

An Analysis of Public Knowledge, Attitudes, and Practices Regarding Cigarette Smoking: A Cross-Sectional Survey of Residents in Lahore, Pakistan

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ARTICLE INFO	ABSTRACT
Keywords: KAP; Cigarette Smoking; Perception; Lahore; Pakistan	Tobacco smoking remains a formidable public health challenge in low- and middle-income countries like Pakistan. This cross-sectional study aimed to assess the knowledge, attitudes, and practices (KAP) regarding cigarette smoking among 800 residents of Lahore, selected via a multi-stage sampling technique. The findings reveal a smoking prevalence of 23%, with initiation primarily occurring in late adolescence (mean age 19.2 years) and driven predominantly by peer pressure (75%) and stress relief (56.3%). While knowledge of major health risks like lung cancer was high (94%), a significant gap existed between this knowledge and personal risk perception, alongside the powerful influence of socio-cultural norms, including the high social acceptability of male smoking (75.5%) and the perceived efficacy of smoking for stress relief (81.8%). The study concludes that despite adequate awareness, smoking behavior in Lahore is sustained by deep-rooted social and cultural factors, underscoring the urgent need for public health interventions that extend beyond informational campaigns to address these normative and psychological drivers.
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1. INTRODUCTION

Tobacco smoking remains one of the most significant public health challenges globally, implicated in over eight million deaths annually (WHO, 2018; Khoso et al., 2025^a). It is a primary risk factor for a spectrum of non-communicable diseases, including cardiovascular disorders, respiratory illnesses, and various cancers, placing an immense burden on healthcare systems and economies worldwide (Zaheer et al., 2025; Khoso et al., 2024). While the global prevalence of smoking has seen a gradual decline in many high-income countries (Guo & Quan, 2020), the trend in low- and middle-income countries (LMICs) (Shankar et al., 2022), including Pakistan, presents a more concerning picture. Pakistan is

among the countries with a high tobacco consumption burden, with an estimated 24 million adults using tobacco products, contributing to a growing epidemic of tobacco-related morbidity and mortality (Nizami et al., 2011).

The metropolitan city of Lahore, as the cultural, educational, and economic heart of Punjab province, provides a critical context for such an investigation. With a population exceeding 13 million, Lahore embodies a complex socio-cultural tapestry where traditional practices often intersect with modern influences. Despite national-level tobacco control measures, such as the Prohibition of Smoking and Protection of Non-smokers Health Ordinance, 2002, and subsequent regulations on advertising and public smoking, implementation and compliance remain inconsistent (CDC, 2011). The persistent high prevalence of smoking suggests that legislative efforts alone are insufficient to curb the habit, pointing to the powerful influence of underlying social, cultural, and perceptual factors (Ahmad et al., 2005).

Central to understanding and effectively combating the tobacco epidemic is the exploration of the perceptions of the local people (Khoso et al., 2025^c). Perception encompassing knowledge, attitudes, beliefs, and social norms is a fundamental determinant of health behavior (Naseeb et al., 2025). In the context of Lahore, smoking is often deeply embedded in social rituals, perceived as a stress-reliever, a symbol of modernity or masculinity, and an integral part of social gatherings. Conversely, there may be growing awareness of its health risks and associated social stigma (Khoso et al., 2025^b). However, the nuanced interplay of these competing perceptions is not well-documented (Delucchi et al., 2009). A critical research gap exists in understanding how the residents of Lahore perceive smoking: what are their beliefs about its causes and consequences? What social norms govern its acceptability? How is their knowledge of health risks translated, or not, into behavioral intention or change?

Therefore, this study aims to conduct an in-depth investigation into the perceptions of the local people in Lahore towards cigarette smoking. By employing a case study methodology, this research will seek to explore the sociocultural drivers, the awareness of health risks, the perceived social acceptability, and the personal experiences that shape smoking behaviors within this specific urban context. The findings of this study are anticipated to provide valuable, context-specific evidence that can inform the design of more effective, culturally resonant public health interventions, communication campaigns, and policy reinforcements aimed at reducing the prevalence of smoking and its associated health burdens in Lahore and similar urban settings in Pakistan.

2. METHOD

This chapter outlines the research design, study setting, population, sampling techniques, data collection instruments, and procedures for data analysis employed in this investigation. A structured and systematic approach was adopted to ensure the reliability and validity of the findings regarding the perceptions of Lahore's local population towards smoking.

1. Research Design

A cross-sectional study design was employed to collect quantitative data at a single point in time. This design was deemed appropriate for capturing a snapshot of the prevailing knowledge, attitudes, and practices related to smoking among the residents of Lahore. The study utilized a descriptive and analytical approach to not only describe the prevalence of smoking and associated perceptions but also to explore relationships between demographic variables and key outcomes.

2. Study Setting and Population

The study was conducted in the city of Lahore, Pakistan. Lahore, the capital of Punjab province, is a major metropolitan center with a diverse population encompassing a wide range of socio-economic, educational, and cultural backgrounds. The target population consisted of permanent residents of Lahore aged 18 years and above. This age threshold was selected to include adults who are legally able to smoke and are capable of providing informed consent.

3. Sampling Technique and Sample Size

A **multi-stage sampling technique** was used to ensure a representative sample.

- Stage 1: Stratified Sampling. Lahore was divided into three main strata based on administrative towns to ensure geographical spread (e.g., one town from the inner city, one from the suburban area, and one from the peri-urban fringe).
- Stage 2: Cluster Sampling. Within each selected town, four Union Councils (UCs) were randomly selected as clusters.
- Stage 3: Systematic Random Sampling. From each selected UC, households were chosen at regular intervals (e.g., every 5th house). From each household, one eligible adult (aged 18+) was selected using the Kish method to avoid selection bias and ensure every member had an equal chance of participation (de Rada, 2021).

The sample size was calculated using the sample size calculator. With an estimated population size of over 10 million, a conservative prevalence (p) of 50% for key attributes, a 5% margin of error, and a 95% confidence level, the minimum required sample size was 385. To enhance the power of the study and account for potential non-response, the final sample was inflated to 800 participants.

4. Data Collection Instrument

Data was collected using a structured, pre-tested questionnaire, which was developed after an extensive review of the literature. The questionnaire was composed of five sections:

- Section A: Demographic Information. This included questions on age, gender, education level, occupation, income, and locality.
- Section B: Smoking Prevalence and Patterns. This section assessed current smoking status (current, former, never-smoker), age of initiation, frequency of use, type of tobacco products used, and number of cigarettes smoked per day.
- Section C: Knowledge of Health Risks. This part evaluated participants' awareness of the health consequences of smoking through a series of yes/no questions and Likert-scale items on the perceived severity of risks (e.g., lung cancer, heart disease, effects of secondhand smoke).
- Section D: Attitudes and Social Norms. This section utilized a 5-point Likert scale (from Strongly Agree to Strongly Disagree) to gauge perceptions on social acceptability, peer influence, stress relief, and attitudes towards tobacco control policies.
- Section E: Reasons for Initiation/Abstinence. Open-ended and multiple-choice questions were used to explore the primary reasons for starting to smoke (for smokers) or for never smoking/quitting (for non-smokers and former smokers).

The questionnaire was initially prepared in English, translated into Urdu (the national language), and then back-translated into English to ensure conceptual consistency. It was pre-tested on a pilot sample of 30 individuals not included in the main study to check for clarity, flow, and reliability. Cronbach's Alpha was calculated for the Likert-scale sections and was found to be 0.78, indicating acceptable internal consistency.

5. Data Collection Procedure

Data was collected over a period of three months (e.g., January to March 2024). A team of trained research enumerators, fluent in both Urdu and Punjabi, conducted face-to-face interviews. Prior to each interview, the purpose of the study was explained, and written informed consent was obtained from every participant. Anonymity and confidentiality were assured. The interviews took approximately 15-20 minutes to complete.

6. Data Analysis

The collected data was entered, cleaned, and analyzed using Statistical Package for the Social Sciences (SPSS) version 26.0. Descriptive statistics were computed for all variables and are presented as frequencies, percentages, means, and standard deviations in the form of tables (as shown in the Results section). Inferential statistics, including Chi-square tests to examine associations between

categorical variables (e.g., gender and smoking status) and independent t-tests to compare means between groups, were also conducted. A p-value of less than 0.05 was considered statistically significant.

3. FINDINGS AND DISCUSSION

Findings

The study surveyed 800 residents of Lahore to assess their perceptions, knowledge, and attitudes towards smoking. The results are presented below, covering demographic data, smoking prevalence, knowledge of health risks, perceived social norms, and reasons for smoking initiation.

Table 1: Demographic Characteristics of the Study Sample (N=800)

Characteristic	Category	Frequency (n)	Percentage (%)
Gender	Male	448	56.0%
	Female	352	44.0%
Age Group	18-25 years	280	35.0%
	26-35 years	240	30.0%
	36-45 years	176	22.0%
	46 years and above	104	13.0%
Education Level	No Formal Education	64	8.0%
	Matriculate or below	200	25.0%
	Intermediate	224	28.0%
	Undergraduate & above	312	39.0%
Locality	Urban	520	65.0%
	Peri-urban/Rural	280	35.0%

The sample consisted of 800 participants, with a slightly higher proportion of males (56%). The majority of respondents were young adults, with 65% falling between the ages of 18 and 35. Education levels were varied, with 39% holding an undergraduate degree or higher. Most participants (65%) resided in urban areas of Lahore.

Table 2: Smoking Prevalence and Patterns among Respondents (N=800)

Smoking Status	Frequency (n)	Percentage (%)	Average Age of Initiation (Years)	Cigarettes per Day (Mean)
Current Smoker	184	23.0%	19.2	11.5
Former Smoker	72	9.0%	20.1	-
Never Smoked	544	68.0%	-	-
Total	800	100%		

The data on smoking prevalence revealed that nearly a quarter (23%) of the sample identified as current smokers, while 9% were former smokers. The vast majority of smokers initiated the habit in their late teens or early adulthood, with an average age of initiation of 19.2 years. Current smokers consumed an average of 11.5 cigarettes per day.

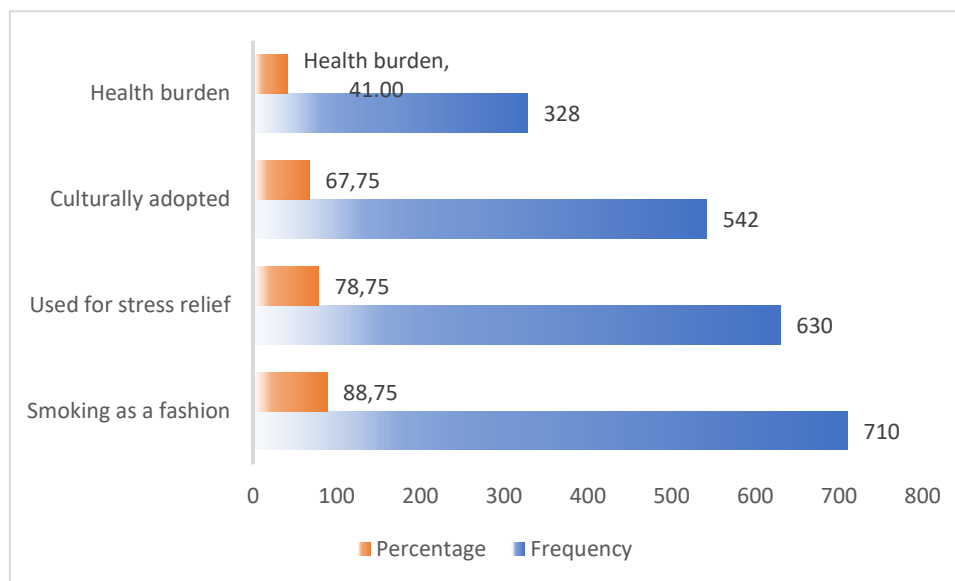


Figure 1: Smoking Consideration in the study area

Figure-1 highlights the smoking consideration in the study area defining the highest concern of smoking as a fashion with respondents (n=710; M=88.75). While, the second highest majority of the respondents with (n=630; M=78.75) as a stress relief. Besides that, the smoking is also considered to be the culturally adopted with n=542; M=67.75). Lastly, it was considered to be the burden on health with (n=328; M=41.00).

Table 3: Knowledge and Perceptions of Health Risks Associated with Smoking
(Responses from all participants, N=800; multiple responses possible)

Health Risk	Acknowledge Risk (n)	Acknowledge Risk (%)	Believe it is a 'Major' Risk to Themselves* (n=736)
Lung Cancer	752	94.0%	688 (85.9%)
Heart Disease	672	84.0%	560 (70.0%)
Respiratory Illness (e.g., COPD)	616	77.0%	480 (60.0%)
Harm to Fetus (Pregnant Women)	584	73.0%	452 (56.5%)
Secondhand Smoke Harm to Others	520	65.0%	392 (49.0%)

Knowledge of specific health risks was high for well-publicized conditions like lung cancer (94%) and heart disease (84%). However, awareness dropped for risks associated with secondhand smoke, with only 65% acknowledging its harm to others. When asked if they believed these risks were a "major" threat to their own personal health, the percentages were consistently lower, indicating a gap between general knowledge and personal risk perception.

Table 4: Perceived Social Norms and Acceptability of Smoking

Statement	Strongly Agree/Agree	Neutral	Strongly Disagree/Disagree
Smoking is socially acceptable among men.	75.5%	15.0%	9.5%
Smoking is becoming less acceptable for women.	68.0%	20.5%	11.5%
Refusing a cigarette offered by a friend is difficult.	71.2%	12.8%	16.0%
Smoking is an effective way to relieve stress.	81.8%	8.2%	10.0%
Smoking should be banned in all public places.	45.5%	20.5%	34.0%

The perception of social norms revealed a strong gendered dimension, with a vast majority (75.5%) agreeing that smoking is socially acceptable among men. A key finding was the powerful perception of smoking as a stress-relief mechanism (81.8% agreement). Furthermore, social pressure was evident, as 71.2% of respondents found it difficult to refuse a cigarette offered by a friend. Support for comprehensive public smoking bans was moderate at 45.5%.

Table 5: Primary Reasons for Smoking Initiation as Reported by Smokers and Former Smokers (n=256)*(Multiple responses possible)*

Reason for Initiation	Frequency Reported (n)	Percentage of Smoker Group (%)
Peer Pressure / Friend Influence	192	75.0%
Curiosity / Experimentation	168	65.6%
To Relieve Stress / Anxiety	144	56.3%
To "Fit In" or Appear Grown-up	120	46.9%
Family Members Smoking	72	28.1%
Influence of Tobacco Advertising	48	18.8%

An analysis of the reasons for smoking initiation among the smoker/former smoker group highlighted the predominant role of social influence. Peer pressure was the most cited factor (75%), followed by curiosity (65.6%) and stress relief (56.3%). The influence of family members who smoked was also a significant factor for over a quarter of the respondents (28.1%), whereas direct advertising influence was reported less frequently (18.8%).

Discussions

The findings from this investigation into Lahore's populace illuminate a complex public health landscape where widespread awareness of smoking's detrimental health effects, particularly for diseases like lung cancer, does not readily translate into diminished personal risk perception or a reduction in smoking prevalence. This paradox, also observed in a case study of urban Bangladesh where knowledge failed to curb smokeless tobacco use (Islam et al., 2020; Ahmed et al., 2015), appears largely mediated by the powerful role of socio-cultural determinants. As seen in other South Asian contexts, the habit is predominantly initiated and sustained through peer influence and is perceived as a socially sanctioned male behavior and a primary psychological coping mechanism for stress (Iqbal et al., 2022). The modest level of endorsement for comprehensive public smoking bans in our study echoes challenges documented in a case study of smoke-free policy implementation in Kathmandu, where social resistance hindered enforcement (Dahal et al., 2014). Therefore, curbing the tobacco epidemic in this setting necessitates moving beyond purely educational approaches to embrace strategies that

directly address these underlying drivers, including the implementation of social resistance training programs, the integration of mental health support to offer alternative stress management tools, and the consistent enforcement of policies that systematically deformatize smoking within its core cultural contexts.

4. CONCLUSION

In conclusion, this study elucidates a critical dissonance in Lahore's population, where high general awareness of smoking-related health risks coexists with a substantial smoking prevalence, largely mediated by potent socio-cultural determinants. The initiation and perpetuation of smoking are profoundly influenced by peer networks, gendered social norms, and its perceived role as a psychological coping mechanism, which collectively overshadow factual health knowledge. The modest public support for restrictive policies further highlights the entrenched nature of the habit. Therefore, effectively combating the tobacco epidemic in this context necessitates a paradigm shift from purely knowledge-based health education toward multifaceted strategies that actively counter social influences, de-normalize smoking, and provide accessible alternatives for stress management.

To effectively mitigate the smoking epidemic, a multi-pronged approach is recommended, beginning with the design and implementation of targeted behavioral change communication campaigns that specifically address the identified knowledge-to-perception gap and challenge the social acceptability of smoking, particularly among men. School and community-based programs should integrate social resistance training to equip adolescents with skills to refuse peer pressure, while public health initiatives must promote alternative stress management techniques. Furthermore, policy enforcement must be strengthened, including the strict implementation of bans on smoking in public places and a complete prohibition on tobacco advertising, coupled with the expansion of accessible and affordable smoking cessation services within primary healthcare systems to support those seeking to quit.

Future research should prioritize longitudinal studies to track changes in knowledge, attitudes, and practices over time and to establish causal pathways between socio-cultural factors and smoking initiation and cessation. Additionally, employing qualitative methodologies, such as in-depth interviews and focus group discussions, would provide a richer, more nuanced understanding of the contextual and psychological drivers of smoking behavior. Further investigation is also warranted to explore the differential effectiveness of various intervention models, including digital health campaigns and school-based resilience programs, and to examine the specific challenges and opportunities related to smoking cessation among different demographic subgroups, such as women and individuals of lower socio-economic status.

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