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Unraveling the Tobacco Menace: Association of Socio-Demographic Factors and Tobacco Usage in Pakistan

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Abstract: Background: The purpose of this study was to assess the association of social and demographic factors with tobacco usage in Pakistan using secondary data from the Pakistan Demographic and Health Survey 2017-18.**Methods:** The study used a sample of 18731 cases of population aged 15 – 49 years of which 80.3% were women and 19.7% were men. The social and demographic variables used in the analysis were age, gender, region, social organization, education, social class, marital status, number of deceased children, number of household members, number of information sources, current employment status, usage of other drugs, and belief in patriarchy. Data was analyzed using SPSS (v.23) and multivariate binary logistic regression analysis was conducted to predict odds of tobacco usage with respect to independent variables. A gendered analysis was also performed to assess differences in tobacco usage among men and women. **Results:** The results showed that the odds of tobacco usage were highest in 45 – 49 years' age interval (AOR = 2.71, p<.001), lower in females (AOR = 0.19, p < .001), higher in Balochistan (AOR = 2.32, p< .001), higher in urban areas (AOR = 1.15, p < .05), lower in higher education and social class groups, and higher in respondents with higher number of deceased children, usage of other drugs, and belief in patriarchy (AOR = 1.07, p < .001). **Conclusion:** The study concludes that general as well as targeted interventions for different age brackets and genders are required to end the menace of tobacco usage in Pakistan.

Keywords: Tobacco usage, Belief in patriarchy, DHS, Risk Factors, Pakistan

1. Introduction

Tobacco usage worldwide is now considered a health emergency. With a growing number of people getting involved in either smoking or the usage of tobacco is an alarming situation. World Health Organization [WHO] (2023) reported that with more than 8 million deaths annually attributable to tobacco use, tobacco use is still one of the major risks to public health, and tobacco control is still a top concern for global health. There is no debate over the adverse consequences related to it as it is now a global concern. This century-old practice continues to be one of humanity's most powerful opponents in a world of medical innovation, orchestrating a symphony of avoidable deaths surreptitiously (Friel et al., 2023). As one of the leading preventable causes of premature death, tobacco is the only commercial product that, when taken as intended, kills half of its users (WHO, 2023). Beyond the relentless grasp of an individual smoker, tobacco use resonates through families, reverberates throughout societies, and sends shock waves through economies. Smoked or smokeless tobacco is consumed in a variety of ways around the world (Shaik et al., 2021). The new trend in this domain is the use of smokeless tobacco (Ghosal et al., 2021). Worldwide, a variety of smokeless tobacco products are produced (Smoke & Smoking, 2004). More than 300 million individuals worldwide consume it (Siddiqi et al., 2020). This is a developing issue in South Asia due to its cultural acceptance and popularity among women when compared to smoked tobacco (Chugh et al., 2023). WHO predicts that the 5.6 trillion cigarettes smoked yearly at the end of the 20th century will have killed close to 10 million people by the year 2030.

Many developing countries are experiencing an unprecedented increase in non-communicable diseases, partly as a result of changing demographics and lifestyles (Azzouzi et

al., 2022). Numerous risk factors for diabetes, heart disease, lung illnesses and cancer are caused by lifestyle choices and can be avoided globally (Balwan&Kour, 2021). Tobacco is the number one enemy when it comes to non-communicable disease risk factors (Tachfouti et al., 2014). It is a well-known contributor to cancer, as well as chronic respiratory and cardiovascular conditions (Boutayeb&Boutayeb, 2005). The history of tobacco use, the development of the tobacco business, and the strategies it employed to promote its deadly goods have all been well documented in the literature (Brown et al., 2023). In contrast, there is a more recent history around the connection between passive smoking and health (i.e., non-smokers inhaling tobacco smoke from individuals who are smoking). The mechanisms by which complex tobacco-smoke exposure results in disease have been widely investigated in the scientific literature (Samet, 2013; Apatzidou, 2022). Controlling disease requires ongoing surveillance of its causes (Dai et al., 2022). In numerous countries, surveys are regularly conducted to monitor the prevalence of smoking (Shkolnikov et al., 2020). Typically, students and general population samples are used in such surveys.

Consuming tobacco is not simply a personal decision and problem; it also poses a public health problem, burdening healthcare systems with a plethora of diseases that can be traced back to tobacco use (Leeson& Thompson, 2021). The pernicious tendrils of tobacco go deep into the pockets of nations, siphoning funds for medical expenses and losses in labor productivity (John et al., 2021). In addition to harming a smoker's health and quality of life, tobacco-related ailments cost billions of dollars in medical expenses and result in losses in human capital and productivity, placing a significant financial burden on governments and individuals (Fuchs et al., 2019). A large share of money is spent on tobacco-related expenses in low- and middle-income households' budgets than in high-income households. Small amounts of tobacco smoking by some (but not all) family members may result in a significant reduction in the family's access to basics like food, housing, and education (Nguyen et al., 2022). A long-term solution could be youth prevention however, a reduction in current smokers numbers is important for improving our country's health in the immediate future (Levy & Friend, 2002). Many of the negative health impacts of smoking can be reversed if current smokers stop (Benowitz et al., 2021). There is, therefore, a necessity to analyze the intricate web of causes supporting this avoidable disease and to enlighten paths leading to a smoke-free horizon.

The devastation caused by tobacco has no respect for geographical borders or societal boundaries (Oppong, 2020). Although the habit may be pervasive across the globe, the most harrowing tales about it frequently unfold in less developed countries (Thandra et al., 2021). Pakistan is no exception when one looks at the issue of tobacco use. In a country like Pakistan which is already struggling with issues like poverty, illiteracy, unemployment, etc. tobacco usage becomes a threat that is at a lower priority of the government due to the non-availability of funds in the health sector. The current article therefore aims to explore the association between socio-demographic factors and tobacco usage in Pakistan. Various factors play an important role in determining one's smoking habit as highlighted by several studies (Momenabadi et al., 2016). These factors comprise of but are not restricted to the region they belong to (Duncan et al., 1999), the province they live in (Nasir&Rehan, 2001), their educational level overall, and the time when they started to smoke (Rozi et al., 2007). Gender is an interesting phenomenon to look into as women are also drifting towards smoking (Zubair et al., 2022). Media plays an important role in creating awareness or marketing hence its access to an individual could be a key factor (Nizami et al., 2011; Bush et al., 2003). Employment is important as the amount of disposable income available could have a link with their autonomy leading to the habit of smoking (Stead et al., 2001). This study will therefore look at the association of social and demographic variables such as age, gender, social class, education, region, social organization, employment status, number of household members, number of information sources available, and marital status in addition to number of deceased children, usage of other drugs, and patriarchal beliefs with tobacco usage in Pakistan using data from Pakistan Demographic and Health Survey (PDHS) 2017-18.

2. Materials and Methods

Design and Sample

The current study analyzed data from Pakistan Demographic Health Survey (PDHS) 2017-18 using 18731 cases of the population aged 15 – 49 years of which 15049 were females and 3682 were males. The complete details of PDHS including detailed methodology, design, and data can be found elsewhere (NIPS, 2019). The study was based on a secondary analysis of data so there was no need of ethical approval from any supervisory board nevertheless the data was acquired from the DHS Program website after registering and placing a request for the dataset. The datasets for males and females were separate so they were merged.

Measures

Dependent variable

The dependent variable in the study was Tobacco usage which included smoking as well as using tobacco in other ways (chewing/sniffing). Both the variables related to smoking and using tobacco in other ways were merged to create a new variable, tobacco usage, which was recoded as 0 = No, and 1 = Yes.

Independent variables

The independent variables (social and demographic) used in the study were age in five years intervals, gender, region, social organization, number of household members, number of information sources, number of deceased children, education, social class, marital status, current employment status, usage of other drugs, and belief in patriarchy. Age (5 years intervals), gender (female/male), region (Punjab/Sindh/KPK/Balochistan/Gilgit Baltistan/Islamabad/AJK/FATA), region (urban/rural), number of household members, education (no/primary/middle/higher), currently working (no/yes), and currently using other drugs (no/yes) were used as given in the dataset. The remaining variables were recoded as follows. The variable, number of information sources, was generated using five items in the PDHS dataset, i) frequency of reading newspapers/magazines, ii) frequency of listening to radio, iii) frequency of watching television, iv) owning a mobile phone, v) internet usage. These five items were recoded as 0 = No, 1 = Yes, to generate the construct of the number of information sources. The variable, the number of deceased children, was generated by adding two variables in the PDHS dataset, which were number of daughters who died and the number of sons who died. Marital status was recoded as 0 = Others (Widows/Separated/Divorced) and 1 = currently married. The construct of belief in patriarchy included five items available in the PDHS dataset that asked respondents whether wife beating was justified if she, i) goes out without telling her husband, ii) neglects children, iii) argues with her husband, iv) refuses sex with husband, v) burns the food. The responses to each item were recoded as 0 = No, 1 = Yes/Don't Know.

Statistical Analysis

The data was analyzed using Statistical Package for Social Sciences (SPSS, v. 23). Factor analysis and reliability test were conducted for the construct of belief in patriarchy followed by computing the items to generate the construct (see Table 1). For the distribution and association of categorical independent variables with tobacco usage, cross-tabulations were done and a Chi-Square Test of Association was conducted (see Table 2) and for the continuous independent variables, independent samples t-tests were conducted to assess mean differences (see Table 3). To predict tobacco usage concerning independent variables, a multivariate binary logistic analysis was carried out (see Table 4) followed by separate multivariate binary logistic analyses to present the gendered analysis of tobacco usage with respect to independent variables (see Table 5).

3. Results

Factor analysis and reliability analysis were conducted for the construct of belief in patriarchy. The results of factor analysis showed that all five items measuring the construct of belief in patriarchy had factor loadings greater than 0.50, representing construct validity. The value of Cronbach's alpha was greater than 0.70 which shows the internal consistency of the construct (see Table 1).

Table 1: Validity and Reliability of Belief in Patriarchy scale, Pakistan Demographic Health Survey 2017-2018 (N=18731)

Construct	Factor Loadings	Cronbach's Alpha
Belief in Patriarchy		0.89
Beating justified if wife		
Goes out without telling husband	0.72	
Neglects the children	0.70	
Argues with husband	0.76	
Refuses sex with husband	0.70	
Burns the food	0.60	

Table 2 below summarizes the frequency and percentage distributions of categorical independent variables with tobacco usage and non-usage. The Chi-Square Test of Association significance values are also given in the table. The results show that age, gender, region, education, social class, current employment status, and usage of other drugs were significantly associated to tobacco usage ($p < .05$). Out of a total of 13.8% of tobacco users in the total sample, 12.3% of tobacco users were between the ages of 25 – 49 years compared to 1.5% of tobacco users who were between the ages of 15 – 24 years. 7.0% of the tobacco users were males and 6.8% were females. The highest number of tobacco users in the sample belonged to Sindh (3.8%), followed by Balochistan (2.8%)

and Punjab (2.6%). 8.9% of the tobacco users had either no education or primary education compared to 5% of tobacco users who had middle or higher education. 13.3% of the tobacco users were married, 7.9% were currently employed, and 9.9% were not using other drugs.

Table 2: Frequency Distribution of Tobacco usage with respect to categorical independent variables, Pakistan Demographic Health Survey 2017- 2018 (N=18731)

Variables	Tobacco Usage			*p*-value
	No usage n (%)	Usage n (%)	Total N (%)	
Age (years)				< .001
15 – 19	731 (3.9)	45 (0.2)	776 (4.1)	
20 – 24	2268 (12.1)	243 (1.3)	2511 (13.4)	
25 – 29	3352 (17.9)	459 (2.5)	3811(20.3)	
30 – 34	3136 (16.7)	478 (2.6)	3614 (19.3)	
35 – 39	2947 (15.7)	520 (2.8)	3467 (18.5)	
40 – 44	1995 (10.7)	402 (2.1)	2397 (12.8)	
45 – 49	1718 (9.2)	437 (2.3)	2155 (11.5)	
Gender				< .001
Female	13767 (73.5)	1282 (6.8)	15049 (80.3)	
Male	2380 (12.7)	1302 (7.0)	3682 (19.7)	
Region				< .001
Punjab	3756 (20.1)	494 (2.6)	4250 (22.7)	
Sindh	2795 (14.9)	716 (3.8)	3511 (18.7)	
Khyber Pakhtunkhwa	2647 (14.1)	234 (1.2)	2881 (15.4)	
Balochistan	1705 (9.1)	531 (2.8)	2236 (11.9)	
GilgitBaltistan	1075 (5.7)	117 (0.6)	1192 (6.4)	
Islamabad	1215 (6.5)	159 (0.8)	1374 (7.3)	
Azad Jammu Kashmir	1837 (9.8)	216 (1.2)	2053 (11.0)	
Federally Administered Tribal Areas	1117 (6.0)	117 (0.6)	1234 (6.6)	
Social Organization				.122
Urban	7898 (42.2)	1221 (6.5)	9119 (48.7)	
Rural	8249 (44.0)	1363 (7.3)	9612 (51.3)	
Education				< .001
No education	7221 (38.6)	1267 (6.8)	8488 (45.3)	
Primary (till 5 years of schooling)	2333 (12.5)	396 (2.1)	2729 (14.6)	
Middle (till 8 years)	3799 (20.3)	648 (3.5)	4447 (23.7)	
Higher (Higher than 8 years)	2794 (14.9)	273 (1.5)	3067 (16.4)	
Social Class				< .001
Poorest	2890 (15.4)	665 (3.6)	3555 (19.0)	
Poorer	3448 (18.4)	586 (3.1)	4034 (21.5)	
Middle	3170 (16.9)	497 (2.7)	3667 (19.6)	
Richer	3122 (16.7)	475 (2.5)	3597 (19.2)	
Richest	3517 (18.8)	361 (1.9)	3878 (20.7)	
Marital Status				.333
Widow/Divorced/Separated	534 (2.9)	95 (0.5)	629 (3.4)	
Married	15613 (83.4)	2489 (13.3)	18102 (96.6)	
Currently Working				< .001
No	12072 (64.4)	1098 (5.9)	13170 (70.3)	
Yes	4075 (21.8)	1486 (7.9)	5561 (29.7)	
Using any type of drugs				< .001
No	15894 (84.9)	1857 (9.9)	17751 (94.8)	
Yes	253 (1.4)	727 (3.9)	980 (5.2)	

The table 3 shows the mean differences of continuous independent variables with respect to tobacco usage. There was a statistically significant mean difference in number of household members with respect to tobacco usage as the results showed that the mean household members were higher for those who reported tobacco usage ($p < .01$). The analysis also showed that mean information sources was higher for tobacco users compared to non-users ($p < .001$). Tobacco users also had a higher mean score on belief in patriarchy compared to non-users ($p < .001$).

Table 3: Mean Difference of Tobacco usage with respect to continuous independent variables, Pakistan Demographic Health Survey 2017-2018 (N=18731)

Variables	Tobacco Usage			*p*-value
	No usage Mean (SD)	Usage Mean (SD)	Mean Difference (SE)	
Number of household members	8.42 (4.6)	8.71 (5.0)	0.29 (0.10)	*.004*
Number of Information sources	1.66 (1.3)	1.79 (1.4)	0.14 (0.03)	*< .001*
Number of deceased children	0.24 (0.6)	0.36 (0.8)	0.12 (0.01)	.882
Belief in Patriarchy	1.48 (1.9)	1.49 (1.8)	0.01 (0.04)	*< .001*

The results of multivariable binary logistic regression analysis are summarized in Table 4 which shows that the odds of tobacco usage statistically significantly increased with increase in age. The highest odds were present in age interval of 45 – 49 years as they were 2.71 times (AOR = 2.71, 95% CI: 1.90 – 3.85, $p < .001$) more likely to use tobacco compared to 15 – 19 years. The odds for the remaining age intervals with respect to tobacco usage were also higher compared to 15 – 19 years ($p < .05$). The odds of smoking were 0.19 times lower in females compared to men (AOR = 0.19, 95% CI: 0.16 – 0.23, $p < .001$). The odds of tobacco usage were significantly higher in Baluchistan (AOR = 2.32, 95% CI: 1.83 – 2.94, $p < .001$), Sindh (AOR = 1.96, 95% CI: 1.54 – 2.48, $p < .001$), Islamabad (AOR = 1.89, 95% CI: 1.41 – 2.54, $p < .001$), Punjab (AOR = 1.58, 95% CI: 1.24 – 2.01, $p < .001$), and Azad Jammu Kashmir (AOR = 1.53, 95% CI: 1.17 – 2.00, $p < .01$) compared to Federally Administered Tribal Areas (FATA). The odds of tobacco usage were 1.15 times higher in urban areas (AOR = 1.15, 95% CI: 1.02 – 1.29, $p < .05$) compared to rural areas. The odds of tobacco usage declined by 0.94 times with increase in number of information sources (AOR = 0.94, 95% CI: 0.89 – 0.99, $p < .05$). The analysis further showed that the odds of tobacco usage increased by 1.13 times with increase in number of deceased children (AOR = 1.13, 95% CI: 1.06 – 1.21, $p < .001$). With respect to education, the odds of tobacco usage were significantly lower in those who had a middle (AOR = 0.84, 95% CI: 0.72 – 0.98, $p < .05$) and higher (AOR = 0.49, 95% CI: 0.40 – 0.60, $p < .001$) education compared to those who had no education and the odds were also lower in middle (AOR = 0.82, 95% CI: 0.69 – 0.96, $p < .05$), richer (AOR = 0.81, 95% CI: 0.68 – 0.97, $p < .05$), and richest (AOR = 0.64, 95% CI: 0.52 – 0.78, $p < .001$) social class compared to poorest social class. Those who were currently working had 1.30 times (95% CI: 1.11 – 1.51, $p < .001$) higher odds of tobacco usage than those who were not working. The odds of tobacco usage increased by 16.28 times if the respondents were using other drugs as well (AOR = 16.28, 95% CI: 13.81 – 19.18, $p < .001$). There was also a 1.07 times higher odds of tobacco usage with increase in beliefs in patriarchy (AOR = 1.07, 95% CI: 1.03 – 1.10, $p < .001$).

Table 4. Multivariate Binary Logistic Regression to predict Tobacco usage from socio-demographic and independent variables, Pakistan Demographic Health Survey 2017 – 2018 (N = 18731)

Variables	Tobacco Usage		
	AOR	**95% CI**	***p*-value**
Age (years)			
15 – 19	1		
20 – 24	1.52	1.06 – 2.17	*.022*
25 – 29	1.66	1.17 – 2.34	*.004*
30 – 34	1.77	1.25 – 2.49	*.001*
35 – 39	2.00	1.42 – 2.83	*< .001*
40 – 44	2.39	1.69 – 3.40	*< .001*
45 – 49	2.71	1.90 – 3.85	*< .001*
Gender			
Female	0.19	0.16 – 0.23	< .001
Male	1		

Region			
Punjab	1.58	1.24 – 2.01	< *.001*
Sindh	1.96	1.54 – 2.48	< *.001*
Khyber Pakhtunkhwa (KPK)	0.84	0.65 – 1.09	.180
Balochistan	2.32	1.83 – 2.94	< *.001*
GilgitBaltistan	0.90	0.66 – 1.23	.501
Islamabad	1.89	1.41 – 2.54	< *.001*
Azad Jammu Kashmir (AJK)	1.53	1.17 – 2.00	*.002*
Federally Administered Tribal Areas (FATA)	1		
Social Organization			
Urban	1.15	1.02 – 1.29	*.019*
Rural	1		
Household members	1.01	0.99 – 1.02	.219
Information sources	0.94	0.89 – 0.99	*.033*
Deceased children	1.13	1.06 – 1.21	< *.001*
Education			
No education	1		
Primary	0.87	0.75 – 1.02	.078
Middle	0.84	0.72 – 0.98	*.022*
Higher	0.49	0.40 – 0.60	< *.001*
Social Class			
Poorest	1		
Poorer	0.88	0.76 – 1.03	.102
Middle	0.82	0.69 – 0.96	*.017*
Richer	0.81	0.68 – 0.97	*.021*
Richest	0.64	0.52 – 0.78	< *.001*
Marital Status			
Widow/Divorced/Separated	0.82	0.63 – 1.05	.117
Married	1		
Currently Working			
No	1		
Yes	1.30	1.11 – 1.51	*.001*
Using any type of drugs			
No	1		
Yes	16.28	13.81 – 19.18	< *.001*
Belief in Patriarchy	1.07	1.03 – 1.10	< *.001*

A gendered analysis of tobacco usage with respect to socio-demographic and independent variables is summarized in Table 5. The results showed that the odds of tobacco usage increased in both genders with increase in age, with the highest odds of 2.40 times (95% CI: 1.60 – 3.61, p < .001) for females and 5.61 times (95% CI: 2.24 – 14.00, p < .001) for males in 45 – 49 years compared to the reference age interval of 15 – 19 years. With respect to province, the gendered analysis showed that the odds of tobacco usage in females were statistically significantly higher in all regions compared to FATA with the highest odds in Balochistan (AOR = 16.21, 95% CI: 9.30 – 28.28, p < .001) followed by Sindh (AOR = 14.79, 95% CI: 8.46 – 25.83, p < .001). Contrarily, the odds of tobacco usage in men were lower in all regions when compared with FATA with the lowest odds in Sindh (AOR = 0.29, 95% CI: 0.20 – 0.42, p < .001) followed by Balochistan (AOR = 0.31, 95% CI: 0.21 – 0.45, p < .001). The odds of tobacco usage were higher for urban men ((AOR = 1.38, 95% CI: 1.16 – 1.63, p < .001) compared to rural men whereas so such distinction was found with respect to women. The odds of tobacco usage were higher for women with higher number of deceased children (AOR = 1.21, 95% CI: 1.11 – 1.31, p < .001) whereas for men, the odds though higher were statistically insignificant. The odds of tobacco usage were lower for females with middle (AOR = 0.71, 95% CI: 0.56 – 0.90, p < .01) and higher (AOR = 0.53, 95% CI: 0.38 – 0.75, p < .001) levels of education whereas for men it was statistically significantly lower in only higher (AOR = 0.50, 95% CI: 0.37 – 0.66, p < .001) level when compared to those who had no education. The odds of tobacco usage were not statistically significant with respect to social class in men,

however for females the odds were significantly lower in middle (AOR = 0.79, 95% CI: 0.63 – 0.99, p < .05), richer (AOR = 0.55, 95% CI: 0.42 – 0.72, p < .001), and richest (AOR = 0.44, 95% CI: 0.31 – 0.61, p < .001) social classes when compared to poorest social class. With respect to marital status, the odds of tobacco usage in females were significantly lower in respondents classified as widow/divorced/separated (AOR = 0.70, 95% CI: 0.52 – 0.96, p < .05) group compared to those who were currently married whereas no such findings were observed for men. The odds of tobacco usage were significantly higher in women who were currently employed (AOR = 1.21, 95% CI: 1.01 – 1.44, p < .05) whereas for men the odds though higher were statistically insignificant. The odds of tobacco usage for both men (AOR = 9.03, 95% CI: 7.06 – 11.60, p < .001) and women (AOR = 30.15, 95% CI: 23.80 – 38.30, p < .001) who were currently using other drugs were statistically significantly higher when compared to non-user men and women, respectively. With respect to beliefs in patriarchy, the odds of tobacco usage were significantly higher in both women (AOR = 1.04, 95% CI: 1.01 – 1.08, p < .05) and men (AOR = 1.08, 95% CI: 1.02 – 1.15, p < .05).

Table 5. Multivariate Binary Logistic Regression to predict Tobacco usage from socio-demographic and independent variables among Females and Males, Pakistan Demographic Health Survey 2017 – 2018 (N = 18731)

Variables	Tobacco Usage (Female, n = 15049)			Tobacco Usage (Male, n = 3682)		
	AOR	95% CI	*p*-value	AOR	95% CI	*p*-value
Age (years)						
15 – 19	1			1		
20 – 24	1.39	0.93 – 2.09	.111	3.31	1.30 – 8.44	*.012*
25 – 29	1.62	1.10 – 2.39	*.015*	3.23	1.29 – 8.06	*.012*
30 – 34	1.71	1.16 – 2.54	*.007*	3.53	1.42 – 8.78	*.007*
35 – 39	1.59	1.07 – 2.35	*.002*	4.81	1.93 – 12.0	*.001*
40 – 44	2.18	1.45 – 3.26	< *.001*	5.19	2.07 – 13.0	< *.001*
45 – 49	2.40	1.60 – 3.61	< *.001*	5.61	2.24 – 14.0	< *.001*
Region						
Punjab	5.64	3.19 – 9.99	< *.001*	0.66	0.48 – 0.92	*.015*
Sindh	14.79	8.46 – 25.83	< *.001*	0.29	0.20 – 0.42	< *.001*
KPK	2.75	1.52 – 5.00	*.001*	0.41	0.29 – 0.58	< *.001*
Balochistan	16.21	9.30 – 28.28	< *.001*	0.31	0.21 – 0.45	< *.001*
GilgitBaltistan	4.01	2.16 – 7.46	< *.001*	0.33	0.21 – 0.52	< *.001*
Islamabad	5.82	3.08 – 11.00	< *.001*	0.89	0.59 – 1.34	.578
AJK	3.66	1.99 – 6.73	< *.001*	0.95	0.65 – 1.63	.779
FATA	1			1		
Social Organization						
Urban	0.99	0.84 – 1.16	.897	1.38	1.16 – 1.63	< *.001*
Rural	1			1		
Household members	1.01	0.99 – 1.03	.078	1.01	0.99 – 1.02	.446
Information sources	1.06	0.98 – 1.15	.169	0.96	0.89 – 1.04	.310
Deceased children	1.21	1.11 – 1.31	< *.001*	1.06	0.95 – 1.18	.308
Education						
No education	1			1		
Primary	0.88	0.70 – 1.09	.233	0.96	0.76 – 1.21	.719
Middle	0.71	0.56 – 0.90	*.005*	0.82	0.66 – 1.03	.085
Higher	0.53	0.38 – 0.75	< *.001*	0.50	0.37 – 0.66	< *.001*
Social Class						
Poorest	1			1		
Poorer	0.95	0.79 – 1.15	.597	0.87	0.68 – 1.11	.264
Middle	0.79	0.63 – 0.99	*.045*	0.89	0.69 – 1.16	.389
Richer	0.55	0.42 – 0.72	< *.001*	1.20	0.92 – 1.56	.189
Richest	0.44	0.31 – 0.61	< *.001*	0.80	0.60 – 1.06	.116
Marital Status						
Widow/Divorced/Separated	0.70	0.52 – 0.96	*.024*	1.01	0.57 – 1.77	.983
Married	1			1		

Currently Working						
No	1			1		
Yes	1.21	1.01 – 1.44	*.037*	1.16	0.82 – 1.65	.395
Using any type of drugs						
No	1			1		
Yes	30.15	23.8 – 38.3	*< .001*	9.03	7.06 – 11.6	*< .001*
Belief in Patriarchy	1.04	1.01 – 1.08	*.031*	1.08	1.02 – 1.15	*.014*

4. Discussion

Many health-promoting messages encourage us to adopt healthy behaviors today to protect our health in the future by appealing to our desire to make the future better, or at least healthier (Orbell&Hagger, 2006). The study showed that several socio-demographic factors have been found to show an association as to how they are related to smoking. According to a study by Bush et al. (2003), age appeared to have an impact on how socially acceptable smoking is. It is believed it is more appropriate for elderly men and, to a lesser extent, older women to smoke openly because of the recognized standing of elders in South Asian society. In contrast, smoking among young people is typically seen as "disrespectful," especially when done in front of elders (Nichter et al., 2002). Within Pakistan, there are considerable regional differences in the prevalence of tobacco usage (Abdullah et al., 2014). In particular, Punjab stands out from the other provinces due to its significantly higher tobacco consumption rate (Saeed et al., 2021). Although to a lesser extent, the province of Sindh has the same tendency of greater tobacco use (Basit et al., 2020). These regional variations in tobacco use show the intricate interactions among cultural norms, economic variables, and tobacco product accessibility (Petti, 2009). Understanding the underlying causes of these variances can help develop anti-smoking campaigns that are specifically tailored to each region's particular problems and influences. To be more successful, efforts to reduce tobacco use must take into account both the subtle distinctions at the province level and the larger national environment (WHO, 2013).

Smoking patterns reveal a clear gender gap, with men showing a considerably higher prevalence of smoking than their female counterparts (Bauer et al., 2007). The deeply ingrained patriarchal norms that define Pakistani society may be inextricably tied to this paradox. In this setting, smoking may not only represent a personal habit but also have symbolic meanings related to masculinity and independence (Amos &Haglund, 2000). In the context of these patriarchal ideals, smoking could be seen as a sign of masculinity, an assertion of independence, or even a show of power (Ricciardelli, 2015). According to this socio-cultural perspective, resolving the disparity between smoking rates among men and women calls for a multifaceted strategy that takes into account, not only health education, but also the alteration of gender norms and the promotion of more equal practices. There is a clear difference between smokers who are employed and those who are unemployed (Nargis et al., 2019). It's noteworthy that smokers tend to be more prevalent among those without jobs than among those with jobs (Henkel, 2011). This particular pattern calls for a closer look at the complex relationship between employment status and smoking habits. The observed tendency could be ascribed to a number of variables, including the stressors and difficulties that unemployed people may encounter, which could increase their propensity to smoke as a coping technique (Perreault et al., 2017). Additionally, economic issues can be at play, with people without stable job possibly having more free time and resources to smoke (Fowler, Henry, &Marcal, 2015).

Socio-economic class happens to be another important factor. In contrast to people from the upper or middle classes, people from lower socioeconomic classes are more likely to smoke than people from higher classes (Marmot & Theorell, 2020). This pattern highlights the complex relationship between smoking habits and socioeconomic level. Economic hardships experienced by people in lower socioeconomic groups may increase their susceptibility to smoking initiation and persistence (Lynch et al., 1997). This trend may be influenced by elements including stress, a lack of resources for quitting smoking, and the attractiveness of cheap tobacco products (Gilmore et al., 2015). The reduced prevalence of smoking among the upper and middle classes, however, may be due to more awareness, better access to healthcare, and possibly a greater ability to pay for healthier lifestyle options (Woodward &Kawachi, 2000). There is a favorable link between people with high levels of smoking and strong patriarchal attitudes (Beardsworth et al., 2002). The complex relationship that exists between social and cultural factors and smoking behavior is brought into focus by this surprising correlation (Paunonen et al., 2003). The higher incidence of smoking may be

influenced by patriarchal views, which place an emphasis on conventional gender roles and power relationships (Courtenay, 2000). People who follow patriarchal norms may be more likely to smoke as a way of adhering to these principles in circumstances where smoking is seen as a sign of masculinity or independence (Mao et al., 2015). This finding highlights the need of addressing not just the physiological and financial factors that contribute to smoking but also the societal elements that shape people's perceptions and choices.

There is a strong link found between people who have lost a child and have higher smoking rates (Lauer et al., 1989). This striking association highlights the intricate interactions between smoking behaviors and severe emotional suffering (Farooqui et al., 2023). When dealing with such a devastating loss, people may turn to coping techniques or solace, and smoking may provide a momentary relief from their emotional suffering (Perissinotto et al., 2019). This tendency becomes more pronounced when more children pass away, suggesting that smoking dependence increases as people deal with mounting layers of loss. The observed link highlights the complex ways in which tobacco use and psychological health might interact. Substance use is another factor related with smoking. Drug use and smoking habits seem to go hand in hand and may be highly associated experiences. Supporting other studies, the study found that people who used other drugs exhibited frequent tobacco use (Mathers et al., 2006). This finding prompts fascinating inquiries regarding the complex interrelationships between various drug use behaviors. Exploration of the causes of this association is also necessary. It is conceivable that persons who take other drugs have similar reasons for doing so, similar views of the risks involved, or similar lifestyle preferences with who smoke (Lindbladh&Lyttkens, 2002).

5. Conclusions

This study brings forth insights, into the web of social and demographic factors that strongly influence tobacco consumption in Pakistan. Our analysis reveals the patterns associated with this multifaceted behavior offering a comprehensive understanding. The key findings of our study underscore the importance of considering social variables while devising targeted interventions and policies to curb tobacco use. The growing number of middle-aged adults using tobacco is a concerning issue that needs to be tackled. This might be due, to standing norms and past habits that have led older people to continue using tobacco. To effectively address this, it is crucial to create tailored awareness campaigns and educational programs targeting these age groups. These initiatives should aim to debunk myths, correct misconceptions, and highlight the health consequences associated with tobacco use. The growing number of individuals using tobacco is a concerning issue that requires attention. The significant differences, in tobacco use between genders emphasize the importance of interventions that consider gender sensitivity. Our study reveals that men and women have different factors influencing their tobacco use patterns. Although tobacco use is generally more prevalent among men, it is surprising to find usage among certain subgroups of women which calls for further investigation. Our findings suggest a diverse approach that targets different demographic segments with targeted techniques as we aim toward a tobacco-free future. Understanding and resolving these distinct trends would pave the path for a healthier, tobacco-free Pakistan for all of its citizens.

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