

# Children, Adolescents and Young Adults of Affluent Smoking Parents are Susceptible to Nicotine Dependence

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## ABSTRACT

**Background:** Smoking is increasing at an alarming rate in developing countries and most of the habitual smokers are reported starting this habit at an early age and this age group constitutes a major part of the population in Pakistan. We want to explore trends related to smoking among children, adolescents and young adults of affluent smoking parents are susceptible to nicotine dependence. It is likely that this genetic risk involves a complex interaction between multiple genes in different biologic pathways. These may include genes involved in the general aspect of dependence (e.g, genes within the dopaminergic system) and those more specific to nicotine dependence (e.g, genes encoding nicotinic acetylcholine receptors and nicotine-metabolizing enzymes) **Study Design:** This was a cross sectional study. **Place of Study:** Punjab Medical College, Faisalabad. **Duration of Study:** September 2012 to March 2014. **Materials and Methods:** We distributed a self-reporting questionnaire to 800 medical students at Punjab Medical College Faisalabad related to the smoking trends and its determinants. **Results:** The prevalence of smoking was 18% and smoking habit was more common in students with affluent background and those living in hostels. **Conclusions:** Children, adolescents and young adults of affluent smoking parents are susceptible to nicotine dependence. Surveillance by the parent is crucial in preventing and controlling smoking in young adults.

**Keywords:** Smoking, Medical students, Nicotine dependence.

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## INTRODUCTION

Tobacco use is one of the most deadly yet preventable health problem across the globe. It is presently estimated to be responsible for the death of about six million people across the world each year.<sup>1</sup> Young adults are known to adopt smoking at a very early age leading to its regular practice. The striking increase in prevalence of smoking among minors and teens therefore, has become a significant challenge for smoking prevention and intervention efforts.<sup>2</sup> Although smoking rates have declined over recent decades in developed countries, tobacco consumption continues to rise in developing countries largely due to poor enforcement of anti-smoking legislations.<sup>3</sup> In Pakistan, tobacco use is common both in general public as well as amongst the health professionals with an overall estimated prevalence of 36% and 9% for males and females respectively.<sup>4</sup> It has been reported that the highest prevalence of smoking in young adults of Pakistan is amongst the university students (15%), with the majority being males.<sup>5</sup> The reasons behind adoption of smoking habits in young people are complex and multi-faceted. These includes a host of interacting biological, genetic, psychological, economic and social variables. Smoking attitudes of parents probably have a key role not only in early adoption but also in the ascent of the smoking habits of the youth.<sup>5</sup> Research has highlighted the fact that young smokers are more likely to develop nicotine dependence, a sign of grave concern to Pakistan where the median age of the population is 21 years.<sup>6</sup>

Parental smoking during childhood and adolescent peer pressure are commonly cited as predictors of teenage smoking an association with larger lung volumes such as emphysema and COPD.<sup>7</sup>

Nicotine, the major psychoactive compound in cigarette smoke, is metabolized by a number of enzymes, including CYP2A6, CYP2B6, FMOs, and UGTs, among others. Variation in the genes encoding these enzymes, in particular CYP2A6, can alter the rate of nicotine metabolism and smoking behaviors. Faster nicotine metabolism is associated with higher cigarette consumption and nicotine dependence, as well as lower quit rates.<sup>8</sup>

The aim of this study was to explore among children, adolescent and medical students, the potential relationship between tobacco/nicotine use and parent's income, active smokers among family members, and start of smoking during study in school, F.sc and medical college.

## METHODOLOGY

**Study Design:** This was a cross sectional study

**Place of Study:** Punjab Medical College, Faisalabad

**Duration of Study:** September 2012 to March 2014

A total of 800 medical students from both genders were invited to participate in the study and were required to respond on a self-administered questionnaire. Six hundred and forty students returned the questionnaire which was included in the study. Consent for participation in the study was implied by return of

completed questionnaire. Students who did not return the questionnaire within stipulated time were not contacted again. The questionnaire did not require students to reveal their identity and hence it was filled anonymously by the responders eliminating fear and bias.

The study tool was a self-administered questionnaire containing both open-ended and closed-ended questions. The questionnaire was designed by the research team based on the available scientific evidence regarding smoking habits of young adults. The questionnaire contained two sections. No pre-testing was done on the study tool and its validity has not been tested by a third-party. Section-A was filled by all responders and Section-B contained questions pertaining to current smoker and had to be completed by smokers only. Section-A included demographic information etc., including age, occupation of parents, socio-economic background of parents, rural or urban background, year of study, smoking status of family members, residing within college hostel or otherwise. Section-B sought to get information about smokers including method of smoking, age at which started smoking, reason for experimenting with smoking, source of money, any attempts at stopping this habit etc. The data were entered in Statistical Software Package SPSS 17.0 and analyzed through the same.

## RESULTS

A total of 640 respondents, among these 115 (18%) were smoker and 525 (82%) were non-smokers. Majority of smokers belong to affluent class (50.43%) and mostly lived in urban area (69.56%). The most of the smokers n=78 (67.82%) were residing in the college hostels.

**Table 1: Determinants of smoking among medical students (n=640)**

Total: 640	Smokers n=115 (18%)	Non-Smokers n=525 (82%)
<b>Parents' Income Category</b>		
Lower-class	27 (23.47%)	198 (37.71%)
Middle-class	30 (26.08%)	181 (34.47%)
Affluent-class	58 (50.43%)	146 (27.80%)
<b>Parents' Background</b>		
Urban dweller	80 (69.56%)	386 (73.52%)
Rural dweller	35 (30.43%)	139 (26.47%)
<b>Residing</b>		
With parents	34 (29.56%)	298 (56.76%)
In college hostel	78 (67.82%)	202 (38.47%)
In bachelor's hostel	3 (2.60%)	25 (4.76%)

When smokers were asked about existing active smoker in their family, it was found that parents were the smokers for the majority (55.65%) of respondents.

Most of the respondents (60.87%) smoked their first cigarette when they were in medical college. It means smoking trends is increasing with advancing age through from children, adolescents and young adults.

Among these 115 smokers, 48.70% (n=56) smokers were habituals followed by recreational smoker. Those who never tried to quit smoking were n=87 (75.65%) of smokers.

**Table 2: Smoking trends among currently smoking students (n=115)**

<b>Active smokers among family members</b>	
Grandparents	12 (10.43%)
Parents	64 (55.65%)
Siblings	15 (13.04%)
None	59 (51.30%)
<b>Started smoking during study in</b>	
School	10 (8.69%)
FSc	35 (30.43%)
Medical college	70 (60.87%)
<b>Describe your smoking habit</b>	
Casual smoker	14 (12.17%)
Recreational smoker	45 (39.13%)
Habitual smoker	56 (48.70%)
<b>Do you want to quit smoking?</b>	
Yes	75 (65.22%)
No	40 (34.78%)
<b>Ever tried giving up smoking?</b>	
Yes	28 (24.35%)
No	87 (75.65%)

## DISCUSSION

Smoking is one of the common leading causes of preventable deaths. Adolescents and young adults are the most vulnerable groups for smoking initiation. Smoking is fairly common among medical students and having an advance knowledge of smoking hazards does not deter medical students from taking up smoking.<sup>9</sup> This study has found that around 20% of students were involved in tobacco smoking, with the majority of smokers being males. Recent studies conducted in various European cities have reported 29-35% prevalence of smoking among medical students.<sup>10</sup> Reported lower rates of smoking among females are in agreement with previously published literature from the region where culture and norms play an important role in female behaviors and customs.<sup>11</sup> However in societies such as Pakistan, where it is generally not socially acceptable for women to smoke in public, smoking in private may still occur and stay hidden to survey researchers. This underreporting will lead to the underestimation of the impact tobacco use has on women in such societies.

Our students reported that they initiated tobacco smoking in order to concentrate on their studies, to relieve stress and as an imitation of smoking habits of family members (mostly parents). These findings are in consistent with reports from diverse demographic and cultural backgrounds Al-Naggar.<sup>12</sup> Results from a study at Quaid-e-Azam Medical college, Bahawalpur in 2012, tension and psychological stress were the most important factor described by medical students responsible for initiation of smoking.<sup>13</sup> Curiosity and peer pressure are additional factors initiating tobacco smoking, with currently smoking family members playing a key role model for aspiring smokers. This

highlights the need of efforts to increase the role of parents in ensuring a smoke free home for the health of their next generation. Studies have shown that smoking restrictions at home not only reduce the overall exposure of tobacco, it can also reduce the smoking uptake in youth. In our study, students living in hostels away from supervision of parents were inclined towards smoking which agrees with the study conducted in Iranian students who live without parents are at increased risk of smoking.<sup>14</sup> The major limitation of this study was the self-reported nature of information, which is subject to recall bias. The findings of the study may not be generalized to non-healthcare students and the general population as majority of our respondents described initiation of smoking between the ages of 18 and 24. The rates of smoking in developed countries have been increasing due to poor implementation and enforcement of antismoking policies including taxation on cigarettes, restriction of smoking in public places and restricting sale of cigarettes to minors as there is no check and balance in our country.

## CONCLUSION

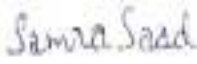



Children, adolescents and young adults of affluent smoking parents are more prone to nicotine/smoking habits. Parents have an important role in prevention of smoking in young adults. Currently, we have no support groups for parents to make them aware of their critical role in smoking prevention efforts.

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