



YOUTH TOBACCO SURVEY AMONG MEDICAL AND PARAMEDICAL UNDERGRADUATE STUDENTS: A CROSS SECTIONAL STUDY

Dr. Vinod.A^{1*}, Bhaskar Mara², Viswanatha Sham Almela³, Veena S. Pattar⁴, Shekavva Halli⁵, Arpitha B⁶

^{1*,2}MD, Associate professor, Department of Psychiatry, S.N. Medical College, Bagalkot 587103.

³MD, Assistant Professor, Department of Psychiatry, S.N. Medical College, Bagalkot 587103.

⁴MD (Ayu), Professor, Dept of Swasthavritta and Yoga, BVVS Ayurvedic Medical College and Hospital, Bagalkot 587101.

⁵MD, Assistant Professor, Department of Radiology, S.N. Medical College, Bagalkot 587103.

⁶MD, Associate Professor, Department of Psychiatry, G S L Medical College and General Hospital, Rajamahendravaram 533296.

Corresponding Author: Dr. Vinod A

MD, Associate professor, Department of Psychiatry, S.N. Medical College, Bagalkot 587103.

ABSTRACT

Background: Tobacco use is a public health challenge across the world. This study was undertaken to study the knowledge, attitude and need for the education regarding tobacco cessation.

Material and Methods: A cross sectional study was undertaken in 500 medical, pharmacy and nursing students in Bagalkot city. The students were administered with a questionnaire containing questions pertaining to the tobacco use, degree of dependency, awareness, attitude and practice related questions. The results were presented as frequencies and percentages and chi square test was used as test of significance. A p value of less than 0.05 was considered as statistically significant.

Results: The overall prevalence of the tobacco use was 7% in this study. There was no statistically significant difference in knowledge related questions of current users, past users and nonusers. The attitude of the students was also to initiate some smoking cessation programs and to ban tobacco near the teaching institutions. The students expressed a positive attitude towards the inclusion of curriculum and training regarding the smoking cessation programs.

Conclusion: The overall prevalence of the tobacco use was low and the students were in favour of including tobacco cessation programs in to their curriculum.

Keywords: Tobacco, Prevalence, Smoking Cessation, Awareness, Attitude.

INTRODUCTION

Tobacco use is one of the major public health problems across the world. Use of tobacco is most important and preventable cause of disease and death all over the world.¹ the estimates have shown that about 6 million deaths occur each year across the world. The deaths attributable to tobacco are projected to increase from 6 million to 8 million by the year 2030, with 80% of these premature deaths among people living in low and middle income countries.²

The estimates of Centres for Disease Control and Prevention using data from the 2000 – 2004 National Health Interview Survey responses and death certificates, cigarette smoking was the leading cause of death in the United States.



www.ajmrhs.com
eISSN: 2583-7761

Date of Received: 09-06-2026
Date Acceptance: 17-06-2026
Date of Publication: 16-07-2026

Approximately 19.3% of Americans over the age of 12 were current smokers as of the year 2010, with current cigarette smokers defined as “adults of ≥ 18 years age who smoked more than 100 cigarettes during their lifetime and now smoking every day or some days”.³

The World Health Organization (WHO) data estimate of the global prevalence of smoking among adults based on the 60 countries that account for 90% of the world’s smokers and 85% of the global population in 2010, estimated the global prevalence just under 24% (around 794 million smokers). Countries which contribute the most to the global smoking account include China (28%), India (11%), Indonesia (4.8%), United States of America (USA) (4.7%) and the Russian Federation (4%). Countries like Germany, Turkey, Brazil, Pakistan and Bangladesh all have contributed around 1.5-1.9% of global smoking.

India is second largest producer of tobacco in the world. Every year about 800,000 - 900,000 Indians die due to tobacco use.⁴ It was estimated

in 1999-2001 that 5,500 adolescents start using tobacco every day in India, joining the 4 million young people, under the age of 15, who already use tobacco regularly.^{5,6} Like other developing countries, the most susceptible time for initiating tobacco use in India is during adolescence and early adulthood, ages 15-24 years.⁷ Most tobacco users start using tobacco before the age of 18 years, while some start as young as 10 years.⁶ Among medical students the prevalence of smoking has been found to vary widely from country to country. Smith et al⁸ conducted a systematic review of the literature which showed smoking prevalence among male medical students ranged between 3% in the United states of America (USA)¹³ and 58% in Japan.⁷ A study observed marked differences in smoking rates between males and females, with male students generally having higher rates. In Indian medical students' prevalence of tobacco use in the form of cigarettes was 11.6% and tobacco products other than cigarettes was 5.4%.⁸

Prevalence rate of tobacco use in Iraq, Kurdistan region among the nursing students of was 20.2% in the form of cigarettes and other than cigarettes was 5.4% and among pharmacy students was in the form of cigarettes 10.6% where all were males and other than cigarettes was 1.1%.⁹ In general due to academic and various kinds of stress students are more prone to fall prey for deadly habits.

Initiation of smoking/ tobacco use at early age underscores the urgent need to intervene and protect this vulnerable group from falling prey to this addiction. Those who start early and continue its use for a longer period are at highest risk.¹⁰

Health professional students forms unique study group since they are future health professionals. Such studies are scant in Northern part of Karnataka since tobacco use is higher compared to other parts of India. Hence, this study was undertaken to assess the prevalence, knowledge, awareness and education about hazards of tobacco especially in students who are the potential health professionals.

MATERIAL AND METHODS

A cross sectional study was undertaken among the medical, pharmacy and nursing college undergraduate students during September, 2016. Sampling was done by using Universal sampling method. The students aged between 18 – 25 years, Medical undergraduate students of S. Nijalingappa Medical College, pharmacy and students of Sajjalashri nursing college and those who gave the informed consent were included in to the study. Clearance was obtained from Institution Ethics review committee. This was a self-administered questionnaire to a pretested anonymous closed and open-ended self-administered questionnaire. It contained 5 sections on use of smoked, smokeless tobacco, awareness about effects of tobacco, ill-effects of tobacco use and contributory factors to tobacco use respectively in addition to socio-demographic details. The outcome variable was smoking status, classified in to three categories: Current smoker, ex-smoker/ ever smoked. The never smoker was defined as one never used any type of tobacco in the lifetime. The predictor variable was attitude towards smoking. The questionnaire was distributed to students in class who filled in responses. Suitable modifications were made to accommodate the local scenario.

Fagerstrom nicotine dependence assessment scale:¹¹

The Fagerstrom is a method for determining the physical addiction to tobacco.

- For smokeless tobacco users Modified Fagerstrom questionnaire
Scoring is from 0-16. Higher the score stronger the addiction.
- Fagerstrom addiction scale for smokers
Score <4 is very low dependence, >4 is dependence.

The data thus obtained was compiled using a Microsoft excel sheet. The data was transferred and analyzed using Statistical Package for Social Services (version 20). The frequencies and percentages were used for the presentation of data. As a test of significance chi square test was used and ≤ 0.05 p value was considered statistically significant.

RESULTS

Table 1: Socio-Demographic Profile of Study Subjects

Variables	Age group	Current tobacco user N (%)	Past tobacco user N (%)	Non user N (%)
Age group	Up to 19 years	16 (45.7)	10 (37.0)	150 (34.2)
	20 years	4 (11.4)	2 (7.4)	35 (7.4)
	21 years	9 (25.7)	5 (18.5)	112 (25.6)
	22 years	0	5 (18.5)	37 (8.4)
	23 years and above	6 (17.1)	5 (18.5)	104 (23.7)
Sex	Male	32 (91.4)	16 (59.3)	181 (41.3)
	Female	3 (8.6)	11 (40.7)	257 (58.7)
Profession	Medical	19 (54.3)	12 (44.4)	218 (49.8)

	Pharmacy	6 (17.1)	8 (29.6)	111 (25.3)
	Nursing	10 (28.6)	7 (25.9)	109 (24.9)
Type of tobacco used	Smoked tobacco	22 (62.9)		
	Smokeless tobacco	13 (37.1)		

Majority of the students in this study were aged up to 19 years (Table 1). Majority of the current tobacco users were males and nonusers were females. In current tobacco users, about 54.3% were from medical fraternity, 17.1% from pharmacy and 28.6% were from nursing fraternity. About 62.9% of the

tobacco users were using smoked tobacco. The overall prevalence of tobacco use was 7% in this study. The prevalence in medical students was 7.6%, pharmacy students were 4.8% and nursing students was 7.9%.

Table 2: Distribution of Study Group According To Level of Dependence of Smoked and Smokeless Tobacco

Level Of Dependence		Frequency	Percent
Fagerstrom Questionnaire	Highly Dependent	8	36.4
	Moderately Dependent	10	45.5
	Minimally Dependent	4	18.2
Modified Fagerstrom Questionnaire	No Dependence	3	23.1
	Moderate Dependence	5	38.5
	Substantial Dependence	5	38.5

The Fagerstrom questionnaire had shown that about 45.5% of the smoked tobacco users were moderately dependent followed by 36.4% were highly dependent and 18.2% were minimally dependent

(Table 2). In smokeless tobacco users, 38.5% were moderately and substantial dependence and 23.1% had no dependence.

Table 3: Attitudes towards Tobacco Control in Health Profession Students

Variables	Current Tobacco User N (%)	Past Tobacco User N (%)	Non User N (%)	P Value
Should Tobacco Sales To Adolescents Be Banned?	30 (85.7)	24 (88.9)	389 (88.8)	0.856, NS
Should Advertising Be Completely Banned?	32 (91.4)	27 (100)	407 (92.9)	0.333, NS
Do You Agree With Smoking Ban In Restaurants?	33 (94.3)	26 (96.3)	415 (94.7)	0.931, NS
Do You Agree With Smoking Ban In Discos/Bars/Pubs?	34 (97.1)	25 (92.6)	414 (94.5)	0.718, NS
Do You Think That Smoking In All Public Spaces Should Be Banned?	31 (88.6)	24 (88.9)	410 (93.6)	0.367, NS
Should Health Professional Get Cessation Training?	31 (88.6)	24 (88.9)	407 (92.9)	0.503, NS
Are Health Professionals Role Models?	33 (94.3)	26 (96.3)	414 (94.5)	0.921, NS
Should Health Professionals Give Quitting Advice Routinely?	34 (97.1)	26 (96.3)	412 (94.1)	0.679, NS
Should Health Professionals Routinely Advise Their Patients Who Use Other Tobacco Products To Quit Using These Products?	32 (91.4)	25 (92.6)	418 (95.4)	0.486, NS
Do Health Professionals Have A Role In Giving Advice About Smoking Cessation To Patients?	32 (91.4)	25 (92.6)	406 (92.7)	0.963, NS

Do Chances Of Quitting Improve If Health Professional Gives Advice?	34 (97.1)	24 (88.9)	416 (95.0)	0.312, NS
---	-----------	-----------	------------	-----------

* NS – Not significant

This study had shown that, majority of the students had positive attitudes towards using tobacco irrespective of their using status(Table 3).There was no statistically significant difference in the attitudes of the students. Majority of the students have agreed for banning the tobacco and banning the tobacco in public places like schools and colleges. About

94.3% of the tobacco users, 96.3% of the past users and 94.5% of the nonusers expressed that they must be role models to the general public. About 91.4% of the current users, 92.6% of the past users and 92.7% of the nonusers expressed that the health professionals have a role in giving advice about smoking cessation to patients.

Table 4: Awareness of Smoking Policy by Programme

Variables	Current Tobacco User N (%)	Past Tobacco User N (%)	Non User N (%)	P Value
Does Your College Have And Official Policy Banning Smoking In School Buildings And Clinics?	35 (100)	27 (100)	411 (93.8)	0.133, NS
Buildings Only	34 (97.1)	24 (88.9)	407 (92.9)	0.443, NS
Buildings And Clinics	33 (94.3)	25 (92.6)	413 (94.3)	0.935, NS
Is Your School' Official Smoking Ban For School Buildings And Clinics Enforced?	33 (94.3)	27 (100)	410 (93.6)	0.397, NS

* NS – Not significant

All the current users, past users of tobacco and 93.8% of the nonusers have expressed that their institutions have the official policy banning smoking in school buildings and clinics (Table 4). About 97.1% of the tobacco users, 88.9% of the past users

and 92.9% of the nonusers expressed that the tobacco must be banned in building only. None of the awareness statements were significantly different.

Table 5. Provision of Tobacco Education to Health Professional Students

Variables	Current Tobacco User N (%)	Past Tobacco User N (%)	Non User N (%)	P Value
During Classes, Were You Taught About Dangers Of Smoking?	32 (91.4)	26 (96.3)	402 (91.8)	0.697, NS
During Classes, Were You Taught About Reasons Why People Smoke?	33 (94.3)	26 (96.3)	391 (89.3)	0.339, NS
Did You Learn That It Is Important To Record Tobacco Use History?	33 (94.3)	26 (96.3)	416 (95.0)	0.935, NS
Have You Ever Received Formal Training In Smoking Cessation?	32 (91.4)	25 (92.6)	418 (95.4)	0.486, NS
Did You Learn It Is Important To Provide Educational Quitting Materials?	29 (82.9)	25 (92.6)	403 (92.0)	0.173, NS
Have You Ever Heard Of Nicotine Replacement Therapies?	33 (94.3)	27 (100)	415 (94.7)	0.468, NS
Have You Heard Of Antidepressant Use In Cessation Programs?	32 (91.4)	26 (96.3)	411 (93.8)	0.730, NS

* NS – Not significant

The dangers of using tobacco have been taught in classrooms has been agreed by current, past and nonusers of the tobacco (Table 5). The topics relating to reasons of smoking, recording the use of tobacco in the history, formal training in smoking cessation, nicotine replacement therapies and use of anti-depressants in cessation programs were expressed by majority of the students including current and past users. None of the statements were statistically significant between current, past and nonusers.

DISCUSSION

This study was mainly undertaken to study the prevalence, knowledge, awareness and education about hazards of tobacco especially in students who are the potential health professionals. These students are the future health professionals and are going to advise the general public at large. The advice from doctors or nurses during the routine care, during hospital visits, ward rounds, outpatient clinics and industrial clinics can significantly improve the smoking cessation rates. The people will be receptive to the advice. The overall prevalence of using tobacco was 7% in this study. The medical and nursing students had higher prevalence of tobacco use than the pharmacy students. The students from other fraternity had less prevalence of smoking. The reason for higher prevalence of use of tobacco in the medical students was unknown in this study. In a study by Sychareun et al, the overall prevalence of the tobacco use was 5.1% and the prevalence was higher among the dental students than other students¹² while other studies have shown that, higher rates of smoking than this study. This study had reported lower rates of use of tobacco than other studies.^{13, 14} This study had shown that most of the current user health professional students were aged up to 19 years and males. The users of tobacco were males compared to females. Majority of students were from medical fraternity and most of the current users were medical fraternity.

Most of the students using smoked tobacco use were moderately dependent and smokeless tobacco users were moderately and substantially dependent. About 36.4% were highly dependent on the tobacco products. A study by Sychareun et al had reported that, most of their respondents expressed positive attitudes towards tobacco control. The attitudes were positive to smoking control which is expressed by both smokers and non-smokers. The respondents generally endorsed tobacco control training, including counselling and agreed that in curricula of health professionals can play a key role¹² the literature suggests that, simple advice from the doctors or nurses during routine care can significantly increase in the smoking cessation rates.^{15, 16}

The attitudes of the health professional students were positive towards using the tobacco irrespective of its use. Around 88.6% of the current users, 88.9% of the past users and 92.9% of the non-users urged compulsory cessation training for the health professionals. Majority of the health professional students have felt that they are role models to the society once they start their profession. But none of the statements were statistically significant between the current users, past and nonusers in this study. A study by Sychareun et al also noted similar findings.¹² despite the existence of no tobacco use policy in college and school premises the perceived enforcement was differing from college to college. Current tobacco users, past users and nonusers were quite aware about banning the sale of tobacco in the school and college premises. Most of them also felt the formal training should be including in to the curricula. Sychareun et al also found the similar results that provision of formal education is an important strategy in promoting cessation.¹² the emphasis must be focussed on knowledge and counselling skills for the health professional students.¹⁷ the overall attitude was positive to control of tobacco use both by users and non-users of the tobacco. The respondents endorsed tobacco control training along with counselling and to incorporate them in to the curriculum.

Limitations

But this study has some limitations since the study was conducted on students but not the practicing health professionals. Most of students may not be interacted with the patients and thus the survey results may not be extrapolated at large. Also, the study lacks in establishing causality since it is a cross sectional study. A qualitative research in this direction can be helpful in order to understand what can work in this context and lessons learnt can be applied to other similar contexts.

CONCLUSION

This study has contributed to the knowledge of tobacco use in health professionals in a tertiary care centre in Karnataka. The overall prevalence of tobacco was low and the students were supportive for the tobacco control in this study. Further studies in this direction can be helpful and also the college authorities to implement the Cigarettes and other tobacco products act 2003 (COTPA) act strictly in order to control the use of tobacco in college premises.

REFERENCES

1. World Health Report 2002. Quantifying selected major risks to health. World Health organization 2002.[http:// www.who.int/whr/2002/ chapter 4.pdf](http://www.who.int/whr/2002/chapter4.pdf) (Cited on 10/10/2021).

2. Sung H, Ferlay J, Siegel RL, Laversanne M, Soerjomataram I, Jemal A, Bray F. Global Cancer Statistics 2020: GLOBOCAN Estimates of Incidence and Mortality Worldwide for 36 Cancers in 185 Countries. *CA Cancer J Clin*: 2021; May;71(3):209-249.
3. Jha P. The hazards of smoking and the benefits of cessation: a critical summation of the epidemiological evidence in high-income countries. *Elife*: 2020;9:e49979.
4. Reddy KS, Arora M. Tobacco use among children in India: a burgeoning epidemic. *Indian Pediatr*. 2005 Aug;42(8):757-61.
5. Patel DR. Smoking and Children. *Indian J of Pediatr*. 1999; 66: 817-824.
6. Chadda RK, Sengupta SN. Tobacco use by Indian adolescents. *Tob Induc Dis*. 2002;1(1):8.
7. Grover S, Anand T, Kishore J, Tripathy JP, Sinha DN. Tobacco Use Among the Youth in India: Evidence From Global Adult Tobacco Survey-2 (2016-2017). *Tob Use Insights*. 2020 Sep 22;13:1179173X20927397.
8. Singh V, Gupta R. Prevalence of tobacco use and awareness of risks among school children in Jaipur. *J Assoc Physicians India*. 2006 Aug;54:609-12.
9. Hussain HY, Abdul Satar BA. Prevalence and determinants of tobacco use among Iraqi adolescents: Iraq GYTS 2012. *Tob Induc Dis*. 2013;11(1):14.
10. Narain R, Sardana S, Gupta S, Sehgal A. Age at initiation & prevalence of tobacco use among school children in Noida, India: a cross-sectional questionnaire based survey. *Indian J Med Res*. 2011;133(3):300-307.
11. Heatherton TF, Kozlowski LT, Frecker RC, Fagerström KO. The Fagerström Test for Nicotine Dependence: a revision of the Fagerström Tolerance Questionnaire. *Br J Addict*. 1991 Sep;86(9):1119-27.
12. Sychareun V, Hansana V, Choummanivong M, Nathavong S, Chaleunvong K, Durham J. Cross-sectional survey: smoking among medical, pharmacy, dental and nursing students, University of Health Sciences, Lao PDR. *BMJ Open*. 2013 Aug 30;3(8):e003042.
13. Yang T, Abdullah AS, Rockett IRea. Assessment of tobacco control advocacy behavioral capacity among students at schools of public health in China. *Tob Control* 2011; 20:20-5.
14. Gualano MR, Bontempi C, Saulle R, et al. Validation of the global health professions students survey questionnaire in Italy. *Ital J Public Health* 2011; 8:392-8.
15. Stead LF, Bergson G, Lancaster T. Physician advice for smoking cessation. *Cochrane Database Syst Rev* 2008;2:CD000165.
16. Rice VH, Stead LF. Nursing interventions for smoking cessation. *Cochrane Database Syst Rev* 2008;1:CD001188.
17. Emmons KM. Smoking cessation and tobacco control: an overview. *Chest* 1999;116:490S-2S.

How to cite this article: Dr.Vinod.A, Bhaskar Mara, Viswanatha Sham Almela, Veena S. Pattar, Shekavva Halli, Arpitha B, YOUTH TOBACCO SURVEY AMONG MEDICAL AND PARAMEDICAL UNDERGRADUATE STUDENTS: A CROSS SECTIONAL STUDY, *Asian J. Med. Res. Health Sci.*, 2026; 4 (2):2174-2179.

Source of Support: Nil, Conflicts of Interest: None declared.