



Smoking Prevalence and Factors Associated with Attempted to Quit Among College Students of Selu Community in Vidarbha (Maharashtra)

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ABSTRACT

Aim and objective: To determine the prevalence and determinants for quitting practices among college going students

Design: Quantitative cross sectional study using structured questionnaire.

Setting: Two colleges of Selu community of Nagpur

Subject: 120 male students of two colleges

Results: Prevalence of ever smoking among college students of Selu community is 20%. Among those participated students in the study (120 students), percentages of ever smoked and never smoked were 20% (24) and 80% (96) respectively. Among these 24 ever smoked students, those who tried to cease the smoking were 25% (6) while those who smokers (currently smokers) at the time of data collection were 75% (18). Among the currently smokers (18), percentages of students attempted to quit the smoking and students never attempted to quit the smoking were 62% (11) and 38% (7) respectively. Those attempted to quit the smoking (11), six individuals quit for more than 3 months while 5 students were able to control on their smoking urge for period of less than 2 months. Fear of health concern (future health hazardous) emerged as cause of quitting.

Conclusion: Quitting nature of smoking attributed to awareness regarding 'health hazardous effects of smoking' and 'moral support' from family members and 'motivating attitude' of friend circles.

KEYWORDS : Smoking, prevalence, quit, ever smokers, currently smokers

Introduction:

Smoking is the single most important cause of death globally as reported by the World Health Organization (WHO, 1995). In 2006, more than 1 billion smokers in the world consumed about 5.7 trillion cigarettes. An additional 700 billion "bids" are consumed annually in India alone.¹ Each day, nearly 4800 adolescents smoke their first cigarette; of these, nearly 2000 will become regular smokers. Tobacco is a widely used addictive substance with an estimated 1.3 billion smokers worldwide. According to WHO estimation in 2010, 13% of India's population smoked (111,856,400 persons) and highest rates of smoking seen in 40 – 45 years.² According to the World Health Organization (WHO), tobacco use is currently responsible for the death of one of ten adults worldwide (about 5 million deaths each year).³ Research suggests that smoking and second hand smoke exposure combined were responsible for 438,000 premature deaths. Also it is estimated that there will be a doubling of deaths from smoking from 5 million per year to approximately 10 million per year in 2020 (Warren et al 2008).⁴ In many developed countries smoking prevalence has been declining over several decades whereas in developing countries smoking prevalence especially among men is increasing and has been exceeded 50%.⁵ In the last 40 years, there has been a steady decline in smoking prevalence among young adults in the US, but despite these improvements, 26% of young adults smoke, which is the highest smoking prevalence of any adult age group in the world (Audrain-McGovern et al 2009).

Prevalence of smoking in Saudi Arabia was 28% (Al-Mohamed et al 2010). In a study done in Nigeria, 20.5% ever smoked, out of which 11.6% were current smokers (Akindele et al 2010). In a similar study in China 61% had a history of smoking out of which 48% currently smoke while 13% were ex-smokers and about half of the current smokers have tried quitting but failed (Al-Mohamed et al 2010). According to WHO estimates, about 194 million men and 45 million women use tobacco in smoked or smokeless form in developing countries like India, use of tobacco smoking by men is 40-60% whereas in women it is 2-10%. In India according to World Bank report 2010 prevalence of smoking in males is 26.85% and according to WHO global tobacco epidemic report 2009 prevalence of smoking in males 26.25% and in female 3.64%.⁶⁻⁷ Tobacco use is one of the major preventable causes of death and disability worldwide. Unfortunately in India, more than 8 lac people die and 123 million become ill as a result of tobacco use every year. It is estimated

that 5500 adolescents start using tobacco every day in India and become part of the 4 million young people using tobacco under the age of 15 years.

In Maharashtra, according to NFHS survey showed the smoking prevalence in Mumbai and Nagpur were 22.1% and 21% respectively.⁹ Indian Journal for Chest Diseases and Allied Sciences 2006 (Jindal et al) stated that the prevalence of ever smoker 28.5% in male and 2.1% in female. One of the studies in tobacco consumption in Wardha district has found smoking prevalence in school going children is 6%. Various types of forms of tobacco consumption were seen across different regions of the country. The most common type of tobacco consumption is in the form of commercial cigarettes which is widely smoked all over the world. Another form of commercially available smoked tobacco is *kretek* (clove cigarettes) which is commonly consumed in Indonesia. Apart from commercially available cigarettes, other forms of tobacco consumption are local hand-rolled cigarettes such as *bidi* in India and *rokok daun* in Malaysia. Various studies of smoking in India showed the regional differences of prevalence of smoking. Table given below showed the prevalence of tobacco consumption pattern of the country

Literature Review of Prevalence of Tobacco consumption in India.

Table No.1 Literature Review of Prevalence of Tobacco consumption in India I

Reference	Population	Year of study	Sample Size	Findings of Study
JAMA	187 countries	2014	38315	Global modelled age-standardized prevalence of daily tobacco smoking in the population older than 15 years decreased from 41.2% (95% uncertainty interval [UI], 40.0%-42.6%) in 1980 to 31.1% (95% UI, 30.2%-32.0%; $P < .001$) in 2012 for men and from 10.6% (95% UI, 10.2%-11.1%) to 6.2% (95% UI, 6.0%-6.4%; $P < .001$) for women.
BMJ ; K M Venkat Narayan, visiting scientista, S L Chadha, community health specialist, R L Hanson, senior staff fellow, R Tandon, consultant cardiologist, S Shekhwat, statistician, R J Fernandes, visiting fellow, N Gopinath, directorb	Delhi Population	1996	13558	45% (95% confidence interval 43.8 to 46.2) of men and 7% (6.4 to 7.6) of women were smokers. Education was the strongest predictor of smoking, and men with no education were 1.8 (1.5 to 2.0) times more likely to be smokers than those with college education, and women with no education were 3.7 (2.9 to 4.8) times more likely. Among smokers, 52.6% of men and 4.9% of women smoked only cigarettes while the others also smoked beedi or chutta.
PIOS; Kolappan Chockalingam, Chandrasekaran Vedhachalam, Subramani Rangasamy, Gomathi Sekar, Srividya Adinarayanan, Sounya Swaminathan, Pradeep Aravindan Menon	Chennai City (urban)	2013	7510	23.7% in rural and 20.9% in semi-urban and 10.4% in urban area. Smokeless tobacco uses were 9.5%, 7% and 7% respectively.
Japi; DS Kelkar1, M Patwardhan2, VD Joshi2	Pune	2013	6577	Prevalence of was 4.2% (256). Prevalence increased from 2.1% at <14 years to 9.8% at 18 to 20 years of age.
IURDH; Devi Madhavi Bhimarasetty, Sunita Sreegiri, Srikanth Gopi, Srikanth Koyyana	Visakhapatnam	2013	250	Among 250 smokers, 41.2% initiated smoking before or at 18 yrs. of age.
GATS study; APJCP; Gupta Bhawan	Across the Indian state - North, West, East, South, central and North-east region	2013	70, 802 households	GATS-India highlighted that total tobacco use among its residents is overall 34.6%, varying for males (47.9%) and females (20.7%). The rural areas of the country exhibit comparatively higher prevalence rates (38.4%) in comparison to urban areas (25.3%). Overall, Khaini, a smokeless tobacco product (12.0%), is the most popular form of tobacco use among males and females, followed by bidi smoking (9.0%).
APJCP; Jayakumary Muttappallymal-il1, Binoo Divakaran2,3, Teena Thomas1, Jayadevan Sreedharan1, Jeeshu C Haran2,4, Mohammed Thanzeel1	Kannur district of kerala	2012	3000 school children	Prevalence among boys was 12% while none of girl found to be smoker
NSS 52nd round	Survey across the India	2009 - 2010	large sample size	Male - tobacco users - 51.3; Smokers 35.3; Users of smokeless tobacco 24.0; Female - tobacco users - 10.3; Smokers 2.6; Users of Smokeless tobacco - 8.6
NFHS-2	Survey across the India	1998- 1999	92486 households	Male - tobacco users - 46.5; Smokers 29.3; Users of smokeless tobacco 28.1; Female - tobacco users - 13.8; Smokers 2.4; Users of Smokeless tobacco - 12.0
NFHS-3	Survey across the India	2005 - 2006	124, 385 females and 74,369 males	Male - tobacco users - 57.6; Smokers 33.4; Users of smokeless tobacco 36.4; Female - tobacco users - 10.8; Smokers 1.4; Users of Smokeless tobacco - 8.4
NHSDAA	Survey across the India	2002	40000 individuals	Male - tobacco users - 61.0; Smokers NA; Users of smokeless tobacco NA; Female - tobacco users - NA; Smokers NA; Users of Smokeless tobacco - NA
SRS	Survey across the India	2010		Male - tobacco users - NA; Smokers 26.1; Users of smokeless tobacco NA; Female - tobacco users - NA; Smokers 2.3; Users of Smokeless tobacco - NA
Global Youth tobacco Survey	Survey across the India	2009		Age range (13 - 15 years) Prevalence among Boys - 11.1 while among Girls 6.0
Global youth tobacco Survey	Survey across the India	2006		Age range (13 - 15 years) Prevalence among Boys - 10.7 while among Girls 7.5
WHO	Survey across the countries (India)	2010		Men (15 - 24 age range) - Prevalence is 12.7; Women (15 - 24 age range) - Prevalence is 0.2; Total (15 - 24 age range) Prevalence is 6.8 Men (25 - 39 age range) - Prevalence is 23.1; Women (25 - 39 age range) - Prevalence is 1.3; Total (25 - 39 age range) Prevalence is 12.6 Men (40 - 54 age range) - Prevalence is 32.9; Women (40 - 54 age range) - Prevalence is 3.2; Total (40 - 54 age range) Prevalence is 18.6; Men (55 - 69 age range) - Prevalence is 30.6; Women (55 - 69 age range) - Prevalence is 6.1; Total (55 - 69 age range) Prevalence is 18.3; Men (70+) - Prevalence is 24.7; Women (70+) - Prevalence is 10.2; Total (70+) is 16.8;
WHO	Survey across the countries (India)	2015		Age 15 years and above - Point estimate for Male 19.9 and female 1.7 For 2020 point estimation of prevalence of smoking Age 15 years and above - for Male 19.9 and female 1.7 For 2025 point estimation of prevalence of smoking Age 15 years and above - for Male 14.6 and female 0.8
Indian Journal of Chest Diseases and Allied Sciences ; S.K. Jindal1, A.N. Aggarwal1, K. Chaudhry2, S.K. Chhabra3, G.A. D'Souza4, D. Gupta1, S.K. Katiyar5, R. Kumar1, B. Shah2, V.K. Vijayan3 for Asthma Epidemiology Study Group	Bangalore, Chandigarh, Delhi and Kanpur	2005	73605	There were 11496 (15.6%) ever smokers in the study sample of 73605 subjects, Among 37682 males, 10756 (28.5%) were ever smokers and among 35923 females 740 (2.1%) were ever smokers.
M Rani, S Bonu, P Jha, S N Nguyen, L Jamjoum	Paper on NFHS-2	2003	315 598 Individuals from 91196 households	47% men and 14% women either smoked or chewed tobacco,

Above table showed the various region-wise, gender-wise, age-wise differences of the tobacco consumption in various parts of the country. Smoking is the leading cause of lung cancer and heart diseases as well. Among young population smoking is found to be attributed for the death and loss of economy. To avoid the future burden of loss of economy and DALY's associated with smoking, targeted intervention of young population is must. For proper intervention, evidence based approach in field of clinical practices, epidemiological practice is must. There are lots of study has been done on prevalence of smoking in country level, Indeed for target intervention need of region-wise epidemiological data is needed. Aimof the study is to determine the prevalence and determinants for quitting practices of college going student in Nagpur urban setting with respect to changed time, place, and persons

Aim and objective of the study

- To study the prevalence among college going students of selu community
- To study the determinants of quitting practices (if any) among college students.

Methods of study

Descriptive cross sectional study was conducted using quantitative method approach to assess smoking prevalence and other determinant for quitting nature. The interview schedules, guidelines for the quantitative interviews, were prepared and discussed in the committee of the experts. These were finalized and pre-tested in the field, and in the light of the findings of the pre-test, the same were revised. The questionnaire was structured and self-administered It was designed to elicit information on socio-demographic characteristics, cigarette smoking pattern, attempted to quit and smoking cessation pattern. All respondent were male only.

Study population and unit of analysis

Graduation students in age category of 18- 25 yrs of age from Selu block Wardha district.

Sampling methods and sample size

Purposive sampling for selection of college as there is only two Graduation College in selu and systematic random sampling for selection of male students in the college. Initially total of 150 students were approached for the interview but 30 were not participated and refused for the interview. Total of 120 participated and completed the study.

Steps for Quantitative study

Study was designed in two stages; For first stage of sampling three faculties were selected (purposive selection as only two colleges exists.

- Arts - from Yashvant Vidhyapith
- Commerce – from Arts, commerce, Science College selu
- Science - Arts, commerce, Science College selu

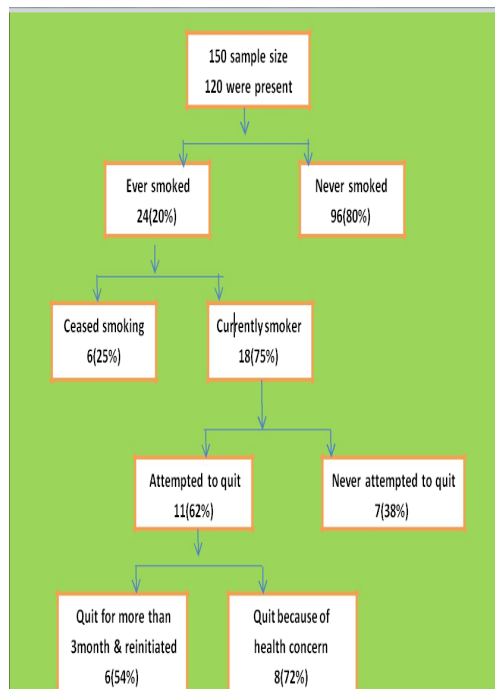
For second stage sampling

In the second stage systematic random sampling was used to select the respondent. The students were identified by their roll numbers. List of the students in the selected departments served as the sampling frame. Students that are not around during the time of the study or those that are not willing to participate were excluded from the study. Such students were replaced by the next person in the sampling frame. From the Arts faculty 52 male students were participated and from commerce and science 29 and 39 students were participated.

Participation of students

Name of College	Faculties	
Yashwant Vidyapeeth, Selu	Arts	30
Arts, Commerce and Sciences College Selu	Arts	22
	Commerce	29
	Science	39
Total	4 Streams	120

Figure 1 - Population flow chart showing participants recruitment and follow-ups for study



Definition of Smokers

Ever Smoked

Those who have taken up to 100 sticks of cigarette in their lifetime, irrespective of whether he/she still smokes (Husten 2007)

Never Smoked

Those who have not taken up to 100 sticks of cigarette in his/her lifetime (Husten 2007)

Currently Smokers

Those who have taken up to 100 sticks of cigarette in their lifetime and has smoked in the last one year (Husten 2007)

Ceased Smoking

Those who have taken up to 100 sticks of cigarette in their lifetime, but have stopped smoking for up to one year before this study (Husten 2007)

Result

Prevalence of Smoking

As per the definition of ever smoked and never smoked people, prevalence of smoking among the student becomes 20%.

Prevalence of smoking

“Prevalence of smoking is defined as the percentages of ever smoked students (100 sticks in their life time) among participants of the study”

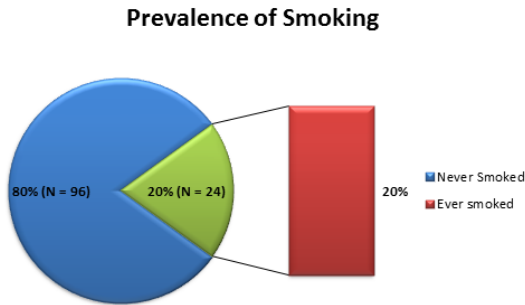
Pi-chart given below showed that of 120 students participated in the study, total of 24 students (20%) were found to have ever smoking while other 96 participants (80%) were found to fall in never smoked category.

Table No.3 Prevalence comparison

Region	Age range	India
India	Age range 15 – 49 years	32.7%
	Among educated (12 or more years completed)	20.1 %
Maharashtra	Age range of 15 – 34 years	21 %
Nagpur	Age range of 15 – 34 years	20.5 %
Selu Community	Among college Students	20%

Above table is comparative analysis of the prevalence of the smoking among the young population. We can conclude that there is no big difference between prevalence of India, Maharashtra and Nagpur when we compared with Selu community' students

Figure 2



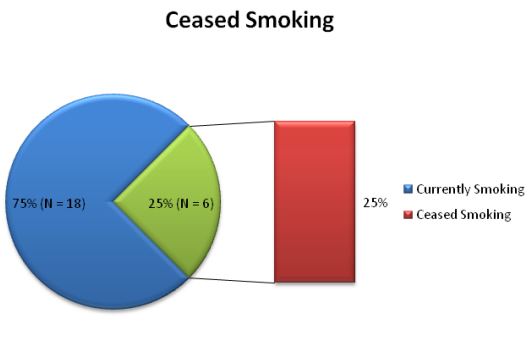
Prevalence of Smoking

Above pi-chart showed the 20% of the students were found to be smokers (ever smokers)

Epidemiological Interpretation of prevalence "Study done in time period of 2012 – 2013 in the area Nagpur with students of Selu community showed the smoking prevalence of 20%"

Characteristics of Ever Smoked Students

Figure 3



Above Pi-chart showed that among those 24 who were ever smoked, 6 students found to be ceased smoking while other 18 students are continuing the same. We can conclude that among smokers (Ever smokers), the percentages of ceased smoking for students of Selu community is 25%.

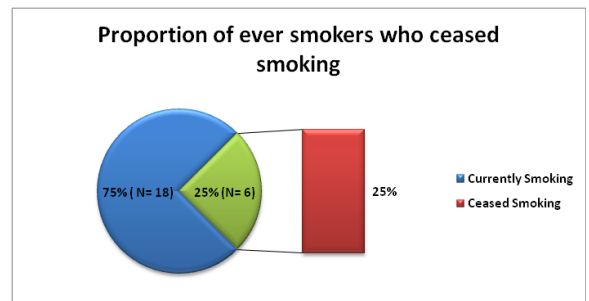
Other characteristics of ever-smoked students

Characteristics	Attributes	Frequency (%) N=24
Age range	18 – 20	10 (42%)
	21 – 25	13 (54%)
	26 – 30	1 (4%)
Location of smoking	Pan- shops	16 (66%)
	Hostel	5 (21%)
	Outside home	3 (12%)
Average Cigarette/day	Less than 3	8 (33.33%)
	Between 3 – 5	12 (50%)
	More than 5	4 (17%)
Use alternative product to cease smoking	Yes	6 (25%)
	No	18 (75%)

Other characteristics of ever smoked students

Of those 24 who were ever smoked, six (25% of ever smoked) were ceased smoking while 18 (75% of ever smoked) are still smoking (currently smokers) as shown in graph below:

Figure 4



Above bar-chart showed the proportion of students who ceased smoking; of those 24 (ever smokers) 18 are still currently smoking while 6 ceased smoking.

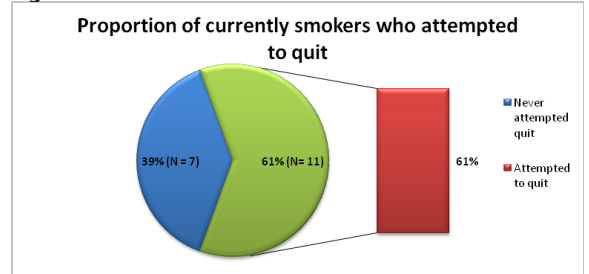
Characteristics of ceased smokers

Of those 6 (25% of ever smokers) who ceased smoking 3 students were used alternative products for the cessation such as Pan-parag, Mava gutka, chaini, khaini and Khara etc. which also contains the harmful copper-sulphate and proved to have harmful effects on health. Indeed having knowledge of harmful effects these students shifted to such alternatives for cessation of smoking indication susceptibility of fear of hazardous effects of smoking. When further probed with structured questionnaire, three main reasons apart from above fear such as health concern by 4/6 (66%) respondents, friends and family pressures 1 (17%) respondents while fear of premature death by 1 (17%) respondent.

Characteristics of currently smokers

Among 24 ever smokers, 18 students were found currently smokers. Graph given below describes the proportion of currently smokers who attempted quitting smoking as:

Figure 5



Above bar chart showed that 61% of currently smokers attempted for quitting the smoking habit while 39% were never attempted for the same.

Other characteristics of currently smoking participants

Characteristics	Attributes	Frequency (%) N=24
Willingness to quit	Yes	8 (45%)
	No	10 (55%)
Attempted to quit	Yes	11 (61%)
	No	7 (39%)
Why (for those 11 who attempted to quit)	Health problems	8 (72%)
	Peer pressure	2 (18%)
	To be smoke free	1 (1%)
Duration of quit (for those 11 who attempted to quit)	More than 2 – 3 months	6 (54%)
	Less than 2 -3 months	5 (45%)
Asked to quit	Yes	13 (72.22%)
	No	5 (17.78%)
Asked by whom (for those 13 who asked to quit)	Friends	8 (62%)
	Parents	1 (7%)
	Health workers	4 (31%)

Above table and Pi-chart shows that, among ever smokers, 18 respondents found to be current smokers and among those 7 (39%) were willing, while 11 (61%) were not willing to quit the smoking. Further probing with structured questions, 11 (61%) of currently smokers had attempted to quit, while 7 (39%) had however made no such attempt to quit the habit of smoking. Of those who had attempted quitting, 8(72%) did so because of health problems, 2 (18%) did because of pressure from friends and family, while 1 (1%) did because he wants his life to be smoke free. From those who had attempted quitting, 6(54%) did this or able to control the urge for more than three months of duration while 5(46%) did or able to control urge for less than three month of duration. At one point in time of their smoking habits, 13 (72.22%) had been asked to stop smoking, while 5 (27.78%) of the respondents had never been asked to quit smoking. Out of the 13 that had been asked to quit, 8 (62%) were asked by friends, 1 (7%) by parents, and 4 (31%) by a health worker.

Discussion and conclusion

Tobacco is one of the major risk factors of non-communicable diseases worldwide. About 15% of men in Maharashtra smoked tobacco daily.⁶The prevalence of smoking among school going children in Wardha district is found 6% which is quit minimum but the prevalence of 20% among college going youth is similar to the prevalence of 20.5% found in a study carried out in Nigeria (Evelyn et al 2007). While a prevalence of 26% found in a study carried out among university students in Pakistan (Ahmed et al 2008).³Several survey done at national, state level also showed the prevalence ranges between 20 to 45 percentages in age group above 15 years. Our study also showed the prevalence of 20 % among college going youth which is also similar to the national level NFHS data and state/district level DLHS data. Prevalence of smoking found to decreased in age group from 45 to 20 as said by global report of smoking by WHO 2015, Indeed use of other form of tobacco habits and alternative of tobacco such as Masala pan, Ghutakha in well-developed area while Mava, Chaini, Khara, Butpens etc. among poor slum area will be growing concern for future burden of mouth cancer. Shifting of smoking on these types of khaini (even after complete Bann by Maharashtra government) is dangerous as it contain poisonous copper sulphate.

Several reasons were given for quitting tobacco use by ex-smokers, in other studies done in Nigeria, 50% gave health reasons, (Akindele et al 2010, Muula et al 2007). Similarly this study showed that health problems (66%) are reason for quitting. Current smokers attempted to quit found in this study was 62% a study done in Nigeria shows 83.3% and 74.5% of them did as a result of health problem (oluwole et al 2012)which is similar to our study 72%.

Peer pressure and support from the family were found to be worldwide factors for the quitting the habits also found in this study too. There is need from family and community as well for the quitting the smoking at community and family level as well. At family level, subject should be given moral support; motivating smokers for the quitting are found attributed to quit the smoking. At community, community people themselves assure and should take responsibility to complete stop smoking by banning the smoking on public places such as hospital, hotel etc. Tea stall emerged as place of smokers should be banned and should not be supported by community people as it is against the law.

There is need of support, motivation and community mobilization as one step ahead for bringing the change of smoke free life.

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