, 2.6)
On the internet	8.3	(6.9, 10.0)	7.5	(5.7, 9.9)	8.9	(7.0, 11.2)	8.2	(5.7, 11.5)	8.4	(6.8, 10.2)	8.3	(6.6, 10.3)	8.5	(6.7, 10.9)
On public transportation	2.9	(1.9, 4.2)	2.0	(1.2, 3.5)	3.4	(2.1, 5.5)	1.5	(0.7, 3.1)	3.3	(2.1, 5.0)	3.0	(1.9, 4.8)	2.2	(1.5, 3.2)
On public walls	3.5	(2.6, 4.7)	2.7	(1.7, 4.3)	4.0	(2.8, 5.9)	2.2	(1.2, 3.9)	3.9	(2.8, 5.4)	3.6	(2.5, 5.1)	3.2	(2.2, 4.6)
Somewhere else	0.2	(0.1, 0.6)	0.0	(0.0, 0.3)	0.3	(0.1, 1.0)	0.0	N/A	0.2	(0.1, 0.8)	0.2	(0.1, 0.7)	0.1	(0.0, 0.5)
Noticed any public event associated with manufactured cigarette brands or companies	1.4	(0.9, 2.2)	1.2	(0.7, 2.2)	1.6	(0.9, 2.8)	0.7	(0.3, 1.8)	1.6	(1.0, 2.6)	1.3	(0.7, 2.3)	1.8	(1.1, 3.0)
Noticed cigarette promotions														
Free samples	1.4	(0.9, 2.3)	1.1	(0.5, 2.5)	1.6	(0.9, 3.0)	1.1	(0.4, 2.6)	1.6	(0.9, 2.7)	1.5	(0.9, 2.7)	1.1	(0.6, 2.1)
Sale prices	1.3	(0.8, 2.2)	0.7	(0.3, 1.4)	1.7	(0.9, 3.3)	1.6	(0.7, 3.5)	1.2	(0.6, 2.3)	1.3	(0.7, 2.5)	1.1	(0.6, 2.0)
Coupons	0.3	(0.1, 0.7)	0.1	(0.0, 0.4)	0.3	(0.1, 1.2)	0.2	(0.0, 1.1)	0.3	(0.1, 0.9)	0.2	(0.0, 0.9)	0.4	(0.1, 1.2)
Free gifts/discounts on other products	1.2	(0.8, 1.8)	1.5	(0.8, 2.8)	1.0	(0.6, 1.7)	1.5	(0.5, 3.8)	1.1	(0.7, 1.7)	1.0	(0.6, 1.8)	1.9	(1.2, 2.8)

	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
Clothing/item with brand name or logo	0.8	(0.4, 1.5)	0.8	(0.4, 1.5)	0.4	(0.2, 1.0)	1.8	(0.9, 3.8)	0.5	(0.2, 1.0)	1.2	(0.6, 2.5)	0.8	(0.5, 1.3)
Mail promoting cigarettes	0.1	(0.0, 0.5)	0.1	(0.0, 0.3)	0.1	(0.0, 0.3)	0.1	(0.0, 0.4)	0.0	(0.0, 0.1)	0.2	(0.1, 0.5)	0.1	(0.0, 0.2)
One-to-one sales promotion	1.1	(0.6, 2.0)	0.5	(0.3, 1.0)	0.6	(0.4, 1.0)	0.7	(0.3, 2.0)	0.7	(0.4, 1.3)	0.6	(0.4, 1.1)	0.7	(0.4, 1.0)
Noticed any in-store advertising or promotion of cigarettes[1]	9.5	(7.7, 11.7)	8.0	(6.3, 10.3)	8.3	(6.7, 10.3)	8.5	(5.9, 12.1)	9.3	(7.3, 11.7)	7.0	(5.2, 9.4)	8.3	(6.9, 10.1)
Noticed any advertisement, sponsorship, or promotion	19.5	(16.5, 22.9)	16.4	(14.0, 19.1)	17.8	(15.4, 20.4)	15.0	(11.8, 19.0)	18.1	(15.4, 21.2)	15.5	(12.8, 18.7)	17.1	(15.1, 19.3)

Note: Current non-smokers of tobacco include former and never smokers.

[1] Includes those who noticed any advertisements in stores where cigarettes are sold, sale prices on cigarettes, or free gifts/discount offers on other products when buying cigarettes.

N/A - The estimate is "0.0".

Table 9.6: Percentage of adults ≥15 years old who noticed anti-electronic cigarette information during the last 30 days in various places, by e-cigarette use status and selected demographic characteristics – GATS Malaysia, 2023.

Places	Overall		Gender				Age (years)				Residence			
			Male		Female		15-24		25+		Urban		Rural	
							Percentage (95% CI)							
Overall														
In newspapers or in magazines	19.0	(16.9,21.3)	19.8	(17.1,22.7)	18.2	(15.7,21.1)	18.9	(14.9,23.6)	19.0	(16.8,21.5)	18.7	(16.2,21.6)	20.0	(17.2,23.2)
On television or the radio	22.4	(20.2,24.8)	22.7	(19.8,25.9)	22.1	(19.5,25.0)	21.1	(16.8,26.1)	22.8	(20.4,25.4)	21.4	(18.8,24.4)	25.8	(22.6,29.3)
On television	21.1	(19.0,23.4)	21.2	(18.4,24.4)	21.0	(18.5,23.7)	20.8	(16.6,25.8)	21.2	(18.8,23.7)	20.1	(17.5,23.0)	24.7	(21.6,28.1)
On the radio	15.0	(13.2,17.0)	16.1	(13.7,18.9)	13.9	(11.8,16.3)	14.0	(10.8,18.0)	15.4	(13.4,17.6)	14.4	(12.2,16.9)	17.3	(14.6,20.4)
On billboards	21.7	(19.4,24.1)	22.1	(19.1,25.5)	21.2	(18.4,24.3)	24.9	(20.2,30.2)	20.7	(18.4,23.2)	20.9	(18.2,23.9)	24.3	(21.0,28.0)
Internet	31.3	(28.5,34.2)	32.5	(28.6,36.6)	30.0	(26.9,33.4)	36.3	(30.5,42.5)	29.8	(27.0,32.7)	31.0	(27.6,34.6)	32.4	(28.8,36.3)
Posters	22.6	(20.3,25.1)	23.3	(20.2,26.6)	21.9	(19.2,24.9)	25.3	(20.7,30.5)	21.8	(19.5,24.4)	22.3	(19.5,25.3)	23.9	(20.8,27.3)
At the cinemas	11.0	(9.2,13.0)	12.1	(9.8,14.8)	9.8	(7.9,12.1)	12.9	(9.6,17.1)	10.4	(8.5,12.7)	11.7	(9.6,14.3)	8.4	(6.7,10.5)
On windows or inside shops/stalls where you buy cigarettes	17.2	(15.2,19.4)	17.7	(15.2,20.5)	16.7	(14.2,19.5)	19.9	(15.8,24.6)	16.4	(14.4,18.6)	17.0	(14.5,19.7)	18.1	(15.5,21.0)
In healthcare facilities	30.5	(27.7,33.5)	32.2	(28.4,36.2)	28.7	(25.4,32.3)	33.4	(28.0,39.2)	29.6	(26.7,32.8)	30.3	(26.8,34.0)	31.3	(27.5,35.4)
Somewhere else	1.5	(1.0,2.1)	1.7	(1.0,2.8)	1.2	(0.7,2.1)	1.4	(0.7,2.7)	1.5	(0.7,2.3)	1.5	(1.0,2.4)	1.3	(0.8,2.1)
Any of the above locations	44.4	(41.1,47.7)	46.2	(42.0,50.5)	42.5	(38.6,46.5)	50.7	(44.3,57.0)	42.5	(39.3,45.7)	44.3	(40.3,48.4)	44.7	(40.3,49.1)
Current users[1]														
In newspapers or in magazines	23.1	(15.8,32.6)	22.8	(15.2,32.7)	-	-	15.6	(6.6,32.5)	27.1	(18.4,38.0)	23.1	(14.7,34.3)	23.5	(14.9,35.1)
On television or the radio	25.7	(18.0,35.3)	26.0	(18.0,36.0)	-	-	18.3	(8.3,35.6)	29.6	(20.5,40.7)	23.9	(15.4,35.2)	35.1	(23.8,48.3)
On television	24.7	(17.1,34.3)	25.3	(17.4,35.3)	-	-	18.3	(8.3,35.6)	28.1	(19.0,39.3)	23.2	(14.8,34.5)	32.3	(21.0,46.2)
On the radio	20.5	(13.4,30.1)	20.6	(13.2,30.7)	-	-	13.8	(5.3,31.2)	24.1	(15.5,35.4)	21.1	(13.0,32.4)	17.6	(9.2,31.1)
On billboards	31.7	(22.5,42.6)	33.1	(23.4,44.4)	-	-	32.2	(15.0,56.1)	31.5	(21.9,43.1)	31.8	(21.3,44.6)	31.4	(19.5,46.4)
Internet	45.6	(34.4,57.3)	46.4	(34.6,58.7)	-	-	50.2	(28.4,71.9)	43.2	(32.9,54.2)	44.3	(31.4,57.9)	52.7	(38.6,66.3)
Posters	30.5	(21.6,41.1)	31.8	(22.4,43.0)	-	-	24.7	(11.7,44.9)	33.6	(23.4,45.6)	31.1	(20.9,43.6)	27.2	(16.2,41.9)
At the cinemas	14.8	(8.5,24.5)	15.0	(8.4,25.2)	-	-	12.2	(4.3,29.9)	16.1	(8.7,27.9)	16.7	(9.2,28.2)	4.9	(2.1,11.1)

	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
On windows or inside shops/stalls where you buy cigarettes	23.1	(14.9, 34.1)	23.9	(15.2, 35.4)	-	-	18.7	(5.9, 45.7)	25.4	(15.9, 38.1)	24.8	(15.2, 37.8)	14.4	(8.4, 23.5)
In healthcare facilities	42.2	(31.9, 53.2)	41.4	(30.9, 52.7)	-	-	43.6	(24.3, 65.1)	41.4	(30.7, 53.1)	42.4	(30.5, 55.2)	41.1	(28.3, 55.2)
Somewhere else	2.1	(0.8, 5.3)	1.1	(0.4, 3.2)	-	-	3.7	(0.9, 14.0)	1.2	(0.4, 3.8)	1.3	(0.3, 6.0)	6.2	(2.3, 15.8)
Any of the above locations	71.5	(62.0, 79.5)	71.4	(61.4, 79.7)	-	-	82.9	(65.3, 92.6)	65.5	(53.6, 75.7)	72.4	(61.1, 81.4)	67.1	(53.1, 78.5)
Non-users²														
In newspapers or in magazines	18.8	(16.6, 21.1)	19.4	(16.7, 22.5)	18.1	(15.5, 21.0)	19.2	(15.0, 24.1)	18.6	(16.3, 21.2)	18.4	(15.8, 21.4)	19.8	(17.1, 22.9)
On television or the radio	22.2	(19.9, 24.7)	22.4	(19.3, 25.7)	22.1	(19.5, 25.0)	21.4	(16.9, 26.6)	22.5	(20.0, 25.2)	21.3	(18.5, 24.4)	25.4	(22.2, 28.9)
On television	20.9	(18.7, 23.3)	20.8	(17.8, 24.1)	21.0	(18.5, 23.8)	21.1	(16.6, 26.3)	20.8	(18.4, 23.4)	19.9	(17.2, 22.9)	24.3	(21.2, 27.7)
On the radio	14.7	(12.9, 16.8)	15.6	(13.1, 18.4)	13.9	(11.8, 16.3)	14.0	(10.7, 18.2)	14.9	(12.9, 17.2)	13.9	(11.7, 16.5)	17.3	(14.6, 20.3)
On billboards	21.1	(18.8, 23.5)	20.9	(17.9, 24.2)	21.2	(18.4, 24.4)	24.2	(19.5, 29.7)	20.1	(17.9, 22.6)	20.2	(17.5, 23.2)	24.0	(20.7, 27.7)
Internet	30.4	(27.7, 33.3)	30.8	(27.0, 35.0)	30.0	(26.9, 33.4)	35.0	(29.1, 41.4)	29.1	(26.3, 32.0)	30.1	(26.7, 33.7)	31.5	(28.0, 35.3)
Posters	22.1	(19.9, 24.6)	22.3	(19.3, 25.5)	22.0	(19.3, 25.1)	25.3	(20.6, 30.7)	21.2	(18.9, 23.7)	21.7	(18.9, 24.7)	23.7	(20.6, 27.2)
At the cinemas	10.8	(9.0, 12.8)	11.7	(9.4, 14.6)	9.8	(7.9, 12.1)	12.9	(9.5, 17.4)	10.1	(8.3, 12.3)	11.4	(9.2, 14.0)	8.6	(6.8, 10.7)
On windows or inside shops/stalls where you buy cigarettes	16.8	(14.8, 19.1)	17.0	(14.5, 19.8)	16.7	(14.2, 19.5)	20.0	(15.7, 25.1)	15.9	(13.9, 18.1)	16.4	(13.9, 19.3)	18.2	(15.6, 21.1)
In healthcare facilities	29.8	(27.0, 32.8)	31.1	(27.3, 35.2)	28.5	(25.3, 32.1)	32.4	(27.0, 38.3)	29.0	(26.1, 32.2)	29.5	(26.1, 33.2)	30.9	(27.1, 35.0)
Somewhere else	1.4	(1.0, 2.1)	1.8	(1.1, 3.0)	1.1	(0.6, 2.0)	1.2	(0.5, 2.6)	1.5	(1.0, 2.3)	1.6	(1.0, 2.4)	1.1	(0.6, 1.9)
Any of the above locations	42.7	(39.5, 46.1)	43.3	(39.0, 47.7)	42.3	(38.4, 46.2)	47.7	(41.2, 54.3)	41.3	(38.1, 44.6)	42.5	(38.5, 46.6)	43.7	(39.3, 48.2)

¹ Includes daily and occasional (less than daily) e-cigarette users.

² Includes former and never e-cigarette users.

- Indicates estimate is suppressed due to unweighted sample size less than 25.

Note: Those that never heard of electronic cigarettes were not asked the questions but included in the denominator.

Table 9.7: Percentage of adults ≥15 years old who noticed electronic cigarette marketing during the last 30 days in various places, by selected demographic characteristics – GATS Malaysia, 2023.

Places	Overall		Gender			Age (years)		Residence	
			Male	Female		15-24	25+	Urban	Rural
	Percentage (95% CI)								
Noticed electronic cigarette advertisements									
In stores where electronic cigarettes are sold	6.2	(5.2, 7.4)	6.2 (4.9, 7.7)	6.2 (4.7, 8.3)		7.0 (4.8, 10.1)	6.0 (4.9, 7.3)	6.0 (4.8, 7.6)	6.9 (5.5, 8.6)
On television	2.0	(1.4, 2.8)	1.9 (1.2, 2.9)	2.1 (1.2, 3.5)		2.0 (1.1, 3.9)	2.0 (1.3, 2.9)	2.0 (1.3, 3.0)	1.9 (1.3, 2.8)
On the radio	1.3	(0.8, 2.0)	1.2 (0.7, 2.1)	1.4 (0.7, 2.9)		0.6 (0.2, 1.8)	1.5 (0.9, 2.4)	1.4 (0.8, 2.4)	1.0 (0.6, 1.7)
On billboards	2.6	(1.9, 3.6)	2.5 (1.7, 3.7)	2.7 (1.7, 4.4)		2.7 (1.4, 5.4)	2.6 (1.9, 3.6)	2.6 (1.8, 3.8)	2.6 (1.8, 3.8)
On posters	3.9	(3.0, 5.0)	3.5 (2.5, 4.8)	4.3 (3.0, 6.2)		3.1 (1.7, 5.7)	4.1 (3.2, 5.3)	4.0 (2.9, 5.3)	3.7 (2.6, 5.0)
In newspapers or magazines	1.3	(0.8, 2.0)	1.1 (0.6, 1.9)	1.5 (0.8, 2.9)		0.5 (0.2, 1.2)	1.5 (0.9, 2.5)	1.2 (0.7, 2.2)	1.5 (0.9, 2.3)
In cinemas	0.7	(0.3, 1.4)	0.5 (0.2, 1.4)	0.9 (0.3, 2.5)		0.0 N/A	0.9 (0.4, 1.9)	0.8 (0.3, 1.8)	0.5 (0.2, 1.2)
On the internet	9.1	(7.5, 10.9)	9.5 (7.5, 12.1)	8.6 (6.9, 10.8)		11.3 (8.0, 15.6)	8.4 (7.0, 10.1)	9.3 (7.4, 11.6)	8.5 (6.7, 10.7)
On public transportation	1.3	(0.8, 2.2)	1.1 (0.6, 2.1)	1.5 (0.7, 3.1)		0.4 (0.1, 1.0)	1.6 (0.9, 2.7)	1.4 (0.8, 2.6)	0.7 (0.4, 1.3)
On public walls	1.5	(1.0, 2.3)	1.5 (1.0, 2.4)	1.5 (0.7, 3.2)		1.6 (0.6, 4.2)	1.5 (0.9, 2.4)	1.5 (0.9, 2.6)	1.6 (1.0, 2.4)
Somewhere else	0.4	(0.2, 0.8)	0.6 (0.2, 1.3)	0.2 (0.1, 0.5)		0.3 (0.0, 1.5)	0.4 (0.2, 0.9)	0.5 (0.2, 1.0)	0.2 (0.1, 0.6)
Noticed any public event associated with e-cigarette/liquid brands or companies	1.0	(0.7, 1.5)	1.2 (0.7, 2.0)	0.8 (0.5, 1.5)		1.4 (0.6, 3.0)	0.9 (0.6, 1.4)	1.0 (0.6, 1.6)	1.2 (0.7, 2.0)
Noticed electronic cigarette promotions									
Free samples	0.6	(0.3, 1.4)	0.7 (0.2, 2.3)	0.5 (0.2, 1.3)		1.6 (0.5, 5.5)	0.3 (0.2, 0.6)	0.7 (0.3, 1.8)	0.3 (0.1, 0.6)
Sale prices	1.1	(0.7, 1.7)	0.9 (0.5, 1.6)	1.3 (0.8, 2.2)		1.9 (1.0, 3.6)	0.9 (0.6, 1.3)	1.0 (0.6, 1.8)	1.4 (0.8, 2.3)
Coupons	0.1	(0.0, 0.2)	0.1 (0.1, 0.3)	0.1 (0.0, 0.2)		0.1 (0.0, 0.6)	0.1 (0.0, 0.2)	0.0 (0.0, 0.1)	0.4 (0.2, 0.9)
Free gifts/discounts on other products	2.5	(1.8, 3.7)	2.9 (1.8, 4.8)	2.1 (1.2, 3.6)		5.0 (2.7, 9.2)	1.8 (1.2, 2.7)	2.6 (1.7, 4.1)	2.3 (1.6, 3.3)

Clothing/item with brand name or logo	0.6 (0.4, 0.9)	0.8 (0.5, 1.5)	0.3 (0.2, 0.7)	1.1 (0.4, 2.6)	0.4 (0.3, 0.7)	0.4 (0.2, 0.9)	1.2 (0.7, 2.0)
Mail promoting cigarettes	0.1 (0.0, 0.3)	0.1 (0.0, 0.3)	0.1 (0.0, 0.4)	0.0 N/A	0.1 (0.1, 0.3)	0.1 (0.0, 0.3)	0.1 (0.0, 0.6)
One-to-one sales promotion	0.7 (0.3, 1.5)	0.9 (0.3, 2.3)	0.6 (0.2, 1.3)	1.8 (0.6, 5.4)	0.4 (0.2, 0.7)	0.8 (0.3, 1.8)	0.5 (0.3, 1.1)
Noticed any in-store advertising or promotion of electronic cigarette[1]	8.3 (7.0, 9.7)	8.8 (7.1, 10.9)	7.7 (6.0, 9.8)	11.1 (7.9, 15.4)	7.4 (6.2, 8.8)	8.0 (6.6, 9.8)	9.0 (7.4, 10.9)
Noticed any advertisement, sponsorship, or promotion	14.1 (12.2, 16.3)	15.3 (12.7, 18.4)	12.9 (10.7, 15.5)	17.4 (13.4, 22.3)	13.1 (11.2, 15.3)	13.9 (11.6, 16.6)	14.8 (12.4, 17.7)

[1] Includes those who noticed any advertisements in stores where e-cigarettes are sold, sale prices on e-cigarettes, or free gifts/discount offers on other products when buying e-cigarettes.

N/A - The estimate is "0.0".

Note: Those that never heard of electronic cigarettes were not asked the questions but included in the denominator.

Table 9.8: Percentage of current e-cigarette users ≥15 years old who noticed electronic cigarette marketing during the last 30 days in various places, by selected demographic characteristics – GATS Malaysia, 2023.

Places	Overall		Gender				Age (years)				Residence			
			Male		Female		15-24		25+		Urban		Rural	
	Percentage (95% CI)													
Noticed electronic cigarette advertisements														
In stores where electronic cigarette are sold	13.3	(7.8, 21.7)	12.5	(7.5, 20.0)	-	-	6.6	(2.4, 16.8)	16.9	(9.4, 28.4)	13.8	(7.5, 23.9)	10.8	(5.7, 19.7)
On television	4.1	(1.4, 11.6)	3.5	(1.0, 11.9)	-	-	2.3	(0.3, 15.3)	5.0	(1.4, 16.1)	4.7	(1.5, 13.7)	1.1	(0.2, 4.8)
On the radio	2.3	(0.4, 11.6)	2.5	(0.5, 12.3)	-	-	0.0	N/A	3.5	(0.7, 16.5)	2.5	(0.4, 14.3)	1.1	(0.2, 4.8)
On billboards	5.7	(2.4, 13.1)	6.1	(2.5, 14.0)	-	-	0.7	(0.1, 4.8)	8.3	(3.5, 18.7)	6.1	(2.3, 15.2)	3.7	(1.2, 10.7)
On posters	8.5	(3.8, 17.8)	7.6	(3.6, 15.5)	-	-	2.3	(0.7, 7.4)	11.8	(5.2, 24.9)	8.7	(3.4, 20.2)	7.6	(3.2, 17.1)
In newspapers or magazines	2.3	(0.4, 11.6)	2.5	(0.4, 12.4)	-	-	0.0	N/A	3.5	(0.7, 16.6)	2.7	(0.5, 13.6)	0.0	N/A
In cinemas	2.1	(0.3, 12.2)	2.3	(0.4, 13.0)	-	-	0.0	N/A	3.2	(0.5, 17.3)	2.5	(0.4, 14.3)	0.0	N/A
On the internet	21.4	(13.4, 32.4)	19.5	(11.7, 30.7)	-	-	27.2	(12.0, 50.7)	18.3	(10.6, 29.6)	21.3	(12.1, 34.6)	22.0	(13.5, 33.7)
On public transportation	3.6	(1.0, 11.6)	3.8	(1.1, 12.4)	-	-	0.0	N/A	5.4	(1.6, 16.8)	4.2	(1.2, 13.7)	0.0	N/A
On public walls	4.5	(1.5, 12.5)	4.8	(1.6, 13.3)	-	-	3.2	(0.4, 20.1)	5.2	(1.5, 16.7)	5.3	(1.8, 14.7)	0.5	(0.1, 3.6)
Somewhere else	2.3	(0.6, 7.7)	2.4	(0.7, 8.3)	-	-	2.6	(0.4, 16.9)	2.1	(0.4, 10.0)	2.7	(0.8, 9.3)	0.0	N/A
Noticed any public event associated with e-cigarette/liquid brands or companies	2.5	(1.0, 5.7)	2.3	(0.9, 5.9)	-	-	3.4	(0.8, 13.0)	2.0	(0.7, 5.7)	2.4	(0.9, 6.5)	2.7	(0.9, 8.4)
Noticed electronic cigarette promotions														
Free samples	4.8	(1.0, 19.7)	5.1	(1.1, 20.9)	-	-	10.7	(1.5, 47.7)	1.6	(0.4, 5.9)	5.5	(1.1, 23.3)	1.1	(0.3, 4.2)
Sale prices	2.3	(1.0, 5.3)	1.3	(0.5, 3.1)	-	-	5.1	(1.6, 14.7)	0.8	(0.3, 2.3)	1.4	(0.3, 5.7)	6.9	(2.9, 15.2)
Coupons	0.4	(0.1, 1.9)	0.4	(0.1, 2.1)	-	-	0.9	(0.1, 6.3)	0.1	(0.0, 0.8)	0.0	N/A	2.3	(0.4, 11.4)
Free gifts/discounts on other products	16.7	(8.8, 29.2)	16.3	(8.3, 29.7)	-	-	26.9	(9.8, 55.4)	11.2	(5.1, 22.9)	17.7	(8.7, 32.7)	11.3	(6.0, 20.3)
Clothing/item with brand name or logo	1.8	(0.7, 4.7)	1.8	(0.7, 5.0)	-	-	2.0	(0.5, 8.1)	1.7	(0.5, 6.1)	1.0	(0.2, 5.2)	5.8	(1.9, 15.9)
Mail promoting cigarettes	0.1	(0.0, 0.5)	0.1	(0.0, 0.6)	-	-	0.0	N/A	0.1	(0.0, 0.8)	0.0	N/A	0.5	(0.1, 3.3)
One-to-one sales promotion	5.3	(1.3, 19.2)	5.5	(1.3, 20.5)	-	-	12.2	(2.2, 46.1)	1.7	(0.5, 5.6)	6.3	(1.5, 22.5)	0.5	(0.1, 3.3)
Noticed any in-store advertising or promotion of electronic cigarettes[1]	27.3	(18.2, 38.9)	26.4	(17.2, 38.2)	-	-	30.3	(12.5, 57.1)	25.7	(16.2, 38.3)	29.5	(18.9, 43.0)	15.9	(9.4, 25.6)
Noticed any advertisement, sponsorship, or promotion	40.5	(30.4, 51.5)	39.4	(29.1, 50.7)	-	-	46.9	(26.2, 68.8)	36.9	(25.8, 49.6)	41.8	(29.9, 54.7)	34.2	(23.3, 47.0)

Note: Current tobacco smokers includes daily and occasional (less than daily) smokers.

[1] Includes those who noticed any advertisements in stores where e-cigarettes are sold, sale prices on e-cigarettes, or free gifts/discount offers on other products when buying e-cigarettes.

N/A - The estimate is "0.0".

- Indicates estimate is suppressed due to unweighted sample size less than 25.

Note: Those that never heard of electronic cigarettes were not asked the questions but included in the denominator.

Table 9.9: Percentage of current non-electronic cigarette users ≥15 years old who noticed electronic cigarette marketing during the last 30 days in various places, by selected demographic characteristics – GATS Malaysia, 2023.

Places	Overall	Gender		Age (years)		Residence	
		Male	Female	15-24	25+	Urban	Rural
	Percentage (95% CI)						
Noticed electronic cigarette advertisements							
In stores where electronic cigarette are sold	5.8 (4.8, 7.0)	5.4 (4.2, 6.9)	6.1 (4.6, 8.0)	7.0 (4.7, 10.3)	5.4 (4.4, 6.6)	5.5 (4.3, 7.0)	6.7 (5.3, 8.4)
On television	1.9 (1.3, 2.7)	1.7 (1.1, 2.6)	2.0 (1.2, 3.5)	2.0 (1.0, 4.0)	1.8 (1.2, 2.7)	1.8 (1.2, 2.9)	1.9 (1.3, 2.8)
On the radio	1.2 (0.8, 2.0)	1.0 (0.6, 1.7)	1.4 (0.7, 2.9)	0.7 (0.2, 2.0)	1.4 (0.8, 2.3)	1.3 (0.7, 2.3)	1.0 (0.6, 1.7)
On billboards	2.4 (1.7, 3.4)	2.1 (1.4, 3.2)	2.8 (1.7, 4.5)	2.9 (1.5, 5.8)	2.3 (1.6, 3.3)	2.4 (1.6, 3.7)	2.6 (1.8, 3.7)
On posters	3.6 (2.8, 4.7)	3.0 (2.1, 4.3)	4.1 (2.9, 6.0)	3.2 (1.7, 6.0)	3.7 (2.8, 4.9)	3.6 (2.6, 5.0)	3.5 (2.5, 4.8)
In newspapers or magazines	1.2 (0.8, 2.0)	0.9 (0.6, 1.5)	1.5 (0.8, 3.0)	0.6 (0.2, 1.3)	1.4 (0.9, 2.4)	1.1 (0.6, 2.1)	1.5 (1.0, 2.4)
In cinemas	0.6 (0.3, 1.4)	0.3 (0.1, 0.8)	0.9 (0.3, 2.5)	0.0 N/A	0.8 (0.4, 1.8)	0.6 (0.2, 1.7)	0.5 (0.2, 1.2)
On the internet	8.3 (6.8, 10.1)	8.4 (6.4, 10.9)	8.3 (6.6, 10.4)	9.8 (6.7, 14.1)	7.9 (6.5, 9.6)	8.5 (6.7, 10.7)	7.9 (6.2, 9.9)
On public transportation	1.2 (0.6, 2.0)	0.8 (0.4, 1.6)	1.5 (0.7, 3.1)	0.4 (0.1, 1.1)	1.4 (0.8, 2.5)	1.3 (0.6, 2.5)	0.8 (0.5, 1.3)
On public walls	1.3 (0.8, 2.1)	1.1 (0.7, 1.8)	1.5 (0.7, 3.2)	1.4 (0.5, 4.3)	1.3 (0.8, 2.2)	1.3 (0.7, 2.4)	1.6 (1.0, 2.5)
Somewhere else	0.3 (0.1, 0.6)	0.3 (0.1, 1.2)	0.2 (0.1, 0.5)	0.0 (0.0, 0.3)	0.4 (0.2, 0.8)	0.3 (0.1, 0.8)	0.2 (0.1, 0.6)
Noticed any public event associated with e-cigarette/liquid brands or companies	0.9 (0.6, 1.4)	1.1 (0.6, 2.0)	0.8 (0.5, 1.5)	1.2 (0.5, 3.0)	0.9 (0.5, 1.5)	0.9 (0.5, 1.5)	1.1 (0.6, 2.0)
Noticed electronic cigarette promotions							
Free samples	0.4 (0.2, 0.8)	0.2 (0.1, 0.5)	0.5 (0.2, 1.3)	0.8 (0.2, 2.8)	0.2 (0.2, 0.8)	0.4 (0.2, 1.1)	0.2 (0.1, 0.6)
Sale prices	1.0 (0.6, 1.7)	0.9 (0.5, 1.6)	1.2 (0.7, 2.1)	1.6 (0.7, 3.5)	0.9 (0.6, 1.4)	1.0 (0.6, 1.9)	1.1 (0.7, 2.0)
Coupons	0.1 (0.0, 0.2)	0.1 (0.0, 0.3)	0.1 (0.0, 0.2)	0.1 (0.0, 0.5)	0.1 (0.0, 0.2)	0.0 (0.0, 0.1)	0.3 (0.1, 0.8)
Free gifts/discounts on other products	1.7 (1.1, 2.5)	1.4 (0.8, 2.4)	2.0 (1.1, 3.5)	3.0 (1.4, 5.9)	1.3 (0.8, 2.1)	1.6 (1.0, 2.8)	1.9 (1.2, 2.9)
Clothing/item with brand name or logo	0.5 (0.3, 0.9)	0.7 (0.3, 1.5)	0.3 (0.1, 0.7)	1.0 (0.3, 2.8)	0.4 (0.2, 0.7)	0.4 (0.2, 0.9)	1.0 (0.6, 1.8)

Mail promoting cigarettes	0.1	(0.0, 0.3)	0.1	(0.0, 0.3)	0.1	(0.0, 0.4)	0.0	N/A	0.1	(0.1, 0.3)	0.1	(0.0, 0.3)	0.1	(0.0, 0.7)
One-to-one sales promotion	0.4	(0.2, 0.9)	0.3	(0.2, 0.6)	0.5	(0.2, 1.3)	0.8	(0.2, 2.7)	0.3	(0.2, 0.6)	0.4	(0.1, 1.0)	0.5	(0.3, 1.1)
Noticed any in-store advertising or promotion of electronic cigarette[1]	7.1	(6.0, 8.3)	6.7	(5.3, 8.4)	7.4	(5.8, 9.5)	9.3	(6.6, 13.0)	6.4	(5.4, 7.7)	6.6	(5.3, 8.2)	8.7	(7.1, 10.6)
Noticed any advertisement, sponsorship, or promotion	12.6	(10.8, 14.6)	12.6	(10.2, 15.4)	12.6	(10.4, 15.1)	14.6	(10.9, 19.2)	12.0	(10.2, 14.0)	12.2	(10.0, 14.7)	14.0	(11.7, 16.7)

Note: Current non-smokers of tobacco include former and never smokers.

[1] Includes those who noticed any advertisements in stores where e-cigarettes are sold, sale prices on e-cigarettes, or free gifts/discount offers on other products when buying e-cigarettes.

N/A - The estimate is "0.0".

Note: Those that never heard of electronic cigarettes were not asked the questions but included in the denominator.

Table 9.10: Percentage of adults ≥ 15 years old who are aware of JOM QUIT/M-quit anti-smoking campaign – GATS Malaysia, 2023.

Demographic Characteristics	Awareness of JOM QUIT/M-quit anti-smoking campaign	
	Percentage (95% CI)	
Overall	35.5	(32.7, 38.3)
Smoking Status		
Current smokers[1]	28.8	(24.2, 33.8)
Non-smokers[2]	37.1	(34.1, 40.2)
Gender		
Male	33.6	(30.1, 37.2)
Female	37.5	(34.0, 41.1)
Age (years)		
15-24	34.1	(28.8, 39.9)
25-44	35.0	(31.3, 39.0)
45-64	37.7	(33.5, 42.2)
65+	35.2	(29.5, 41.3)
Residence		
Urban	33.8	(30.5, 37.3)
Rural	41.3	(37.2, 45.6)
Education Level		
Less than primary	32.5	(25.1, 40.8)
Primary	33.4	(28.8, 38.3)
Secondary/High School	35.7	(32.2, 39.3)
College or above	40.3	(34.4, 46.4)
Ethnicity		
Malay	41.9	(38.2, 45.6)
Chinese	24.2	(19.0, 30.3)
Indian	21.8	(16.2, 28.7)
Others	34.6	(29.0, 40.7)

[1] Includes daily and occasional (less than daily) tobacco smokers
[2] Includes former and never tobacco smokers.
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Table 9.11: Percentage of adults ≥15 years old who noticed cigarette marketing during the last 30 days, by selected demographic characteristics – GATS Malaysia, 2011 and 2023.

Demographic Characteristics	Noticed any in-store cigarette advertising or promotion[1,2]			Noticed any cigarette advertisement, promotion, or sponsorship[1]		
	2011	2023	Relative change	2011	2023	Relative change
	Percentage (95% CI)		*Percentage*	*Percentage (95% CI)*		*Percentage*
Overall	21.7 (19.4, 24.1)	8.8 (7.4, 10.4)	-59.6*	35.6 (32.9, 38.5)	18.3 (16.3, 20.5)	-48.7*
Gender						
Male	25.0 (21.9, 28.5)	8.3 (6.6, 10.4)	-67.0*	39.0 (35.4, 42.7)	18.3 (15.7, 21.3)	-53.0*
Female	18.1 (15.5, 21.0)	9.3 (7.3, 11.7)	-48.7*	32.0 (28.7, 35.5)	18.2 (15.6, 21.2)	-43.1*
Age (years)						
15-24	25.0 (20.9, 29.7)	8.3 (5.9, 11.4)	-66.9*	40.9 (36.3, 45.7)	17.1 (13.5, 21.4)	-58.2*
25-44	23.0 (20.0, 26.4)	9.9 (7.7, 12.8)	-56.8*	36.7 (33.1, 40.4)	21.0 (17.6, 24.9)	-42.8*
45-64	17.6 (14.6, 21.1)	6.8 (5.1, 9.1)	-61.4*	31.5 (27.4, 36.0)	14.4 (11.7, 17.5)	-54.5*
65+	14.1 (8.6, 22.3)	9.6 (6.6, 13.8)	-32.1	22.0 (15.8, 29.9)	19.1 (14.6, 24.6)	-13.2
Residence						
Urban	23.8 (20.9, 26.9)	8.5 (6.9, 10.6)	-64.1*	38.1 (34.5, 41.8)	17.8 (15.4, 20.6)	-53.2*
Rural	16.1 (13.7, 18.9)	9.5 (7.8, 11.5)	-41.3*	29.2 (25.9, 32.7)	19.9 (17.0, 23.1)	-31.9*
Education Level[3]						
Less than primary	8.2 (5.8, 11.4)	5.2 (3.2, 8.5)	-35.9	20.2 (16.1, 25.1)	12.9 (9.0, 18.2)	-36.2*
Primary	19.9 (16.3, 24.0)	8.8 (6.3, 12.3)	-55.5*	32.3 (27.8, 37.2)	15.9 (12.7, 19.8)	-50.7*
Secondary/High School	23.1 (19.8, 26.7)	7.0 (5.3, 9.3)	-69.5*	36.6 (32.7, 40.7)	15.9 (13.4, 18.7)	-56.6*
College or above	22.8 (17.0, 30.0)	11.8 (8.3, 16.7)	-48.2*	38.4 (31.7, 45.6)	25.4 (20.4, 31.2)	-33.8*
Ethnicity						
Malay	24.4 (21.4, 27.6)	8.0 (6.6, 9.6)	-67.2*	37.9 (34.5, 41.5)	17.8 (15.3, 20.5)	-53.2*
Chinese	16.3 (12.6, 20.7)	8.9 (5.6, 14.0)	-45.0*	29.5 (24.4, 35.2)	18.0 (13.6, 23.5)	-38.8*
Indian	24.2 (16.9, 33.4)	7.3 (3.4, 15.0)	-69.7*	38.4 (29.3, 48.4)	16.6 (10.6, 25.1)	-56.7*
Others	15.3 (11.2, 20.5)	12.1 (8.8, 16.4)	-21.0	32.0 (26.0, 38.6)	21.5 (17.5, 26.2)	-32.6*

[1] During the last 30 days.

[2] Includes those who noticed any advertisements in stores, sale prices, or free gifts/discount offers on other products.

[3] Education level is reported only among persons aged ≥ 25 years.

* $p < 0.05$

NOTE: Results for prevalence estimates / averages and 95% CIs are rounded to the nearest tenth (0.1). The relative changes are calculated using un-rounded prevalence estimates and might be different if calculated using rounded prevalence estimates shown in this table.

10 KNOWLEDGE, ATTITUDES AND PERCEPTIONS

KEY FINDINGS

- 86.6% of adults aged ≥15 years in Malaysia believed that smoking causes serious illness.

- 85.9% of adults believed that second-hand smoke causes serious illness.

- The majority of adults aged ≥15 years in Malaysia believed that anti-smoking actions could reduce the number of smokers in the country.

10.0 Knowledge, Attitudes and Perceptions

Introduction

This chapter presents results on knowledge, attitudes, and perceptions about tobacco among adults aged 15 years or older in Malaysia, including beliefs about diseases and illnesses caused by tobacco use (both smoked and smokeless), exposure to second-hand smoke (SHS), and public opinion regarding anti-smoking actions. GATS has revealed a high level of awareness about the dangers of exposure to SHS, including serious illness, as well as strong evidence of public support for anti-smoking laws.

10.1 Belief that Smoking Causes Serious Illness and Various Specific Diseases

Overall, 86.6% of adults believed that smoking causes serious illness, as shown in **Table 10.1**. The majority of adults believed that smoking causes stroke (81.2%), heart attack (90.7%), lung cancer (94.1%), oral cancer (90.9%), emphysema or chronic lung disease (93.7%), premature birth (88.6%) and miscarriage (86.7%). Only 41.2% of adults believed that smoking tobacco causes diabetes.

10.2 Levels of Belief that Breathing other People's Smoke Causes Serious Illness in Non-Smokers
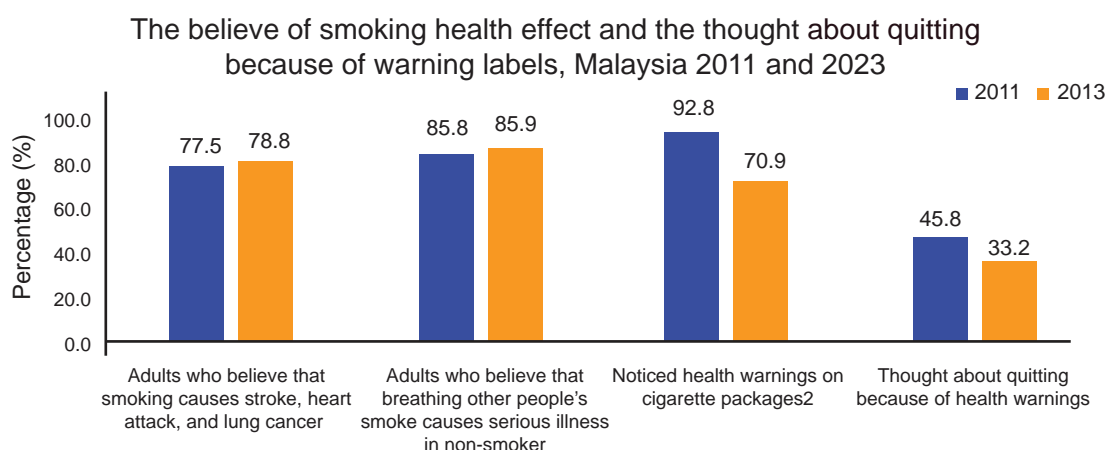
An estimated 85.9% of adults believed that second-hand smoke causes serious illness in non-smokers, as shown in **Table 10.2**. The belief was higher among non-smokers (86.4%), females (87.0%), those living in rural areas (86.1%) and the Malay ethnic group (88.6%)**.** Among adults aged ≥25 years or older, the belief that secondhand smoke causes serious illness among non-smokers ranged from 80.4% among those with less than primary education to 89.6% among those with college or above education levels.

10.3 Belief about anti-smoking actions in reducing the number of smokers in Malaysia

The majority of respondents believed that anti-smoking actions could reduce the number of smokers in Malaysia, specifically increasing no-smoking zones (85.9%), increasing cigarette prices (78.1%), making selling cigarettes illegal (84.7%), high fines for smoking-related offences (85.0%) and more quit smoking services (89.5%). The beliefs were generally more common among non-smokers, females, and those living in rural areas. (**Table 10.3**)

10.4 Comparative change between 2011 and 2023: Knowledge, Attitude and Perception

- The belief that smoking causes stroke, heart attack, and lung cancer has increased slightly (77.5% in 2011 and 78.8% in 2023), and the belief that breathing other people's smoke causes serious illness in non-smokers has remained stable (85.8% in 2011 to 85.9% in 2023).

- The percentage of current smokers who thought about quitting smoking because of health warnings on cigarette packages has decreased significantly (45.8% in 2011 to 33.2% in 2023).

The believe of smoking health effect and the thought about quitting
because of warning labels, Malaysia 2011 and 2023

Legend: ■ 2011 ■ 2013

Category	2011	2013
Adults who believe that smoking causes stroke, heart attack, and lung cancer	77.5	78.8
Adults who believe that breathing other people's smoke causes serious illness in non-smoker	85.8	85.9
Noticed health warnings on cigarette packages2	92.8	70.9
Thought about quitting because of health warnings	45.8	33.2

The overall awareness of the health effects of smoking and secondhand smoke among adults in Malaysia remained stable from 2011 to 2023 across sex, smoking status and ethnicity. However, there is a significant increase of awareness among those age 65 and above who belief that smoking causes stroke, heart attack, and lung cancer (68.5% in 2011 to 78.4% in 2023) and that the breathing of other people's smoke causes serious illness in non-smokers (73.3% in 2011 to 83.5% in 2023) **(Table 10.4)**.

Overall, there was a significant decrease in the prevalence of current smokers who noticed health warnings on cigarette packages (92.8% in 2011 to 70.9% in 2023) and who thought about quitting because of these warning labels (45.8% in 2011 to 33.2% in 2023). These decreases were significant across age, ethnicity, education level and male gender. The change among female gender was not significant probably due to low prevalence of female smokers **(Table 10.5)**.

Table 10.1: Percentage of adults ≥15 years old who believe that smoking tobacco causes serious illness and various diseases, by smoking status and selected demographic characteristics – GATS Malaysia, 2023.

Demographic Characteristics	Adults who believe that smoking tobacco causes…								
	Serious illness	Stroke	Heart attack	Lung cancer	Diabetes	Oral Cancer	Emphysema/Chronic Lung Disease	Premature birth	Miscarriage
	Percentage (95% CI)								
Overall	86.6 (84.4,88.6)	81.2 (78.8,83.3)	90.7 (89.0,92.1)	94.1 (92.7,95.3)	41.2 (38.1,44.4)	90.9 (89.4,92.2)	93.7 (92.3,94.8)	88.6 (86.6,90.3)	86.7 (84.7,88.5)
Smoking Status									
Current smokers[1]	81.2 (74.9,86.1)	73.2 (67.0,8.7)	85.9 (79.8,90.3)	90.5 (85.4,93.9)	39.3 (34.0,44.7)	86.4 (81.2,90.4)	89.8 (85.9,92.7)	82.9 (78.4,86.6)	81.4 (77.0,85.2)
Non-smokers[2]	87.9 (85.6,89.9)	83.0 (80.6,85.2)	91.8 (90.1,93.2)	95.0 (93.8,96.0)	41.7 (38.2,45.1)	91.9 (90.4,93.2)	94.6 (93.3,95.6)	89.9 (87.8,91.7)	88.0 (85.7,89.9)
Gender									
Male	84.5 (81.2,87.4)	80.3 (76.9,3.4)	88.8 (86.2,91.0)	92.8 (90.5,4.6)	40.3 (36.6,44.2)	89.4 (87.0,91.3)	92.0 (89.9,93.7)	86.8 (84.1,89.1)	85.1 (82.4,87.4)
Female	88.9 (86.2,91.1)	82.0 (79.3,84.5)	92.6 (90.7,94.2)	95.5 (94.1,96.6)	42.1 (38.0,46.3)	92.5 (90.6,94.0)	95.4 (94.0,96.5)	90.5 (88.1,92.5)	88.5 (86.0,90.6)
Age (years)									
15-24	86.7 (81.8,90.5)	80.0 (74.8,84.3)	91.9 (88.4,94.4)	95.3 (92.8,96.9)	38.8 (32.7,45.2)	93.6 (90.9,95.6)	95.8 (93.5,97.3)	91.5 (87.6,94.2)	88.7 (84.0,92.2)
25-44	86.2 (82.9,88.9)	82.6 (79.0,85.7)	91.4 (89.0,93.3)	94.6 (91.9,96.4)	40.8 (36.9,44.8)	92.4 (90.0,94.3)	94.7 (92.4,96.3)	90.2 (87.0,92.7)	88.5 (85.2,91.1)
45-64	87.6 (84.6,0.2)	79.8 (75.9,83.2)	89.2 (86.1,91.7)	93.0 (90.2,95.1)	43.3 (39.0,47.8)	88.0 (84.9,90.6)	91.5 (88.7,93.7)	85.9 (82.7,88.7)	84.4 (81.1,87.2)
65+	85.9 (82.0,89.0)	81.2 (74.8,86.2)	88.2 (82.8,92.0)	92.3 (89.2,94.6)	43.4 (37.2,49.8)	84.4 (78.5,88.9)	89.7 (84.6,93.3)	81 (75.2,85.6)	80.0 (74.1,84.7)
Residence									
Urban	86.6 (83.8,89.0)	81.2 (78.3,83.9)	90.2 (88.0,92.0)	94.0 (92.2,95.4)	41.0 (37.2,44.9)	90.8 (88.9,92.4)	93.6 (91.8,95.0)	88.5 (86.0,90.6)	86.7 (84.1,88.9)
Rural	86.7 (84.3,88.8)	80.9 (78.3,83.3)	92.2 (90.6,3.5)	94.8 (93.3,96.0)	42.0 (37.4,46.8)	91.1 (89.3,92.5)	94.0 (92.6,95.1)	88.9 (86.5,90.9)	86.9 (84.4,89.0)
Education Level[3]									
Less than primary	76.6 (67.2,4.0)	74.4 (66.5,80.9)	85.5 (78.4,90.5)	86.6 (79.1,91.6)	48.8 (40.7,56.9)	80.8 (73.4,86.5)	85.7 (78.4,90.8)	75.1 (66.2,82.2)	74.7 (65.9,81.9)
Primary	85.5 (82.1,88.4)	77.1 (72.0,81.5)	85.0 (80.6,88.6)	90.8 (87.4,93.4)	40.6 (35.7,45.8)	82.9 (78.8,86.3)	89.0 (85.3,91.9)	80.7 (76.3,84.5)	78.1 (73.5,82.1)
Secondary/High School	87.9 (84.6,90.5)	81.7 (78.3,84.7)	90.9 (87.7,93.3)	95.0 (92.8,96.5)	44.5 (40.1,49.0)	92.3 (90.0,94.1)	94.6 (92.5,96.1)	88.5 (85.0,91.2)	87.5 (83.9,90.3)
College or above	89.0 (85.1,91.9)	86.3 (82.0,89.7)	94.6 (92.1,96.4)	96.3 (93.3,98.0)	37.8 (32.0,43.9)	94.1 (91.1,96.2)	95.7 (92.3,97.6)	95.3 (92.3,97.2)	93.4 (90.2,95.6)

Ethnicity																	
Malay	89.7	(87.9, 91.3)	83.6	(81.0, 85.9)	94.2	(92.6, 95.5)	96.5	(95.3, 97.4)	40.7	(36.7, 44.9)	93.6	(92.1, 94.8)	95.8	(94.5, 96.8)	92.2	(90.3, 93.7) 91.1 (89.2, 92.7)
Chinese	84.0	(76.9, 89.2)	83.1	(77.5, 87.5)	86.0	(81.0, 89.9)	92.9	(89.5, 95.2)	42.8	(34.9, 51.0)	90.3	(86.5, 93.0)	91.8	(87.8, 94.5)	85.7	(78.5, 90.8) 84.8 (77.5, 90.0)
Indian	86.2	(75.3, 92.8)	77.0	(66.1, 85.2)	90.2	(83.0, 94.6)	92.9	(86.5, 96.4)	41.3	(29.9, 53.6)	89.8	(84.1, 93.6)	94.3	(89.0, 97.1)	85.2	(76.9, 90.8) 81.6 (71.3, 88.8)
Others	78.8	(71.7, 84.5)	71.0	(64.9, 76.3)	83.8	(79.3, 87.4)	87.5	(82.4, 91.3)	40.9	(35.1, 47.1)	81.6	(76.7, 85.7)	87.8	(82.7, 91.5)	80.7	(75.4, 85.1) 75.4 (70.0, 80.0)

[1] Includes daily and occasional (less than daily) tobacco smokers.

[2] Includes former and never tobacco smokers.

[3] Education level is reported only among persons aged ≥ 25 years.

Table 10.2: Percentage of adults ≥ 15 years old who believe that second-hand smoke causes serious illness in non-smokers, by smoking status and selected demographic characteristics – GATS Malaysia, 2023.

Demographic Characteristics	Belief that breathing other people's smoke causes Serious Illness	
	Percentage (95% CI)	
Overall	85.9	(83.9, 87.7)
Smoking Status		
Current smokers[1]	84.0	(79.3, 87.8)
Non-smokers[2]	86.4	(84.1, 88.4)
Gender		
Male	84.9	(82.3, 87.1)
Female	87.0	(84.3, 89.3)
Age (years)		
15-24	87.7	(83.3, 91.0)
25-44	86.1	(83.1, 88.6)
45-64	84.9	(81.1, 88.1)
65+	83.5	(79.2, 87.1)
Residence		
Urban	85.9	(83.4, 88.0)
Rural	86.1	(83.5, 88.5)
Education Level[3]		
Less than primary	80.4	(73.7, 85.7)
Primary	82.0	(78.1, 85.2)
Secondary/High School	84.6	(80.9, 87.8)
College or above	89.6	(85.1, 92.8)
Ethnicity		
Malay	88.6	(86.4, 90.4)
Chinese	83.3	(78.6, 87.1)
Indian	79.8	(66.3, 88.8)
Others	82.9	(78.2, 86.8)

[1] Includes daily and occasional (less than daily) tobacco smokers
[2] Includes former and never tobacco smokers.
[3] Education level is reported only among persons aged ≥ 25 years.

Table 10.3: Percentage of adults ≥15 years old who believe that these anti-smoking actions could reduce the number of smokers in Malaysia, by smoking status and selected demographic characteristics – GATS Malaysia, 2023.

Demographic Characteristics	Anti-smoking actions…									
	Increase no smoking zones		Increase cigarette price		Make selling cigarettes illegal		High fine for smoking related offences		More quit smoking services	
					Percentage (95% CI)					
Overall	85.9	(83.8, 87.7)	78.1	(75.9, 80.1)	84.7	(83.0, 86.3)	85.0	(83.1, 86.7)	89.5	(87.5, 91.1)
Smoking Status										
Current smokers[1]	76.9	(72.4, 80.8)	61.4	(55.8, 66.7)	73.2	(68.5, 77.5)	70.1	(64.6, 75.1)	82.3	(76.9, 86.6)
Non-smokers[2]	87.9	(85.6, 89.9)	82.0	(79.6, 84.2)	87.4	(85.3, 89.2)	88.5	(86.5, 90.2)	91.1	(89.1, 92.8)
Gender										
Male	83.4	(80.6, 85.9)	74.5	(71.6, 77.3)	81.7	(79.0, 84.2)	81.4	(78.4, 84.0)	87.6	(84.9, 89.9)
Female	88.5	(86.0, 90.5)	81.9	(78.9, 84.5)	87.9	(85.2, 90.1)	88.9	(86.6, 90.9)	91.4	(88.7, 93.5)
Age (years)										
15-24	87.3	(83.6, 90.3)	81.5	(77.2, 85.2)	86.7	(82.4, 90.0)	88.4	(84.7, 91.4)	90.2	(86.2, 93.1)
25-44	83.6	(79.9, 86.7)	75.6	(71.9, 79.0)	82.9	(80.1, 85.3)	83.0	(80.0, 85.6)	88.3	(85.3, 90.7)
45-64	86.9	(83.7, 89.5)	78.5	(74.6, 82.0)	86.1	(83.2, 88.6)	85.4	(82.1, 88.2)	90.8	(88.1, 92.9)
65+	89.9	(86.2, 92.6)	79.8	(74.4, 84.3)	84.5	(79.8, 88.3)	84.6	(80.3, 88.1)	89.7	(84.3, 93.4)
Residence										
Urban	85.4	(82.8, 87.7)	77.9	(75.2, 80.3)	84.1	(82.0, 86.0)	84.5	(82.1, 86.6)	88.5	(86.1, 90.6)
Rural	87.4	(85.0, 89.4)	78.9	(75.7, 81.8)	86.7	(84.5, 88.7)	86.8	(84.3, 89.0)	92.8	(90.8, 94.4)
Education Level[3]										
Less than primary	80.9	(72.8, 87.0)	72.2	(64.6, 78.8)	88.9	(83.4, 92.7)	81.8	(72.3, 88.5)	87.9	(81.9, 92.0)
Primary	79.9	(74.8, 84.2)	70.7	(65.5, 75.3)	79.5	(74.4, 83.8)	81.5	(76.9, 85.3)	87.6	(82.6, 91.2)
Secondary/High School	87.6	(84.6, 90.1)	78.0	(74.4, 81.3)	86.4	(83.7, 88.6)	86.6	(83.1, 89.4)	90.5	(87.2, 92.9)
College or above	89.1	(84.9, 92.3)	82.1	(77.2, 86.1)	84.0	(79.6, 87.6)	84.1	(79.5, 87.9)	90.7	(86.8, 93.6)
Ethnicity										
Malay	89.9	(88.1, 91.5)	81.6	(79.1, 83.9)	87.6	(85.6, 89.4)	87.4	(85.1, 89.4)	91.7	(89.7, 93.4)
Chinese	85.1	(80.2, 89.0)	78.5	(73.5, 82.7)	80.6	(75.6, 84.8)	84.4	(80.2, 87.9)	86.0	(80.8, 89.9)
Indian	82.2	(70.7, 89.8)	75.8	(65.8, 83.5)	88.9	(81.8, 93.5)	88.1	(79.8, 93.3)	92.5	(83.6, 96.8)
Others	73.0	(66.1, 78.8)	65.0	(59.0, 70.6)	76.7	(70.9, 81.6)	74.5	(68.9, 79.4)	83.8	(77.5, 88.6)

[3] Education level is reported only among persons aged ≥ 25 years.

Table 10.4: Percentage of adults ≥15 years old who believe that tobacco smoking and exposure to secondhand smoke causes serious illness and diseases, by smoking status and selected demographic characteristics – GATS Malaysia, 2011 and 2023.

Demographic Characteristics	Adults who believe that smoking causes serious illness			Adults who believe that smoking causes stroke, heart attack, and lung cancer [1,2]			Adults who believe that breathing other people's smoke causes serious illness in non-smokers		
	2011	2023	Relative change	2011	2023	Relative change	2011	2023	Relative change
	Percentage (95% CI)		Percentage	Percentage (95% CI)		Percentage	Percentage (95% CI)		Percentage
Overall	92.2 (90.9, 93.4)	86.6 (84.4, 88.6)	-6.1*	77.5 (75.3, 79.5)	78.8 (76.5, 81.1)	1.8	85.8 (84.3, 87.3)	85.9 (83.9, 87.7)	0.1
Smoking Status									
Current smokers3	88.1 (84.7, 90.9)	81.2 (74.9, 86.1)	-7.9*	70.5 (65.6, 74.9)	70.1 (64.0, 75.5)	-0.5	79.8 (75.8, 83.2)	84.0 (79.3, 87.8)	5.3
Non-smokers4	93.5 (92.1, 94.6)	87.9 (85.6, 89.9)	-5.9*	79.6 (77.2, 81.7)	80.9 (78.4, 83.1)	1.6	87.7 (86.0, 89.2)	86.4 (84.1, 88.4)	-1.5
Gender									
Male	90.7 (88.5, 92.4)	84.5 (81.2, 87.4)	-6.7*	75.2 (72.2, 77.9)	77.3 (73.7, 80.5)	2.8	84.1 (81.7, 86.2)	84.9 (82.3, 87.1)	1.0
Female	93.9 (92.5, 95.1)	88.9 (86.2, 91.1)	-5.4*	79.9 (77.3, 82.3)	80.5 (77.7, 83.0)	0.7	87.7 (85.8, 89.5)	87.0 (84.3, 89.3)	-0.8
Age (years)									
15-24	93.6 (90.9, 95.6)	86.7 (81.8, 90.5)	-7.4*	80.4 (76.4, 83.9)	78.1 (72.7, 82.6)	3.0	87.4 (84.0, 90.1)	87.7 (83.3, 91.0)	0.3
25-44	93.7 (91.8, 95.1)	86.2 (82.9, 88.9)	-8.0*	78.0 (74.9, 80.9)	80.3 (76.8, 83.4)	2.9	86.7 (84.2, 88.8)	86.1 (83.1, 88.6)	-0.7
45-64	90.3 (87.9, 92.3)	87.6 (84.6, 90.2)	-2.9	75.6 (72.0, 79.0)	77.2 (73.1, 80.8)	2.1	86.3 (83.6, 88.6)	84.9 (81.1, 88.1)	-1.6
65+	85.0 (79.7, 89.1)	85.9 (82.0, 89.0)	1.0	68.5 (62.0, 74.4)	78.4 (72.2, 83.6)	14.5*	73.3 (66.0, 79.5)	83.5 (79.2, 87.1)	14.0*
Residence									
Urban	92.8 (91.1, 94.2)	86.6 (83.8, 89.0)	-6.6*	78.5 (75.6, 81.1)	78.8 (75.8, 81.5)	0.5	86.6 (84.6, 88.3)	85.9 (83.4, 88.0)	-0.8
Rural	90.8 (88.8, 92.5)	86.7 (84.3, 88.8)	-4.5*	74.9 (71.8, 77.7)	78.9 (76.2, 81.4)	5.4	84.0 (81.4, 86.3)	86.1 (83.5, 88.5)	2.6
Education Level5									
Less than primary	80.1 (74.5, 84.8)	76.6 (67.2, 84.0)	-4.3	63.5 (58.2, 68.6)	70.3 (62.5, 77.1)	10.7	70.6 (65.3, 75.3)	80.4 (73.7, 85.7)	14.0*
Primary	90.1 (87.2, 92.4)	85.5 (82.1, 88.4)	-5.1*	74.7 (70.4, 78.6)	73.3 (68.0, 77.9)	-1.9	82.9 (79.4, 86.0)	82.0 (78.1, 85.2)	-1.2
Secondary/High School	95.6 (94.0, 96.8)	87.9 (84.6, 90.5)	-8.1*	81.4 (78.4, 84.1)	79.3 (75.6, 82.6)	-2.6	89.2 (86.7, 91.3)	84.6 (80.9, 87.8)	-5.1*
College or above	94.2 (88.1, 97.3)	89.0 (85.1, 91.9)	-5.6	76.0 (68.7, 82.1)	85.1 (80.9, 88.5)	11.9*	92.4 (88.1, 95.2)	89.6 (85.1, 92.8)	-3.1
Ethnicity									
Malay	93.5 (91.9, 94.8)	89.7 (87.9, 91.3)	-4.1*	81.2 (78.7, 83.5)	82.2 (79.6, 84.5)	1.2	87.8 (85.7, 89.6)	88.6 (86.4, 90.4)	0.9
Chinese	89.6 (85.9, 92.4)	84.0 (76.9, 89.2)	-6.3	71.7 (66.3, 76.6)	79.0 (72.9, 84.1)	10.2	82.9 (79.1, 86.1)	83.3 (78.6, 87.1)	0.5

Indian	92.3 (87.0, 95.6)	86.2 (75.3, 92.8)	-6.6	75.6 (69.5, 80.9)	75.0 (63.8, 83.6)	-0.8	86.7 (81.3, 90.8)	79.8 (66.3, 88.8)	-8.0
Others	90.2 (86.4, 93.0)	78.8 (71.7, 84.5)	-12.7*	70.0 (64.4, 75.1)	67.5 (61.8, 72.8)	-3.5	80.8 (76.3, 84.6)	82.9 (78.2, 86.8)	2.6

[1] Among those who believe or don't know if smoking causes serious illness.

[2] Percentage who believed tobacco smoking causes all three of these diseases.

[3] Includes daily and occasional (less than daily) tobacco smokers

[4] Includes former and never tobacco smokers.

[5] Education level is reported only among persons aged ≥ 25 years.

* $p<0.05$

NOTE: Results for prevalence estimates / averages and 95% CIs are rounded to the nearest tenth (0.1). The relative changes are calculated using un-rounded prevalence estimates and might be different if calculated using rounded prevalence estimates shown in this table.

Table 10.5: Percentage of current smokers ≥15 years old who noticed health warnings on cigarette packages and considered quitting because of the warning labels during the last 30 days, by selected demographic characteristics – GATS Malaysia, 2011 and 2023.

Demographic Characteristics	Current smokers[1] who…					
	Noticed health warnings on cigarette packages[2]			Thought about quitting because of health warnings[2]		
	2011	2023	Relative change	2011	2023	Relative change
	Percentage (95% CI)		Percentage	Percentage (95% CI)		Percentage
Overall	92.8 (90.1, 94.8)	70.9 (64.6, 76.6)	-23.6*	45.8 (41.3, 50.4)	33.2 (28.0, 38.7)	-27.6*
Gender						
Male	93.2 (90.4, 95.2)	71.4 (64.9, 77.1)	-23.4*	45.7 (41.2, 50.2)	32.9 (27.9, 38.3)	-28.0*
Female	74.7 (54.3, 88.0)	54.3 (27.2, 79.0)	-27.3	51.7 (30.7, 72.1)	42.9 (19.3, 70.3)	-17.0
Age (years)						
15-24	91.6 (82.5, 96.2)	70.5 (52.9, 83.6)	-23.0*	47.6 (36.6, 58.8)	27.3 (15.3, 43.9)	-42.7*
25-44	94.0 (90.4, 96.3)	75.5 (68.6, 81.2)	-19.7*	45.7 (39.9, 51.6)	36.4 (29.6, 43.9)	-20.3*
45-64	93.9 (89.8, 96.5)	63.6 (52.0, 73.8)	-32.3*	44.0 (36.2, 52.2)	29.8 (22.3, 38.6)	-32.3*
65+	78.7 (65.5, 87.8)	57.4 (39.6, 73.5)	-27.1*	47.4 (31.4, 63.9)	31.9 (18.5, 49.1)	-32.7
Residence						
Urban	94.4 (90.6, 96.7)	70.9 (62.4, 78.1)	-24.9*	47.4 (41.4, 53.5)	33.4 (26.8, 40.7)	-29.5*
Rural	88.9 (84.7, 92.0)	71.0 (65.3, 76.2)	-20.1*	42.1 (37.1, 47.2)	32.5 (27.7, 37.6)	-22.8*
Education Level3						
Less than primary	73.3 (61.3, 82.7)	46.1 (26.1, 67.4)	-37.2*	36.8 (25.2, 50.1)	11.6 (5.4, 23.2)	-68.4*
Primary	93.2 (88.5, 96.1)	67.4 (55.6, 77.3)	-27.7*	47.6 (39.8, 55.5)	27.5 (20.0, 36.4)	-42.3*
Secondary/High School	96.0 (90.5, 98.4)	73.4 (62.6, 82.0)	-23.5*	46.5 (39.8, 53.5)	36.5 (29.0, 44.6)	-21.7*
College or above	100 (N/A)	78.4 (67.2, 86.6)	-21.6*	41.1 (26.3, 57.7)	44.9 (31.4, 59.2)	9.1
Ethnicity						
Malay	95.1 (92.1, 97.0)	75.7 (69.3, 81.2)	-20.3*	50.4 (45.0, 55.8)	35.6 (29.6, 42.0)	-29.4*
Chinese	95.0 (83.4, 98.6)	62.7 (47.6, 75.7)	-34.0*	33.3 (22.2, 46.6)	18.1 (10.4, 29.6)	-45.6*
Indian	97.9 (90.5, 99.6)	62.6 (37.7, 82.2)	-36.1*	49.3 (32.8, 65.9)	46.5 (23.9, 70.7)	-5.5
Others	80.6 (70.7, 87.7)	65.4 (50.9, 77.5)	-18.9*	36.2 (27.5, 46.1)	29.5 (18.7, 43.4)	-18.5

[1] Includes daily and occasional (less than daily) tobacco smokers.

[2] During the last 30 days.

[3] Education level is reported only among persons aged ≥ 25 years.

* p<0.05

NOTE: Results for prevalence estimates / averages and 95% CIs are rounded to the nearest tenth (0.1). The relative changes are calculated using un-rounded prevalence estimates and might be different if calculated using rounded prevalence estimates shown in this table.

N/A – The estimate is "0.0" or "100"

11 RECOMMENDATIONS AND CONCLUSION

11.1 Recommendations

Eradicating future tobacco-related health issues, illnesses, and deaths depends on a substantial and sustained reduction in tobacco usage. This can be achieved by preventing the initiation of tobacco use, especially among young people, and by encouraging current users to quit. Despite the significant decline in the prevalence of adult tobacco smokers from 2011 to 2023, there are still major challenges related to tobacco use that need to be addressed. These include exposure to tobacco smoke, and electronic cigarette vapours, the affordability of cigarettes, and the increasing trend of e-cigarette use.

Since becoming a party to the World Health Organization Framework Convention on Tobacco Control (WHO FCTC) in 2005, Malaysia has shown dedication to enforcing its wide-ranging provisions for tobacco control. WHO supports nations like Malaysia in realizing the WHO FCTC's goals through the MPOWER Package, an integral part of their Action Plan for Non-communicable Diseases. This package encompasses six prioritized, cost-effective strategies aimed at reducing the demand for tobacco and consequently saving lives, namely;

I.   **M**onitor tobacco use

II. **P**rotect people from tobacco smoke

III. **O**ffer help to quit tobacco use

IV. **W**arn about the dangers of tobacco

V.   **E**nforce bans on tobacco advertising, promotion, and sponsorship

VI. **R**aise taxes on tobacco products.

The MPOWER Package is designed to assist in planning, building and evaluating national and international partnerships, while facilitating access to financial resources for tobacco control activities. It encourages policymakers and other stakeholders to envision a world free from tobacco consumption. From 2011 to 2023, Malaysia enacted a range of tobacco control policies. This includes ongoing surveillance of tobacco and nicotine products use among adults and adolescents through regular surveys, expanding smoke-free zones to cover outdoor dining areas, enhancing smoking cessation programs across public and private healthcare facilities, workplaces, and higher education institutions, introduction of a new set of six graphic health warnings on cigarette packaging, prohibition of tobacco product sales through direct or indirect advertising, increase in the tobacco excise tax from 28 cents to 40 cents per cigarette stick, and setting the minimum price for a pack of 20 cigarettes or cigars at MYR 12.

In this chapter, we will focus on the six components of the MPOWER Package and provide tailored recommendations[1] for each component based on findings from GATS Malaysia.

11.1a Monitor Tobacco Use (WHO FCTC Article 20 & 21)

Reliable data is crucial for implementing and evaluating effective tobacco control policies, as it enables accurate measurement of the tobacco epidemic and a fair assessment of control efforts. Malaysia successfully conducted its first GATS survey in 2011, publishing the report as GATS Malaysia 2011. This is the second edition of GATS. These reports provide data on adult tobacco use prevalence and other related statistics that focus exclusively on tobacco. They provide in-depth to the study and standardization of its tools for potential cross-country result comparisons and time series comparisons, particularly in monitoring the impact of policy changes over time. GATS Malaysia's findings will be shared internationally through the WHO, CDC, and other partners. Under Articles 20 & 21 of the WHO FCTC, Malaysia is obligated to submit detailed biennial reports to the WHO FCTC Secretariat on the country's progress in implementing this treaty.

Therefore, it is recommended that:

i.   The national survey on tobacco and nicotine product use in Malaysia needs to be conducted every four years to effectively track the tobacco epidemic and assess the impact of control measures. While some interventions may take longer to yield results, other measures, such as tobacco tax and price increases or the implementation of pictorial health warnings, can be observed in a shorter period. Additionally, the frequency of conducting GATS every four years aligns with the reporting cycle of the WHO's Global Tobacco Epidemic Report. Given that GATS provides detailed insights into tobacco and nicotine product usage, the Ministry of Health should allocate sufficient funding for upcoming surveys.

ii.   The Ministry of Health, as the primary agency for tobacco control and the national Secretariat for WHO FCTC implementation, should have its capacity enhanced. Tobacco and nicotine product control at the national, state, and district levels could be restructured to assign officers with clear roles and responsibilities, as well as to ensure a reasonable number of staff for an effective implementation of tobacco control policies, health promotion, and education, surveillance, and enforcement. This aligns with the Cabinet's decision during Malaysia's ratification of the WHO FCTC, which designated MOH as the national secretariat with a dedicated team.

iii.   Collaboration between tobacco control and research experts from the Ministry of Health (MOH) and other institutions, particularly academia, should be strengthened. Furthermore, the National Institutes of Health (NIH) within the MOH should establish a functional network of these experts to promote a more scientifically robust approach to tobacco control. This network will facilitate the exchange of knowledge and best practices, thereby strengthening the scientific basis of tobacco control measures to support evidence-based decision-making.

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[1] The recommendations suggested in this chapter are aligned with the recommendations from the WHO FCTC and MPOWER. These suggestions represent the perspectives of the Malaysian government and may not necessarily reflect the views of the U.S. Centers for Disease Control and Prevention (CDC). Developing these recommendations involved numerous discussions with stakeholders in tobacco control, particularly officers from the Control of Smoking Product, Alcohol and Substance Abuse Sector, and Disease Control Division from the Ministry of Health Malaysia. The officers also serve as investigators in the Global Adult Tobacco Survey (GATS).

11.1b Protection from Tobacco Smoke (WHO FCTC Article 8)

Tobacco smoke exposure and secondhand aerosol from e-cigarettes are highly toxic, with no safe level of exposure to those who don't smoke or vape. Over 7,000 compounds, including more than 69 carcinogens (1) , have been identified in tobacco smoke. E-cigarettes, like traditional smoked tobacco products, also pose significant health risks. The aerosols from e-cigarettes are not merely water vapour but contain particles of nicotine, flavourings, ultrafine particles, and other harmful substances such as acetaldehyde, acrolein, and formaldehyde, which can cause lung disease, cardiovascular disease, and cancer (2). GATS Malaysia 2023 findings revealed that 18-20% of adults are involuntarily exposed to tobacco smoke in various places. The 2023 survey findings showed a significant reduction in tobacco smoke exposure in various public places, except in government buildings, restaurants, and healthcare facilities, compared to the 2011 survey. Smoke-free policies not only protect non-smokers from exposure to secondhand smoke but also encourage smokers to quit and help de-normalize smoking in society. According to WHO FCTC Article 8 Guidelines, countries are urged to implement comprehensive smoke-free laws that cover all public places. Exceptions for 'smoking rooms' in designated 'no smoking' areas or the use of mechanical systems like ventilation or extraction fans do not eliminate the health risks posed by tobacco smoke and e-cigarette vapours.

Enforcement efforts could be enhanced by establishing dedicated teams at each district health office, with their performance regularly monitored. Additionally, the effectiveness of enforcement officers should be periodically reviewed and adjusted as needed. Therefore, it is recommended that:

i.   Smoke-free and vape-free areas should be implemented effectively and efficiently throughout the nation, particularly in government buildings, restaurants, and healthcare facilities. Enforcement efforts could be enhanced by establishing dedicated teams at each district health office, with their performance regularly monitored. Additionally, the effectiveness of the enforcement officers should be periodically reviewed and adjusted as needed in terms of quality as well as quantity to ensure effective enforcement can be carried out;

ii.   A comprehensive reporting channel should be established to enable the public to report any violation of the smoke-free law to the authorities. Currently, there is a WhatsApp number available for this purpose, but it should be widely advertised nationwide. This would increase public awareness and help ensure more effective enforcement of the law ;

iii. The designation of 100% smoke-free areas should be expanded to include pubs, bars, nightclubs, discos, and casinos. Additionally, more public spaces, such as parks and other open areas frequented by families, should also be designated as 'no-smoking' areas;

iv.   Legislative measures should be considered to protect non-smokers from tobacco smokes not only in public places but also in all workplaces and home settings, where passive smoking appears to be highly prevalent;

v.   Nationwide health promotion campaigns should be intensified to disseminate accurate information and empower the general public, particularly non-smokers, to assert their right to breathe clean, unpolluted air. All stakeholders are encouraged to participate in tobacco control initiatives through community-focused programmes, such as the

Malaysian Home without Smoking Environment (MyHOUSE), and smoke-free workplaces. Communities can be empowered to counsel adults who smoke or use e-cigarettes to avoid these behaviours in public areas. At home, children can be educated about the risks of tobacco and nicotine products use to deter them from starting these habits. Persistent advocacy and promotion of programmes aimed at achieving a tobacco-free generation can be pursued through community and multisectoral collaboration. Implementing Health in All Policies could realize Malaysia's goal of becoming a smokefree and vapour free nation by 2040;

vi.   Implementing awareness campaigns among young people to educate them about the dangers of smoke-free environments and encourage to support 100%smoke-free policies. Additionally, the Generational Endgame that has been decoupled from the new act should be reconsidered.

11.1c Offer Help to Quit (WHO FCTC Article 14)

Tobacco, especially due to its nicotine content, is highly addictive and, according to this survey, an estimated 19.5% of the adult population current smoke tobacco. Although smoking prevalence has decreased, the number of adults who current smoked tobacco has increased from 4.75 million in 2011 to 4.8 million in 2023 due to population expansion. These individuals are most vulnerable to the dangers of tobacco. These individuals must cease tobacco use immediately to prevent tobacco-related diseases and deaths in Malaysia. The treatment of non-communicable diseases (NCDs) associated with tobacco, such as cancer, cardiovascular diseases, respiratory diseases, and stroke, imposes a substantial financial burden (3). Premature deaths from these conditions result in productivity loss and costs related to insurance and damages for the government, employers, and families (4). Therefore, providing tobacco cessation services is a cost-effective investment that delivers substantial social and economic benefits both medium and long term. GATS Malaysia 2011 and 2023 estimates indicate that the percentage of individuals who smoked tobacco in the past 12 months and attempted to quit has remained relatively stable across both survey periods.

Article 14 of the World Health Organization Framework Convention on Tobacco Control (WHO FCTC) requires Parties to promote tobacco cessation and implement effective measures to help tobacco users quit (5). Article 14 guidelines provide details on establishing or enhancing a sustainable basic treatment infrastructure and support system that encourages quitting attempts, ensures broad access to support for those wishing to quit, and provides sustainable resources to maintain this support. These guidelines also identify the key measures necessary to promote tobacco cessation and integrate tobacco dependence treatment into national tobacco control programs and healthcare systems.

Therefore, it is recommended that:

i.   There should be extensive promotion of tobacco cessation and the availability of Ministry of Health (MOH) smoking cessation services through multiple channels. Given the changes in lifestyle and information seeking behavior, both mass media and social media should be effectively utilized to advertise these services. This is in line with the findings of GATS 2023, whereby the proportion of adults who noticed anti-cigarette smoking information on the internet significantly increased from 17.7% in 2011 to 59.3% in 2023;

ii.   The revised version of the Clinical Practice Guidelines on Treatment of Tobacco Use Disorder 2016 should be updated with the findings from GATS Malaysia 2023 and published as soon as possible;

iii.   Comprehensive training sessions on tobacco control and smoking cessation as well as capacity-building programmes should be planned and implemented for various medical and healthcare providers, including doctors, dentists, pharmacists, nurses, and other allied healthcare personnel. All healthcare workers could be encouraged to support comprehensive tobacco control interventions. This should also include those from the private sector;

iv.   Smoking cessation services should be widely available in government and private healthcare facilities. They could be integrated into primary healthcare services with operational targets set and regularly monitored;

    a. MOH-owned health centres should offer smoking cessation services through brief and intensive interventions. These clinics must be equipped with adequate resources and staffed with properly trained personnel to expend their services to as many clinic attendees as possible.

    b. MOH hospitals should provide smoking cessation services across relevant disciplines in both in-patient and out-patient settings. These disciplines include, but are not limited to, cardiovascular, cancer, respiratory, tuberculosis, stroke, psychiatry, and others.

    c. Private health facilities including private hospitals, specialist clinics, and general practices (GP), should be equipped with medical and health practitioners with necessary knowledge and incentives to encourage them to deliver effective smoking cessation services.

v.   Sufficient financial allocations should be given to the State Health Departments to ensure the continuous availability of nicotine replacement therapy (NRT);

vi.   Despite the decrease in tobacco use, the increase in e-cigarette usage remains a significant concern. All healthcare professionals should encourage quitting through Ministry of Health interventions. Therefore, all healthcare professionals should encourage adults who smoke tobacco or use e-cigarettes to quit, utilizing effective interventions provided by the Ministry of Health. The Malaysia Quit Smoking Services should be widely promoted, focusing on adults who smoke tobacco or use e-cigarettes. Adults seeking to quit can register on www.jomquit.com, a mobile application that provides online quit-smoking services. This app could enhance access to smoking and e-cigarette cessation services, particularly in rural and remote areas;

vii.   Efforts should be made to encourage large corporate organizations (both local and transnational) to facilitate tobacco cessation among their staff through special programmes by the 'Human Resource Department' and/or cessation services provided by resident doctors or panel clinics/hospitals;

viii.   Efforts should be made integrate the subject of 'treatment of tobacco dependence' topic into the core undergraduate curriculum for medical, dental, and pharmacy schools, as well as all relevant allied health graduate education and training programs. Education and training in smoking cessation is essential since tobacco dependence is classified as a mental and behavioural disorder under the International Classification of Disease (ICD-10). Despite this classification, many medical students (and most

doctors) lack the knowledge and skills needed to treat nicotine dependence effectively, even though five million individuals are at risk of developing potentially fatal non-communicable diseases (NCD).

11.1d Warn About the Dangers of Tobacco (WHO FCTC Articles 11 & 12)

In Malaysia, many tobacco users may not be aware of the health risks associated with smoking. They may often underestimate the harm tobacco causes to themselves and others and are unaware of nicotine's highly addictive properties. This highlights the need to provide the public, especially tobacco users, clear, straightforward, and accurate information.

Health warnings on tobacco packaging, as stipulated in Article 11 of the WHO FCTC, are designed to reach all smokers and non-smokers as well. These warnings, ideally featuring large, prominent images and texts detailing specific tobacco related illnesses, have been shown to effectively communicate risks and encourage behavioral change. They help reduce the appeal of tobacco packaging and deter potential smoking initiation. However, GATS Malaysia results showed a significant decline in the percentage of adults who noticed health warning labels on cigarette packages, dropping from 92.8% in 2011 to 70.9% in 2023. In addition, the percentage of adults who thought about quitting because of these warning labels also significantly decreased from 45.8% in 2011 to 33.2% in 2023.

A substantial body of evidence demonstrates that product packaging is one of the tobacco industry's central vehicles for initiating and maintaining addiction to its dangerous products among its consumers. The WHO FCTC Articles 11 and 13 Guidelines recommend the implementation of plain packaging to remove the tobacco industry's ability to use targeted messages and designs on its product packages. This approach aims to enhance the impact of health warnings, minimize false and misleading claims that suggests that some tobacco products are safer than others, and reduce the appeal of tobacco products to segments of the population targeted by tobacco companies.

The percentage of adults who noticed anti-cigarette smoking information in various places in the last 30 days significantly decreased from 94.0% in 2011 to 77.1% in 2023. Given this decline, the 'Tak Nak Merokok' Campaign, which was launched in 2004, should be revitalized and rebranded as a robust health promotion and tobacco control initiative in Malaysia. In 2011, over 90% of respondents in the Global Adult Tobacco Survey (GATS) noticed anti-tobacco messages in the media, demonstrating the effectiveness of such public media in conveying information about the hazards of tobacco. However, GATS Malaysia 2023 showed a significant increase in the proportion of adults who noticed anti-cigarette smoking information on the internet from 17.7% in 2011 to 59.3% in 2023.

Therefore, it is recommended that:

i.   The 'Tak Nak Merokok' campaign should be revitalized with a rebranding that resonate more deeply with Malaysians. It should focus on education rather than punishment,

emphasizing that smoking is a habit best avoided and highlighting the available options for quitting ;

ii.   In addition to the MOH, other government agencies, the private sector, and NGOs should be encouraged to participate in or organize activities aimed at raising awareness about the dangers of tobacco and the importance of cessation ;

    a.   More local health and consumer NGOs should actively engage in anti-tobacco education and advocacy. Health Education Division, Ministry of Health Malaysia should continue the role previously played by the Malaysian Health Promotion Board (MySihat) by providing technical support and financial assistance to individuals, private sectors, and NGOs that promote healthy lifestyles without smoking and the smoke-free environment.

    b.   The Public Service Department (PSD) should extend its commendable initiative of promoting healthy lifestyles, such as requiring BMI measurements, to also include smoking cessation in the evaluation of government employees.

    c.   Corporate organizations should be incentivized to implement healthy lifestyle campaigns and tobacco cessation drives for their employees and the public.

iii. A new series of cigarette pictorial health warnings (PHW) should be introduced promptly. Given that the effectiveness of the previous six images has diminished over time, as evidenced from this survey's findings, the current set of images should be replaced. The new warning labels could feature larger images, and more impactful text messages to enhance their effectiveness. Regular evaluation of these PHW should be conducted to ensure that they remain visible and effective for the target groups ;

iv. The introduction of plain packaging for all tobacco products should be considered, with related legislation to ensure compliance by the tobacco industry. This measure aligns with item 46 in the "Guidelines for Implementation of Article 11 of the WHO Framework Convention on Tobacco Control (Packing and Labelling of Tobacco Products)".

11.1e   Enforce Bans on Tobacco Advertising & Promotion (WHO FCTC Article 13)

A total ban on direct and indirect tobacco advertising, promotion, and sponsorship, as outlined in Article 13 of the WHO FCTC guidelines, can significantly reduce tobacco consumption and protect individuals, particularly youths, from the tobacco industry's marketing strategies. For these bans to be effective, they must be complete and encompass all marketing channels. The tobacco industry strongly resists such extensive bans because they effectively reduce tobacco use. These tobacco advertising, promotion, and sponsorship tactics (TAPS) create a false impression that tobacco is a regular consumer product rather than a lethal commodity that kills up to half of its regular users when used as intended by the manufacturer. It's crucial to implement enforceable measures to ban not only traditional forms of direct advertising through media such as television, radio, print publications, and billboards but also indirect forms of TAPS like brand stretching, points of sale display, and tobacco industry-sponsored 'corporate social responsibility' (CSR) programmes.

A total ban on direct and indirect advertising, promotion, and sponsorship, as outlined in Article 13 of the WHO FCTC guidelines, can significantly reduce tobacco consumption, and protect individuals, especially youths, from the tobacco industry's marketing strategies. For these bans to be effective, they must be comprehensive and cover all marketing channels. The tobacco

industry strongly resists such extensive bans because they effectively reduce tobacco use. TAPS creates a misleading perception that tobacco is a regular consumer product rather than a deadly commodity that kills up to half of its regular users when used as intended. It is crucial to enforce measures that ban not only traditional forms of direct advertising, such as television, radio, print media, and billboards, but also indirect forms of TAPS, including brand stretching, point-of-sale displays, and tobacco industry-sponsored 'corporate social responsibility' (CSR) programs.

Therefore, it is recommended that:

i.   Continue the ban on TAPS outlined in the new bill and expand it to the electronic cigarette also

ii.   Establish a dedicated channel to encourage public reporting of any violations of the laws banning TAPS.

Continue the bans on TAPS outlined in the new bill and extend these restrictions to include electronic cigarettes.

11.1f Raise Tobacco Taxes (WHO FCTC Article 6)

Evidence shows that increasing tobacco prices through higher taxes is the most effective strategy to encourage users to quit and prevent children from starting to smoke. Taxes on cheaper tobacco products should match those of premium-brand cigarettes to prevent consumption substitution. Regular tax increases are essential to keep pace with inflation and consumer purchasing power. Despite global recognition of the importance of tax and price increases to curb tobacco use, in Malaysia, tobacco, especially cigarettes, remains affordable to most consumers. In fact, GATS Malaysia results showed that the average amount spent on 20 manufactured cigarettes significantly decreased from RM 13.2 in 2011[2] to RM 10.8 in 2023, and the average monthly expenditure on manufactured cigarettes significantly decreased from RM 234.0 in 2011[3] to RM 177.7 in 2023.

Increasing tobacco prices through higher taxes should lead to higher prices for manufactured cigarettes, reduced consumption, and a decrease in tobacco-related diseases and deaths. However, the influence of the tobacco industry on Malaysian policymakers presents a significant challenge to the strategy of continuous tobacco tax increases. The industry contends that raising tobacco taxes will lead to increased smuggling and substantial revenue losses for the government. They promote biased results of their self-sponsored cigarette 'litter survey' to estimate the extent of tobacco smuggling in the country.

Therefore, it is recommended that:

i.   Significantly increase the price of tobacco products, followed by consistent annual increases in tobacco taxes, as tax hikes have been proven to be a highly effective tool in tobacco control.

ii.   Continue to raise the prices for all tobacco products by a predetermined amount to prevent the tobacco industry from absorbing the impact and maintaining current retail prices;

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[2] In adjusted constant 2023 Malaysian Ringgit using the Inflation Rate for Average Consumer Prices from the International Monetary Fund's World Economic
[3] In adjusted constant 2023 Malaysian Ringgit using the Inflation Rate for Average Consumer Prices from the International Monetary Fund's World Economic

iii.   Facilitate in-depth serious discussions between the MOH and the Ministry of Finance, Tax Division, and other relevant ministries to study and implement a comprehensive, evidence-based tobacco taxation structure recognized globally as best practices. This should include adopting a relatively simple tax system that applies equivalent taxes to all tobacco products, with:

       a.   Ensure that at least 70% of the final consumer price is composed of excise tax, in line with the WHO and the World Bank recommendations.

       b.   Implement tax increases that exceed the growth of consumer prices and incomes to reduce the affordability of tobacco products.

       c.   Minimize incentives for tobacco users to switch to cheaper brands or products in response to tax increases.

       d.   Improve tobacco tax administration to reduce opportunities for tax avoidance and evasion, including implementing effective monitoring systems for the production and transport of traded tobacco products.

A firm commitment is essential to elevate tobacco control as a top national priority for improving the nation's health. Tobacco control becomes vital as the global community mobilizes to prevent and control non-communicable diseases. Therefore, it is crucial to strengthen the existing Tobacco Control and WHO FCTC framework to ensure all necessary actions for effective control are implemented, guided by the WHO FCTC and the WHO MPOWER Package.

11.2 Conclusion

The successful eradication of future tobacco-related health issues, illnesses, and deaths depends on a significant and sustained reduction in the use of tobacco and nicotine products. This goal can be achieved by preventing the initiation of tobacco and nicotine products use, particularly among young people, and encouraging current users to quit. Despite a notable decrease in the prevalence of adult tobacco smoking from 2011 to 2023, challenges remain, including exposure to tobacco smoke, and e-cigarette vapour, affordability of cigarettes, and the rising trend of e-cigarette use.

Since ratifying the World Health Organization Framework Convention on Tobacco Control (WHO FCTC) in 2005, Malaysia has committed to tobacco control, guided by the six MPOWER Package strategies. From 2011 to 2023, the country implemented various tobacco control policies, including expanding smoke-free zones, enhancing smoking cessation programs, and increasing tobacco taxes.

Malaysia has conducted six National Health and Morbidity Surveys (NHMS) since 1986, with tobacco use as a consistent focus area. The latest survey in 2023, alongside the Global Adult Tobacco Survey (GATS) Malaysia 2023, provides national estimates of tobacco and nicotine products use and invaluable data on exposure to second-hand smoke, anti-tobacco media campaigns, tobacco-related expenditures, knowledge about smoking-related diseases, the impact of pictorial health warnings, and the willingness to quit smoking. Disseminating these findings widely and integrating them into national strategies is crucial for effectively monitoring and implementing the WHO FCTC.

In conclusion, a steadfast commitment to these recommendations is essential to elevate tobacco control as a national priority. By leveraging data-driven insights and adhering to the

WHO FCTC and the MPOWER Package, Malaysia can progress towards a smoke-free future, safeguarding the health of its citizens for generations to come.

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Appendix A: Questionnaire
Household Questionnaire

INTRO.   [THE HOUSEHOLD SCREENING RESPONDENT SHOULD BE 18 YEARS OF AGE OR OLDER AND YOU MUST BE CONFIDENT THAT THIS PERSON CAN PROVIDE ACCURATE INFORMATION ABOUT ALL MEMBERS OF THE HOUSEHOLD. IF NEEDED, VERIFY THE AGE OF THE HOUSEHOLD SCREENING RESPONDENT TO MAKE SURE HE/SHE IS 18 YEARS OF AGE OR OLDER.

THE HOUSEHOLD SCREENING RESPONDENT CAN BE LESS THAN 18 YEARS OLD, ONLY IF NO HOUSEHOLD MEMBERS ARE 18 YEARS OF AGE OR OLDER.]

INTRO1.   An important survey of adult tobacco use behavior is being conducted by the Institute for Public Health, Ministry of Health Malaysia throughout Malaysia and your household has been selected to participate. All houses selected were chosen from a scientific sample and it is very important to the success of this project that each participates in the survey. All information gathered will be kept strictly confidential. I have a few questions to find out who in your household is eligible to participate.

HH1.   **First, I'd like to ask you a few questions about your household. In total, how many persons live in this household?**

[INCLUDE ANYONE WHO CONSIDERS THIS HOUSEHOLD THEIR USUAL PLACE OF RESIDENCE]

[NO DK/REF]

HH2.   **How many of these household members are 15 years of age or older?**

[NO DK/REF]

> **[IF HH2 = 00 (NO HOUSEHOLD MEMBERS ≥ 15 IN HOUSEHOLD)]**
>
> [THERE ARE NO ELIGIBLE HOUSEHOLD MEMBERS.
>
> THANK THE RESPONDENT FOR HIS/HER TIME.
>
> THIS WILL BE RECORDED IN THE VISIT RECORD AS A CODE 201.]

HH2a.   **[IF HH2<HH1:] How many household members are less than 5 years old?**

HH4both. **I now would like to collect information about only these persons that live in this household who are 15 years of age or older. Let's start listing them from oldest to youngest.**

HH4a. **What is the {oldest/next oldest} person's first name?**

_____

HH4b. **What is this person's age?**

[IF RESPONDENT DOESN'T KNOW, PROBE FOR AN ESTIMATE]

[NO DK/REF]

[IF REPORTED AGE IS 15 THROUGH 17, BIRTH DATE IS ASKED]

HH4c. **What is the month of this person's date of birth?**

01		1
02		2
03		3
04		4
05		5
06		6
07		7
08		8
09		9
10		10
11		11
12		12
DON'T KNOW		-7
REFUSED		-9

HH4cYEAR. **What is the year of this person's date of birth?**

HH4d. Is this person male or female?

MALE		1
FEMALE		2

HH4e. **Does this person currently smoke tobacco, including manufactured cigarettes, hand-rolled cigarettes, kreteks, pipes, cheroots, cigars, cigarillos, bidis, or shisha/hookah?**

YES		1
NO		2
DON'T KNOW		-7
REFUSED		-9

HH4f. **What is the relationship between this person and the head of the house?**

[RESPONDENT SHOULD THINK OF ONLY ONE PERSON AS THE HEAD OF HOUSEHOLD]

HEAD OF HOUSEHOLD		1
WIFE/HUSBAND OF HEAD		2
MOTHER/FATHER OF HEAD		3
GRANDFATHER/GRANDMOTHER OF HEAD		4
SISTER/BROTHER OF HEAD		5
CHILD OF HEAD		6
OTHER FAMILY MEMBER		7
NON-FAMILY MEMBER		8
DON'T KNOW		-7
REFUSED		-9

[REPEAT HH4a – HH4e FOR EACH PERSON REPORTED IN HH2]

HH5. [NAME OF THE SELECTED ELIGIBLE PERSON IS:

{FILL SELECTED HH MEMBER'S FIRST NAME}

ASK IF SELECTED RESPONDENT IS AVAILABLE AND IF SO, PROCEED TO THE INDIVIDUAL QUESTIONNAIRE.

IF SELECTED RESPONDENT IS NOT AVAILABLE, MAKE AN APPOINTMENT AND RECORD IT AS A COMMENT IN THE VISIT RECORD.]

Individual Questionnaire

CONSENT1. [SELECT THE APPROPRIATE AGE CATEGORY BELOW. IF NEEDED, CHECK THE AGE OF SELECTED RESPONDENT FROM THE "CASE INFO" SCREEN IN THE TOOLS MENU.]

15-17		1	→ **GO TO CONSENT2**
18 OR OLDER		2	→ **GO TO CONSENT5**
EMANCIPATED MINOR (15-17)		3	→ **GO TO CONSENT5**

CONSENT2. **Before starting the interview, I need to obtain consent from a parent or guardian of** [NAME OF RESPONDENT] **and from** [NAME OF RESPONDENT].

[IF BOTH SELECTED RESPONDENT AND PARENT/GUARDIAN ARE AVAILABLE, CONTINUE WITH INTERVIEW.

IF PARENT/GUARDIAN IS NOT AVAILABLE, BREAK-OFF INTERVIEW AND SCHEDULE AN APPOINTMENT TO RETURN.

IF MINOR RESPONDENT IS NOT AVAILABLE, CONTINUE WITH OBTAINING PARENTAL CONSENT.]

CONSENT3. [READ THE FOLLOWING TO THE PARENT/GUARDIAN AND SELECTED RESPONDENT (IF AVAILABLE):]

I am working with Institute for Public Health, Ministry of Health Malaysia. This institution is collecting information about tobacco use in Malaysia. This information will be used for public health purposes by the Ministry of Health.

Your household and [NAME OF RESPONDENT] **have been selected at random.** [NAME OF RESPONDENT] **responses are very important to us and the community, as these answers will represent many other persons.**

The interview will last around 30 minutes. [NAME OF RESPONDENT] **participation in this survey is entirely voluntary. The information that** [NAME OF RESPONDENT] **will provide will be kept strictly confidential and** [NAME OF RESPONDENT] **will not be identified by his/her responses. Personal information will not be shared with anyone else, not even other family members including you.** [NAME OF RESPONDENT] **can withdraw from the study at any time and may refuse to answer any question.**

We will leave the necessary contact information with you. If you have any questions about this survey, you can contact the telephone numbers listed.

If you agree with [NAME OF RESPONDENT]**'s participation in this survey, we will conduct a private interview with him/her.**

[ASK PARENT/GUARDIAN:]

Do you agree with [NAME OF RESPONDENT]**'s participation?**

YES		1	→ **GO TO CONSENT4**
NO		2	→ **END INTERVIEW**

CONSENT4. [WAS THE SELECTED MINOR RESPONDENT PRESENT?]

PRESENT		1	→ **GO TO CONSENT6**
NOT PRESENT		2	→ **GO TO CONSENT6**

CONSENT5. [READ TO THE SELECTED RESPONDENT:]

I am working with the Institute for Public Health, Ministry of Health Malaysia. This institution is collecting information about tobacco use in Malaysia. This information will be used for public health purposes by the Ministry of Health.

Your household and you have been selected at random. Your responses are very important to us and the community, as these answers will represent many other persons. The interview will last around 30 minutes. Your participation in this survey is entirely voluntary. The information that you will provide us will be kept strictly confidential, and you will not be identified by your responses. Personal information will not be shared with anyone else, not even other family members. You can withdraw from the study at any time and may refuse to answer any question.

We will leave the necessary contact information with you. If you have any questions about this survey, you can contact the telephone numbers listed.

{FILL IF CONSENT4=2: Your parent/guardian has given his/her permission for you to participate in this study}

If you agree to participate, we will conduct a private interview with you.

CONSENT6. [ASK SELECTED RESPONDENT:]

Do you agree to participate?

YES		1	→ **PROCEED WITH INTERVIEW**
NO		2	→ **END INTERVIEW**

INTLANG. [INTERVIEW LANGUAGE]

MALAY LANGUAGE		1
ENGLISH		2

Section A. Background Characteristics

A00. **I am going to first ask you a few questions about your background.**

A01. [RECORD GENDER FROM OBSERVATION. ASK IF NECESSARY.]

MALE		1
FEMALE		2

A02a. **What is the month of your date of birth?**

01		1
02		2
03		3
04		4
05		5
06		6
07		7
08		8
09		9
10		10
11		11
12		12
DON'T KNOW		-7
REFUSED		-9

A02b. **What is the year of your date of birth?**

[IF MONTH=DK OR REF OR YEAR=DK OR REF, ASK A03. OTHERWISE, SKIP TO A04.]

A03. **How old are you?**

[IF RESPONDENT IS UNSURE, PROBE FOR AN ESTIMATE AND RECORD AN ANSWER.

IF REFUSED, BREAK-OFF AS WE CANNOT CONTINUE INTERVIEW WITHOUT AGE]

[NO DK/REF]

A03a. [WAS RESPONSE ESTIMATED?]

YES		1
NO		2
DON'T KNOW		-7

A04. **What is the highest level of education you have completed?**

[SELECT ONLY ONE CATEGORY]

NO FORMAL SCHOOLING		1
LESS THAN PRIMARY SCHOOL COMPLETED		2
PRIMARY SCHOOL COMPLETED		3
LESS THAN SECONDARY SCHOOL COMPLETED		4
SECONDARY SCHOOL COMPLETED		5
FORM 6/CERTIFIED COMPLETED		6
COLLEGE/UNIVERSITY COMPLETED		7
POST-GRADUATE DEGREE COMPLETED		8
DON'T KNOW		-7
REFUSED		-9

A04a. **Can you read and write?**

YES		1
NO		2
REFUSED		-7

A05. **Which of the following best describes your main work status over the past 12 months? Government employee, non-government employee, self-employed, student, homemaker, retired, unemployed-able to work, or unemployed-unable to work?**

[INCLUDE SUBSISTENCE FARMING AS SELF-EMPLOYED]

GOVERNMENT EMPLOYEE		1
NON-GOVERNMENT EMPLOYEE		2
SELF-EMPLOYED		3
STUDENT		4
HOMEMAKER		5
RETIRED		6
UNEMPLOYED, ABLE TO WORK		7
UNEMPLOYED, UNABLE TO WORK		8
DON'T KNOW		-7
REFUSED		-9

A06. **Please tell me whether this household or any person who lives in the household has the following items:**

		YES	NO	DON'T KNOW	REFUSED
a.	ELECTRICITY?	1	2	-7	-9
b.	FLUSH TOILET?	1	2	-7	-9
c.	INTERNET ACCESS VIA MOBILE PHONE, TABLET, LAPTOP OR OTHER COMPUTER?	1	2	-7	-9
d.	CELL TELEPHONE?	1	2	-7	-9
e.	TELEVISION?	1	2	-7	-9
f.	RADIO?	1	2	-7	-9
g.	REFRIDGERATOR?	1	2	-7	-9
h.	CAR, TRUCK OR VAN?	1	2	-7	-9
i.	MOPED/SCOOTER/MOTORCYCLE?	1	2	-7	-9
j.	WASHING MACHINE?	1	2	-7	-9

A07. **What is your racial/ethnic background?**

MALAY		1
CHINESE		2
INDIAN		3
OTHER BUMIPUTERAS		4
OTHERS		5
DON'T KNOW		-7
REFUSED TO ANSWER		-9

A08. **What is your religion?**

ISLAM		1
BUDDHISM		2
CHRISTIANITY		3
HINDUNISM		4
OTHERS		5
NONE		6
DON'T KNOW		-7
REFUSED TO ANSWER		-9

A09. **What is your marital status? Would you say single, married, separated, divorced, or widowed?**

SINGLE		1
MARRIED		2
SEPARATED		3
DIVORCED		4
WIDOWED		5
REFUSED		-9

Section B. Tobacco Smoking

B01. The following questions are about the use of different types of tobacco products. There are four categories of products that I will be asking you about separately: "classic" smoking tobacco products; electronic cigarettes/vape (mod or pod) such as AKSO, Elf Bar, SnowPlus; heated tobacco products such as iQos/Heets or Glo/Neo; and smokeless tobacco.

I would first like to ask you some questions about <u>smoking</u> tobacco, including manufactured cigarettes, hand-rolled cigarettes, kreteks, pipes, cheroots, cigars, cigarillos, bidis, and shisha/hookah. This includes all products where you burn the tobacco as you smoke it.

Do you <u>currently</u> smoke tobacco on a daily basis, less than daily, or not at all?

DAILY		1	→ **SKIP TO B04**
LESS THAN DAILY		2	
NOT AT ALL		3	→ **SKIP TO B03**
DON'T KNOW		-7	→ **SKIP TO NEXT SECTION EC**
REFUSED		-9	→ **SKIP TO NEXT SECTION EC**

B02. Have you smoked tobacco daily in the past?

YES		1	→ **SKIP TO B04**
NO		2	→ **SKIP TO B04**
DON'T KNOW		-7	→ **SKIP TO NEXT SECTION EC**
REFUSED		-9	→ **SKIP TO NEXT SECTION EC**

B03. In the <u>past</u>, have you smoked tobacco on a daily basis, less than daily, or not at all?

[IF RESPONDENT HAS DONE BOTH "DAILY" AND "LESS THAN DAILY" IN THE PAST, CHECK "DAILY"]

DAILY		1	→ **SKIP TO B04**
LESS THAN DAILY		2	→ **SKIP TO B04**
NOT AT ALL		3	→ **SKIP TO NEXT SECTION EC**
DON'T KNOW		-7	→ **SKIP TO NEXT SECTION EC**
REFUSED		-9	→ **SKIP TO NEXT SECTION EC**

B04. How old were you when you <u>first tried</u> smoking tobacco, even once?

☐☐

[IF B04 = DK OR REF, ASK B04a. OTHERWISE GO TO BCOMP1.]

B04a. How many years ago did you <u>first try</u> smoking tobacco, even once?

☐☐

```
BCOMP1


IF B01 = 1, GO TO B05
IF B02 = 1, GO TO B05
IF B02 = 2, GO TO B08
IF B03 = 1, GO TO B05
IF B03 = 2, GO TO B09a
```

B05. How old were you when you first started smoking tobacco <u>daily</u>?

☐☐

[IF B05 = DK OR REF, ASK B05a. OTHERWISE GO TO BCOMP2.]

B05a. How many years ago did you first start smoking tobacco <u>daily</u>?

☐☐

BCOMP2

IF B01 = 1, GO TO B06

IF B02 = 1, GO TO B08

IF B03 = 1, GO TO B09a

[CURRENT DAILY SMOKERS]

B06. On average, how many of the following products do you currently smoke each day? Also, let me know if you smoke the product, but not every day.

[IF RESPONDENT REPORTS SMOKING THE PRODUCT BUT NOT EVERY DAY, ENTER 888

IF RESPONDENT REPORTS IN PACKS OR CARTONS, PROBE TO FIND OUT HOW MANY ARE IN EACH AND CALCULATE TOTAL NUMBER]

a.	Manufactured cigarettes, not including kreteks?				*PER DAY*
a1.	**[IF B06a=888]** On average, how many manufactured cigarettes, not including kreteks, do you currently smoke each week?				*PER WEEK*
b.	Hand-rolled cigarettes?				*PER DAY*
b1.	**[IF B06b=888]** On average, how many hand-rolled cigarettes do you currently smoke each week?				*PER WEEK*
c.	Kreteks?				*PER DAY*
c1.	**[IF B06c=888]** On average, how many kreteks do you currently smoke each week?				*PER WEEK*
d.	Pipes full of tobacco?				*PER DAY*
d1.	**[IF B06d=888]** On average, how many pipes full of tobacco do you currently smoke each week?				*PER WEEK*
e.	Curut, cigars, or cigarillos?				*PER DAY*
e1.	**[IF B06e=888]** On average, how many curut, cigars, or cigarillos do you currently smoke each week?				*PER WEEK*
f.	Number of shisha/hookah sessions per day?				*PER DAY*
f1.	**[IF B06f=888]** On average, how many shisha/hookah sessions do you currently smoke each week?				*PER WEEK*
g.	Bidis?				*PER DAY*
g1.	**[IF B06g=888]** On average, how many bidis do you currently smoke each week?				*PER WEEK*
h.	Any others? (→ g1. Please specify the other type you currently smoke.)				*PER DAY*
h1.	**[IF B06h=888]** On average, how many [FILL PRODUCT] do you currently smoke each week?				*PER WEEK*

B07. How soon after you wake up do you usually have your first smoke? Would you say within 5 minutes, 6 to 30 minutes, 31 to 60 minutes, or more than 60 minutes?

WITHIN 5 MINUTES		1
6 TO 30 MINUTES		2
31 TO 60 MINUTES		3
MORE THAN 60 MINUTES		4
REFUSED		-9

[SKIP TO NEXT SECTION EC]

[CURRENT LESS THAN DAILY SMOKERS]

B08. How many of the following do you currently smoke during a usual week?

[IF RESPONDENT REPORTS SMOKING THE PRODUCT <u>WITHIN THE PAST 30 DAYS</u>, BUT LESS THAN ONCE PER WEEK, ENTER 888

IF RESPONDENT REPORTS IN PACKS OR CARTONS, PROBE TO FIND OUT HOW MANY ARE IN EACH AND CALCULATE TOTAL NUMBER]

a.	Manufactured cigarettes, not including kreteks?				PER WEEK
b.	Hand-rolled cigarettes?				PER WEEK
c.	Kreteks?				PER WEEK
d.	Pipes full of tobacco?				PER WEEK
e.	Curut, cigar, or cigarillos?				PER WEEK
f.	Number of shisha/hookah sessions per week?				PER WEEK
g.	Bidis?				PER WEEK
h.	Any others?				PER WEEK

h1.   Please specify the other type you currently smoke:

_____

[SKIP TO NEXT SECTION EC]

[FORMER SMOKERS]

B09a. How long has it been since you stopped smoking?
[ONLY INTERESTED IN WHEN RESPONDENT STOPPED SMOKING REGULARLY — DO NOT INCLUDE RARE INSTANCES OF SMOKING

ENTER UNIT ON THIS SCREEN AND NUMBER ON NEXT SCREEN]

YEARS		1
MONTHS		2
WEEKS		3
DAYS		4
LESS THAN 1 DAY		5 → **SKIP TO B10**
DON'T KNOW		-7 → **SKIP TO NEXT SECTION EC**
REFUSED		-9 → **SKIP TO NEXT SECTION EC**

B09b. [ENTER NUMBER OF (YEARS/MONTHS/WEEKS/DAYS)]

[NO DK/REF]

[IF B09a/b < 1 YEAR (< 12 MONTHS), THEN CONTINUE WITH B10. OTHERWISE, SKIP TO NEXT SECTION EC.]

B10. Have you visited a doctor or other health care provider in the past 12 months?

YES		1
NO		2 → **SKIP TO B14**
REFUSED		-9 → **SKIP TO B14**

B11. How many times did you visit a doctor or health care provider in the past 12 months? Would you say 1 or 2 times, 3 to 5 times, or 6 or more times?

1 OR 2		1
3 TO 5		2
6 OR MORE		3
REFUSED		-9

B12. During any visit to a doctor or health care provider in the past 12 months, were you asked if you smoke tobacco?

YES		1
NO		2 → **SKIP TO B14**
REFUSED		-9 → **SKIP TO B14**

B13. During any visit to a doctor or health care provider in the past 12 months, were you advised to quit smoking tobacco?

YES		1
NO		2
REFUSED		-9

B14. During the past 12 months, did you use any of the following to try to stop smoking tobacco?

		YES	NO	REFUSED
a.	Counseling, including at no smoking cessation clinic?	1	2	-9
b.	Nicotine replacement therapy, such as the patch or gum?	1	2	-9
c.	Other prescription medications, for example varenicline, bupropion	1	2	-9
d.	Traditional medicines, for example herbal therapy, hypnotherapy, acupuncture and aromatherapy?	1	2	-9
e.	A quit line or a smoking telephone support line? e1. [IF YES] Did you get the quit line or smoking telephone info line number from the cigarette packet?	1	2	-9
f.	Website such as "Jomquit"?	1	2	-9
g.	Using electronic cigarettes instead? (eg.AKSO, Elf Bar, SnowPlus)	1	2	-9
h.	Using heated tobacco products instead? (eg iQos/Heets or Glo/Neo)	1	2	-9
i.	Try to quit without assistance?	1	2	-9

B15. When you quit smoking, which of the following reasons led you to think about quitting smoking?

		YES		NO		DON'T KNOW		REFUSED	
a.	Concern for your own health?		1		2		-7		-9
b.	Concern about the health effects of your tobacco smoke on non-smokers?		1		2		-7		-9
c.	That society disapproves of smoking?		1		2		-7		-9
d.	The price of smoking tobacco products?		1		2		-7		-9
e.	Smoking is/was not allowed in your home?		1		2		-7		-9
f.	Indoor smoking restrictions at work or public places?		1		2		-7		-9
g.	Wanting to set a good example for children?		1		2		-7		-9
h.	Close friends and family disapprove(d) of your smoking?		1		2		-7		-9
i.	Because of COVID-19		1		2		-7		-9

Section EC. Electronic Cigarettes

EC1. **Now I want to ask you about electronic cigarettes, which are also called e-cigarettes or vaping devices. These devices are battery powered and heat a liquid to produce vapor or aerosol instead of smoke. Examples of these products include mod or pod. Examples of brands include AKSO, Elf Bar, SnowPlus.**

Prior to today, have you ever heard of electronic cigarettes or vaping devices?

YES	1	
NO	2	→ **SKIP TO NEXT SECTION HTP**
REFUSED	-9	→ **SKIP TO NEXT SECTION HTP**

EC2. **Do you <u>currently</u> use electronic cigarettes or any other vaping device on a daily basis, less than daily, or not at all?**

DAILY	1	→ **SKIP TO EC5a**
LESS THAN DAILY	2	→ **SKIP TO EC4**
NOT AT ALL	3	
DON'T KNOW	-7	→ **SKIP TO NEXT SECTION HTP**
REFUSED	-9	→ **SKIP TO NEXT SECTION HTP**

EC3. **Have you ever, <u>even once</u>, used an electronic cigarette or any other vaping device?**

YES	1	
NO	2	→ **SKIP TO NEXT SECTION HTP**
DON'T KNOW	-7	→ **SKIP TO NEXT SECTION HTP**
REFUSED	-9	→ **SKIP TO NEXT SECTION HTP**

EC4. **Have you ever used electronic cigarettes or any other vaping device daily in the past?**

YES		1	→ **GO TO EC5b**
NO		2	→ **SKIP TO EC5x1a**
DON'T KNOW		-7	→ **SKIP TO EC5x1a**
REFUSED		-9	→ **SKIP TO EC5x1a**

EC5a. {**IF EC2=1:** For how long have you been using electronic cigarettes or any other vaping device on a daily basis?}

EC5b. {**IF EC4=1:** For how long did you use electronic cigarettes or any other vaping device on a daily basis?}

Would you say less than 1 month, 1 to 3 months, 4 to 11 months, 1 to 2 years, or more than 2 years?

LESS THAN 1 MONTH		1
1 TO 3 MONTHS		2
4 TO 11 MONTHS		3
1 TO 2 YEARS		4
MORE THAN 2 YEARS		5
DON'T KNOW		-7
REFUSED		-9

EC5x1a. **How old were you when you first tried using an electronic cigarette or any other vaping device, even once?**

☐☐

[IF EC5x1a = DK OR REF, ASK EC5x1b. OTHERWISE SKIP TO ECCOMP

EC5x1b. How many years ago did you first try using an electronic cigarette or any other vaping device, even once?

<div style="border:1px solid;">|__|__|</div>

ECCOMP1

IF EC2 = 1 OR 2 (CURRENT USERS), GO TO EC6

IF EC2 = 3 AND EC4 = 1 (FORMER DAILY USERS), GO TO EC5x2a

IF EC3 = 1 AND EC4 = 2 (FORMER USER BUT NOT DAILY), GO TO ECCOMP2

ELSE SKIP TO NEXT SECTION HTP

EC5x2a. How long has it been since you stopped using electronic cigarettes or any other vaping device?

[ONLY INTERESTED IN WHEN RESPONDENT STOPPED USING REGULARLY – DO NOT INCLUDE RARE INSTANCES OF USE

ENTER UNIT ON THIS SCREEN AND NUMBER ON NEXT SCREEN]

YEARS		1
MONTHS		2
WEEKS		3
DAYS		4
LESS THAN 1 DAY		5 → **SKIP TO ECCOMP2**
DON'T KNOW		-7 → **SKIP TO ECCOMP2**
REFUSED		-9 → **SKIP TO ECCOMP2**

EC5x2b. [ENTER NUMBER OF (YEARS/MONTHS/WEEKS/DAYS)]

[NO DK/REF]

<div style="border:1px solid;">|__|__|__|</div> → **SKIP TO ECCOMP2**

EC6. Which of the following are reasons that you use electronic cigarettes or any other vaping device?

		YES	NO	REFUSED
a.	**[IF B01=1 OR 2:]** To quit smoking tobacco?	1	2	-9
b.	**[IF B03=1 OR 2:]** To avoid going back to smoking tobacco?	1	2	-9
c.	Because I enjoy it?	1	2	-9
d.	Because I'm addicted to it?	1	2	-9
e.	I can use it at times when or in places where tobacco smoking is no allowed?	1	2	-9
f.	It is less harmful than smoking tobacco?	1	2	-9
g.	It comes in flavors I like?	1	2	-9
h.	A friend or family member uses them?	1	2	-9

EC7. **What brand of electronic cigarette or other vaping device do you currently use?**

[IF MORE THAN ONE TYPE IS USED, SELECT BRAND USED MOST RECENTLY]

AKSO		1
ALADDIN PRO		2
CAP BAR		3
ELF BAR		4
IJOY		5
VOLTBAR		6
NCIG		7
RELX		8
SNOWPLUS		9
UWELL		10
VAAL		11
VOOPOO		12
NANOSTIX		13
OTHER [SPECIFY]: _____		14 **EC7a. [SPECIFY]** _____
DON'T KNOW		-7
REFUSED		-9

EC8. **What is the primary flavor of the electronic cigarette or vaping device you currently use?**

[IF MORE THAN ONE FLAVOR IS USED, SELECT FLAVOR USED MOST RECENTLY]

TOBACCO FLAVOR		1
MENTHOL OR MINT		2
CLOVE OR SPICE		3
FRUIT FLAVOR		4
CHOCOLATE, CANDY, DESSERT, OR OTHER SWEETS		5
AN ALCOHOLIC DRINK (SUCH AS WINE/ COGNAC/ MARGARITA/ OTHER COCKTAILS)		6
A NON-ALCOHOLIC DRINK (SUCH AS COFFEE/ SODA/ ENERGY DRINK/OTHER)		7
SOME OTHER FLAVOR [SPECIFY]: _____		8 **EC8a. [SPECIFY]** _____
DON'T KNOW		-7
REFUSED		-9

EC9. **Does the electronic cigarette or other vaping device that you currently use contain nicotine?**

[IF MORE THAN ONE DEVICE IS USED, REFER TO DEVICE USED MOST RECENTLY]

YES		1
NO		2
DON'T KNOW		-7
REFUSED		-9

EC10. **Which of the following types of electronic cigarette or vaping device do you currently use: a disposable device that is not rechargeable; a device that uses replaceable pre-filled pods or cartridges and is rechargeable; or a device with a tank that you refill with liquids and is rechargeable?**

[IF MORE THAN ONE TYPE IS USED, SELECT DEVICE USED MOST RECENTLY]

DISPOSABLE DEVICE THAT IS NOT RECHARGEABLE		1
DEVICE USES REPLACEABLE PRE-FILLED POD OR CATRIDGES AND IS RECHARGABLE		2
DEVICE WITH A TANK THAT REFILLS WITH LIQUIDS AND IS RECHARGEABLE		3
DON'T KNOW		-7
REFUSED		-9

EC10a. **The last time you purchased electronic cigarettes or vaping devices for yourself, what size/capacity did you buy?**

LESS THAN 800 puffs		1	
800 TO 1,499 puffs		2	
1,500 to 2,999 puffs		3	
3,000 to 4,999 puffs		4	
5,000 to 6,999 puffs		5	
7,000 to 8,999 puffs		6	
9,000 puffs OR MORE		7	
NEVER PURCHASED E-CIGS/VAPES		8	→ **SKIP TO EEC2**
DON'T KNOW		-7	
REFUSED		-9	→ **SKIP TO EEC1**

EC10b. **The last time you purchased electronic cigarettes or vaping devices for yourself, how many e-liquid pods did you buy?**

FEWER THAN 2 PODS		1	
2 TO 3 PODS		2	
4 TO 5 PODS		3	
6 PODS OR MORE		4	
NEVER PURCHASED E-CIGS/VAPES		5	→ **SKIP TO EEC2**
DON'T KNOW		-7	
REFUSED		-9	→ **SKIP TO EC11**

EC10c. The last time you purchased electronic cigarettes or vaping devices for yourself, how much e-liquid did you buy?

LESS THAN 3ml		1
3ml TO 4.9ml		2
5ml TO 9.9ml		3
10ml TO 14.9ml		4
15ml TO 19.9ml		5
20ml TO 29.9ml		6
30ml TO 49.9ml		7
50ml TO 59.9ml		8
60ml TO 99.9ml		9
100ml OR MORE		10
NEVER PURCHASED E-CIGS/VAPES		11 → **SKIP TO EEC2**
DON'T KNOW		-7
REFUSED		-9

EC11. The last time you purchased electronic cigarettes or vaping devices for yourself, how much money did you spend on the liquids/pods, not including the device?

[INCLUDE PURCHASE OF LIQUIDS/PODS ONLY]

LESS THAN RM20		1
RM20 TO RM49		2
RM50 TO RM RM99		3
RM100 TO RM RM149		4
RM150 TO RM199		5
RM200 TO MORE		6
NEVER PURCHASED E-CIGS/VAPES		7 → **SKIP TO EEC2**
DON'T KNOW		-7
REFUSED		-9

EEC1. The last time you purchased e-cigarettes/vapes for yourself, where did you buy them?

E-CIGARETTE/VAPE SHOP		1
VENDING MACHINCE		2
GROCERY STORE		3
CONVENIENCE STORE		4
PETROL STATION		5
STREET VENDOR		6
NEWSPAPER STAND/KIOSK		7
EATERIES		8
OUTSIDE THE COUNTRY		9
SUPERMARKET		10
INTERNET/ONLINE SHOPPING		11
FROM ANOTHER PERSON		12
NIGHT/OPEN MARKET		13
DELIVERY SERVICE		14
OTHER [SPECIFY LOCATION]: _____		15
DON'T KNOW		-7
REFUSED		-9

EEC1a.   [SPECIFY LOCATION]
_____

EEC2. The next questions ask about any attempts to stop using electronic cigarettes or any other vaping device that you might have made during the past 12 months.

During the past 12 months, have you tried to stop using electronic cigarettes or any other vaping device?

YES		1
NO		2 → **SKIP TO ECCOMP2**
REFUSED		-9 → **SKIP TO ECCOMP2**

EEC3a.Thinking about the last time you tried to quit, how long did you stop using electronic cigarettes or any other vaping device?

[ENTER UNIT ON THIS SCREEN AND NUMBER ON NEXT SCREEN]

MONTHS		1
WEEKS		2
DAYS		3
LESS THAN 1 DAY (24 HOURS)		4 → **SKIP TO ECCOMP2**
DON'T KNOW		-7 → **SKIP TO ECCOMP2**
REFUSED		-9 → **SKIP TO NEXT ECCOMP2**

EEC3b. [ENTER NUMBER OF (MONTHS/WEEKS/DAYS)]

[NO DK/REF]

ECCOMP2

IF (B06a>0 AND <=888), GO TO EC12

IF 9B08a>0 AND <=888), GO TO EC12

ELSE SKIP TO NEXT SECTION HTP

EC12. How satisfying is using electronic cigarettes or any other vaping device compared to smoking ordinary cigarettes? Would you say that using electronic cigarettes is much less satisfying than smoking ordinary cigarettes; a little less satisfying than smoking ordinary cigarettes; about as satisfying as smoking ordinary cigarettes; a little more satisfying than smoking ordinary cigarettes; or much more satisfying than smoking ordinary cigarettes?

MUCH LESS SATISFYING		1
A LITTLE LESS SATISFYING		2
ABOUT AS SATISFYING		3
A LITTLE MORE SATISFYING		4
MUCH MORE SATISFYING		5
DON'T KNOW		-7
REFUSED		-9

EC13. Overall, how expensive do you think using electronic cigarettes or any other vaping device is compared to smoking ordinary cigarettes? Would you say that using electronic cigarettes is much less expensive than smoking ordinary cigarettes; a little less expensive than smoking ordinary cigarettes; about as expensive as smoking ordinary cigarettes; a little more expensive than smoking ordinary cigarettes; or much more expensive than smoking ordinary cigarettes?

MUCH LESS EXPENSIVE		1
A LITTLE LESS EXPENSIVE		2
ABOUT AS EXPENSIVE		3
A LITTLE MORE EXPENSIVE		4
MUCH MORE EXPENSIVE		5
DON'T KNOW		-7
REFUSED		-9

Section HTP – Heated Tobacco Products

HTP1. Now I want to ask you about heated tobacco products. These are products that heat tobacco sticks or capsules to produce vapor or aerosol. Examples of these products include iQos/Heets or Glo/Neo.

Prior to today, have you ever heard of heated tobacco products?

YES		1
NO		2 → **SKIP TO NEXT SECTION C**
REFUSED		-9 → **SKIP TO NEXT SECTION C**

HTP2. Do you <u>currently</u> use heated tobacco products on a daily basis, less than daily, or not at all?

DAILY		1 →**SKIP TO HTP5a**
LESS THAN DAILY		2 →**SKIP TO HTP4**
NOT AT ALL		3
DON'T KNOW		-7 → **SKIP TO NEXT SECTION C**
REFUSED		-9 → **SKIP TO NEXT SECTION C**

HTP3. Have you ever, <u>even once</u>, used a heated tobacco product?

YES		1
NO		2 → **SKIP TO NEXT SECTION C**
DON'T KNOW		-7 → **SKIP TO NEXT SECTION C**
REFUSED		-9 → **SKIP TO NEXT SECTION C**

HTP4. Have you ever used heated tobacco products daily in the past?

YES		1 → **SKIP TO HTP5b**
NO		2 → **SKIP TO HTPCOMP1**
DON'T KNOW		-7 → **SKIP TO HTPCOMP1**
REFUSED		-9 → **SKIP TO HTPCOMP1**

HTP5a. {**IF HTP2=1:** For how long have you been using heated tobacco products on a daily basis?}

HTP5b. {**IF HTP4=1:** For how long did you use heated tobacco products on a daily basis?}

> **Would you say less than 1 month, 1 to 3 months, 4 to 11 months, 1 to 2 years, or more than 2 years?**

LESS THAN 1 MONTH	1
1 TO 3 MONTHS	2
4 TO 11 MONTHS	3
1 TO 2 YEARS	4
MORE THAN 2 YEARS	5
DON'T KNOW	-7
REFUSED	-9

HTPCOMP1

IF HTP2 = 1 OR 2, GO TO HTP6

ELSE SKIP TO NEXT SECTION C

HTP6. Which of the following are reasons that you use a heated tobacco product?

		YES	NO	REFUSED
a.	**[IF B01=1 OR 2:]** To quit smoking tobacco?	1	2	-9
b.	**[IF B03=1 OR 2:]** To avoid going back to smoking tobacco?	1	2	-9
c.	Because I enjoy it?	1	2	-9
d.	Because I'm addicted to it?	1	2	-9
e.	I can use it at times when or in places where tobacco smoking is no allowed?	1	2	-9
f.	It is less harmful than smoking tobacco?	1	2	-9
g.	It comes in flavors I like?	1	2	-9
h.	A friend or family member uses them?	1	2	-9

HTP7. What brand of heated tobacco products do you currently use?

[IF MORE THAN ONE TYPE IS USED, SELECT BRAND USED MOST RECENTLY]

IQOS		1
GLO		2
PLOOM TECH		3
OTHERS		4	→ **HTP7a.** [SPECIFY]:
DON'T KNOW		-7
REFUSED		-9

HHTP1.The last time you purchased heated tobacco products for yourself, where did you buy them?

HTP SHOP		1
VENDING MACHINE		2
GROCERY STORE		3
CONVENIENCE STORE		4
PETROL STATION		5
STREET VENDOR		6
NEWSPAPER STAND/KIOSK		7
EATERIES		8
OUTSIDE THE COUNTRY		9
SUPERMARKET		10
INTERNET/ONLINE SHOPPING		11
FROM ANOTHER PERSON		12
NIGHT/OPEN MARKET		13
DELIVERY SERVICE		14
OTHER		15	→ **HHTP1a.** [SPECIFY LOCATION]:
DON'T REMEMBER		-7
REFUSED		-9

Section C. Smokeless Tobacco

C01. **The next questions are about using smokeless tobacco, such as snuff, sniff or chewing tobacco. Smokeless tobacco is tobacco that is not smoked, but is sniffed through the nose, held in the mouth, or chewed.**

Do you <u>currently</u> use smokeless tobacco on a daily basis, less than daily, or not at all?

[IF RESPONDENT DOES NOT KNOW WHAT SMOKELESS TOBACCO IS, EITHER PRESENT A SHOWCARD OR READ DEFINITION FROM QXQ SCREEN]

DAILY	1	→ **SKIP TO C04**
LESS THAN DAILY	2	
NOT AT ALL	3	→ **SKIP TO C03**
DON'T KNOW	-7	→ **SKIP TO NEXT SECTION D1**
REFUSED	-9	→ **SKIP TO NEXT SECTION D1**

C02. **Have you used smokeless tobacco daily in the past?**

YES	1	→ **SKIP TO C04**
NO	2	→ **SKIP TO C04**
DON'T KNOW	-7	→ **SKIP TO C04**
REFUSED	-9	→ **SKIP TO C04**

C03. **In the <u>past</u>, have you used smokeless tobacco on a daily basis, less than daily, or not at all?**

[IF RESPONDENT HAS DONE BOTH "DAILY" AND "LESS THAN DAILY" IN THE PAST,
CHECK "DAILY"]

DAILY	1	→ **SKIP TO C04**
LESS THAN DAILY	2	
NOT AT ALL	3	→ **SKIP TO C03**
DON'T KNOW	-7	→ **SKIP TO NEXT SECTION D1**
REFUSED	-9	→ **SKIP TO NEXT SECTION D1**

C04. **How old were you when you <u>first tried</u> using smokeless tobacco, even once?**

[IF C04 = DK OR REF, ASK C04a. OTHERWISE GO TO CCOMP1.]

C04a. How many years ago did you <u>first try</u> using smokeless tobacco, even once?

☐☐

CCOMP1

IF C01 = 1, GO TO C05

IF C02 = 1, GO TO C05

IF C02 = 2, -7, OR -9, GO TO C08

IF C03 = 1, GO TO C05

IF C03 = 2, GO TO NEXT SECTION D1

C05. How old were you when you first started using smokeless tobacco <u>daily</u>?

☐☐

[IF C05 = DK OR REF, ASK C05a. OTHERWISE GO TO CCOMP2.]

C05a. How many years ago did you first start using smokeless tobacco <u>daily</u>?

☐☐

CCOMP2

IF C01 = 1, GO TO C06

IF C02 = 1, GO TO C08

IF C03 = 1, GO TO NEXT SECTION D1

[CURRENT DAILY SMOKELESS TOBACCO USERS]

C06. **On average, how many times a day do you use the following products? Also, let me know if you use the product, but not every day.**

[IF RESPONDENT REPORTS USING THE PRODUCT BUT NOT EVERY DAY, ENTER 888]

a.	Snuff, by mouth?				*PER DAY*
a1.	**[IF C06a=888]** On average, how many times a week do you currently use snuff, by mouth?				*PER WEEK*
b.	Snuff, by nose?				*PER DAY*
b1.	**[IF C06b=888]** On average, how many times a week do you currently use snuff, by nose?				*PER WEEK*
c.	Chewing tobacco?				*PER DAY*
c1.	**[IF C06c=888]** On average, how many times a week do you currently use chewing tobacco?				*PER WEEK*
d.	Chew betel quid with tobacco?				*PER DAY*
d1.	**[IF C06d=888]** On average, how many times a week do you currently chew betel quid with tobacco?				*PER WEEK*
e.	Any others? (→ e1. Please specify the other type you currently use: _____)				*PER DAY*
e2.	**[IF C06e=888]** On average, how many times a week do you currently use [FILL PRODUCT]?				*PER WEEK*

→ SKIP TO NEXT SECTION D1

[CURRENT LESS THAN DAILY SMOKELESS TOBACCO USERS]

C08. How many times a week do you usually use the following?

[IF RESPONDENT REPORTS USING THE PRODUCT <u>WITHIN THE PAST 30 DAYS</u>, BUT LESS THAN ONCE PER WEEK, ENTER 888]

a.	Snuff, by mouth?			*TIMES PER WEEK*
b.	Snuff, by nose?			*TIMES PER WEEK*
c.	Chewing tobacco?			*TIMES PER WEEK*
d.	Chew betel quid with tobacco?			*TIMES PER WEEK*
e.	Any others?			*TIMES PER WEEK*

e1. Please specify the other type you currently use:

_____

Section D. Cessation — Tobacco Smoking

D00COMP

IF B01 = 1 OR 2 (RESPONDENT CURRENTLY SMOKES TOBACCO), CONTINUE WITH THIS SECTION.

IF B01 = 3, -7, OR -9 (RESPONDENT DOES NOT CURRENTLY SMOKE TOBACCO), SKIP TO NEXT SECTION E.

D01. The next questions ask about any attempts to stop smoking that you might have made during the past 12 months. Please think about tobacco smoking.

During the past 12 months, have you tried to stop smoking?

YES		1
NO		2 → **SKIP TO D04**
REFUSED		-9 → **SKIP TO D04**

D02a. Thinking about the last time you tried to quit, how long did you stop smoking?

[ENTER UNIT ON THIS SCREEN AND NUMBER ON NEXT SCREEN]

MONTHS		1
WEEKS		2
DAYS		3
LESS THAN 1 DAY (24 HOURS		4 → **SKIP TO D03**
DON'T KNOW		-7 → **SKIP TO D03**
REFUSED		-9 → **SKIP TO D03**

D02b. [ENTER NUMBER OF (MONTHS/WEEKS/DAYS)]

[NO DK/REF]

D03.   During the past 12 months, did you use any of the following to try to stop smoking tobacco?

		YES		NO		REFUSED	
a.	Counseling, including at no smoking cessation clinic?		1		2		-9
b.	Nicotine replacement therapy, such as the patch or gum?		1		2		-9
c.	Other prescription medications, for example varenicline, bupropion		1		2		-9
d.	Traditional medicines, for example herbal therapy, hypnotherapy, acupuncture and aromatherapy?		1		2		-9
e.	A quit line or a smoking telephone support line? e1. [IF YES] Did you get the quit line or smoking telephone info line number from the cigarette packet?		1		2		-9
	Website such as "Jomquit"?		1		2		-9
f.	Using electronic cigarettes instead? (eg.AKSO, Elf Bar, SnowPlus)		1		2		-9
g.	Using heated tobacco products instead? (eg iQos/Heets or Glo/Neo)		1		2		-9
h.	Try to quit without assistance?		1		2		-9

D03x1. During the past 12 months, did any of the following reasons lead you to think about quitting smoking?

		YES		NO		DON'T KNOW		REFUSED	
a.	Concern for your own health?		1		2		-7		-9
b.	Concern about the health effects of your tobacco smoke on non-smokers?		1		2		-7		-9
c.	That society disapproves of smoking?		1		2		-7		-9
d.	The price of smoking tobacco products?		1		2		-7		-9
e.	Smoking is/was not allowed in your home?		1		2		-7		-9
f.	Indoor smoking restrictions at work or public places?		1		2		-7		-9
g.	Wanting to set a good example for children?		1		2		-7		-9
h.	Close friends and family disapprove(d) of your smoking?		1		2		-7		-9
i.	Because of COVID-19		1		2		-7		-9

D04. Have you visited a doctor or other health care provider in the past 12 months?

YES		1
NO		2 → **SKIP TO D08**
REFUSED		-9 → **SKIP TO D08**

D05. How many times did you visit a doctor or health care provider in the past 12 months? Would you say 1 or 2 times, 3 to 5 times, or 6 or more times?

1 OR 2		1
3 TO 5		2
6 OR MORE		3
REFUSED		-9

D06. During any visit to a doctor or health care provider in the past 12 months, were you asked if you smoke tobacco?

YES		1
NO		2 → **SKIP TO D08**
REFUSED		-9 → **SKIP TO D08**

D07. During any visit to a doctor or health care provider in the past 12 months, were you advised to quit smoking tobacco?

YES		1
NO		2
REFUSED		-9

D08. Which of the following best describes your thinking about quitting smoking? I am planning to quit within the next month, I am thinking about quitting within the next 12 months, I will quit someday but not within the next 12 months, or I am not interested in quitting?

QUIT WITHIN THE NEXT MONTH		1
THINKING WITHIN THE NEXT 12 MONTHS		2
QUIT SOMEDAY, BUT NOT NEXT 12 MONTHS		3
NOT INTERESTED IN QUITTING		4
DON'T KNOW		-7
REFUSED		-9

D08a. How much do you want to quit smoking? Would you say not at all, a little, somewhat, or a lot?

NOT AT ALL		1
A LITTLE		2
SOMEWHAT		3
A LOT		4
DON'T KNOW		-7
REFUSED		-9

D08b. How easy or hard would it be for you to quit smoking if you wanted to? Would you say very easy, somewhat easy, neither easy nor hard, somewhat hard, or very hard?

VERY EASY		1
SOMEWHAT EASY		2
NEITHER EASY NOR HARD		3
SOMEWHAT HARD		4
VERY HARD		5
DON'T KNOW		-7
REFUSED		-9

D08c. How worried are you that smoking will damage your health in the future? Would you say not at all worried, a little worried, moderately worried, or very worried?

NOT AT ALL WORRIED		1
A LITTLE WORRIED		2
MODERATELY WORRIED		3
VERY WORRIED		4
DON'T KNOW		-7
REFUSED		-9

Section E. Secondhand Smoke

E01. **I would now like to ask you a few questions about smoking in various places.**

Which of the following best describes the rules about smoking inside of your home: Smoking is allowed inside of your home, smoking is generally not allowed inside of your home but there are exceptions, smoking is never allowed inside of your home, or there are no rules about smoking in your home?

ALLOWED		1
NOT ALLOWED, BUT EXCEPTIONS		2
NEVER ALLOWED		3 → **SKIP TO E04**
NO RULES		4 → **SKIP TO E03**
DON'T KNOW		-7 → **SKIP TO E03**
REFUSED		-9 → **SKIP TO E03**

E02. **Inside your home, is smoking allowed in every room?**

YES		1
NO		2
DON'T KNOW		-7
REFUSED		-9

E03. **How often does <u>anyone</u> smoke inside your home? Would you say daily, weekly, monthly, less than monthly, or never?**

DAILY		1
WEEKLY		2
MONTHLY		3
LESS THAN MONTHLY		4
NEVER		5
DON'T KNOW		-7
REFUSED		-9

E04. **Do you currently work outside of your home?**

YES		1
NO/DON'T WORK		2
REFUSED		-9

E05. Do you usually work indoors or outdoors?

INDOORS		1	→ **SKIP TO E07**
OUTDOORS		2	
BOTH		3	→ **SKIP TO E07**
REFUSED		-9	

E06. Are there any indoor areas at your work place?

YES		1	
NO		2	→ **SKIP TO E09**
DON'T KNOW		-7	→ **SKIP TO E09**
REFUSED		-9	→ **SKIP TO E09**

E07. Which of the following best describes the indoor smoking policy where you work: Smoking is allowed anywhere, smoking is allowed only in some indoor areas, smoking is not allowed in any indoor areas, or there is no policy?

ALLOWED ANYWHERE		1
ALLOWED ONLY IN SOME INDOOR AREAS		2
NOT ALLOWED IN ANY INDOOR AREAS		3
THERE IS NO POLICY		4
DON'T KNOW		-7
REFUSED		-9

E08. During the past 30 days, did anyone smoke in indoor areas where you work?

YES		1
NO		2
DON'T KNOW		-7
REFUSED		-9

E08a. [ONLY ADMINISTERED IF E08 = YES]

How often does anyone smoke in indoor areas where you work? Would you say daily, weekly, monthly, or less than monthly?

DAILY		1
WEEKLY		2
MONTHLY		3
LESS THAN MONTHLY		4
DON'T KNOW		-7
REFUSED		-9

E09. During the past 30 days, did you visit any government buildings or government offices?

YES		1	
NO		2	→ **SKIP TO E11**
DON'T KNOW		-7	→ **SKIP TO E11**
REFUSED		-9	→ **SKIP TO E11**

E10. Did anyone smoke inside of any government buildings or government offices that you visited in the past 30 days?

YES		1
NO		2
DON'T KNOW		-7
REFUSED		-9

E11. During the past 30 days, did you visit any health care facilities?

YES		1	
NO		2	→ **SKIP TO E13a**
DON'T KNOW		-7	→ **SKIP TO E13a**
REFUSED		-9	→ **SKIP TO E13a**

E12. Did anyone smoke inside of any health care facilities that you visited in the past 30 days?

YES		1
NO		2
DON'T KNOW		-7
REFUSED		-9

E13a. During the past 30 days, did you visit any eateries or restaurants with air conditioning?

YES		1
NO		2 → **SKIP TO E13b**
DON'T KNOW		-7 → **SKIP TO E13b**
REFUSED		-9 → **SKIP TO E13b**

E14a. Did anyone smoke inside of any eateries or restaurants with air conditioning that you visited in the past 30 days?

YES		1
NO		2
DON'T KNOW		-7
REFUSED		-9

E13b. During the past 30 days, did you visit any eateries or restaurants without air conditioning?

YES		1
NO		2 → **SKIP TO E15**
DON'T KNOW		-7 → **SKIP TO E15**
REFUSED		-9 → **SKIP TO E15**

E14b. Did anyone smoke inside (within 3 meters) of any eateries/restaurants without air conditioning that you visited in the past 30 days?

YES		1
NO		2
DON'T KNOW		-7
REFUSED		-9

E15. During the past 30 days, did you visit any bars or night clubs?

YES		1
NO		2 → **SKIP TO E17**
DON'T KNOW		-7 → **SKIP TO E17**

E16. Did anyone smoke inside of any bars or night clubs that you visited in the past 30 days?

YES		1
NO		2
DON'T KNOW		-7
REFUSED		-9

E17.   During the past 30 days, did you use any public transportation?

YES		1	
NO		2	→ **SKIP TO E19**
DON'T KNOW		-7	→ **SKIP TO E19**
REFUSED		-9	→ **SKIP TO E19**

E18. Did anyone smoke inside of any public transportation that you used in the past 30 days?

YES		1
NO		2
DON'T KNOW		-7
REFUSED		-9

E19. During the past 30 days, did you visit any universities?

YES		1	
NO		2	→ **SKIP TO E21**
DON'T KNOW		-7	→ **SKIP TO E21**
REFUSED		-9	→ **SKIP TO E21**

E20. Did anyone smoke inside of any university buildings that you visited in the past 30 days?

YES		1
NO		2
DON'T KNOW		-7
REFUSED		-9

E20a. Did anyone smoke on the grounds of any universities that you visited in the past 30 days?

YES		1
NO		2
DON'T KNOW		-7
REFUSED		-9

E21. During the past 30 days, did you visit any schools?

YES		1
NO		2 → **SKIP TO E23**
DON'T KNOW		-7 → **SKIP TO E23**
REFUSED		-9 → **SKIP TO E23**

E22. Did anyone smoke inside of any school buildings that you visited in the past 30 days?

YES		1
NO		2
DON'T KNOW		-7
REFUSED		-9

E22a. Did anyone smoke on the grounds of any schools that you visited in the past 30 days?

YES		1
NO		2
DON'T KNOW		-7
REFUSED		-9

E23. Based on what you know or believe, does breathing other people's smoke cause serious illness in non-smokers?

YES		1
NO		2
DON'T KNOW		-7
REFUSED		-9

E25. For each of the following public places, please tell me if you think smoking should or should not be allowed.

		SHOULD BE ALLOWED		SHOULD NOT BE ALLOWED		DON'T KNOW		REFUSED	
a.	Indoor eateries or restaurants?		1		2		-7		-9
b.	Indoor workplaces?		1		2		-7		-9
c.	Indoor bars or night clubs?		1		2		-7		-9
d.	Outdoor market places?		1		2		-7		-9
e.	Outdoor recreational areas?		1		2		-7		-9

Section **F**. Economics — Manufactured Cigarettes

F00COMP

IF [B01 = 1 OR 2 (RESPONDENT CURRENTLY SMOKES DAILY OR LESS THAN DAILY)]

AND

[(B06a OR B08a) > 0 AND <= 888 (RESPONDENT SMOKES MANUFACTURED CIGARETTES)],

THEN CONTINUE WITH THIS SECTION.

OTHERWISE, SKIP TO NEXT SECTION G.

F01a. **The next few questions are about the last time you purchased manufactured cigarettes for yourself to smoke.**

Manufactured cigarettes does not include kreteks

The last time you bought manufactured cigarettes for yourself, did you buy loose cigarettes, packs, cartons, or something else?

[DO NOT INCLUDE ELECTRONIC CIGARETTES OR HEATED TOBACCO PRODUCTS]

CIGARETTES (STICKS)		1	
PACKS		2	
CARTONS		3	
OTHER (SPECIFY)		4	→ **F01c.** [SPECIFY THE UNIT]: _____
NEVER BOUGHT CIGARETTES		5	→ **SKIP TO NEXT SECTION G**
REFUSED		-9	→ **SKIP TO F03**

F01b. **The last time you bought cigarettes for yourself, how many {FILL F01a: cigarettes/packs/cartons/{FILL F01c}} did you buy?**

[NO DK/REF]

[IF F01a=CIGARETTES, GO TO F02]

[IF F01a=PACKS, GO TO F01dPack]

[IF F01a=CARTONS, GO TO F01dCart]

[IF F01a=OTHER, GO TO F01dOther]

F01dPack. **Did each pack contain 10 cigarettes, 20 cigarettes, or another amount?**

10		1
20		2
OTHER AMOUNT		3
DON'T KNOW		-7
REFUSED		-9

→ **F01dPackA.** How many cigarettes were in each pack? **[NO DK/REF]:**

_____

[GO TO F02]

F01dCart. **Did each carton contain 100 cigarettes, 200 cigarettes, or another amount?**

100		1
200		2
OTHER AMOUNT		3
DON'T KNOW		-7
REFUSED		-9

→ **F01dCartA.** How many cigarettes were in each carton? **[NO DK/REF]:**

_____

[GO TO F02]

F01dOther. **How many cigarettes were in each {F01c}?**

F02. **In total, how much money did you pay for this purchase?**

RANGE: RM0.10-1000

F03. What brand did you buy the last time you purchased cigarettes for yourself?

DUNHILL		1
ROTHMANS		2
MARLBORO		3
MEVIUS		4
WINSTON		5
L&M		6
LD		7
CHESTERFIELD		8
OTHER		9 → **F03a.** [SPECIFY BRAND]: _____
REFUSED		-9

F03b.   Did the cigarettes in the {FILL: NAME OF BRAND IN F03} brand you last purchased have a capsule in the filter that released a flavor when it was crushed?"

YES		1
NO		2
DON'T KNOW		-7
REFUSED		-9

F03b1.   [IF F03b=1:] What flavor was in the capsules of the last pack of {FILL: NAME OF BRAND IN F03} you purchased?

MENTHOL OR MINT		1
MENTHOL OR MINT MIXED WITH OTHER FLAVOURS E.G. FRUIT MINT		2
OTHERS		3 → **F03b1a.** [SPECIFY FLAVOUR]: _____
DON'T KNOW		-7
REFUSED		-9

F04. The last time you purchased cigarettes for yourself, where did you buy them?

VENDING MACHINE		1
GROCERY STORE		2
CONVENIENCE STORE		3
PETROL STATION		4
STREET VENDOR		5
NEWSPAPER STAND/KIOSK		6
DUTY-FREE SHOP		7
OUTSIDE THE COUNTRY		8
SUPERMARKET		9
INTERNET/ONLINE SHOPPING		10
FROM ANOTHER PERSON		11
NIGHT/OPEN MARKET		12
EATERIES		13
OTHER		14 → **F04a.** [SPECIFY LOCATION]: _____
DON'T REMEMBER		-7
REFUSED		-9

F05. In the last 6 months, has there been a time when the money you spent on cigarettes   resulted in not having enough money for household essentials such as food?

YES		1
NO		2
DON'T KNOW		-7
REFUSED		-9

Section G. Media

G201intro. The next questions ask about your exposure to the media and advertisements in the last 30 days. I will first ask about noticing anti-tobacco information and then ask about noticing tobacco advertisements and promotions. I will be asking questions separately about manufactured cigarettes, electronic cigarettes, and heated tobacco products.

G201. In the last 30 days, have you noticed <u>information about the dangers of smoking manufactured cigarettes</u> or that encourages quitting in any of the following places in Malaysia?

		YES	NO	NOT APPLICABLE	REFUSED
a.	In newspapers or magazines?	1	2	-7	-9
b.	On television?	1	2	-7	-9
c.	On the radio?	1	2	-7	-9
d.	On billboards?	1	2	-7	-9
e.	On the internet?	1	2	-7	-9
f.	On posters?	1	2	-7	-9
g.	At the cinemas?	1	2	-7	-9
h.	On windows or inside shops/stalls where you buy cigarettes?	1	2	-7	-9
i.	In health care facilities?	1	2	-7	-9
j.	Somewhere else?	1	2	-7	-9

[DO NOT INCLUDE HEALTH WARNINGS ON CIGARETTE PACKAGES]

j1. → Please specify where:

_____

_____

G201COMP1. IF EC1=2, GO TO G201COMP2

G202. **In the last 30 days, have you noticed <u>information about the dangers of using e-cigarettes</u> or that encourages quitting in any of the following places in Malaysia?**

		YES	NO	NOT APPLICABLE	REFUSED
a.	In newspapers or magazines?	1	2	-7	-9
b.	On television?	1	2	-7	-9
c.	On the radio?	1	2	-7	-9
d.	On billboards?	1	2	-7	-9
e.	On the internet?	1	2	-7	-9
f.	On posters?	1	2	-7	-9
g.	At the cinemas?	1	2	-7	-9
h.	On windows or inside shops/stalls where you buy cigarettes?	1	2	-7	-9
i.	In health care facilities?	1	2	-7	-9
j.	Somewhere else?	1	2	-7	-9

j1. → Please specify where:

_____

__ _____

G201COMP2. IF HTP1=2, GO TO G202COMP

G203. **In the last 30 days, have you noticed <u>information about the dangers of using heated tobacco products</u> or that encourages quitting in any of the following places in Malaysia?**

		YES		NO		NOT APPLICABLE		REFUSED	
a.	In newspapers or magazines?		1		2		-7		-9
b.	On television?		1		2		-7		-9
c.	On the radio?		1		2		-7		-9
d.	On billboards?		1		2		-7		-9
e.	On the internet?		1		2		-7		-9
f.	On posters?		1		2		-7		-9
g.	At the cinemas?		1		2		-7		-9
h.	On windows or inside shops/stalls where you buy cigarettes?		1		2		-7		-9
i.	In health care facilities?		1		2		-7		-9
j.	Somewhere else?		1		2		-7		-9
j1.	→ Please specify where: _____								

G202a. **In the last 30 days, did you notice any health warnings on cigarette packages?**

YES		1
NO		2 → **SKIP TO GG1**
DID NOT SEE ANY CIGARETTE PACKAGES		3 → **SKIP TO GG1**
REFUSED		-9 → **SKIP TO GG1**

G203a. **In the last 30 days, have warning labels on cigarette packages led you to think about quitting?**

YES		1
NO		2
DON'T KNOW		-7
REFUSED		-9

GG1. **In the last 12 months, have you ever seen or heard about 'JOM QUIT/M-QUIT' anti-smoking campaign?**

YES		1
NO		2
DON'T KNOW		-7
REFUSED		-9

G204. **I will now ask you about noticing marketing of manufactured cigarettes, electronic cigarettes, and heated tobacco products. In the last 30 days, have you noticed any <u>advertisements or signs promoting manufactured cigarettes</u> in the following places in Malaysia?**

		YES	NO	NOT APPLICABLE	REFUSED
a.	In stores where cigarettes are sold?	1	2	-7	-9
b.	On television?	1	2	-7	-9
c.	On the radio?	1	2	-7	-9
d.	On billboards?	1	2	-7	-9
e.	On posters?	1	2	-7	-9
f.	In newspapers or magazines?	1	2	-7	-9
g.	At the cinemas?	1	2	-7	-9
h.	On the internet?	1	2	-7	-9
i.	On public transportation vehicles or stations?	1	2	-7	-9
j.	On public walls?	1	2	-7	-9
k.	Anywhere else?	1	2	-7	-9
k1.	→ Please specify where: _____				

G204COMP1. IF EC1=2, GO TO G204COMP2

G204. **In the last 30 days, have you noticed any <u>advertisements or signs promoting e-cigarettes</u> in the following places in Malaysia?**

		YES		NO		NOT APPLICABLE		REFUSED	
a.	In stores where cigarettes are sold?		1		2		-7		-9
b.	On television?		1		2		-7		-9
c.	On the radio?		1		2		-7		-9
d.	On billboards?		1		2		-7		-9
e.	On posters?		1		2		-7		-9
f.	In newspapers or magazines?		1		2		-7		-9
g.	At the cinemas?		1		2		-7		-9
h.	On the internet?		1		2		-7		-9
i.	On public transportation vehicles or stations?		1		2		-7		-9
j.	On public walls?		1		2		-7		-9
k.	Anywhere else?		1		2		-7		-9

k1. → Please specify where:

_____

G204COMP2. IF HTP1=2, GO TO G205

G204. **In the last 30 days, have you noticed any <u>advertisements or signs promoting heated tobacco products</u> in the following places in Malaysia?**

		YES		NO		NOT APPLICABLE		REFUSED	
a.	In stores where cigarettes are sold?		1		2		-7		-9
b.	On television?		1		2		-7		-9
c.	On the radio?		1		2		-7		-9
d.	On billboards?		1		2		-7		-9
e.	On posters?		1		2		-7		-9
f.	In newspapers or magazines?		1		2		-7		-9
g.	At the cinemas?		1		2		-7		-9
h.	On the internet?		1		2		-7		-9
i.	On public transportation vehicles or stations?		1		2		-7		-9
j.	On public walls?		1		2		-7		-9
k.	Anywhere else?		1		2		-7		-9

k1. → Please specify where:

_____

G205. **In the last 30 days, have you noticed any public event that was associated with <u>manufactured cigarette brands or companies</u>?**

YES		1
NO		2
DON'T KNOW		-7
REFUSED		-9

G205COMP1. IF EC1=2, GO TO G205COMP2

G205a. **In the last 30 days, have you noticed any public event that is associated with <u>e-cigarette/liquid brands or companies</u>?**

YES		1
NO		2
DON'T KNOW		-7
REFUSED		-9

G205COMP2. IF HTP1=2, GO TO G206a1

G205b. **In the last 30 days, have you noticed any public event that is associated with <u>heated tobacco product brands or companies</u>?**

YES		1
NO		2
DON'T KNOW		-7
REFUSED		-9

G206. **In the last 30 days, have you noticed any of the following types of <u>manufactured cigarette promotions</u>?**

		YES		NO		DON'T KNOW		REFUSED	
a.	Free sample of cigarettes?		1		2		-7		-9
b.	Cigarettes at sales prices?		1		2		-7		-9
c.	Coupons for cigarettes?		1		2		-7		-9
d.	Free gifts or special discount offers on other products when buying cigarettes?		1		2		-7		-9
e.	Clothing or other items with a cigarette brand name or logo?		1		2		-7		-9
f.	Cigarette promotions in the mail?		1		2		-7		-9
g.	One-to-one sales promotion?		1		2		-7		-9

G206COMP1. IF EC1=2, GO TO G206COMP2

G207. In the last 30 days, have you noticed any of the following types of <u>e-cigarette/liquid promotions</u>?

		YES		NO		DON'T KNOW		REFUSED	
a.	Free sample of e-cigarettes?		1		2		-7		-9
b.	E-cigarettes at sales prices?		1		2		-7		-9
c.	Coupons for e-cigarettes?		1		2		-7		-9
d.	Free gifts or special discount offers on other products when buying e-cigarettes?		1		2		-7		-9
e.	Clothing or other items with a e-cigarette brand name or logo?		1		2		-7		-9
f.	E-cigarette promotions in the mail?		1		2		-7		-9
g.	One-to-one sales promotion?		1		2		-7		-9

G206COMP2. IF HTP1=2, GO TO NEXT SECTION H

G208. **In the last 30 days, have you noticed any of the following types of <u>heated tobacco product promotions</u>?**

		YES		NO		DON'T KNOW		REFUSED	
a.	Free sample of heated tobacco products?		1		2		-7		-9
b.	Heated tobacco products at sales prices?		1		2		-7		-9
c.	Coupons for heated tobacco products?		1		2		-7		-9
d.	Free gifts or special discount offers on other products when buying heated tobacco products?		1		2		-7		-9
e.	Clothing or other items with a heated tobacco products brand name or logo?		1		2		-7		-9
f.	Heated tobacco products promotions in the mail?		1		2		-7		-9
g.	One-to-one sales promotion?		1		2		-7		-9

Section H. Knowledge, Attitudes & Perceptions

H01. The next question is asking about <u>smoking</u> tobacco.

Based on what you know or believe, does smoking tobacco cause serious illness?

YES		1
NO		2
DON'T KNOW		-7
REFUSED		-9

H02. Based on what you know or believe, does smoking tobacco cause the following…

		YES	NO	DON'T KNOW	REFUSED
a.	Stroke (blood clots in the brain that may cause paralysis)?	1	2	-7	-9
b.	Heart attack?	1	2	-7	-9
c.	Lung cancer?	1	2	-7	-9
d.	Diabetes?	1	2	-7	-9
e.	Emphysema/chronic lung disease?	1	2	-7	-9
f.	Oral cancer?	1	2	-7	-9
g.	Premature Birth?	1	2	-7	-9
h.	Miscarriage?	1	2	-7	-9

H02x3. Do you believe cigarettes are addictive?

YES		1
NO		2
DON'T KNOW		-7
REFUSED		-9

H02x4. As far as you know, does your religion discourage smoking tobacco?

YES		1
NO		2 → **SKIP TO H03**
DON'T KNOW		-7
REFUSED		-9

H02x5. What is the ruling on smoking tobacco in your religion?

[DO NOT READ CATEGORIES]

SMOKING IS STRICTLY FORBIDDEN/SINFUL		1
SMOKING IS DISCOURAGED		2
OTHER RULING		3 → **H02x5a.** [SPECIFY]: _____
THERE ISN'T ANY RULING ON SMOKING		4
DON'T KNOW		-7
REFUSED		-9

H03. Based on what you know or believe, does using <u>smokeless tobacco</u> cause serious illness?

YES		1
NO		2
DON'T KNOW		-7
REFUSED		-9

H04. Would you support or oppose a law which prohibits the display of cigarettes or tobacco products at points-of-sale?

SUPPORT		1
OPPOSE		2
DON'T KNOW		-7
REFUSED		-9

H05.   **Would you support or oppose the restriction of sales on cigarettes and tobacco products by licensing retailers?**

SUPPORT		1
OPPOSE		2
DON'T KNOW		-7
REFUSED		-9

H06.   **In your opinion, which of the following anti-smoking actions could reduce the number of smokers in Malaysia?**

		YES		NO		DON'T KNOW		REFUSED
a.	Increase no smoking zone?		1		2		-7	
b.	Increase cigarette price?		1		2		-7	
c.	Make selling cigarettes illegal?		1		2		-7	
d.	High fine for smoking related offences?		1		2		-7	
e.	More quit smoking services?		1		2		-7	

End Individual Questionnaire

I00.   **Those are all of the questions I have. Thank you very much for participating in this important survey.**

I02.   [RECORD ANY NOTES ABOUT INTERVIEW:]

_____

_____

_____

APPENDIX B: SAMPLE DESIGN

1. Sampling Strategy and Sample Size:

In Malaysia, the sampling for GATS was a multistage stratified cluster sampling that was representative of Malaysia's population (15 years and above) all over the country except very remote areas in Sabah and Sarawak, where the only access to the areas is by boat or air transport. The sampling did not include those who are visitors (e.g. tourists), institutionalized in hospitals, assisted living facility/ nursing homes, military base, group quarters or in prisons.

The sampling strategy of the survey was to generate precise cross-sectional estimates at the national level, by gender and by geographical (urban/rural) localities at the national level as per the GATS protocol. According to the GATS sampling protocol, a sample size of at least 4000 respondents is required (2000 males and 2000 females, and 2000 from each urban and rural areas). The GATS sample size was then adjusted for potential ineligibility and non-response in determining the number of households to be selected to get the required number of respondents. After the adjustment, the final sample size is 5780 respondents. Of this number, 3060 was from urban areas, while 2720 was from rural areas. The response rate in urban areas was usually lower than rural areas in Malaysia. There was no specific allocation of household sample by gender and the probability was expected to be equal between gender as the population ratio between men and women are almost equal in Malaysia.

2. Sampling Method

The sampling process for GATS was done with the following sample design and technique:

a. First-Stage Sample

Primary Sampling Unit (PSU): The PSU is made up of enumeration blocks (EBs) based on information from the 2020 census, as these are the latest available EBs from the Department of Statistics (DOS) at the time of the survey. The list of EBs represents the frame of the first-stage sample.

The first stage of selection was selection of EBs from a list of EBs in Malaysia. Based on the latest census in Malaysia, there were about 100,000 EBs in Malaysia, of which 73,000 were in urban areas and 27,000 in rural areas. A total of 289 EBs were selected for the GATS, 153 from urban areas and 136 from rural areas. The selection of EBs was done proportionate to the population size. The selection was done by Department of Statistics, Malaysia.

b. Second-Stage Sample

Secondary Sampling Unit (SSU): The second stage of selection was selection of living quarters (LQs) from each selected EB. Twenty (20) LQs were selected from each selected EB. The sample frame was composed of a list of all LQs enumerated previously by the Department of Statistics during the 2020 Census within each selected EB. On average, the number of LQs for each EB was about 80 to 120 LQs. The selection of LQs was also done by Department of Statistics, Malaysia.

c. Final-Stage Sample:

GATS Final Sampling Unit (FSU) -- Eligible household residents: A random selection method from a roster of eligible household members was used to select an individual from within a sampled household as per the GATS protocol. In summary, this method of selection proceeded as follows:

1. For each household selected into the GATS sample, an interviewer attempted to identify an individual in the household who was 18 years or older and knowledgeable about the household residents. This person was considered as the screening respondent.

2. An interviewer asked for the presence of eligible respondents in the household to create a roster of all people who were aged 15 years or older regardless of gender and who considered the household to be their usual place of residence. The basic information of applicable household residents was entered into a handheld device from the oldest to the youngest and for the selection of a respondent.

3. The handheld device used a random process to select a respondent, and the name of the selected respondent was displayed on the screen. By using this method of selection, all eligible respondents had an equal chance of selection and the probability of selection was the inverse of the number of eligible people listed.

3. Survey Estimates and Sample Weighting Process

All estimates that derived from the GATS were in the form of percentage distributions, proportions, ratios, or means. Estimates were generated by using a standard statistical package (e.g., SAS, SUDAAN and SPSS). The sample data were weighted before generating the estimates. Sample weighting and analysis were done with the help of the Centers for Disease Control and Prevention (CDC), Atlanta, USA.

For the GATS sample estimates to be representative of the population, it was necessary to multiply the data by a sampling weight, or expansion factor. The basic weight for each sampled household would be equal to the inverse of its probability of selection (calculated by multiplying the probabilities at each sampling stage).

As per the GATS manual, a three-step process for GATS sample weighting was conducted for GATS Malaysia. The following are the details of computation and example cases.

a. Base weight calculations: The selection probability for p1 and p2 were calculated, where p1 = selection probability for PSUs, p2 = selection probability for households within the PSU. The selection probability for the individual within each household p3 is given by 1/(the number of eligible persons in the household). This is obtained from the survey response data. The overall base weight (*wb*) is calculated as 1/(p1*p2*p3).

$$wb = \frac{1}{p1 * p2 * p3}$$

In addition, the household-level base weight (*wb_hh*) for use in nonresponse adjustments is calculated as:

$$wb\_hh = \frac{1}{p1 * p2}$$

b. Nonresponse adjustment: The nonresponse adjustment was done at two levels: household and respondent. The household nonresponse adjustment was calculated by PSU, so there were 289 adjustment cells – one for each PSU. The household level nonresponse adjustment was calculated as:

$$hh\_nr = \frac{\sum wb\_hh_{eligible\ households}}{\sum wb\_hh_{completed\ rosters}}$$

The household nonresponse adjusted weight *wr_hh* was the product of the base weight *wb* and the household nonresponse adjustment *hh_nr.*

The person nonresponse adjustment was calculated by residence (urban/rural), gender and smoking status taken from the household roster. Therefore, there were 2*2*2=8 adjustment cells for the person nonresponse adjustment. The person-level non-response adjustment was:

$$pp\_nr = \frac{\sum wb_{eligible\ respondents}}{\sum wb_{completed\ rosters}}$$

The final nonresponse adjusted weight (*wr_hh_pp*) was the product of the household nonresponse adjusted weight (*wr_hh*) and the person nonresponse adjustment (*pp_nr*).

c. Post stratification adjustment: The post-stratification adjustment (*r*) was calculated by residence (urban/rural), gender, and the four standard GATS age groups (15-24, 25-44, 45-64, and 65+) resulting in 16 adjustment cells. Population counts were obtained from the 2020 census in Malaysia. The post-stratification adjustment was calculated as:

$$r = \frac{popproj}{\sum wr\_hh\_pp}$$

The final weight (*wf*) was the product of the nonresponse adjusted weight (wr_hh_pp) and the post-stratification adjustment (*r*)

APPENDIX C: ESTIMATES OF SAMPLING ERRORS

The estimates from a sample survey are affected by two types of error: (1) non-sampling errors, and (2) sampling errors. Non-sampling errors are the result of errors that cannot be attributable to sampling and are made in the implementing of data collection and data processing, such as errors in coverage, response errors, nonresponse errors, faulty questionnaires, interviewers recording errors, data processing errors, etc. Although numerous efforts were made during the implementation of GATS in Malaysia 2023 to minimize those errors, non-sampling errors are impossible to avoid completely and difficult to evaluate statistically.

Sampling errors are a measure of the variability between all possible samples. The extent of variability is not known exactly, but it can be estimated statistically from the survey results. The following sampling error measures are presented for each of the selected indicators:

Standard error (SE): *Sampling errors are usually measured in term of standard errors for a particular estimate or indicator. The standard error of an estimate is thus the square root of the variance of the estimate, and it is computed in the same units as the estimate.*

Design effect: *Design effect denoted by 'deff' is the ratio of actual variance of an indicator, under the sampling method used in the survey, to the variance calculated under the assumption of simple random sampling. The square root of the design effect denoted by 'deft' is used to show the efficiency of the sample design and is calculated for each estimate as the ratio between the standard error using the given sample design and the standard error that would result if a simple random sample had been used. A 'deft' value of 1.0 indicates that the sample design is as efficient as a simple random sample, while a 'deft' value of above 1.0 indicates the increase in the standard error due to the use of a more complex sample design. In general, for a well-designed survey, 'deft' usually ranges from 1 to 3. It is common, however, for 'deft' to be much larger, up to 7 or 8.*

Relative standard error (RSE): *Relative standard error, also known as coefficient of variation (CV), is the ratio of the standard error to the value of the indicator.*

Confidence limits: *Confidence limits are calculated to show the interval within which the true value for the population can be reasonably assumed to fall. For any given statistic calculated from the survey, the value of that statistic will fall within a range of plus or minus two times the standard error of the statistic in 95% of all possible samples of identical size and design.*

Calculation of Standard Error

The sampling design for GATS Malaysia 2023 was a complex sampling design. Therefore, it is necessary to use appropriate formulae for the analysis. For calculation of sampling errors for the estimates, SUDAAN 10.1 software was used. The method used in the calculation was Taylor series linearization.

The Taylor series linearization method treats any percentage or average as ratio estimates, r = y/x, where y represents the total sample value for variable y, and x represents the total number of cases in the group or subgroup under consideration. The variance of r is computed using the formula below:

$$SE^2(r) = var(r) = \frac{1-f}{x^2} \sum_{h=1}^{2} \left[\frac{m_h}{m_h - 1} \left(\sum_{i=1}^{m_h} z_{hi}^2 - \frac{z_h^2}{m_h} \right) \right]$$

In which, $z_{hi} = y_{hi} - rx_{hi}$, and $z_h = y_h - rx_h$

where h(=1 or 2) represents the stratum which is urban or rural,

m_h *is the total number of PSUs selected in the hth stratum,*

y_{hi} *is the sum of weighted values of variable y in the ith PSU in the hth stratum,*

x_{hi} *is the sum of weighted number of cases in the ith PSU in the hth stratum, and*

f is the overall sampling fraction, which is so small that it is ignored

The results are presented in this appendix for the county as a whole, for urban and rural areas, and for gender. In addition to the sampling error measures, the tables include unweighted and weighted counts of denominators for each indicator (Tables C.1-C.5).

Table C1: List of Indicators for Sampling Errors – GATS Malaysia, 2023.

Indicator	Estimate	Base Population
Current Tobacco Users	Proportion	Adults ≥ 15 years old
Current Tobacco Smokers	Proportion	Adults ≥ 15 years old
Current Manufactured Cigarette Smokers	Proportion	Adults ≥ 15 years old
Current Users of Smokeless Tobacco	Proportion	Adults ≥ 15 years old
Daily Tobacco Users	Proportion	Adults ≥ 15 years old
Daily Tobacco Smokers	Proportion	Adults ≥ 15 years old
Daily Cigarette Smokers	Proportion	Adults ≥ 15 years old
Daily Users of Smokeless Tobacco	Proportion	Adults ≥ 15 years old
Former Daily Tobacco Smokers Among All Adults	Proportion	Adults ≥ 15 years old
Former Tobacco Smokers Among Ever Daily Smokers	Proportion	Ever daily tobacco smokers ≥ 15 years old
Time to First smoke Within 5 Minutes of Waking	Proportion	Daily tobacco smokers ≥ 15 years old
Time to First Smoke Within 6-30 Minutes of Waking	Proportion	Daily tobacco smokers ≥ 15 years old
Smoking Quit Attempt in the Past 12 Months	Proportion	Current tobacco smokers and former smokers who have been abstinent for less than 12 months
Health Care Provider Asked About Smoking	Proportion	Current tobacco smokers and former smokers who have been abstinent for less than 12 months and who visited a HCP during the past 12 months
Health Care Provider Advised Quitting Smoking	Proportion	Current tobacco smokers and former smokers who have been abstinent for less than 12 months and who visited a HCP during the past 12 months
Use of Pharmacotherapy for Smoking Cessation	Proportion	Current tobacco smokers and former smokers who have been abstinent for less than 12 months
Use of Counseling/Advice or Quit Lines for Smoking Cessation	Proportion	Current tobacco smokers and former smokers who have been abstinent for less than 12 months
Planning to Quit, Thinking About Quitting, or Will Quit Someday	Proportion	Current tobacco smokers ≥ 15 years old
Exposure to SHS at Home	Proportion	Adults ≥ 15 years old
Exposure to SHS at Workplace	Proportion	Adults ≥ 15 years old who work indoors
Exposure to SHS in Government Buildings	Proportion	Adults ≥ 15 years old who visited government buildings in the past 30 days
Exposure to SHS in Healthcare Facilities	Proportion	Adults ≥ 15 years old who visited healthcare facilities in the past 30 days
Exposure to SHS in Restaurants	Proportion	Adults ≥ 15 years old who visited restaurants in the past 30 days
Exposure to SHS in Public Transportation	Proportion	Adults ≥ 15 years old who used public transportation in the past 30 days
Last Cigarette Purchase in Store	Proportion	Current manufactured smokers ≥ 15 years old
Noticed Anti-Cigarette Smoking Information on Radio or Television	Proportion	Adults ≥ 15 years old
Noticed Health Warning Labels on Cigarette Packages	Proportion	Current tobacco smokers ≥ 15 years old
Thinking of Quitting Because of Health Warning Labels on Cigarette Package	Proportion	Current tobacco smokers ≥ 15 years old

Noticed Any Cigarette Advertisement, Sponsorship, or Promotion	Proportion	Adults ≥ 15 years old
Believes that Tobacco Smoking Causes Serious Illness	Proportion	Adults ≥ 15 years old
Believes that Tobacco Smoking Causes Strokes	Proportion	Adults ≥ 15 years old
Believes that Tobacco Smoking Causes Heart Attacks	Proportion	Adults ≥ 15 years old
Believes that Tobacco Smoking Causes Lung Cancer	Proportion	Adults ≥ 15 years old
Believes that SHS Causes Serious Illness in Non-Smokers	Proportion	Adults ≥ 15 years old
Number of Cigarettes Smoked per Day	Mean	Current daily cigarette smokers ≥ 15 years old
Time Since Quitting Smoking (in years)	Mean	Former tobacco smokers ≥ 15 years old
Monthly Expenditures on Manufactured Cigarettes	Mean	Current cigarette smokers ≥ 15 years old
Age at Daily Smoking Initiation	Mean	Ever daily tobacco smokers ≥ 15 years old

Table C2: Sampling Errors - Overall – GATS Malaysia, 2023.

Indicator	Estimate (R)	Standard Error (SE)	Unweighted Sample Size (N)	Weighted count (000s) (WN)	Design Effect (Deft)	Relative Standard Error (RSE)	Lower Limit (R - 1.96 SE)	Upper Limit (R + 1.96 SE)
Current Tobacco Users	0.195	0.010	4,216	24,811,653	2.829	0.053	0.174	0.215
Current Tobacco Smokers	0.190	0.010	4,269	25,142,400	2.823	0.053	0.171	0.21
Current Manufactured Cigarette Smokers	0.151	0.009	4,269	25,142,400	2.499	0.057	0.134	0.168
Current Users of Smokeless Tobacco	0.009	0.003	4,185	24,635,464	4.188	0.336	0.003	0.015
Daily Tobacco Users	0.149	0.009	4,208	24,780,102	2.449	0.058	0.133	0.166
Daily Tobacco Smokers	0.146	0.008	4,269	25,142,400	2.418	0.057	0.130	0.163
Daily Cigarette Smokers	0.119	0.008	4,269	25,142,400	2.292	0.063	0.104	0.134
Daily Users of Smokeless Tobacco	0.006	0.003	4,185	24,635,464	5.601	0.469	0.000	0.012
Former Daily Tobacco Smokers Among All Adults	0.016	0.003	4,269	25,142,400	1.837	0.161	0.011	0.022
Former Tobacco Smokers Among Ever Daily Smokers	0.084	0.013	886	4,897,400	2.031	0.158	0.058	0.11
Time to First smoke Within 5 Minutes of Waking	0.083	0.016	686	3,599,895	2.378	0.196	0.051	0.115
Time to First Smoke Within 6-30 Minutes of Waking	0.209	0.022	686	3,599,895	1.966	0.104	0.166	0.251
Smoking Quit Attempt in the Past 12 Months	0.493	0.030	873	4,794,147	3.164	0.061	0.434	0.552
Health Care Provider Asked About Smoking	0.779	0.050	214	1,116,280	3.091	0.064	0.681	0.877
Health Care Provider Advised Quitting Smoking	0.666	0.059	213	1,114,184	3.354	0.089	0.550	0.782
Use of Pharmacotherapy for Smoking Cessation	0.095	0.032	435	2,364,382	5.089	0.334	0.033	0.158

Use of Counseling/Advice or Quit Lines for Smoking Cessation	0.083	0.017	435	2,364,382	1.640	0.204	0.050	0.116
Planning to Quit, Thinking About Quitting, or Will Quit Someday	0.597	0.027	851	4,660,925	2.637	0.046	0.543	0.65
Exposure to SHS at Home	0.194	0.011	4,211	24,548,250	3.342	0.057	0.172	0.216
Exposure to SHS at Workplace	0.210	0.019	1,080	8,783,171	2.421	0.092	0.172	0.248
Exposure to SHS in Government Buildings/Offices	0.292	0.030	769	4,882,274	3.350	0.103	0.233	0.351
Exposure to SHS in Health Care Facilities	0.186	0.019	1,592	8,809,574	3.602	0.100	0.149	0.222
Exposure to SHS in Restaurants	0.776	0.016	1,573	11,341,338	2.398	0.021	0.745	0.808
Exposure to SHS on Public Transportation	0.190	0.034	276	2,487,408	2.021	0.177	0.124	0.255
Last Cigarette Purchase in Store	0.799	0.024	701	3,594,188	2.588	0.031	0.751	0.846
Noticed Anti-Cigarette Smoking Information on Radio or Television	0.54	0.017	4,263	25,124,834	4.776	0.031	0.508	0.573
Noticed Health Warning Labels on Cigarette Packages	0.709	0.031	856	4,701,573	3.888	0.043	0.649	0.769
Thinking of Quitting Because of Health Warning Labels on Cigarette Package	0.332	0.027	855	4,699,404	2.854	0.082	0.278	0.385
Noticed Any Cigarette Advertisement, Sponsorship, or Promotion	0.183	0.011	4,246	24,939,191	3.305	0.059	0.162	0.204
Believes that Tobacco Smoking Causes Serious Illness	0.866	0.01	4,265	25,077,578	4.006	0.012	0.846	0.887
Believes that Tobacco Smoking Causes Strokes	0.812	0.011	4,263	25,062,681	3.617	0.014	0.789	0.834
Believes that Tobacco Smoking Causes Heart Attacks	0.907	0.008	4,263	25,065,507	3.207	0.009	0.891	0.922

Believes that Tobacco Smoking Causes Lung Cancer	0.941	0.006	4,263	25,065,507	3.223	0.007	0.929	0.954
Believes that Using Smokeless Tobacco Causes Serious Illness	0.677	0.018	4,264	25,073,422	6.208	0.026	0.642	0.712
Number of Cigarettes Smoked per Day	13.070	0.646	631	2,994,646	2.018	0.049	11.805	14.336
Time Since Quitting Smoking (in years)	12.761	2.371	87	385,401	3.413	0.186	8.114	17.408
Monthly Expenditures on Manufactured Cigarettes	177.729	10.767	645	3,067,321	2.008	0.061	156.627	198.832
Age at Daily Smoking Initiation	18.239	0.491	254	1,848,232	3.614	0.027	17.276	19.202

Table C3: Sampling Errors - Males – GATS Malaysia, 2023.

Indicator	Estimate (R)	Standard Error (SE)	Unweighted Sample Size (N)	Weighted count (000s) (WN)	Design Effect (Deft)	Relative Standard Error (RSE)	Lower Limit (R - 1.96 SE)	Upper Limit (R + 1.96 SE)
Current Tobacco Users	0.362	0.019	2,109	12,743,287	3.45	0.054	0.324	0.4
Current Tobacco Smokers	0.357	0.019	2,135	12,890,000	3.43	0.054	0.319	0.394
Current Manufactured Cigarette Smokers	0.286	0.015	2,135	12,890,000	2.198	0.051	0.258	0.315
Current Users of Smokeless Tobacco	0.011	0.004	2,079	12,579,624	2.92	0.363	0.003	0.018
Daily Tobacco Users	0.276	0.018	2,101	12,711,736	3.246	0.064	0.242	0.311
Daily Tobacco Smokers	0.272	0.017	2,135	12,890,000	3.2	0.063	0.239	0.306
Daily Cigarette Smokers	0.225	0.015	2,135	12,890,000	2.592	0.065	0.196	0.253
Daily Users of Smokeless Tobacco	0.006	0.003	2,079	12,579,624	4.327	0.606	-0.001	0.012
Former Daily Tobacco Smokers Among All Adults	0.031	0.005	2,135	12,890,000	1.853	0.163	0.021	0.042
Former Tobacco Smokers Among Ever Daily Smokers	0.086	0.014	862	4,719,541	2.077	0.16	0.059	0.113
Time to First smoke Within 5 Minutes of Waking	0.081	0.016	667	3,487,365	2.39	0.202	0.049	0.113
Time to First Smoke Within 6-30 Minutes of Waking	0.211	0.022	667	3,487,365	1.922	0.104	0.168	0.254
Smoking Quit Attempt in the Past 12 Months	0.495	0.03	847	4,606,076	3.101	0.061	0.435	0.554
Health Care Provider Asked About Smoking	0.785	0.051	204	1,078,298	3.101	0.065	0.685	0.884
Health Care Provider Advised Quitting Smoking	0.668	0.061	203	1,076,202	3.385	0.091	0.548	0.787
Use of Pharmacotherapy for Smoking Cessation	0.099	0.033	422	2,277,849	5.098	0.332	0.035	0.163
Use of Counseling/Advice or Quit Lines for Smoking Cessation	0.086	0.017	422	2,277,849	1.632	0.202	0.052	0.121

Planning to Quit, Thinking About Quitting, or Will Quit Someday	0.592	0.027	826	4,530,073	2.54	0.046	0.538	0.645
Exposure to SHS at Home	0.236	0.018	2,104	12,608,831	3.951	0.078	0.2	0.272
Exposure to SHS at Workplace	0.258	0.028	599	4,883,047	2.434	0.108	0.203	0.312
Exposure to SHS in Government Buildings/Offices	0.333	0.044	403	2,670,281	3.579	0.133	0.246	0.421
Exposure to SHS in Health Care Facilities	0.196	0.029	721	4,017,049	3.933	0.15	0.139	0.254
Exposure to SHS in Restaurants	0.767	0.023	844	5,955,540	2.522	0.03	0.722	0.813
Exposure to SHS on Public Transportation	0.229	0.049	126	1,153,638	1.7	0.214	0.133	0.325
Last Cigarette Purchase in Store	0.793	0.025	684	3,499,260	2.511	0.031	0.745	0.841
Noticed Anti-Cigarette Smoking Information on Radio or Television	0.544	0.021	2,130	12,876,670	3.839	0.039	0.502	0.585
Noticed Health Warning Labels on Cigarette Packages	0.714	0.031	831	4,570,721	3.896	0.043	0.653	0.775
Thinking of Quitting Because of Health Warning Labels on Cigarette Package	0.329	0.027	830	4,568,551	2.672	0.081	0.277	0.381
Noticed Any Cigarette Advertisement, Sponsorship, or Promotion	0.183	0.014	2,120	12,778,817	2.889	0.078	0.155	0.211
Believes that Tobacco Smoking Causes Serious Illness	0.845	0.016	2,132	12,882,396	3.973	0.018	0.815	0.876
Believes that Tobacco Smoking Causes Strokes	0.803	0.016	2,130	12,867,499	3.651	0.021	0.771	0.835
Believes that Tobacco Smoking Causes Heart Attacks	0.888	0.012	2,130	12,870,326	3.232	0.014	0.864	0.912
Believes that Tobacco Smoking Causes Lung Cancer	0.928	0.01	2,130	12,870,326	3.336	0.011	0.908	0.948
Believes that Using Smokeless Tobacco Causes Serious Illness	0.651	0.022	2,131	12,878,240	4.508	0.034	0.608	0.694

Number of Cigarettes Smoked per Day	13.227	0.662	614	2,897,437	2.03	0.05	11.93	14.524
Time Since Quitting Smoking (in years)	12.581	2.417	84	378,604	3.447	0.192	7.844	17.317
Monthly Expenditures on Manufactured Cigarettes	178.817	10.695	631	2,977,321	1.902	0.06	157.855	199.78
Age at Daily Smoking Initiation	18.146	0.508	249	1,753,765	3.827	0.028	17.151	19.141

Table C4: Sampling Errors - Females – GATS Malaysia, 2023.

Indicator	Estimate (R)	Standard Error (SE)	Unweighted Sample Size (N)	Weighted count (000s) (WN)	Design Effect (Deft)	Relative Standard Error (RSE)	Lower Limit (R - 1.96 SE)	Upper Limit (R + 1.96 SE)
Current Tobacco Users	0.018	0.006	2,107	12,068,366	3.712	0.313	0.007	0.029
Current Tobacco Smokers	0.015	0.005	2,134	12252400	4.154	0.353	0.005	0.026
Current Manufactured Cigarette Smokers	0.008	0.003	2,134	12252400	2.214	0.362	0.002	0.013
Current Users of Smokeless Tobacco	0.007	0.005	2,106	12055840	6.882	0.683	-0.002	0.016
Daily Tobacco Users	0.016	0.005	2,107	12,068,366	4.065	0.347	0.005	0.027
Daily Tobacco Smokers	0.014	0.005	2,134	12,252,400	4.513	0.388	0.003	0.024
Daily Cigarette Smokers	0.008	0.003	2,134	12252400	2.224	0.361	0.002	0.014
Daily Users of Smokeless Tobacco	0.006	0.005	2,106	12055840	7.367	0.733	-0.003	0.016
Former Daily Tobacco Smokers Among All Adults	0.001	0	2,134	12,252,400	0.509	0.656	0	0.001
Former Tobacco Smokers Among Ever Daily Smokers	0.038	0.029	24	177,859	0.512	0.749	-0.018	0.094
Time to First smoke Within 5 Minutes of Waking	0.134	0.123	19	112,529	2.356	0.92	-0.108	0.375
Time to First Smoke Within 6-30 Minutes of Waking	0.144	0.121	19	112,529	2.143	0.84	-0.093	0.382
Smoking Quit Attempt in the Past 12 Months	0.46	0.176	26	188,071	3.131	0.383	0.114	0.806
Health Care Provider Asked About Smoking	0.617	0.26	10	37,982	2.582	0.422	0.106	1.127
Health Care Provider Advised Quitting Smoking	0.617	0.260	10	37,982	2.582	0.422	0.106	1.127
Use of Pharmacotherapy for Smoking Cessation	0	0	13	86,533	.	.	0	0
Use of Counseling/Advice or Quit Lines for Smoking Cessation	0	0	13	86,533	.	.	0	0

Planning to Quit, Thinking About Quitting, or Will Quit Someday	0.779	0.094	25	130,853	1.24	0.121	0.594	0.964
Exposure to SHS at Home	0.15	0.012	2,107	11939420	2.237	0.077	0.127	0.173
Exposure to SHS at Workplace	0.151	0.022	481	3,900,124	1.789	0.145	0.108	0.193
Exposure to SHS in Government Buildings/Offices	0.242	0.035	366	2,211,993	2.484	0.146	0.173	0.311
Exposure to SHS in Health Care Facilities	0.177	0.022	871	4,792,525	2.951	0.126	0.133	0.22
Exposure to SHS in Restaurants	0.787	0.024	729	5,385,798	2.494	0.03	0.74	0.834
Exposure to SHS on Public Transportation	0.156	0.042	150	1,333,770	1.965	0.267	0.074	0.237
Last Cigarette Purchase in Store	1	0	17	94,929	.	0	1	1
Noticed Anti-Cigarette Smoking Information on Radio or Television	0.537	0.02	2,133	12248165	3.433	0.037	0.498	0.576
Noticed Health Warning Labels on Cigarette Packages	0.543	0.145	25	130,853	2.047	0.268	0.258	0.828
Thinking of Quitting Because of Health Warning Labels on Cigarette Package	0.429	0.142	25	130,853	1.983	0.331	0.151	0.708
Noticed Any Cigarette Advertisement, Sponsorship, or Promotion	0.182	0.014	2,126	12,160,374	2.895	0.078	0.154	0.21
Believes that Tobacco Smoking Causes Serious Illness	0.889	0.012	2,133	12195182	3.333	0.014	0.864	0.913
Believes that Tobacco Smoking Causes Strokes	0.82	0.013	2,133	12195182	2.525	0.016	0.795	0.846
Believes that Tobacco Smoking Causes Heart Attacks	0.926	0.009	2,133	12,195,182	2.454	0.01	0.909	0.943
Believes that Tobacco Smoking Causes Lung Cancer	0.955	0.006	2,133	12195182	2.032	0.007	0.943	0.968
Believes that Using Smokeless Tobacco Causes Serious Illness	0.704	0.019	2,133	12,195,182	3.551	0.026	0.667	0.74

Number of Cigarettes Smoked per Day	8.405	2.016	17	97,209	1.416	0.24	4.454	12.355
Time Since Quitting Smoking (in years)	22.798	5.558	3	6,797	0.644	0.244	11.904	33.692
Monthly Expenditures on Manufactured Cigarettes	141.732	38.838	14	90,000	1.595	0.274	65.611	217.854
Age at Daily Smoking Initiation	19.967	2.297	5	94,467	1.225	0.115	15.465	24.47

Table C5: Sampling Errors - Urban – GATS Malaysia, 2023.

Indicator	Estimate (R)	Standard Error (SE)	Unweighted Sample Size (N)	Weighted count (000s) (WN)	Design Effect (Deft)	Relative Standard Error (RSE)	Lower Limit (R - 1.96 SE)	Upper Limit (R + 1.96 SE)
Current Tobacco Users	0.186	0.013	1,965	19,281,609	2.109	0.069	0.161	0.211
Current Tobacco Smokers	0.183	0.013	1,990	19,538,000	2.103	0.069	0.158	0.207
Current Manufactured Cigarette Smokers	0.141	0.011	1,990	19,538,000	1.866	0.076	0.120	0.162
Current Users of Smokeless Tobacco	0.008	0.004	1,951	19,161,597	3.264	0.443	0.001	0.016
Daily Tobacco Users	0.142	0.011	1,963	19,274,719	1.829	0.075	0.121	0.163
Daily Tobacco Smokers	0.139	0.010	1,990	19,538,000	1.806	0.075	0.119	0.160
Daily Cigarette Smokers	0.107	0.009	1,990	19,538,000	1.748	0.085	0.089	0.125
Daily Users of Smokeless Tobacco	0.006	0.004	1,951	19,161,597	4.077	0.575	-0.001	0.013
Former Daily Tobacco Smokers Among All Adults	0.017	0.003	1,990	19538000	1.301	0.196	0.01	0.023
Former Tobacco Smokers Among Ever Daily Smokers	0.088	0.017	366	3,716,523	1.320	0.194	0.054	0.121
Time to First smoke Within 5 Minutes of Waking	0.077	0.021	271	2,654,028	1.651	0.270	0.036	0.118
Time to First Smoke Within 6-30 Minutes of Waking	0.187	0.028	271	2,654,028	1.361	0.148	0.133	0.242
Smoking Quit Attempt in the Past 12 Months	0.503	0.039	353	3,559,511	2.177	0.078	0.426	0.580
Health Care Provider Asked About Smoking	0.775	0.065	91	842,883	2.177	0.084	0.648	0.902
Health Care Provider Advised Quitting Smoking	0.652	0.077	91	842,883	2.345	0.118	0.502	0.803
Use of Pharmacotherapy for Smoking Cessation	0.104	0.042	178	1,790,195	3.287	0.401	0.022	0.185
Use of Counseling/Advice or Quit Lines for Smoking Cessation	0.081	0.021	178	1,790,195	1.077	0.262	0.040	0.123

Planning to Quit, Thinking About Quitting, or Will Quit Someday	0.603	0.035	344	3,461,230	1.758	0.058	0.535	0.672
Exposure to SHS at Home	0.178	0.014	1,963	19,025,572	2.526	0.077	0.151	0.205
Exposure to SHS at Workplace	0.195	0.021	667	7,615,961	1.891	0.108	0.154	0.237
Exposure to SHS in Government Buildings/Offices	0.303	0.036	411	4,042,947	2.470	0.118	0.233	0.373
Exposure to SHS in Health Care Facilities	0.187	0.022	749	7,010,966	2.467	0.120	0.143	0.231
Exposure to SHS in Restaurants	0.766	0.019	866	9,444,028	1.760	0.025	0.729	0.804
Exposure to SHS on Public Transportation	0.175	0.036	172	2,204,905	1.555	0.207	0.104	0.246
Last Cigarette Purchase in Store	0.778	0.032	278	2,589,668	1.674	0.042	0.714	0.841
Noticed Anti-Cigarette Smoking Information on Radio or Television	0.533	0.021	1,986	19,523,187	3.399	0.039	0.492	0.573
Noticed Health Warning Labels on Cigarette Packages	0.709	0.040	345	3,485,469	2.682	0.057	0.630	0.788
Thinking of Quitting Because of Health Warning Labels on Cigarette Package	0.334	0.036	345	3,485,469	1.961	0.107	0.264	0.404
Noticed Any Cigarette Advertisement, Sponsorship, or Promotion	0.178	0.013	1,975	19,357,251	2.332	0.074	0.152	0.204
Believes that Tobacco Smoking Causes Serious Illness	0.866	0.013	1,987	19,473,770	2.934	0.015	0.841	0.892
Believes that Tobacco Smoking Causes Strokes	0.812	0.014	1,985	19,458,874	2.618	0.017	0.784	0.840
Believes that Tobacco Smoking Causes Heart Attacks	0.902	0.010	1,986	19,463,849	2.303	0.011	0.882	0.922
Believes that Tobacco Smoking Causes Lung Cancer	0.940	0.008	1,986	19,463,849	2.284	0.009	0.924	0.955
Believes that Using Smokeless Tobacco Causes Serious Illness	0.679	0.022	1,987	19,473,770	4.465	0.033	0.636	0.722

Number of Cigarettes Smoked per Day	13.139	0.899	233	2,096,609	1.204	0.068	11.377	14.902
Time Since Quitting Smoking (in years)	13.662	2.843	41	312,954	2.223	0.208	8.089	19.235
Monthly Expenditures on Manufactured Cigarettes	194.824	14.773	255	2,171,020	1.430	0.076	165.868	223.780
Age at Daily Smoking Initiation	18.165	0.628	102	1,434,632	2.053	0.035	16.934	19.397

Table C6: Sampling Errors - Rural – GATS Malaysia, 2023.

Indicator	Estimate (R)	Standard Error (SE)	Unweighted Sample Size (N)	Weighted count (000s) (WN)	Design Effect (Deft)	Relative Standard Error (RSE)	Lower Limit (R - 1.96 SE)	Upper Limit (R + 1.96 SE)
Current Tobacco Users	0.225	0.015	2,251	5,530,044	2.743	0.065	0.196	0.253
Current Tobacco Smokers	0.217	0.014	2,279	5,604,400	2.645	0.065	0.190	0.245
Current Manufactured Cigarette Smokers	0.185	0.013	2,279	5,604,400	2.439	0.069	0.160	0.210
Current Users of Smokeless Tobacco	0.010	0.002	2,234	5,473,868	1.313	0.240	0.005	0.015
Daily Tobacco Users	0.177	0.012	2,245	5,505,383	2.401	0.071	0.152	0.201
Daily Tobacco Smokers	0.171	0.012	2,279	5,604,400	2.300	0.070	0.147	0.194
Daily Cigarette Smokers	0.160	0.012	2,279	5,604,400	2.256	0.072	0.138	0.183
Daily Users of Smokeless Tobacco	0.005	0.002	2,234	5,473,868	1.180	0.318	0.002	0.008
Former Daily Tobacco Smokers Among All Adults	0.015	0.003	2,279	5,604,400	1.391	0.198	0.009	0.021
Former Tobacco Smokers Among Ever Daily Smokers	0.073	0.014	520	1,180,877	1.439	0.187	0.046	0.100
Time to First smoke Within 5 Minutes of Waking	0.098	0.019	415	945,866	1.736	0.196	0.060	0.136
Time to First Smoke Within 6-30 Minutes of Waking	0.268	0.025	415	945,866	1.344	0.094	0.219	0.318
Smoking Quit Attempt in the Past 12 Months	0.465	0.028	520	1,234,636	1.653	0.061	0.410	0.520
Health Care Provider Asked About Smoking	0.792	0.040	123	273,397	1.170	0.050	0.714	0.870
Health Care Provider Advised Quitting Smoking	0.708	0.044	122	271,301	1.153	0.063	0.621	0.795
Use of Pharmacotherapy for Smoking Cessation	0.069	0.018	257	574,187	1.278	0.259	0.034	0.105
Use of Counseling/Advice or Quit Lines for Smoking Cessation	0.089	0.021	257	574,187	1.391	0.236	0.048	0.130
Planning to Quit, Thinking About Quitting, or Will Quit Someday	0.578	0.032	507	1,199,696	2.063	0.055	0.516	0.639
Exposure to SHS at Home	0.251	0.016	2,248	5,522,679	2.896	0.062	0.220	0.281
Exposure to SHS at Workplace	0.306	0.036	413	1,167,210	2.558	0.119	0.235	0.377

Exposure to SHS in Government Buildings/Offices	0.240	0.034	358	839,326	2.246	0.141	0.173	0.306
Exposure to SHS in Health Care Facilities	0.179	0.028	843	1,798,607	4.361	0.154	0.125	0.233
Exposure to SHS in Restaurants	0.828	0.023	707	1,897,310	2.609	0.028	0.783	0.873
Exposure to SHS on Public Transportation	0.305	0.079	104	282,504	3.012	0.258	0.151	0.460
Last Cigarette Purchase in Store	0.852	0.027	423	1,004,520	2.499	0.032	0.799	0.906
Noticed Anti-Cigarette Smoking Information on Radio or Television	0.568	0.021	2,277	5,601,647	3.964	0.036	0.528	0.609
Noticed Health Warning Labels on Cigarette Packages	0.710	0.028	511	1,216,105	1.928	0.039	0.656	0.765
Thinking of Quitting Because of Health Warning Labels on Cigarette Package	0.325	0.025	510	1,213,935	1.492	0.078	0.275	0.374
Noticed Any Cigarette Advertisement, Sponsorship, or Promotion	0.199	0.015	2,271	5,581,940	3.393	0.078	0.169	0.229
Believes that Tobacco Smoking Causes Serious Illness	0.867	0.011	2,278	5,603,807	2.578	0.013	0.844	0.889
Believes that Tobacco Smoking Causes Strokes	0.809	0.013	2,278	5,603,807	2.387	0.016	0.784	0.834
Believes that Tobacco Smoking Causes Heart Attacks	0.922	0.007	2,277	5,601,658	1.599	0.008	0.908	0.936
Believes that Tobacco Smoking Causes Lung Cancer	0.948	0.007	2,277	5,601,658	2.131	0.007	0.935	0.961
Believes that Using Smokeless Tobacco Causes Serious Illness	0.669	0.019	2,277	5,599,651	3.858	0.029	0.631	0.707
Number of Cigarettes Smoked per Day	12.910	0.487	398	898,037	1.335	0.038	11.956	13.864
Time Since Quitting Smoking (in years)	8.869	1.548	46	72,447	1.010	0.175	5.835	11.903
Monthly Expenditures on Manufactured Cigarettes	136.322	9.062	390	896,301	1.034	0.066	118.561	154.083
Age at Daily Smoking Initiation	18.495	0.267	152	413,599	1.336	0.014	17.971	19.018

APPENDIX D: TECHNICAL AND SURVEY STAFF

INSTITUTE FOR PUBLIC HEALTH

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Principal Investigator
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Project Manager
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Ms Nur Faraeein Zainal Abidin
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Ms Nik Nor Natasha Nasaruddin
Mr Iskandar Zul Qarnain Azizan
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Dr Noor Aliza Lodz (Southern Zone)
Dr S Maria Awaluddin (Sarawak)

Mr Khairul Hasnan Amali (Northern Zone)
Mr Lim Kuang Kuay (Eastern Zone)
Ms Nurul Huda Ibrahim (Sabah and Labuan)

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Ms Noor Fazira Mhd Sofbri
Mr Muhammad Suhail Saifoll Rizal
Ms Farisya Athirah Azizi
Ms Aimi Farzana Abdul Salam
Mr Alif Najmi Subri
Ms Nurul Ain Rizal
Mr Izzat Ahmad Zaharuddin
Ms Dhia Qistina Daud
Ms Daisy Gandi

Southern Zone
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Mr Muhammad Farid Dzulkifeli
Mr Muhammad Alimin Harun
Ms Siti Shafikah Aresah
Ms Nor Farahana Abu Bakar
Ms Nurain Mohd Nasir
Ms Atikah Abu Hashim
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Mr Abdul Rahim Khuzaini Ashari
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Mr Muhammad Firdaus Paizol
Ms Nor Afiqah Noor Hisham
Ms Norhidayah Abdul Majid
Mr Mohamad Nur Iman Shamsudin
Mr Mohamad Hazir Hussain
Mr Muhammad Ridhwan Said
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Ms Ailen Alesha Hashim Abdullah
Mr Ammar Ashraf Sawal
Mr Muhammad Ehsan Md Zakariah
Ms Yuslinda Asreena Mohd Yuzri
Ms Nur Amalina Ja'affar
Ms Norkamalin Mastura Mohd Sharifudin
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Ms Nur Hasyimah Zulkepli
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Mr Aaron Chee
Ms Erma Safwan Erison
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Dr Lazarous Mbulo (CDC Focal Point GATS Malaysia)
Dr Pranesh Chowdhury (Sample Weighting Team)
Mr Edward Rainey (IT Support)
Ms. Jing Shi (Statistician)
Ms. Aastha Vashist (Statistician)
Ms. Glenda Blutcher-Nelson (Statistician)

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GLOBAL ADULT TOBACCO SURVEY GATS

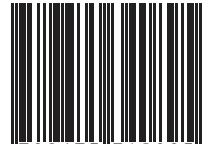## MALAYSIA 2023