

# The Clinical and Demographic Profile of Nicotine Users Among Children and Adolescents

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## Abstract

**Introduction:** Children represent the most vulnerable age group for initiation and use of nicotine. Nicotine use in this age group is of grave concern because of associated physical, mental co-morbidities. Moreover, many of them graduate to use of harder substance longitudinally in their lifetime. **Aims and Objective:** To study profile of Nicotine users of child and adolescents age group among subjects attending tobacco cessation clinic. **Methodology:** All subjects between the age group of 10-19 years who attended the tobacco cessation center and its different community outreach programs of Drug De-addiction and treatment Center of Postgraduate Institute of Medical Education and Research, Chandigarh between the periods 2002- 2006 were enrolled for the study. All the subjects were administered standard questionnaires by a trained social worker for the purpose of the study. **Results:** A total 173 subjects of age group 10-19 years attended the clinic and its community programs during this period. Majority of subjects (58%) enrolled for the study was part of the community outreach efforts of Tobacco cessation clinic. Majority (83%) were in the 15-19 years age group, Hindu (80%), educated till high School (52%), were single (94%), from nuclear family (69%) of urban background (69%). Smokers constituted single major group (60%), out of which 38% were additionally used smokeless tobacco. Nicotine users reported peer pressure as a single most important cause for initiation; however after a period of use nicotine withdrawal preempted them from stopping its use. Majority of them (75%) never made any attempts to quit. Multiple physical and psychological complaints including impact on family members were recorded. **Conclusion:** Nicotine use has tremendous impact not only on the user but also on the society at large. Knowing profile of the user and the patterns of use would help in planning both preventive and curative strategies (German J Psychiatry 2009; 12: 14-18).

**Keywords:** Adolescents, children, nicotine, tobacco, impact

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## Introduction

Approximately three-quarters of adult tobacco users report that their first tobacco use occurred during childhood or adolescent (11–17) years (Riley et al., 1996). Similarly, many adults who do not regularly use tobacco report that they have experimented with it, usually as adolescents (McNeill, 1991). For this very reason tobacco dependence had been termed as “pediatric disease” (Perry et

al., 1994). Around the world, between 82,000 and 99,000 young people start smoking daily (Tanski et al., 2004). Smoking just a few cigarettes during adolescence increases the probability of developing dependence on nicotine and leads to a 16-fold increase in the risk of adult smoking (Russell, 1990). Furthermore, the earlier one starts smoking, the more cigarettes per day one will smoke as an adult and the more severe the tobacco-related health consequences one is likely to experience (Colby et al., 2000). In the year 2000, an estimated 4.83 million premature deaths in the world were attributable to smoking alone out of which 2.41 million were

in developing countries. The region with the highest number of deaths attributable to smoking (0.68 million) was the developing region of South-East Asia (SEAR-D; dominated by India in terms of population) (Benegal, 2005). This makes the impact far more serious as many of these countries lack basic healthcare facilities to treat ailments arising from use of nicotine. The factors contributing to youth smoking in developing countries include cultural traditions, easy accessibility to tobacco and moderate pricing in comparison to that in developed countries, peer and family influences, and tobacco companies' advertisements and promotional activities (Prokhorov et al., 2006). Very little data is available from countries like India regarding prevalence of nicotine use among adolescence, type of use, triggering factors, ailments associated with their use. The present paper is an endeavor towards understanding the profile of nicotine users among adolescents in India.

## Methods

The study was carried out at the Tobacco Cessation Center (TCC) of Drug De-addiction & Treatment Centre (DDTC), Postgraduate Institute of Medical Education and Research (PGIMER), Chandigarh. Tobacco Cessation Center is an initiative by The World Health Organization (WHO) and the Ministry of Health, Government of India (Benegal, 2005). The services offered at the clinic includes, creating awareness among the general public about the ill effects of tobacco, through exhibitions, community outreach programs, preparation of information booklets/manuals aimed at specific populations (consumers of tobacco/clinicians/general public), training programs on tobacco cessation for various professionals, and individual intervention in the form of behavioral counseling etc (Benegal, 2005). For the purpose of the study all subjects between the age group of 10-19 years who voluntarily attended the TCC and its different community outreach programs between the periods January 2002-December 2006 were enrolled for the study. All the subjects were administered standard questionnaire as per WHO Case Record Form developed for this purpose by trained psychologist and social workers under the supervision of clinical psychiatrist. The questionnaires documented socio-demographic profile, clinical parameters like type and mode of nicotine use, duration of use in months and years, quantity, frequency per day, reasons for starting tobacco, maintaining factors, cessation attempts, reasons for quitting, reason for relapse, duration of abstinence, treatment sought, social support, motivation, impact on health, family, psychiatric symptoms etc. The information was obtained mostly from users as majority of them sought help without the information of their parents. In fact, parents were unaware of their nicotine use habit. These children and adolescents sought anonymity as a precondition to their treatment. All the subjects were treated at the TCC using counseling, information, education, self-help tips, behavioral counseling and medicines.

**Table 1: Socio-demographic profile of subjects**

Variables	Subjects in % (N= 173)
Age	
10-14 years	30 (17.3%)
15-19 years	143 (82.7%)
Marital status	
Single	162 (94%)
Married	9 (5.2%)
Separated	2 (1.2%)
Occupation	
Student	99 (57.2%)
Farmer	2 (1.2%)
Businessman	7 (4%)
Service	11 (6.4%)
Others	54 (31.2%)
Education	
Illiterate	20 (11.6%)
Up to Matriculate	55 (31.8%)
Up to High School	98 (56.6%)
Religion	
Hindu	138 (80%)
Sikh	28 (16.2%)
Others	7 (3.8%)
Family type	
Nuclear	120 (70%)
Other	53 (30%)
Locality	
Urban	119 (69%)
Rural	50 (29%)
Other	4 (2.3%)

## Results

*Socio-demographic profile.* About 1892 subjects sought consultation from the TCC between January 2002 to December 2006. Out of these about 173 subjects were in the age range of 10-19 years, which gives a prevalence figure of 9.2%. The majority (83%) was in the 15-19 years age group. The mean age was 16.4 (SD=2.1) years. There were three subjects of 10 years of age. All the subjects were male, majority of them had completed high school (52%), were Hindu (80%), single (94%), unemployed (66%), living in a nuclear setup (69%), urban background (69%) of middle socio economic status (43%). Detailed socio-demographic profile is given in Table 1.

The majority (58%) of subjects were approached through community outreach programs. About fifteen percent of the subjects were referred by physicians, 14% by family and friends. Only 8% of the subjects sought treatment on their own. Details of source and mode of referral are given in Table 2.

*Type of tobacco use.* Out of the 173 subjects, smokeless tobacco users with or without zarda (chewing tobacco) were 69 (40%), smokers were 66 (38.2%), smokeless tobacco with smoking was 38 (22%).

**Table 2: Source and Mode of Referral**

Variables	Subjects N (%)
Self	14 (8.1%)
Family and friends	24 (13.9%)
Physician	25 (14.5%)
Ex- Tobacco users (From TCC)	2 (1.2%)
Community Outreach Efforts	100 (57.8%)
NGOs	4 (2.3%)
Media	2 (1.2%)
Others	2 (1.2%)

*Smokeless Tobacco (SLT).* Chewing tobacco (Zarda, Khaini), paan (betel leaf) with tobacco, dry tobacco, areca nut preparations such as paan masala, gutka and mawa are the different form of SLT in use. Majority of the subjects (58%) reported between 1-5 years as period of use, using more than 150 grams of tobacco per day (80%), keeping tobacco in mouth for periods less than half an hour at stretch (89%). Forty-eight percent of the subjects considered use of smokeless tobacco as “somewhat” important so as to able to perform day-to-day activities.

*Smokers.* Out of the 173 subjects, 104 (60%) smoked cigarettes or bidis (made of tobacco wrapped in a tendu leaf and secured with colored thread at one end). Majority of subjects reported to have been smoking for the past 1-5 years (72%), less than 5 cigarettes/bidis daily (53%). Forty-six percent of the subjects considered smoking to be “somewhat” important so as to able to perform day-to-day activities.

*Clinical Profile.* About 60% percent of the subjects gave no specific reason for seeking consultation from TCC. Social pressure was reported as a single most important reason reported by 19% of the subjects, followed by awareness of physical harm (10%). Only 6% percent of the subjects were aware about “addiction” to tobacco.

About sixty-eight percent of the subjects reported peer pressure as the single most important reason for initiating tobacco use followed by curiosity (24.3%). Other reasons cited were psychological stressors, environmental factors, and use by role models in society. About forty-five percent reported that distressing symptoms associated with withdrawal were responsible for maintaining habit. Other reasons reported were low self-esteem, stressors, social milieu, nature of work etc. Routine daily activities were single most important (42%) trigger for daily use followed by stressful situations, home or/and workplace. Motivation to stop using tobacco was assessed to be fair in 53% of the subjects and poor in 37% of the subjects. The majority (76%) on their own had made no attempt to stop use of tobacco, however, rest (24%) had made some attempts to stop its use. Those who made attempts to stop its use reported various reasons for doing so including peer pressure, awareness of physical harm, addiction, and disturbance in work. About eighty percent of those who attempted to stop its use reported craving and peer pressure as most important reason for relapse. Others, included cues for use, psychological stress etc. The mean duration of abstinence was 3.2 months (SD=6.2). The mean expenditure on tobacco products per month was 180 rupees (SD=229.7). Details of the clinical profile of subjects are given in Table 3.

**Table 3: Clinical Profile of subjects**

Variables	Subjects N (%)
<b>Reasons for starting Tobacco</b>	
Peer Pressure	118 ( 68.2%)
Curiosity	42 ( 24.3%)
Role Model	5 ( 2.9%)
Stressors	2 ( 1.2%)
Environmental factors	4 (2.3 %)
Others	2 (1.2 %)
<b>Maintaining Factors</b>	
Withdrawal features	79 (45.7%)
Low self-esteem	14 (8.1%)
Stressors	5 (2.9%)
Social Miliueu	16(9.2 %)
Nature of work	10 (5.8%)
Others	49 (28.3%)
<b>Cessation attempts</b>	
No attempts	131 (75.7%)
Multiple unsuccessful attempts	21 (12.1%)
Multiple successful attempts	21 (12.1%)
<b>Reason for Quitting (n=42)</b>	
No specific reason	11 (26 %)
Peer pressure	3( 7.1%)
Pressure of medical complications	1( 2.3%)
Awareness of physical harm caused by nicotine	12( 28.5%)
Awareness of addiction	7( 16.6%)
Lack of productive work	1( 0.6%)
Others	7( 4.0%)
<b>Reason for relapse (n=42)</b>	
No specific reason	3 (7.1%)
Peer pressure	18 (42%)
Craving	16 (39%)
Cues	3 (7.1%)
Psychological stressors	2 (4.7%)

*Impact on Physical and psychological health.* On detailed interview about physical health and review of medical records, 53 subjects (31%) of the total sample had symptoms of cardiovascular/respiratory system, which included breathlessness, chest pain, dry cough, cough with sputum. Of this about 45% of this sample consisted of smokers only, 30% belonged to the category who used both the forms, 24% were smokeless tobacco users. About twenty subjects (12%) reported oral lesions e.g., white patches in oral cavity, ulcerations, red patches etc. Smokeless tobacco users (with and without smoking) formed the majority (75%) among the subjects with oral lesions. The number of symptoms that each subjects complained varied from 0 to 9 (Mean  $1.1 \pm 1.5$ ). Above complaints were present persistently for over a year before this assessment. Of this only 5% of these subjects were under treatment for the above symptoms and had been told by their treating physicians that these were related to their use of tobacco and had been advised to quit using it.

About psychological health, 29% of the subjects complained of restlessness, 26% of irritability, 23% of lack of concentration, 22% revealed anxiety symptoms, 12% complained of depressive symptoms. Above complaints were present for over a year before this assessment. Only 2% of these subjects were under treatment for the above psychological symptoms.

*Impact on family.* About 23% considered that smoking had impact on the family in the form of passive smoking, negative impact on other members of the family, on occupation and financial condition etc.

*Treatment.* Various modalities of treatment are provided at the TCC. Patients are initially assessed by a psychiatrist who decides the course of treatment with oral medications (Nicotine Chewing Gum, Bupropion, Nortriptyline, Clonidine) or and psychological therapies. The patients were started on oral medications like Nicotine replacement therapy on the quit date, but for other drugs they were prescribed with an advice to reduce smoking concomitantly. All patients were advised to set a quit date and to reduce number of cigarettes gradually except for cases where nicotine replacement therapy was initiated. The psychological therapies included psychoeducation, self-help tips, brief interventions, behavioral counseling etc. In the current study group about 71% of the subjects preferred self-help tips, 15% preferred other psychological therapies and only 3.5 % preferred oral medications. Based on the severity of use and preference for treatment about 61% of the subjects were provided both self-help tips and brief interventions, followed by self-help tips (34%). The patients were followed up for an average of 6 weeks.

## Discussion

Nicotine is typically the first substance of abuse youth's encounter. It is estimated that two in every ten boys and one in every ten girls use a tobacco product and initiation to tobacco products before the age of 10 years is increasing (Benegal, 2005). Prevalence figure of 9.2% perhaps underestimates the problem but is also an indicator of poor knowledge and awareness about problems associated with smoking. All male subjects in our study is an indicator of the cultural taboo and male stereotype associated with use of tobacco products in India and the feelings of embarrassment and shame in revealing its use among female members of the society. Majority of subjects were from nuclear families and middle socioeconomic status, urban backgrounds. This reflects the population profile of Chandigarh city where the study was done. Children and adolescents from such social state often have an easy access to finances, spent majority of their free hours in front of television or internet or in company of friends unsupervised by elders and thus perhaps get easily overwhelmed by glamorous 'role models'. The advertising and promotion of tobacco products and the exposure to smoking in films have a powerful effect on youth and have been directly associated with the initiation of smoking in adolescents. In addition, developing countries like ours have a significant child labor. This exposes them to multiple deprivations and abuse, which have a significant impact on health and development. These children are likely to be school dropouts, have emotional and psychological problems, poor physical health making them vulnerable to indulge in abuse of substances like nicotine to begin with before graduating to harder substances (Nikapota et al., 2003). This is similar to specific socio-demographic risk

factors for smoking initiation during adolescence in the United States where low socioeconomic status, being male, being white, low parental education level, and living in a single-parent household induces a high risk for initiation of nicotine (Buttross et al., 2003, USDHHS, 1994). The use of smokeless tobacco in its various forms is more prevalent than use of cigarettes or bidis is perhaps due to its lower cost, easier accessibility, and ease with which it can be hidden while using it. The awareness about addiction to tobacco and its harmful effects is awefully low and thus most of the subjects have been brought to TCC by their family members concerned about their habits. Although the motivation to stop using tobacco related products is high it was observed that attempts were however unsuccessful. When adolescents initiate tobacco use, they are unaware of the challenge that tobacco cessation will present and thus like adults, they get addicted and experience withdrawal symptoms with nicotine abstinence. Physical and psychological impact of use of tobacco is observed to be significant. The impact is more as child's body is more vulnerable to harmful effects of nicotine and is unable to absorb vis-à-vis an adult. Moreover, only a small proportion of these subjects were under treatment or detailed evaluation of the same. The paper has certain limitations in the form of lacking structured assessment of psychological symptoms, outcome of treatment and follow-up status.

## Conclusion

Nicotine use among children and adolescents is a challenge to every physician and caregiver. The silent nature of this epidemic is still unrecognized. The physical and psychological vulnerability of this age group, low awareness together with easy accessibility makes tobacco use one the dreaded substances of abuse. Preventive measures like ban on advertising and sale to children below 18 years under different tobacco control acts (Lalwani et al., 2005) will obviously help in curtailing in availability of the substance but to what extent will it help in reducing the habit is albeit unknown. Awareness about the physical and psychological harm from use of tobacco, propensity to graduate to harder forms of drugs of abuse, difficulties in abstinence, impact on family, occupation etc., will help in bringing tobacco on the public health agenda. Thus, clinicians should screen pediatric and adolescent patients for tobacco use and provide developmentally appropriate interventions like behavioral counseling, self-help tips etc. Clinicians should also reinforce need for total abstinence, propagate knowledge about harmful effects of tobacco through clinic, community- and school-based intervention programs. All such measures will help in reducing the incidence and prevalence of tobacco use in population.

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