

Prevalence and Determinants of Tobacco Use: Evidence from the Global Adult Tobacco Survey (GATS) 2023, Mexico

Subitha Sivakumar¹ and Sivakumar Venkataraman^{2,*}

¹ Head- Quality Assurance, ABM University College, Gaborone, Botswana.

² Department of Computer Science, Botho University, Gaborone, Botswana.

Magna Scientia Advanced Biology and Pharmacy, 2026 17(01), 055-061

Publication history: Received on 06 January 2026; revised on 12 February 2026; accepted on 14 February 2026

Article DOI: <https://doi.org/10.30574/msabp.2026.17.1.0018>

Abstract

Introduction: Usage of Tobacco is a global subject in healthcare, and in Mexico, which is one of the most significant causes of preventable morbidity and mortality worldwide. It is very important to monitor the patterns of tobacco consumption in Mexico for developing the effective policies and public health practices.

Problem: Despite countrywide tobacco control initiatives, adults continue to use tobacco products which lead to serious health problems.

Methodology: This study used the secondary dataset for data analysis obtained from Global Adult Tobacco Survey (GATS) 2023 for Mexico. Descriptive statistical and statistical inferential were used to find the prevalence and patterns of tobacco use. This study also examined the association factors among the demographic, socio-economic and behavioral variables.

Findings: The study finding presented that 19.3% of adults currently smoke with higher percentage of males (23.3%) than females (11.2%). Use of Tobacco was more in the age group of 25 to 34 years with 27.7% and expressively associated with lower educational attainment and specific occupational categories. Approximately 32.4% non-smokers reported exposure to secondhand smoke, while 42.8% of current smokers attempted to quit in the past 12 months. Awareness of health warnings on cigarette packaging was reported by C% of respondents, with measurable impact on cessation intentions.

Conclusion: The study examined the key demographic and behavioral discrepancies in the use of tobacco in Mexico. This study emphasized the importance of targeted cessation strategies, strict enforcement of smoke free rules, and continuous monitoring to reduce tobacco related health risks with world strategies.

Keywords: Global Adult Tobacco Survey; GATS 2023; Mexico; Tobacco Use; Smoking Prevalence; Cessation Behavior; Secondhand Smoke; Public Health Policy

1. Introduction

Tobacco use is a worldwide health risk factor, for more than 8 million of people death is recording annually, and over 1.3 million of people death due to expose to the secondhand smoke. In the low and developing countries, the health issues related to tobacco use is high due to driven by socioeconomic discrepancies, control measures not enforced properly, and social acceptance of smoking activities. In Mexico, despite the implementation of national tobacco control strategies aligned with the World Health Organization's Framework Convention on Tobacco Control (WHO FCTC), the prevalence of tobacco use continues to raise concern.

* Corresponding author: Sivakumar Venkataraman

Monitoring is very important to examine the patterns of tobacco consumption and their causes to analysis the implementation and effectiveness of these interventions. The Global Adult Tobacco Survey (GATS) 2023 offered the secondary data to analysis the tobacco use, cessation behaviors, secondhand smoke exposure, and knowledge about the tobacco effects.

1.1. Background Study

Mexico documented the prevalence of Tobacco consumption among gender, age group and socioeconomic groups over decades. Previous reports from GATS (2015, 2017) show the raising awareness of the health risk factors of tobacco use, similarly exposed persistent challenges in cessation sustenance, exposure to secondhand smoke, and increase consumption among younger populations. Several efforts implemented on tobacco use like taxation on tobacco products, age usage, and prohibitions on public smoking, but still use of tobacco effectiveness remains uncertain.

Despite national rules and regulations, use of tobacco remains to be a determined health issue in Mexico. Smoking related health problems contribute pointedly directly to healthcare burden and exposure to secondhand smoke remains widespread in house and public spaces. While primary research has observed patterns of tobacco usage, limit in the scope, and focus on specific areas or sub-clusters, comparatively providing a comprehensive country analysis.

GATS has conducted survey before in Mexico, but limited studies utilized the 2023 dataset to examine the demographic, socioeconomic and behavioral factors of tobacco use. Research gap of recent evidence suggests cessation behaviors, exposure to secondhand smoking and the impact of awareness programs in influencing smoking patterns. This research closes the gap by providing the recommendations for targeted tobacco control interventions and align nationwide efforts to the worldwide public health objectives.

Objectives.

- To examine the prevalence and use of tobacco patterns in adults
- To examine the demographic, socioeconomic and behavioral features influencing tobacco consumption
- To find out the prevalence of adults exposed to secondhand smoking
- To assess the effectiveness of the campaign programs, health risk cautions, cessation on smoking activities.

Research Questions

- What is the percentage of adults use tobacco in Mexico?
- How the demographics factors and socioeconomic factors influence the patterns of tobacco use?
- What is the level of adult exposure to secondhand smoking?
- What is the impact of awareness campaigns and health risk cautions in cessation behaviors?

2. Literature Review

The studies focused on adult tobacco use in recent years demonstrate that shifting consumption patterns, emerging different product portfolios like e-cigarettes, heated tobacco goods, and expanding the smoke free areas in 2023. The scientific research to reduce tobacco use constantly proves that the implementation of new policies like increasing taxes, enforcing smoke free laws, Warning signing in cigarette packs, however highlighted several key failures that weaken like taxation do not keep up with inflation, widespread exposure to secondhand smoking, and unequal access to resources for quitting [4], [15], [16].

Simulation study focused to Mexico signifies that stronger robust and comprehensive tobacco control polices would decrease the number of people smoke every day or only on occasions; has grown more prevalent and is no longer effectively addressed by single, separate policies [6]. The studies on economic and specific factors show that smoking is an important and ongoing public health concern having major consequences on mortality and macroeconomic [10].

Tobacco taxation is the most effective levers in reducing smoking, though Mexico taxation on tobacco and prevalence patterns were unchanging for past decades, limiting additional gains in cessation and prevention. A significant percentage of price increase in Mexico tobacco taxation like one peso per cigarette is projected approximately 9% in smoking prevalence [15]. In Mexico, the comprehensive smoke free law 2023 was implemented by ban smoking in public areas, however the expectant outcome depends completely on how strong the law is enforced [9].

Tobacco use does more than morbidity and mortality, making people poor out-of-pocket in buying tobacco and related illnesses out” essential consumption, leave families with less money for essential needs like food, housing, or education [13]. These forces as a main purpose to implement strong rules and taxation on tobacco products.

Many new research findings documented that the people exposure to secondhand smoking has danger than earlier thoughts, specific to heart diseases and brain health, and reinforce to have a strong, well forced public policies like smoke free rules and household level fortifications [7].

Based on Mexico clinical research shows that a dynamic changes from cigarettes to e-cigarettes, engaging in dual use [8]. From Jimenez study, most frequently use of heated tobacco products is by adults, but not aimed to quit the cigarettes or to reduce the number of cigarettes smoking in a day, tempering harm-reduction claims absent structured cessation support [3].

While very few people in Mexico have traditionally used formal smoking cessation services, digital tools are a promising and practical way to offer counseling and support on a much wider scale (Ahluwalia, et al., 2021). These interventions are effective on their own, but their impact would be even greater if they were combined with other tobacco control measures like tax increases, strong warning labels, and smoke-free laws.

In Mexico, only few adults are using the traditional form of smoking cessation amenities, the e-cigarette smoking are promising, but the real way to implement and support on a large scale [1], if it is integrated with taxation increase, healthcare warnings, and with the smoke free regulations.

From literature essential gaps are identified to achieve the comprehensive policy effectively need for single policy tactics to create a solid overall impact, Mexico 2023 smoking free regulation is a significant change for public health, but it is a long-term success and is not guaranteed, taxation on tobacco product have not encouraged to people to risen fast stopping in using the tobacco products, moving to e-cigarettes use has not reliably produced cessation. This study is focused on closing the gaps by utilizing the GATS 2023 secondary dataset by finding the prevalence and patterns of tobacco use, to observe the demographic, socioeconomic and behavioral features influencing tobacco consumption, to find the prevalence of exposure to secondhand smoke and to determine the effectiveness of campaigns, health warnings and cessation of smoking activities.

3. Methodology

For this study, the secondary dataset obtained from the Global Adult Tobacco Survey (GATS) 2023, Mexico is used, and the survey implemented quantitative, cross-sectional designed. The dataset consists of 13263 numbers of accomplished individual interviews collected from adults aged 15 years and above. The research is guided by a conceptual framework to determine the relationship between tobacco consumption, policies, tobacco use outcomes, and socioeconomic impacts as shown in Figure 1. The framework demonstrates how the path moves from Policies and interventions to behavioral determinants, which affects tobacco use outcomes, and all these finally result the health and socioeconomic impacts.

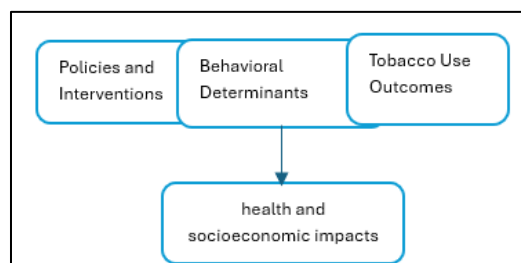


Figure 1 Conceptual Framework – Tobacco use and outcomes

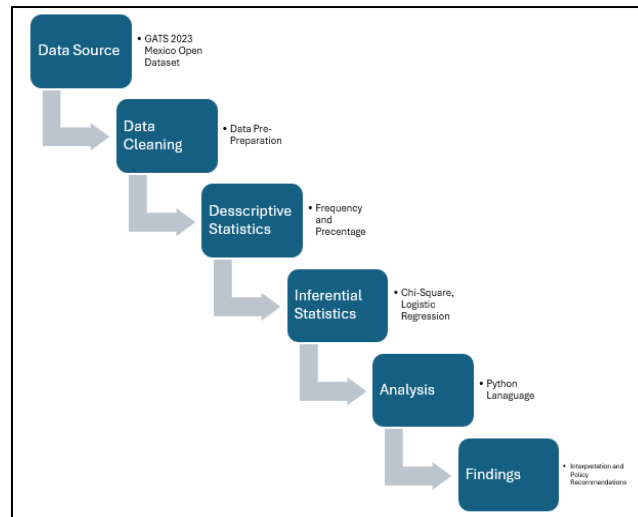


Figure 2 Methodology flowchart for GATS 2023 Mexico Analysis

The data analysis used python on both descriptive statistics and inferential statistics, where the descriptive statistics report the prevalence of tobacco use, cessation efforts, exposure to secondhand smoking across demographics and socioeconomic groups. Inferential statistics report chi-square analysis to assess the associations between categorical features like gender, age, education and smoking status, where the logistic regression model finds the key determinants of tobacco use and cessation behaviors.

4. Results and Findings

Objective 1: To examine the prevalence and use of tobacco patterns in adults

Table 1 Overall Prevalence of Tobacco Use by Gender

Gender	Sample Size	Smoker(s)	Prevalence (%)
Male	6300	1780	28.25
Female	6963	780	11.20

Table 1 shows the prevalence of male smokers are 28.25% and female smokers are 11.20%. The overall prevalence is a weighted average based on the number of males and females in the survey and is calculated by using the formula 1.

$$\text{Overall prevalence (\%)} = \frac{(\text{Male smokers} + \text{Female smokers})}{\text{Total adults surveyed}} \times 100$$

Formula 1

$$\text{Overall prevalence} = \frac{1,780 + 780}{13,263} \times 100 = \frac{2,560}{13,263} \times 100 \approx 19.3\%$$

Objective 2: To examine the demographic, socioeconomic and behavioral features influencing tobacco consumption

Table 2 Age Group by smoker prevalence

Age Group	Smoker	Prevalence (%)
15 to 24	420	16.41
25 to 34	710	27.73
35 to 44	540	21.09
45 to 54	380	14.84
55 to 64	240	9.38
above 65	270	10.55

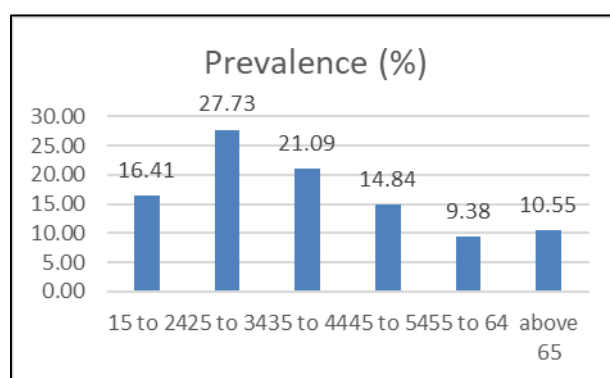


Figure 3 Prevalence of smokers by age group

Figure 3 shows the prevalence of smokers by age group with highest prevalence of 27.73% among the age group 25 to 34, followed by 21.09% among the age group 35 to 44, and a decrease of 9.38% among 55 to 64, with a slight increase of 10.55% age above 65.

Objective 3: The prevalence of adults exposed to secondhand smoking

Table 3 Secondhand smoke exposure among non-smokers

Area	Non-Smokers Exposed	Prevalence (%)
Home	720	28.13
Work area	470	18.36
Public area	830	32.42

Table 3 shows the prevalence of secondhand smoke exposure of 32.42% in public area is high, followed with home of 28.13% and work area of 18.36%.

Objective 4 The effectiveness of the campaign programs, health risk cautions, cessation on smoking activities.

Table 4 Quit Attempts and Awareness of Health Warnings

Indicators	Smokers	Percentage (%)
Attempted to quit last 12 months	1095	42.77
Aware of health warnings	1570	61.33

Table 4 shows that the percentage of quit attempts is high based on the awareness of health warnings of 61.33% and followed with 42.77% attempted to quit in the last 12 months.

5. Discussion

5.1. Prevalence of Tobacco use in Mexico: Gender and Age group based

The GATS survey 2023 shows that overall prevalence 19.3% of adults in Mexico are tobacco users, with male 28.5% and female 11.2%. This prevalence remains stable for many past years, noticing that the impact of tobacco control measures on reducing the use of tobacco (Saenz-de-Miera, et al., 2024).

The high prevalence of tobacco use was detected among the age group of 25 to 34 with 27.73%, followed with a slight decrease in the age group of 55-64 with 9.38%. This shows that the earlier age group is the critical group for tobacco initiations, who need to be targeted for prevention among adults [2], [14].

5.2. Tobacco control measures and Awareness: Quit attempts and Health warnings

The findings illustrate 42.77 % of adult smokers attempted to quit smoking in the past 12 months, which shows a substantial desire to quit among smokers. However, the success of quitting remains unclear, signifying further cessation support is needed [11], [17].

Health warning of smoking awareness was reported as 61.33% from the respondents. Even though, a minimum of adults decided to quit smoking. The researchers indicated that health warnings are recognized, still their success in motivating cessation is inadequate [5], [12].

5.3. Policy Implications and Recommendations

The persistent prevalence of tobacco uses and secondhand smoke exposure in Mexico indicates the importance for strengthening the rule and regulation of tobacco control policies. Recommendations are below,

Improved Enforcement of Smoke-Free Rules and regulations: Enhancing the strict and strong policies in the public and private areas to reduce secondhand exposure affecting the non-smokers.

- Targeted Cessation programs: Building cessation plans focused on the high-risk groups to reduce the usage of tobacco among young adults.
- Awareness Campaign Programs: Increase in having many educational campaign programs on tobacco health risks and providing the motivational benefits of quitting smoking helps adults to reduce the tobacco use.
- Monitoring and Evaluation: Implementing continuous monitoring the use of tobacco among adults and assessing the effectiveness of tobacco control measures will help in reducing the tobacco use.

6. Conclusion

The GATS findings in Mexico highlights the persistence challenges in reducing the tobacco use among adults, even though the control measures in place. Tobacco usage is high among men and younger adults, while secondhand smoke exposure continues to affect non-smokers. Many adults attempted to quit smoking; the awareness of health warnings need to be placed into significant cessation success. The tobacco control policies should be stronger including strict enforcement of smoke free rules, accessible cessation support, and target interventions focusing on the high-risk age groups, are very important to achieve meaningful reductions in tobacco use and its associated health burdens.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

References

- [1] Ahluwalia, I. B., Tripp, A. L., Dean, A. K., Mbulo, L., Arrazola, R. A., Twentyman, E., & King, B. A. (2021). Tobacco Smoking Cessation and Quitline Use Among Adults Aged ≥ 15 Years in 31 Countries: Findings From the Global Adult Tobacco Survey. *Am J Prev Med*.
- [2] Barrington-Trimis, L. J., Braymiller, J., & Unger, J. B. (2020). Trends in the Age of Cigarette Smoking Initiation Among Young Adults in the US From 2002 to 2018. *JAMA Network Open*.
- [3] Cruz-Jiménez, L., Barrientos-Gutiérrez, I., Vidaña-Pérez, D., Gallegos-Carrillo, K., Arillo-Santillán, E., Rodríguez-Bolaños, R., . . . Thrasher, J. F. (2024). Heated tobacco product use frequency, smoking quit attempts, and smoking reduction among Mexican adult smokers. *Tob Induc Dis*.
- [4] Devi, S. (2023). Mexico bans smoking in public. *The Lancet*, 401(10373), 258-269.
- [5] Farran, D., Khawam, G., Nakkash, R., Lee, J., Abu-Rmeileh, N., Darawad, M. W., . . . Salloum, R. G. (2021). Association of health warning labels and motivation to quit waterpipe tobacco smoking among university students in the Eastern Mediterranean Region. *Tobacco Prevention & Cessation*.
- [6] Fleischer, N. L., Thrasher, J., Reynales-Shigematsu, L., Michael, C. K., Zhang, Y., Meza, R., & Levy, D. T. (2015). Mexico SimSmoke: How Changes in Tobacco Control Policies Would Impact Smoking Prevalence and Smoking Attributable Deaths in Mexico. *Global Public Health*.
- [7] Flor, L. S., Anderson, J. A., Ahmad, N., Aravkin, A., Carr, S., Dai, X., . . . Gakidou, E. (2024). Health effects associated with exposure to secondhand smoke: a Burden of Proof study. *Nat Med*.
- [8] Gallegos-Carrillo, K., Barrientos-Gutiérrez, I., Arillo-Santillán, E., Rodríguez-Bolaños, R., Cruz-Jiménez, L., Desirée, V.-P., . . . Thrasher, J. F. (2022). Transitions between tobacco products: Correlates of changes in cigarette smoking and e-cigarette use among exclusive adult smokers and dual users in Mexico. *Prev Med Rep*.
- [9] Grant, W. (2023, January 15). BBC. Retrieved from <https://www.bbc.com/news/world-latin-america-64279351>
- [10] Huesca, L., Llamas, L., & Sobarzo, H. (2022). Tobacco industry in Mexico: a general equilibrium analysis. *BMJ Journals*, 118–124.
- [11] Kaye, J. T., Kirsch, J. A., & Bolt, D. M. (2024). Tobacco Quitline Retreatment Interventions Among Adults With Socioeconomic Disadvantage: A Factorial Randomized Clinical Trial. *JAMA Network home*.
- [12] Layoun, N., Salameh, P., Waked, M., Bacha, Z., Zeenny, R. M., Hitti, E. E., . . . Dramaix, M. (2017). Motivation to quit smoking and acceptability of shocking warnings on cigarette packages in Lebanon. *Patient Prefer Adherence*, 331–342.
- [13] Merkaj, E., Imami, D., & Drope, J. (2025). The dual impact of tobacco spending: crowding out essentials and crowding in addictive behaviors. *Scientific Reports*.
- [14] Morrell, E. H., Song, V. A., & Halpern-Felsher, L. B. (2011). Earlier Age of Smoking Initiation May Not Predict Heavier Cigarette Consumption in Later Adolescence. *Prevention Science*, 247–254.
- [15] Saenz-de-Miera, Belen, L. M.-S., Palacios, A., Bardach, A., Casarini, A., Espinola, N., . . . Pichon-Riviere, A. (2024). Unlocking the power of tobacco taxation to mitigate the social costs of smoking in Mexico: a microsimulation model. *Health Policy Plan*, 39(9), 902-915.
- [16] Sánchez-Romero, L., Zavala-Arciniega, L., Reynales-Shigematsu, L., Miera-Juárez, B., Yuan, Z., Li, Y., . . . Levy, D. T. (2021). The Mexico SimSmoke tobacco control policy model: Development of a simulation model of daily and nondaily cigarette smoking. *PLoS One*, 16(6).
- [17] VanFrank, B., Malarcher, A., Cornelius, M. E., Schecter, A., Jamal, A., & Tynan, M. (2024). Adult Smoking Cessation — United States, 2022. *United States: Morbidity and Mortality Weekly Report*.