

ASSESSING THE PREVALENCE OF CIGARETTE SMOKING AMONG ADULT MALES IN RURAL PUNJAB LAHORE

Rehana Perveen^{*1}, Zunira Amir², Farzana Meherban³

^{*1}MSN, Senior Nursing Instructor CON Itafaq Hospital Lahore.

²MSN, Nursing Instructor, CON APMC Jinnah Hospital Lahore.

³MSN, Principal Sehara college of Nursing.

¹rehanaperveen665@yahoo.com, ²zuniraamir@gmail.com³, mehrbanfarz@gmail.com

DOI: <https://doi.org/10.5281/zenodo.16948815>

Keywords

Cigarette smoking, prevalence, rural Punjab, adult males, peer influence, public health

Article History

Received on 26 May 2025

Accepted on 01 August 2025

Published on 26 August 2025

Copyright @Author

Corresponding Author: *

Rehana Perveen

Abstract

Background: Cigarette smoking remains a major public health concern in Pakistan, contributing to high morbidity and mortality from cardiovascular, respiratory, and cancer-related diseases. Rural populations are particularly vulnerable due to low health literacy, limited cessation resources, and socio-cultural norms that normalize tobacco use. Understanding the prevalence and determinants of smoking in these settings is essential for targeted interventions.

Aim: To assess the prevalence of cigarette smoking among adult males in rural Punjab, Lahore, and identify factors associated with smoking initiation and continuation.

Methods: A cross-sectional descriptive survey was conducted in Raiwind, a rural area near Lahore, involving 100 adult male participants aged 18 years and above. A multistage cluster sampling technique was employed. Data were collected through a structured questionnaire adapted from the WHO (1977) survey tool, covering socio-demographic details, smoking status, consumption patterns, and reasons for initiation. Descriptive statistics were analyzed using SPSS version 16.0.

Results: The prevalence of current smokers was 54%, with 16% former smokers and 30% never smokers. Peer influence was the most reported reason for initiation (38.9%), followed by stress relief (22.2%), curiosity (16.7%), family influence (13.0%), and easy availability/low cost (9.2%). Smoking was more common among younger adults aged 18–34 and those with lower educational attainment.

Conclusion: Cigarette smoking prevalence among rural adult males in Punjab is alarmingly high, driven largely by peer and social influences. Tailored community-based prevention and cessation interventions are urgently needed to address this public health issue.

INTRODUCTION

Cigarette smoking is the puffing of the smoke of tobacco that is rolled in papers and burns the paper releasing nicotine, tar, carbon monoxide gas, and

other poisonous substances into the lungs (Sinha & Haider, 2024). Adult males include patients who are at least 18 years of age, whereas rural regions are places

with a low population density, farming as their primary source of income and poor healthcare facilities (Shah et al., 2023). Punjab is the largest province in Pakistan with varied socio-economic and cultural environments that could affect health behavior such as the use of tobacco (Menon et al., 2024). The prevalence refers to the percentage of persons in a population living with a certain condition in an instant or moment in time (Zubair et al., 2022). Public health uses prevalence as the measure of the burden of disease or risk factor within a population so that the magnitude of the burden can be determined and influence policy (Chan et al., 2022). Point prevalence determines the percentage of the people who are practising in cigarette smoking during a particular time whereas period prevalence examines the occurrences over a certain period (Oliveira et al., 2019). Tobacco burning prevalence is also high and results in a major societal health burden, especially in low- and middle-income countries (LMICs), which have a potentially lesser impact in relation to tobacco control policies, including Pakistan (Prochaska & Benowitz, 2019).

Smoking cigarettes is also one of the contributions of preventable morbidity and mortality in the world with a reported tobacco-related death rate of more than 8 million deaths each year (Abdelkader et al., 2024). Nicotine is an addicted chemical that further maintains smoking behaviors, and therefore, it is possible to quit smoking despite being aware of the health consequences (Vance et al., 2022). Smoking is the key way of a person getting chronic respiratory disease, heart diseases, and various kinds of cancer, especially lung cancer (Trigg et al., 2023). Plurality of rural communities tends to experience a greater prevalence of smoking because of the lesser awareness levels, social tolerance, coupled with a decreased access to cessation external aid (Merianos et al., 2021). In Pakistan, smoking by adult males is out of equilibrium in comparison to the number of adult females smoking and culture is a factor that creates gender variances in tobacco smoking (Menon et al., 2024). Owing to such factors as low literacy levels, traditional lifestyles, and the peer effect, unique smoking trends are revealed in rural Punjab toward smoking (Todd et al., 2022). The growing of tobacco in some districts can also lead to availability and lower prices which can stimulate its extensive use (Shah et

al., 2023). Health literacy is an essential aspect in the development of perceptions regarding the dangers of smoking (Zubair et al., 2022). It is believed that poverty, unemployment, and fewer recreational activities increase smoking rates in rural communities (Chan et al., 2022). Cigarettes can be seen in rural Punjab as a tool of stress mitigation and a manly attribute, contributing to their cultural legitimacy (Vance et al., 2022). The effectiveness of the mass media campaigns and tobacco taxes per se has proven to be unequal in these aspects because of the difference in the channels of communications and enforcement (Prochaska & Benowitz, 2019).

The health risks associated with smoking in the rural area are also secondary to the health of the people in terms of inhaling second hand smoke and the ones who are most vulnerable to this health threat are women and children in houses (Oliveira et al., 2019). Variations of a lack of strict smoke-free measures in public places enhance the exposure in a workplace, markets and gathering areas (Abdelkader et al., 2024). Infrastructural and resource-related constraints usually make awareness programs rather narrow (Sinha & Haider, 2024).

The prevalence of cigarette smoking in adult males in rural Punjab is the very necessary data that should be used during the design of tobacco control interventions. Guidance on specific health promotion can be informed by the use of understanding regional patterns, socio-cultural determinants, and demographic disparities (Shah et al., 2023). Such as community-based cessation, mechanisms of taxation, and culturally tailored awareness-raising actions are essential evidence-based interventions to decrease smoking and associated health burdens (Abdelkader et al., 2024).

Methodology

The cross-sectional descriptive survey was carried out to measure the prevalence of cigarette smoking and to identify whether there was a relation between the smoking and selected factors age, socioeconomic status and the level of education. The variables in the cross-sectional studies are measured at one instance study (Polit, 2012). Sample selection was done in Raiwind, a rural locality which is 30 kilometers away to the city of Lahore. Raiwind boasted of paddy fields and hence cultivation formed the main source of

livelihood with other subsidiary jobs like running shops, being a teacher, labor, and cabs. It was a homogeneous populace in cultural terms because the population spoke the same language (Punjabi), wore the same clothes, observed the same customs and held to the same values. The level of data collection was at the community level that is at the homes of the participants. The target population included adult men with an age of 18 years and above, and who lived within Raiwind. Cluster sampling was used, whereby the various villages were used as the clusters. It was a random sample of the participants in each cluster where at least one adult male was selected in every household. A margin of non-response responses was considered and set the final sample size at 100 participants.

Data Collection Procedure

Prior to data collection, a well-informed and voluntary consent was achieved with each of the participants. The amount of participants was interviewed in Lingua franca (Urdu) referring to a slight modification of the World Health Organization (WHO, 1977) questionnaire. The instrument registered socio-demographic characteristics (age, education, occupation, income, marital status), smoking habits, as well as causes of taking up smoking. Hand wrapping was used to pass out the questionnaires and the collection lasted 20 to 30 minutes.

Data Analysis Procedure

Data values were coded and recorded in the Statistical Package for the Social Sciences (SPSS) version 16.

Socio-demographic variables and the prevalence definition of smoking were summated under descriptive statistics. Percentage and frequencies were used to analyse categorical variables, whereas age, marital status, occupation and income were classified into particular categories. The significant correlations between variables relating to smoking status and independent measures were determined by suitable statistical tests at significance level of $p=0.05p$

Results and Analysis

100 adult males were selected as the participants living in the rural community of Raiwind, Lahore. In this case, the largest proportion of respondents (38%) was between 25 years and 34 years, 27 years to 44 years, 18 years to 24 years, and 13 years and above constituted 22 percentage, 13 percentage respectively. The majority (71%) of the participants were married, whereas 29 percent of them were unmarried. In the case of education levels, 21 percent said that they did not get any education, 28 percent got primary education, 34 percent got secondary, and 17 percent got higher secondary school or more. Occupational structure was distributed as 37 percent were farmers, 24 percent were laborers, 20 percent shopkeepers and 19 percent pursued an office or professional work. The rate of monthly income reported that: 25 percent earned less than PKR 5000, 44 percent earned the amount between 5000-10000, 21 percent earned 10000-15000 and 10 percent earned above 15000. [Table 1]

Table 1: Socio-Demographic Characteristics of Participants (n = 100)

Variable	Category	Frequency (n)	Percentage (%)
Age (Years)	18-24	22	22.0
	25-34	38	38.0
	35-44	27	27.0
	45+	13	13.0
Marital Status	Married	71	71.0
	Unmarried	29	29.0
Education Level	No formal education	21	21.0
	Primary (1-5)	28	28.0
	Secondary (6-10)	34	34.0
	Higher secondary or above	17	17.0
Occupation	Farmer	37	37.0

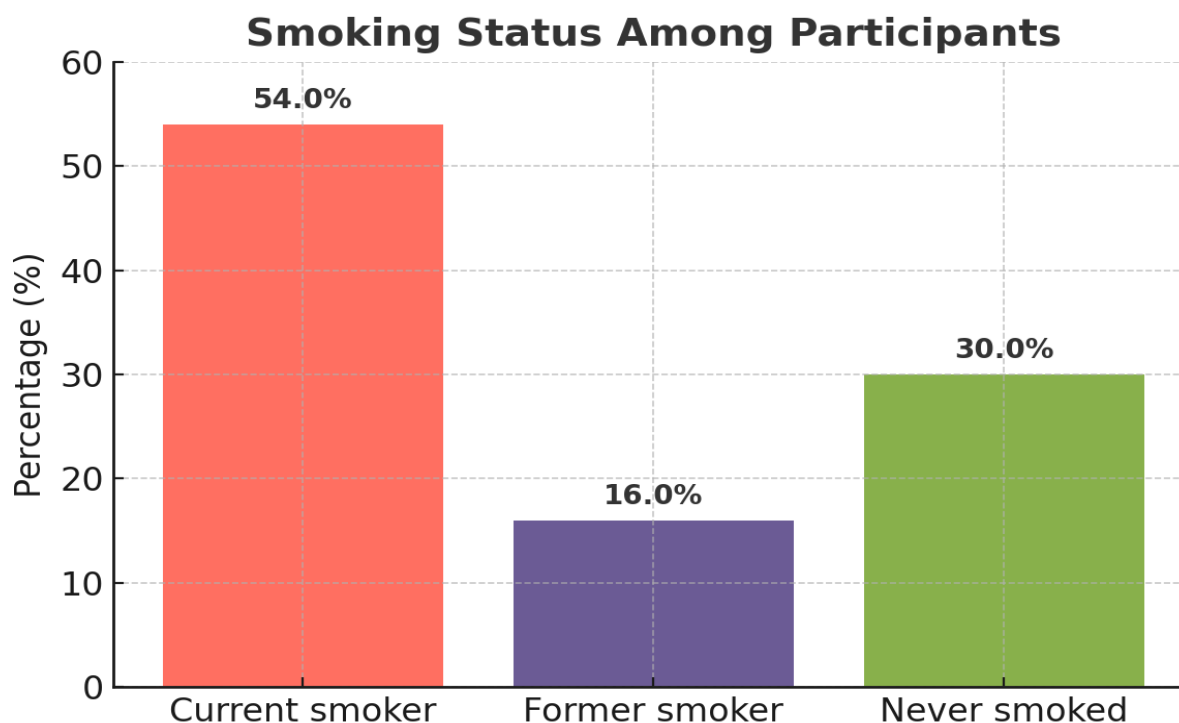
	Laborer	24	24.0
	Shopkeeper	20	20.0
	Office/Other	19	19.0
Monthly Income (PKR)	< 5000	25	25.0
	5000-10000	44	44.0
	10000-15000	21	21.0
	> 15000	10	10.0

Prevalence of Cigarette Smoking

The prevalence of cigarette smoking among the participants was 54%, with an additional 16% identified as former smokers, while 30% reported never having smoked. Among current smokers, the most frequently reported reason for initiating

smoking was peer influence (38.9%), followed by stress relief (22.2%), curiosity (16.7%), family influence (13.0%), and easy availability combined with low cost (9.2%). [Figure 1].

Figure 1: Prevalence of Cigarette Smoking among Adult Males (n = 100)



Reasons for Initiating Cigarette Smoking

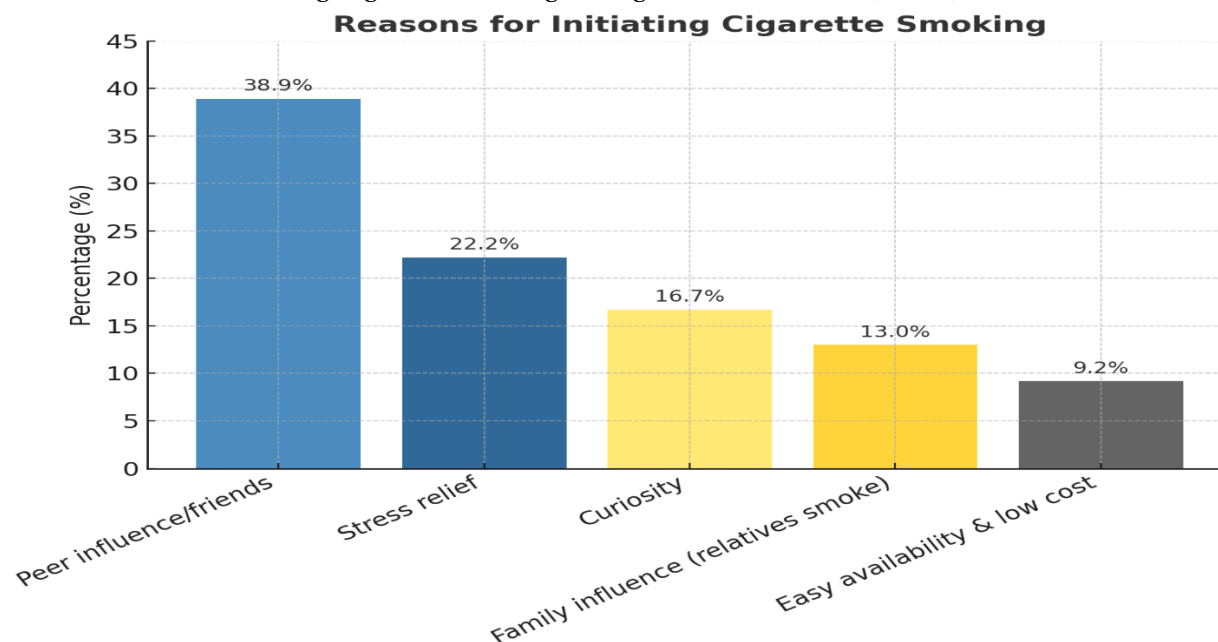
On the reasons of taking to cigarette smoking among the current smokers, it was learned that 38.9 percent of respondents gave peer influence or encouragement by friends as the most said reason. The second most common cause was stress relief, which played out in 22.2 percent of the cases. It was cited that 16.7 % of respondents cited curiosity, which implies

experimentation as another significant source of motives. The influence of family members, especially the younger generation or those closely related had relatives that smoked led to the onset of smoking in 13.0 percent of them. Cigarettes could easily be accessed and, moreover, were low-priced, which was cited as the main cause of starting smoking by 9.2 percent participants. These results indicate that social

determinants, psychological stress, and accessibility to the environment are considerable in the onset of

cigarette smoking in this population of rural men. [Figure 2].

Figure 2: Reasons for Initiating Cigarette Smoking among Current Smokers (n = 54)



In bivariate analysis, statistically significant relationships between smoking status and some of the socio-demographic variables were associated. The participants mean prevalence of smoking was highest (65.8%) in 25-34 years old and lowest (38.5) in those who were more than 45 years old ($p = 0.041$). There was an inverse relation between level of education and smoking status: 71.4 percent of those with no formal education were found to be smoking against only 29.4 percent of the participants with higher secondary

education or more ($p = 0.032$). There was also a substantial connection in monthly incomes with the greatest prevalence of smoking prevalence among those earning less than 5000 PKR value a month (72.0%) and lowest amongst those earning more than 15000 PKR value a month (30.0%) ($p = 0.018$). The occupational variables (5%) were not significant enough in terms of statistical perspective though farmers (67.6%) smoked extensively than office workers (36.8%). [Table 2].

Table 2: Association between Socio-Demographic Variables and Cigarette Smoking Status (n = 100)

Variable	Category	Smokers (%)	Non-Smokers (%)	p-value
Age	18-24	45.5	54.5	0.041*
	25-34	65.8	34.2	
	35-44	59.3	40.7	
	45+	38.5	61.5	
Education	No formal education	71.4	28.6	0.032*
	Primary	64.3	35.7	
	Secondary	52.9	47.1	
	Higher secondary+	29.4	70.6	
Occupation	Farmer	67.6	32.4	0.056
	Laborer	58.3	41.7	
	Shopkeeper	50.0	50.0	

	Office/Other	36.8	63.2	
Income	< 5000	72.0	28.0	0.018*
	5000-10000	59.1	40.9	
	10000-15000	42.9	57.1	
	> 15000	30.0	70.0	

Discussion

The high degrees of cigarette smoking within the adult men population in the Punjab area revealed in this study highlights a long lasting community health issue in Pakistan. The observation that 54 percent of the respondents are current smoking supports past studies carried out in rural areas in South Asian settings that have indicated the disparity in the percentage of men and women who have a preference to smoke compared to the effectiveness of a specific size of the population (Merianos et al., 2021). Like the rural Indian population, similar forms of prevalence were experienced in the range of 50-60 percent (Menon et al., 2024), demonstrating that shared socio-cultural factors could be the driving force. The found rate exceeds the world male smoking prevalence of 38% listed among the World Health Organization statistics (Todd et al., 2022), which confirms the necessity of specific intervention regarding tobacco control in the specified communities.

Peer influence proved the most popular reason of smoking initiation in the given study as it explained 38.9 percent of cases. This can be compared to the results of Gough and Novikova (2020), who described the issue of peer pressure as one of the critical factors that contribute to smoking among rural juveniles. These patterns were quite evident in other low- and middle-income countries where the patterns of smoking behavior among friends were a solid indicator of whether they were likely to start smoking or not (Sharma & Khapre, 2021; Cao et al., 2022). Nevertheless, other Western researches have demonstrated an even stronger impact of family members as compared to peers influenced by other patterns of social structure and interactions (Tan et al., 2022). The lower percentage of smoking initiation caused by family influence (13%) in the given study holds true to the senses that in the rural Punjab, peer groups carry greater influence over familial modeling techniques.

The stress relief factor as a motivator of cigarette smoking (22.2 percent of the participants) can also be referred to the results presented by Semple et al. (2022), who mentioned stress as a crucial smoking determinant in low-income groups. Corroborating findings of stress as a supportive dimension of the smoking behavior have also been found in industrialized countries (primarily on occupational and mental stress) (Boderie et al., 2021). The homogeneity would indicate that there is an overall coping mechanism, yet the nature of the stressors in rural Punjab e.g. financial stability and farming uncertainties might enhance this correlation. The results show that stress management element should be introduced to cessation programs specifically to rural people.

A total of 16.7 per cent of the respondents cited curiosity as one of the reasons why they started smoking. This is in line with the results of Boderie et al. (2023), who listed experimentation and seeking novelty as some of the popular issues among the rural smoking population. Comparative evidence with the major urban-focused studies indicates a low rate of curiosity-driven initiations, which is potentially associated with the development of higher health literacy and exposure to anti-smoking programs (Merianos et al., 2021). It is possible that the increased importance of curiosity in the rural setting is connected to the lack of recreational opportunities, which was also reflected in the literature on other rural lifestyles (Menon et al., 2024).

Accessibility and affordability were mentioned by 9.2 percent of the respondents as the reasons behind taking up smoking, agreeing with a study conducted by Todd et al. (2022) that low prices increased tobacco use in low-income neighborhoods. Locally manufactured cigarettes in rural Punjab are still very cheap as compared to those in the urban areas because of low taxation enforcement and the informal distribution channel. Research in other developing countries also shows the same developments, with

affordability hindering the public health campaigns (Gough & Novikova, 2020). The implication of this economic dimension implies that taxation and controlling the supply chains may be useful interventions in rural Pakistan.

Former smokers in the given study (16pct) compared to the 25 pct information yielded in national surveys is not as high (Sharma & Khapre, 2021). Even greater cessation rates, even above 40 percent, are recorded in studies conducted in high-income countries (Cao et al., 2022). The explanation of this difference could be seen in the quality of reach to the cessation support services in the rural part of Punjab as well as the reduction in creativeness of awareness of cessation services. The results align with Tan et al. (2022), who cited that rural residents do not tend to have access to healthcare infrastructure and community-specific healthcare messaging.

The fact that 30 percent of the participants had never smoked implies that non-smoking norms have not disappeared in a significant proportion of male citizens. Very much the same protective trends were recorded by Semple et al. (2022) with cultural values being one of the factors that enhanced abstinence. The high rates of current smokers, however, are a cause of concern that these types of protective norms may be degraded without focus on prevention efforts. Comparisons with the situation in Southeast Asia have revealed that regions characterized by high community-based efforts towards anti-smoking campaigns have managed to keep the smoking uptake levels (Boderie et al., 2021) low amongst young adults. The results suggest that prevention initiatives in the Punjab rural areas could reap the benefit of using cultural and religious stories as well as the communication of health messages.

Conclusion

The surveys found that there is a high proportion of cigarette smoking among the grown-up men in the countryside of Punjab and over half the respondents were reported as cigarette smokers. Influence by peers ranked as the greatest reason as to why people start to smoke followed by stress relief, curiosity, family influence as well as easy access to cigarettes at low prices. The results emphasize the robust effect of social processes, United States economic conditions,

and coping strategies on smoking behavior in populations residing in rural areas. The relatively low proportion of ex-smokers shows that there exist high cessation barriers, which is probably attributed to low awareness, resources, and access to cessation programs. These findings highlight the necessity of culturally specific, community-based tobacco control interventions (not only aimed at prevention but also related to cessation) in rural Pakistan.

Recommendations

1. Conduct local language awareness programs involving the communities by laying emphasis on health hazards of smoking and demystifying prevalent myths.
2. Combine prevention education against smoking in schools and community centers to address the elements of curiosity and peer pressure among the young folks
3. Provide local healthcare amenities in rural areas with smoking cessation support measures like counseling and nicotine replacement therapies which should be cost-effective and easily accessible to patients.
4. To reduce affordability, implement more rigid laws on selling and distributing the cigarettes such as higher taxes and reduced informal channels of sale.
5. Design stress management and mental health support initiatives into the rural populations which will provide healthier coping solutions.
6. Consider involving local church leaders and community leaders and opinion makers to spread smoke-free norms and strength cultural values that promote a taboo to the tobacco use.
7. Undertake periodic surveillance to continue to surveil smoking prevalence in rural areas and the effectiveness of interventions in rural areas.

References

- Abdelkader, R., Maabreh, R. S., Al-Dgheim, R., Altarawneh, N. S., Alrabab'a, M. H., Zaiton, H., ... & Elshatarat, R. A. (2024). The impact of tobacco use and nicotine addiction on health: A literature review of nursing interventions for smoking cessation. *Journal of Integrative Nursing*, 6(4), 218-230.
- Boderie, N. W., Mölenberg, F. J., Sheikh, A., Bramer, W. M., Burdorf, A., van Lenthe, F. J., & Been, J. V. (2021). Assessing public support for extending smoke-free policies beyond enclosed public places and workplaces: protocol for a systematic review and meta-analysis. *BMJ Open*, 11(2), e040167.
- Boderie, N. W., Sheikh, A., Lo, E., Sheikh, A., Burdorf, A., van Lenthe, F. J., ... & Been, J. V. (2023). Public support for smoke-free policies in outdoor areas and (semi-) private places: a systematic review and meta-analysis. *EClinicalMedicine*, 59.
- Cao, S., Xie, M., Jia, C., Zhang, Y., Gong, J., Wang, B., ... & Duan, X. (2022). Household second-hand smoke exposure and stunted growth among Chinese school-age children. *Environmental Technology & Innovation*, 27, 102521.
- Chan, K. H., Wright, N., Xiao, D., Guo, Y., Chen, Y., Du, H., ... & Liu, J. (2022). Tobacco smoking and risks of more than 470 diseases in China: a prospective cohort study. *The Lancet Public Health*, 7(12), e1014-e1026.
- Gough, B., & Novikova, I. (2020). Mental health, men and culture: how do sociocultural constructions of masculinities relate to men's mental health help-seeking behaviour in the WHO European Region?. WHO.
- Menon, S., Singh, S., & Rathore, B. S. (2024). Socio-cultural determinants of tobacco consumption: a study of migrant and local workers in a district of Punjab, India. *Journal of Ethnicity in Substance Abuse*, 23(4), 806-822.
- Merianos, A. L., Fevrier, B., & Mahabee-Gittens, E. M. (2021). Telemedicine for tobacco cessation and prevention to combat COVID-19 morbidity and mortality in rural areas. *Frontiers in Public Health*, 8, 598905.
- Oliveira, G. M. M. D., Mendes, M., Dutra, O. P., Achutt, A., Fernandes, M., Azevedo, V., ... & Morais, J. A. (2019). 2019: Recommendations for reducing tobacco consumption in Portuguese-speaking countries-positioning of the federation of Portuguese language cardiology societies. *Arquivos Brasileiros de Cardiologia*, 112(4), 477-486.
- Prochaska, J. J., & Benowitz, N. L. (2019). Current advances in research in treatment and recovery: Nicotine addiction. *Science Advances*, 5(10), eaay9763.
- Semple, S., Dobson, R., O'Donnell, R., Abidin, E. Z., Tigova, O., Okello, G., & Fernández, E. (2022). Smoke-free spaces: a decade of progress, a need f.
- Shah, G., Bhatt, U., & Soni, V. (2023). Cigarette: an unsung anthropogenic evil in the environment. *Environmental Science and Pollution Research*, 30(21), 59151-59162.
- Sharma, T., & Khapre, M. (2021). Exposure of second hand smoke in women and children: a narrative review. *Journal of Family Medicine and Primary Care*, 10(5), 1804-1807.
- Sinha, S. K., & Haider, M. N. (2024). Tobacco and health effects. *TOBACCO & PUBLIC HEALTH: Tobacco and Community Well-being: A Worldwide Health Crisis*, 101.
- Tan, G. P. P., Teo, O., & van der Eijk, Y. (2022). Residential secondhand smoke in a densely populated urban setting: a qualitative exploration of psychosocial impacts, views and experiences. *BMC Public Health*, 22(1), 1168.
- Todd, K. P., Thornburgh, S., Pitter, R., Gamarel, K. E., & Peitzmeier, S. (2022). Masculine identity development and health behaviors in transmasculine individuals: A theory of gender and health. *SSM-Qualitative Research in Health*, 2, 100186.

- Trigg, J., Skelton, E., Lum, A., Guillaumier, A., McCarter, K., Handley, T., ... & Bonevski, B. (2023). Smoking cessation interventions and abstinence outcomes for people living in rural, regional, and remote areas of three high-income countries: A systematic review. *Nicotine and Tobacco Research*, 25(11), 1709-1718.
- Vance, L., Glanville, B., Ramkumar, K., Chambers, J., & Tzelepis, F. (2022). The effectiveness of smoking cessation interventions in rural and remote populations: systematic review and meta-analyses. *International Journal of Drug Policy*, 106, 103775.
- Zubair, F., Husnain, M. I. U., Zhao, T., Ahmad, H., & Khanam, R. (2022). A gender-specific assessment of tobacco use risk factors: evidence from the latest Pakistan demographic and health survey. *BMC Public Health*, 22(1), 1133.

