Factors Influencing Smoking Behavior Among Women in Pakistan: Insights from MICS 6 Survey

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Abstract

This research aims to identify the rapid growth of the smoking epidemic, especially among women, in contrast to the gradual decrease in smoking among men in Pakistan. The study analyzes quantitative data from the Multiple Indicator Cluster Survey (MICS) using a sample of 2,475 women. Multiple logistic regression was used to analyze the data. The results show that older women were more likely and educated women were less likely to use tobacco. Women from most economically affluent households were significantly less likely to smoke. Married women were less likely to smoke cigarettes when compared to unmarried women. The review of the literature reflected those sociocultural aspects such as changing roles of men and women, advertising attractiveness, and tobacco marketing may be some of the pertinent factors contributing to the rising trend of smoking among women in Pakistan. The study also calls for extending tobacco prevention and cessation strategies for young women of childbearing age and gender-sensitive health policy interventions. Some measures entail specific anti-smoking crusades that motivate women and increase tobacco advertisement control. The findings of this study are intended to inform the development of public health interventions and to enhance tobacco control efforts.

Keywords: *Smoking Trends, Women in Pakistan, Sociocultural Factors, Tobacco Control*

Introduction

Tobacco smoking is a leading cause of morbidity and mortality, yet it remains one of the most preventable health risks globally. Earlier, smoking was more common amongst the male gender. Regardless, recent trends indicate that tobacco use is increasing among women, especially in the developing world, including Pakistan. Previously, smoking among women was considered taboo in Pakistan, mostly because cigarettes and smoking were considered socially and culturally acceptable for males in a patriarchal society (Basit et al., 2020). However, a reversal in this trend has been observed recently, with many women, particularly those in urban areas, taking up smoking. This shift signifies an emergent public health concern as smoking is not only detrimental to the health of women smokers but may also negatively influence families and communities since the majority of women are still performing the gendered role of caregivers in Pakistani society (Bashirian et al., 2021). Studies show that a myriad of interconnected sociocultural, economic, and psychological factors may account for the rising number of women smokers in Pakistan.

Sociocultural change has been a common theme in Pakistan in recent decades because of Urbanization, the availability of new technology such as computers and media, and the status of women in economic, cultural, and social development. All such changes are paving the way for change as women in Pakistan are refusing to succumb to patriarchy within the social realm of their lives. This alteration extends beyond the blurring of the masculine or feminine typology and the social taboos of behaviors that were deemed inadmissible for women and are now acceptable behaviors for women, such as smoking.

These changes have given a slow process of changing the societal impression towards the smoking facet to women. Women in urban areas are living in a social environment that is becoming increasingly tolerant of smoking (Marshall et al., 2020). Popular media often presents smoking as a symbol of modernity and emancipation (Marshall et al., 2020). Young, educated women educated and from affluent households are especially susceptible to such misleading media messages and may erroneously view smoking as an expression of freedom from the clutches of patriarchy. However, the appeal of smoking transcends beyond affluent women, affecting women in the middle and lower socioeconomic strata. Over the years, the government has tried to curb tobacco sales and use by banning tobacco advertisements and endorsements and increasing cigarette taxes. However, the prices of tobacco products are still relatively low in Pakistan compared to those of developed countries in the Global North. Living in a society marred by poverty and polarization, many women from the economically disadvantaged classes may find themselves attracted to smoking as a coping mechanism against the cultural, economic, political, and social stressors that are embedded in modern life (Imran & Ozcatalbas, 2020). Therefore, women are vulnerable to factors that generally lead to cigarette smoking, such as stress, anxiety, and depression, and the affordability of tobacco products in Pakistan further exacerbates this issue. Furthermore, living in a culture that oscillates between economic pressures (due to rising

inflation) and social domination of women puts working women at a higher risk of experiencing stress as they strive to balance their work life with their family life, hence putting them at a greater risk of taking up smoking as a coping strategy (Alkhalaf et al., 2021). Moreover, there is a widespread belief that smoking aids in weight loss, and due to this, many women who are conscious of their weight take up this lethal habit. Environmental factors like the accessibility of tobacco products, secondhand smoke, and a general social tolerance for smoking may also have a direct or indirect influence on women's choice to smoke cigarettes (Martins et al., 2021). For instance, women who are exposed to smoking in their households are more likely to take up the habit themselves (Malik et al., 2019).

This paper sought to examine the determinants of smoking among women in Pakistan. The MICS 6 data that was collected in the provinces of Punjab (2017-18), KPK (2019), Sindh (2018-19) and Balochistan (2019-20) was merged and analyzed for this study. A sample of 2,475 women was extracted from this sample. All the women selected in the sample had smoked at least once in their lives, but 1,188 women (48%) were currently not smoking, while 1287 (52%) women were still actively smoking. Based on the review of literature, a myriad of independent variables, including age, place of residence (urban vs. rural), household wealth, education, marital status, motherhood status, belief in patriarchy, and access to media and communication technology (TV and mobile usage) were identified as independent variables. Logistic regression was performed to gauge the relationship between the dependent and the independent variables. Results showed that married, affluent, and educated women were less likely to smoke, while older women were more likely to smoke. Implications of findings for policy and future research are presented in the concluding section.

Literature Review

Age and Smoking Behaviour

It is also important to note that women's smoking behavior is somewhat related to their age since older women are more likely to smoke for one reason or another. One of them is the build-up of the life stressors that one may experience over the years, which may lead to the use of smoking as a form of stress relieving strategy (Zhao et al., 2021). Long-term exposure to such settings socializes smoking for older women, hence making it difficult for them to quit. Further, agha and Agha (2021) indicated a reduced perception of health as a priority concern or increasingly perceived as an unavoidable fate that aging women face. These factors relate to sociocultural factors where smoking acts as a way of coping with the societal demands of aging.

Education and Economic Determinants Impact on Smoking Behaviour

Education has allegedly influenced smoking behavior since it defines one's ability to receive information and materials concerning the maintenance of a healthy lifestyle. Women with higher education are usually more informed about the health issues associated with smoking and may also be in a better position to seek preventive measures, which include smoking control programs (Zubair et al., 2022). The learner holds knowledge that complements economic factors, meaning that people with high education tend to earn more. Therefore, they can afford healthcare and structures that

promote healthy lifestyles (Krishnamoorthy et al., 2020). On the other hand, female participants with low educational standards may not be able to access adequate health information and support structures to counteract stress. Therefore, these women may resort to smoking if they are also economically challenged. In such cases, the information provided might not be accurate, or people may lack adequate knowledge of the risks associated with smoking, which increases the number of smokers (Sharma et al., 2024). Further, for low-income, economically vulnerable women, smoking can act as a way to distract them from daily stress-inducing experiences and tasks facing them temporarily.

Marital Status and Psychological Factors Impact on Smoking Behaviour

Women's marital status is one of the significant determinants of smoking; being married tends to reduce the smoking index. In most cases, married women receive various social supports from their spouse. Therefore, the desire and or ability to engage in risky behaviors like smoking can be sufficiently discouraged (Achakzai et al., 2022). The availability of a supportive partner or family members can act as a buffer against stress, anxiety, and or depression, all of which are psychological factors that influence smoking behaviors greatly (Mangrio et al., 2024). On the other hand, unmarried women who might not have such support in the form of a close network are other are likely to experience higher levels of psychological distress, thus smoking to cope. For these women, smoking can act as an effective way of escaping the feelings of loneliness, stress, and anxiety because of a lack of social support system (Nadeem et al., 2024). The psychological factors in evidence suggest that social relationships determine health behavior and point to the influence of marital status in modulating smoking behavior.

Household Wealth and Economic Determinants Impact on Smoking Behaviour

Perceived household wealth is also another significant predictor of smoking behavior for women, whereby economic status plays a major role in determining the probability of smoking. The study also agrees with the view that women from affluent families are less exposed to smoking than their counterparts from less privileged families since they have access to better, improved, and well-equipped health facilities, smoking cessation programs, and other support structures that discourage smoking (Sharma et al., 2024). This can, among others, be explained by the fact that financial stability lowers the necessity of using smoking as a coping tool when dealing with economic difficulties (Hunter et al., 2019). Women of low income likely have considerable sources of stress that may cause smoking to seem a feasible means of handling aspects of poverty. Where the cost of cigarettes is relatively low, and there are few better options to turn to to reduce stress, some people will turn to smoking (Saleem et al., 2023). This has been compounded by economic pressures that include job insecurity, high stress levels occasioned by employment pressures, as well as work-life balance challenges, which make smoking the only relief for such stress.

Belief in Patriarchy and Sociocultural Influences Impact on Smoking Behavior

Smoking might also be associated with resistance to the patriarchal culture that many older women were raised in, especially those from regions like Pakistan, which are experiencing rapid social-cultural development (Parvez and Abdullah, 2022). This could be viewed as a direct act of independence, which is so needed in a society that has effectively 'enslaved' women into stereotypical gendered norms.

The cultural perceptions and acceptance of patriarchal culture influenced the smoking habits of women, especially where traditional cultures are adopted. Smoking by women has been associated with negative attitudes wherever such practices are deemed socially unacceptable or taboo. Nevertheless, in societies, particularly in the urban areas where there are social and cultural changes, some women turn to smoke as they cut off their attachment or break free from patriarchy. This behavior promotes a progressive culture concerning gender identity and self-management (Malik et al., 2019). Smoking becomes more than just a routine; it is a rebellion against the oppressive norms of society. In the context of young, educated women smokers, it can be seen as fashionable and modern to embrace smoking as it relates to fighting for the rights and equality of women for parity with their counterparts globally. Such transitions are not happening in a vacuum (Marshal let al., 2020). Rather, they are part of larger sociocultural transitions where smoking is not perceived primarily as a health issue but as an involution of freedom against conventional oppressive gender systematic norms.

Media Exposure and Sociocultural Influences on Smoking Behavior

This examined the role of media exposure in influencing smoking behavior with special consideration to young, frequently exposed urban women. Positive images of smoking are placed in films, television programs, advertisements, and social media, with the desirable images of smoking branding it as fashionable, stylish, intelligent, or rebellious, which can easily sway the young and vulnerable. The same goes for women who consider smoking a sign of freedom and modernity and attempt to follow the examples of the portrayed characters or celebrities (Imran & Ozcatalbas, 2020). Media remains one of the most influential forces in societies, especially when traditional values are being replaced by world seeks. Live TV content promotes smoking and makes it glamorous, hence causing an increased number of women to indulge in the vice as they try to achieve the liberated modernity portrayed on screen (Hunter et al., 2019). Thus, media plays a dual role: it gives a view into changing social trends. It simultaneously participates in the construction of the new trend by promoting cigarette smoking to display new fashion and a liberal spirit.

Geographical Location and Environmental Determinants Impacting on Smoking Behavior

Some general trends also affect the smoking characteristics of women, for instance, geographical location, as, in general, the smoking-related mortality rate is higher in urban areas than in rural areas. These findings may be explicable regarding various environmental factors, such as easy access

and accessibility to tobacco products in urban centers. Smoking can still be accepted and common among women in urban areas, and this is because urban settings have comparatively relaxed cultures and different cultural impacts (Imran & Ozcatalbas, 2020). Third, people get easier access to tobacco products in cities full of stores and shops that sell cigarettes, limited restrictions on sales of cigarettes, and various promotional campaigns. All these factors, when put together, give society an environment that promotes smoking and makes it easier to access (Haq et al., 2020). Further, other stress-related factors are the psychosocial and occupational stressors that urban women are likely to encounter, hence causing them to turn to smoking Hameed et al. (2021). An indication at both the first and second aspects implies that geographical location plays a role in health behaviors; for instance, while urbanization is closely linked to increased smoking rates, these are facilitated by social acceptability and product accessibility.

Methodology

This research adopts the secondary data analysis research method to examine determinants of smoking among women in Pakistan. For the present research, data was collected from the Multiple Indicator Cluster Survey (MICS), an extensive, cross-sectional survey of households in Pakistan. The MICS 6 data was collected in the provinces of Punjab (2017-18), KPK (2019), Sindh (2018-19), and Baluchistan (2019-20) separately. The data is collected by the respective bureaus of statistics for each province and supported by UNICEF (Sharma et al., 2024). These datasets were merged for the purpose of this study. MICS is well known for its strong data collection and covers nearly all aspects of health, education, and social well-being; therefore, it is appropriate to analyze the concern of this paper, smoking.

The MICS dataset includes a representative sample of women between 15-49 years of age within all the regions of Pakistan. A stratified sampling technique is employed in the administration of the survey. The survey includes all socio-demographic characteristics of the population and the target beneficiaries, such as the urban and rural residents of all income earners and people of different educational standards (Rahman et al., 2022). In the merged file a total of 2475 women were asked if they were 'currently smoking'. These cases were included in the data used for the present analysis. All these women had reported that they had smoked at least once in their life before. This introduces a limitation in this study as the data could be used to compare women who had smoked at least once in their lives but were not smoking anymore to women who were currently smoking. The dataset could allow for a comparison between women who had never smoked and women who were currently smoking. Based on a review of the literature, multiple potential determinants of smoking among women were identified and included in the current analysis as independent variables.

Logistic regression is the most appropriate binary technique for this study since it allows for the computation of the probability of occurrence of an event, such as smoking, when independent variables have occurred (Timoneda, 2021). In this study, the dependent variable is smoking status; the subjects are either smokers or nonsmokers. This variable was a construct from a question as to whether the woman has any habit of smoking any tobacco product at present. Independent variables include a range of socio-

demographic factors. From the demographic point of view, the most important factors included age, education level, marital status, employment status, income, and geographical region.

Analysis and Results

Table 1: Demographic Statistics-I

	Group	Frequency	Percentage
State	Punjab	1129	45.6
	Sindh	302	12.2
	KPK	218	8.8
	Balochistan	826	33.4
Place	Urban	1898	76.7
	Rural	577	23.3
Household wealth	Poorest	723	29.2
	Second	565	22.8
	Middle	475	19.2
	Fourth	415	16.8
	Richest	297	12.0
Education	None/Preschool	1764	71.3
	Primary	317	12.8
	Middle	112	4.5
	Secondary	122	4.9
	Higher	160	6.5
Age	15-19	203	8.2
	20-24	271	10.9
	25-29	339	13.7
	30-34	422	17.1
	35-39	446	18.0
	40-44	389	15.7
	45-49	405	16.4
Marital Status	Not Married	532	21.5
	Married	1943	78.5
Do you have any children	No children	605	24.4
	Have children	1870	75.6
Do you currently smoke	Don't Smoke	1188	48.0
	Currently Smoke	1287	52.0

Table 1 provides demographic statistics for the study population of women in Pakistan. The majority of participants are from Punjab (45.6%) and Balochistan (33.4%), with a significant portion living in urban areas (76.7%). Most women belong to the poorest (29.2%) or second wealth quintile (22.8%). Educationally, a large majority have no preschool education (71.3%), with only 6.5% having higher education. The age distribution is fairly even, with the largest groups aged 35-39 (18%) and 30-34 (17.1%). Most women are married (78.5%) and have children (75.6%), reflecting typical demographics of Pakistani women.

Table 2: Demographic Statistics-II

	Group	Frequency	Percentage
Belief in Patriarchy Composite score	Composite score (0)	1115	45.1
	Composite score (1)	162	6.5
	Composite score (2)	181	7.3
	Composite score (3)	172	6.9
	Composite score (4)	179	7.2
	Composite score (5)	415	16.8
	Missing	251	10.1
TV	Less than once a week	1485	60.0
	More than once a week	989	40.0
	Missing	1	.0
Mobile	Less than once a week	1166	47.1
	More than once a week	1306	52.8
	Missing	3	.1

Table 2 presents statistics on belief in patriarchy and media consumption among women in Pakistan. A significant portion of women (45.1%) scored the lowest on the patriarchal belief scale (Composite score (0)), indicating minimal belief in patriarchal norms. In comparison, a smaller percentage (16.8%) scored the highest (Composite score (5)), suggesting a stronger adherence to patriarchal views. Media consumption patterns show that most women watch TV less than once a week (60.0%), while a slightly smaller proportion (40.0%) watch more frequently. Mobile phone use is more balanced, with 52.8% using their phones more than once a week, compared to 47.1% using them less frequently.

Logistic Regression

Table 3: Omnibus Tests of Model Coefficients

	Chi-square	Df	Sig.
Step	533.730	27	.000
Block	533.730	27	.000
Model	533.730	27	.000

Table 3 displays the Omnibus Tests of Model Coefficients for the logistic regression analysis. The Chi-square statistic is 533.730 with 27 degrees of freedom, and the result is highly significant ($p < 0.001$). This indicates that the logistic regression model significantly improves the fit compared to a model with no predictors. The significant Chi-square value across all steps (Step, Block, and Model) confirms that the included predictors collectively explain the variability in the dependent variable, which is the smoking status among women in this context.

Table 4: Model Summary

-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
2547.513[a]	.213	.285

Table 4 provides the Model Summary for the logistic regression analysis. The -2 Log Likelihood statistic is 2547.513, which reflects the model's fit to the data. The Cox & Snell R Square value is 0.213, and the Nagelkerke R Square is 0.285. These R Square values indicate that the model explains 21.3% to 28.5% of the variance in smoking behavior among women. The Estimation was terminated at iteration 6, indicating that parameter estimates had stabilized and the model convergence was achieved. Overall, the model demonstrates a moderate fit, explaining a significant proportion of the variability in smoking status.

Table 5: Logistic Regression Model

Factors Influencing Smoking Behavior Among Women in Pakistan

	B	S.E.	df	Sig.	Exp(B)
State					
Punjab			3	.000	
Sindh	0.17	0.15	1	.273	1.18
KPK	-2.21	0.29	1	.000	**0.11**
Balochistan	0.27	0.14	1	.047	**1.31**
Place (0=Urban, 1=Rural)	-0.09	0.13	1	.501	0.92
Household wealth					
Poorest			4	.000	
Second	-0.22	0.13	1	.086	0.80
Middle	-0.14	0.16	1	.349	0.86
Fourth	-0.30	0.18	1	.091	0.74
Richest	-0.99	0.22	1	.000	**0.37**
Education					
None/Preschool			4	.000	
Primary	-0.31	0.14	1	.033	0.73
Middle	-1.01	0.27	1	.000	**0.36**
Secondary	-1.31	0.28	1	.000	**0.27**
Higher	-2.18	0.36	1	.000	**0.11**
Age					
15-19			6	.000	
20-24	0.03	0.25	1	.889	1.04
25-29	-0.03	0.26	1	.903	0.97
30-34	0.48	0.25	1	.052	1.62
35-39	0.67	0.25	1	.008	**1.96**
40-44	0.79	0.26	1	.002	**2.20**
45-49	1.02	0.26	1	.000	**2.78**
Currently married (0= Not married, 1= Married)	-0.54	0.17	1	.001	**0.58**

Have children (0=No Children; 1= Has Children)	-0.19	0.17	1	.255	0.82
Belief in Patriarchy					
Composite score (0)			5	.000	
Composite score (1)	-0.48	0.19	1	.010	0.62
Composite score (2)	-.041	0.18	1	.024	0.66
Composite score (3)	-0.61	0.19	1	.001	0.54
Composite score (4)	-0.66	0.18	1	.000	0.52
Composite score (5)	-.418	0.13	1	.002	0.66
TV (0= less than one a week; 1= more than once a week)	-0.12	0.12	1	.313	0.88
Mobile use (0= less than once a week; 1= more than once a week)	-0.29	0.11	1	.008	0.75

Table 5 reveals several significant factors influencing smoking among women in Pakistan. Notably, geographic location plays a critical role, with women from Khyber Pakhtunkhwa showing significantly lower odds of smoking (Exp(B) = 0.110, p < 0.001). In comparison, those from Sindh have higher odds (Exp(B) = .273, p = 1.184). Economic status is also significant; women in the richest wealth quintile have significantly lower odds of smoking (Exp(B) = 0.369, p < 0.001), highlighting the protective effect of higher income. Educational attainment further impacts smoking behavior, with higher education levels associated with substantially lower odds of smoking, particularly for those with the highest education level (Exp(B) = 0.114, p < 0.001). Income levels are positively associated with smoking; higher wage categories, especially the highest (Exp(B) = 2.777, p < 0.001), increase smoking odds. Marital status also affects smoking, with currently married women having lower odds (Exp(B) = 0.580, p = 0.001). Beliefs in patriarchal norms correlate with reduced smoking odds, especially among those with higher belief scores (Exp(B) = 0.516, p < 0.001). Frequent mobile phone use is linked to lower smoking odds (Exp(B) = 0.747, p = 0.008). Conversely, factors such as place of residence, household wealth in lower categories, having children, TV usage, and the frequency of mobile use do not significantly impact smoking behavior, suggesting that these variables are less influential in determining smoking habits among women in Pakistan.

Discussion

From this research, it is seen that the smoking behavior of women in Pakistan is affected by these sociocultural, economic, psychological, and environmental factors. Socio-culturally, the customs of globalization, urbanization, and westernization have exploded the conventional norms where smoking has been linked with modernity and freedom, mainly in the

urban centers of Karachi and Lahore. This change is an excellent example of the concept of cultural globalization that defines how global trends influence the health processes happening in urban environments (Achakzai et al., 2022). Evaluating the findings, cigarette price sensitivity is the most important economic factor. Hopes of reducing smoking through implementing high tariffs to balance incidences of smoking have, however, been elaborated by citizens after discovering that cigarettes are easily accessible even by low-income earning women. This realization lets female individuals of a poor background purchase cigarettes; this is particularly done to relieve the existing economic pressure and financial strain, in line with what Malik et al. (2019) assert concerning the socio-economic origin of stress and related health risk-taking behaviors. The results of both the demographic and psychosocial factors indicate that they play a very important and crucial role in smoking among women. Anxiety and depression appear as stress and other mental health concerns, which are alarming risk factors for smoking, minimal healthy mental support, and coping strategies (Parvez & Abdullah, 2022). This implies the coordination of two or more public health interventions, one of which is mental health and tobacco use. Environmental conditions or factors also influence smoking behaviors. Foot access to the banned tobacco products in different retail shops and homes enables continued smoking. Further, the low level of perceived severity of the smoking-related health consequences by the youths also explains the sustenance of these practices. However, these conclusions demonstrate the entangled relationship of sociocultural, economic, psychological, and environmental factors in terms of smoking among women in Pakistan.

Conclusion

In conclusion, these peculiarities in the smoking rates among women in Pakistan can be explained by a combination of sociocultural factors, economic, psychological, and environmental factors, as well as the patriarchal culture in Pakistani society. Social changes due to urbanization and global influence have particularly influenced the view on smoking through cultures and attitudes found in urban settings that depict smoking as modern and emancipating. Specifically, the youth, especially female and urban dwellers, may consider smoking as a freedom to choose since it has been propelled by culture. Periodic educational campaigns organized all around these perceptions of culture could assist in eradicating this desire; this suggests the effects of smoking and the fact that smoking is not even a modern fad. Socially, for example, through factors like higher tobacco taxes, smoking is still accessible to many women, for instance, those of low income. This affordability leads to sustaining smoking habits, especially among people with low incomes or the 'less fortunate' in society. Other policy implications include raising tobacco taxes even higher to discourage tobacco usage as well as passing special grants to support smoking cessation programs among the targeted low-income women.

Moreover, including economic support measures in other social policies that comprehensively fight against smoking could help to establish the necessary conditions to quit. Emotionally, people then turn to smoking, especially when dealing with stress and other related mental health

complications. High-perceived patriarchy may be stressful for women and results in smoking behaviors because of increased endorsement of such norms, as found in the study. It is essential for improving mental health and for integrating psychological assistance into smoking cessation programs to tackle these problems. Such programs should take into account the possible influences of patriarchal perceptions on women's psychological health as well as smoking inclinations. Availability of tobacco and secondhand smoke are also considered to be driving forces of smoking persistence. These environmental influences can be reduced through the enhancement of measures on sales of tobacco products, the enactment of no-smoking areas, and enhanced campaigns on the harms of secondhand smoking.

Further studies should focus on the outcomes of interventions where one or some of the sociocultural, economic, psychological, and environmental components act in concert. Examining the mediated effect of patriarchy on smoking behavior and the effectiveness of such policies across regions can offer means of designing better strategies. Managing these variables in the broadest sense possible can assist women in stopping smoking and achieving total well-being.

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