

Original Research Article

Information related to tobacco products in Indian undergraduate college syllabus: a content analysis

Anu Krishna Kumar S.*, Madan Kumar P. D.

Department of Public Health Dentistry, Ragas Dental College and Hospital, Chennai, Tamil Nadu, India

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*Correspondence:

Anu Krishna Kumar S.,

E-mail: anukridhnakumar1996@gmail.com

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ABSTRACT

Background: Health education through college textbooks is effective in promoting knowledge, reforming, and improving health related behaviours among youths. This study evaluated the amount of tobacco related health and other information among the undergraduate college syllabus in their curriculum.

Methods: Under graduate college courses that were enrolled by students in the academic year 2019-2020 according to the All-India survey on higher education were included in the study. A total of 28 undergraduate courses under 12 governing bodies were included for content analysis. These curriculums were analysed by three examiners for the search of tobacco related keywords obtained from the WHO glossary of tobacco terms. The inter examiner reliability was calculated using the Cohen's Kappa in the SPSS software (version 25).

Results: Total of 3383 pages of the curriculum from different undergraduate courses were analysed. Results showed that the total number of information related to tobacco appeared in the form of text as 15 and tabulations as 4, to a total of 19. Among the different courses, the tobacco-related contents were higher in MBBS curriculum. Distribution of the tobacco related contents under health information were found to be higher when compared to the tobacco cessation contents and laws.

Conclusions: The distribution of tobacco related contents were found to be very less among the undergraduate courses. There is a lack of information regarding the cessation process and guidance against tobacco related habits.

Keywords: Tobacco products, Health education, Undergraduate courses

INTRODUCTION

Tobacco is an important public health issue and the single most preventable cause of illness and death in the world. According to the latest research by the world health organisation (WHO) suggests that smoking-related mortality has risen to 8 million lives globally and disease in India accounts for nearly 1.35 million deaths every year.¹ India is also the second-largest consumer and producer of tobacco. According to the global youth tobacco survey (GYTS) India 2009, there is a current decrease in the use of tobacco products in youth by about 14.6%.² However, there is also an increase in the never

smokers who are likely to initiate smoking next year to 15.5%. Yearly 267 million adults (15 years and above) in India (29% of all adults) are users of tobacco, according to the global adult tobacco survey India (GATS), 2016-17.³ There is a significant increase in the use of tobacco among students transitioning from schools to colleges. Tobacco not only causes loss of lives but also has heavy social and economic costs. The total economic costs attributed to tobacco use from all diseases in India in the year 2011 for people aged 35-39 amounted to INR 1,04,500 crore.⁴ World health organizations and every national and international body are taking numerous steps to reduce the use of tobacco and creating awareness about tobacco and

its harmful effects. Though COTPA Act 2003 produce a positive outcome in reducing the use of tobacco among the youth, still there are numerous loopholes in the implementation of the act. However, the Government of India has taken efforts for reimplementation of the act in 2021 after ratification.⁵ According to the All-India Survey on higher education (AISHE), 2019-2020 in India the undergraduate students enrolled are 3,85,36,359 which accounts for 6.4% of the population of age group 15-35 years.⁶ Several studies have shown that youth take up the habit of using tobacco very faster than adults. So, we consider that these college students are the potential age group to be reached and to be educated, motivated, and to create awareness about tobacco and its effects. Health education in schools has played an important role in understanding and eliminating lifestyle diseases such as diabetes and HIV etc, this health education has shown results in creating awareness and change in lifestyle among the students and society.⁷ WHO has also emphasized the importance of promoting a healthy environment and creating awareness through school-based programs. In addition to health-promoting interventions at schools, the school syllabus plays a vital role in imparting education to them, governing bodies, including those who are part of syllabus framing committees have realized this importance and have taken efforts in including chapters related to general health and well-being. Though numerous studies have demonstrated this benefit on school-going children, colleges students are also a risk group that warrants attention to create awareness about the abuse of tobacco, its health-related complications, and ways to quitting the habits of using tobacco through education. Hence, the objective of this study was to identify and evaluate the tobacco-related information in undergraduate curriculum, India. The informative from this study can be used to evaluate the extent to which these textbooks promote information about tobacco-related products and as well as its risk behaviour avoidance among the students.

METHODS

Although numerous countries have implemented health education material in their syllabus that includes tobacco-related health information, for our analysis we chose to focus on courses offered by Indian universities. The impending growth of the tobacco industry and the impact of smoking on the population have increased the rate of smoking among college students. This trend resulted in the analysis of tobacco-related knowledge and health education materials in the curriculum of the undergraduate courses in India.

Search for curriculum

For our content analysis, we included the majority of UG courses that were enrolled by students in the academic year 2019-2020 according to the All-India Survey on Higher Education. 28 Undergraduate courses under 12 governing bodies were included for content analysis. The included courses were “BA applied Sanskrit”, “BA business

economics”, “BA corporate economics”, “BA defence and strategic studies”, “BA economics”, “BA English”, “BA historical studies”, “BA history & tourism”, “BA labour management”, “BA philosophy”, “BA political science”, “BA public administration”, “BA Sanskrit”, “BA sociology”, “BA Tamil”, “BA Telugu”, “BA tourism and travel management”, “BA music bachelor of music”, “BSW bachelor of social work”, “BSc agriculture”, “bachelor of ayurveda”, “bachelor of medicine and surgery (BAMS)”, “bachelor of dental surgery (BDS)”, “B arch.”, “BE biomedical”, “BE biotechnology”, “BE chemical”, “BE civil”, “BE computer science”, “BE information technology”, “BE marine”, “BE mechanical”, “bachelor of law”, “bachelor of arts LLB”, “bachelors of business administration, LLB”, “bachelor of science, LLB”, “BA, LLB (Hons) BSc”, “LLB (Hons) BBA”, “LLB (Hons)”, “bachelor of medicine and bachelor of surgery (MBBS)”, “BSc nursing”, “bachelors in education”, “bachelor of science”, “bachelor of unani medicine & surgery (BUMS)” have been chosen for the analysis.

Duration of the study

The study was carried out for a period of 4 months (June to September 2021). The number of students who enrolled in each undergraduate course in the academic year 2019-2020 according to the all-India survey on higher education (AISHE) is depicted in (Table 1). The table also provides summary of the courses provided in India with their governing bodies and official websites that facilitated syllabus download. From the curriculum of 28 undergraduate courses, a total of 3383 pages of the curriculum were reviewed by 3 Dental Professionals for its tobacco-related health contents. The content analysis of the subjects was conducted based on: Content on core components: The core component of this content analysis was a search for the Tobacco-related keywords in the undergraduate curriculum and analyzed based on the context on which it is present. The keywords were determined from the Glossary of Terms Used in the Tobacco Atlas by WHO (2019) and other regional keywords related to tobacco were taken under consideration.⁸ The keyword component: The Keyword component was based on tobacco and its forms: areca nut, betel quid, bidis, cessation, chilum, cigar, cigarette, hookah, nicotine, nicotine replacement therapy, pan masala, passive smoking, smoke-free areas, smoker, snuff, tar, tobacco, water pipe, and COTPA.⁸ Contents were assessed based on 20 words that are present in the syllabus. We also searched for misspelled words, including “cigarette,” “ciggarete,” and “cigarett.” The keyword search was performed, and a list of the potentially tobacco-containing curriculum was generated (these were considered potential because many keywords can be used in nontobacco contexts). All pages of the curriculum were retrieved in the keyword search and evaluated systematically for the characteristics. Each page was examined for the presence of tobacco-related context. The curriculum of each UG syllabus was converted to a word document from the pdf file. Search for the keywords was

done using the word search in the Microsoft word 2019 version software. Tobacco content was noted as present in the curriculum if it appeared in any category in that curriculum. Keywords were classified into 3 different components based upon the context in which it is present. Component 1: tobacco related health content, component 2: tobacco cessation contents, component 3: tobacco related laws and other content. A total of 20 keywords were extracted and distributed to all the examiners. Coding was completed using Microsoft Excel and on completion, data were entered into IBM SPSS Statistics 20 for analysis. Mode of representation: They were categorized into 1-texts; 2-tables; Their frequency under each category was enumerated for every page by all the 3 dental examiners. Inter examiner reliability: The inter-rater reliability was calculated using the Cohen's Kappa in the SPSS software (version 25) and it was found to be good (0.917) reliability between the raters.

RESULTS

We reviewed a total of 3383 pages of the curriculum from different undergraduate courses. The total number of information related to tobacco appeared in the form of text as 15 and tabulations as 4, to a total of 19. Among the different courses, the occurrence of tobacco-related health contents was high in MBBS curriculum (4) followed by B. Pharm and D. Pharm (3) and in BDS, BABL, Agriculture (2) curriculum. No of the students enrolled in the majority of the undergraduate courses available in India during the academic year (2019-2020) and frequency in occurrences of tobacco-related keywords in the different UG course curriculum is reported in (Table 2).

Keyword component

The distribution of each keyword among different courses was found to be ranged widely (Table 2). Most of the information was found under the keyword "tobacco" which is accounted to be 12 out of 19. Across the courses in which the majority of the keywords appeared in the medical curriculum (4). The curriculum of the undergraduate courses such as arts, engineering, and teaching contained no information related to the tobacco-related health content and tobacco cessation methods. The keywords were distributed under the 3 different components. The distribution of the words was found to be highest under component 1 (tobacco-related health content) is accounted to be 8, component 2 (Tobacco-cessation related content) to be 3 and component 3 (tobacco-related laws and other contents) is found to be 8.

DISCUSSION

Use of tobacco at earlier years of life leads to high levels of addiction. Increased addiction to tobacco leads to the several health problems and reduction in cessation attempts. Most smokers who take up the habit of using tobacco during the teenage years become chronic adult tobacco user.⁹ This wave of increased use of tobacco will

impact the population over time. The upward tobacco trend was seen in the late 1960s in the USA after the introduction and advertising of special cigarettes brands for women which in turn resulted in the increased initiation of smoking among the women under the age of 18 and thus to the increase in overall adult female smoking rate in the 1970s and 1980s.¹⁰ According to the reports of the Indian national mental health survey (2016) the prevalence of tobacco use in the general population is about 12.5% and young users between 18 to 29 years was around 20.9% of the entire population of tobacco users.¹¹ 87% of young tobacco users was initiated early at an age before 18 and 98% before the age of 26 years. GATS 2 (2017) results found a decline in tobacco use prevalence, from 34.6% in GATS 1 (2009) to 28.6% in GATS 2 (2017).¹² In GATS 2 survey there was a 33% reduction in the use of tobacco among the 15-24 years old population and a 54% reduction in 15-17 years old population.

According to the reports of the AISHE (2019-20), the number of undergraduate students enrolling in India was found to be 3.06 crore (79.5% of total enrolment). Intervention or awareness programs in college at undergraduate levels was found to be effective as it covers a large number of the future adult population.¹³ This further proves the fact that any intervention that is provided before the initiation of the behaviour in young population was found to be more successful than other modes of prevention. Further several study results have proved that early intervention in schools and colleges have produced a significant effect in promoting the adoption of positive behaviour. This was similar to the results of the study conducted by Zhen-Qiang et al in 2014 regarding the effect of HIV education in adolescents and its demonstrated that there was a reduction in risky sexual behaviours and reduction of sharing of needles in drug addicts in American young population.¹⁴

A curriculum is a set of courses, including their content, offered at a school or university.¹⁵ Several studies have shown that curriculum has not only contributed to the improvement of educational quality but also to produce a significant impact in the society.¹⁶ A learning module is more than just a collection of academically obligatory subjects. It must consider all aspects of understudy learning demands.¹⁷ Based on their distribution throughout the courses and the themes under which they are discussed, the results of our content analysis searched for tobacco-related content in the undergraduate curriculum and found it to be relatively low.¹⁸

Tobacco-related health content and tobacco cessation methods were found in the undergraduate curriculum like MBBS, BDS, and nursing, which was significant as these professionals would be responsible for advocating and supporting patients to quit smoking.¹⁹ Tobacco-related content were also present in the Law undergraduate course curriculum, where it was discussed under the topic related to the chemical composition of tobacco products and law and acts relating to tobacco content.

Table 1: No of students enrolled in each UG course in the academic year 2019-2020 according to the all-India survey on higher education governing bodies and official websites that facilitated syllabus download.

Name of the course	Governing body with Official website	No of students enrolled (2019-2020)
Bachelor of arts	University grant sommission https://www.ugc.ac.in/ , University of Madras https://www.unom.ac.in/	9655586
Bachelor of science		4706869
Bachelor of commerce		4162555
Bachelor of education	National council of teacher education https://www.ncte.gov.in/	1371134
Bachelor of technology	All India council for technical education https://www.aicte-india.org/	2147962
Bachelor of engineering		1496083
Bachelor of business administration		581535
Bachelor of computer applications		521532
Bachelor of law or laws	Bar council of India http://www.barcouncilofindia.org/	398264
Bachelor of pharmacy	Pharmacy council of India https://www.pci.nic.in/	293822
Bachelor of science in nursing	Indian nursing council https://indiannursingcouncil.org/	290165
Bachelor of medicine and bachelor of surgery	Medical Council of India https://www.nmc.org.in/	287776
Bachelor of agriculture	Indian Council for Agricultural Research https://icar.org.in/	144506
Bachelor of dental surgery	Dental Council of India https://dciindia.gov.in/	100329
Bachelor of architecture	Council of Architecture https://www.coa.gov.in/	81007
Bachelor of ayurvedic medicine and surgery	Central council of Indian medicine (CCIM) https://www.ccimindia.org/index.php	57156
Bachelor of homeopathic medicine and surgery	Central council of homeopathy https://cchindia.com/home	57005
Bachelor of hotel management	All India council for technical education https://www.aicte-india.org/	30728
Bachelor of business management	All India council for technical education https://www.aicte-india.org/	30539
Bachelor of literature	University grant commission https://www.ugc.ac.in/	27715
Bachelor of fine arts	All India council for technical education https://www.aicte-india.org/	26110
Bachelor of hotel management and catering technology	All India council for technical education https://www.aicte-india.org/	19433
Bachelor of physical education	University grand Commission https://www.ugc.ac.in/	19148
Bachelor of ayurveda in pharmacy	Pharmacy Council of India https://www.pci.nic.in/	17538
Bachelor of unani medicine and surgery	Central council of Indian medicine (CCIM) https://www.ccimindia.org/index.php	9188
Bachelor of arts, bachelor of law or laws	Bar council of India http://www.barcouncilofindia.org/	110474
Bachelor of arts, bachelor of education	University grand Commission https://www.ugc.ac.in/	35192

However, the law related curriculum lacks tobacco-related health information and quitting options. However, there was a general summary of the detrimental consequences of tobacco and how to quit smoking. Reports of Quit Tobacco International stated that Indian medical colleges spent minimal time discussing tobacco as a disease risk factor in their curriculum audit and tobacco cessation skills were not taught in medical school, nor were they exhibited on the wards.

Therefore, there is a need for extensive and in-depth knowledge of tobacco's deleterious consequences, as well as efficient procedures to quit smoking.¹⁹ There is a need for the change in the curriculum of all the undergraduate courses which covers the effects of tobacco and ways to protect themselves and others from tobacco. Detailed context related to tobacco must be enforced to these students.

Table 2: Frequency in occurrences of tobacco-related keywords in the different UG course curriculum.

Syllabus	Authority	AR	BQ	BI	CE (4)	CH	CI	CIG (1)	HO	NI (3)	NRT	PM	PS	SF	S	SN	T	TO (12)	WP	C	T
Arts & Science	University of Madras	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	291
Agriculture	Indian council of agricultural research (ICAR)	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	54
Ayurvedha	Central council of Indian Medicine	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	110
Dental	Dental council of India	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	101
Engineering	AICTE (All India council for technical education)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1105
Homeopathy	Central council of Indian medicine	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	78
Law	Bar council of India	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	243
Medical	Medical council of India	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	263
Nursing	Indian nursing council	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	251
Pharmacy	Pharmacy council of India	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0	189
Teaching	National council of teacher education	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	125
Unani	Central council of Indian medicine	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	90

AR-Areca Nut, BQ-Betel quid, BI-Bidis, CE-Cessation, CS-Chilum, CI-Cigar, CIG-Cigarette, HO-Hookah, NI-nicotine, NRT-Nicotine replacement therapy, PM- Pan masala, PS- Passive smoking, SF-Smoke free areas, S-Smoker, SN-snuff, T-Tar, TO-Tobacco, WP-water pipe, C-coat, T-Total number of pages.

Menon et al reported that high prevalence of tobacco was found in arts and science and engineering students.²⁰ He also added that low rate of use of tobacco was found in the medical and nursing students. This could be explained due to the increase in knowledge and awareness about the harmful effects of tobacco among medical students. By including the tobacco related health information and tobacco cessation methods in the undergraduate course in India we can influence the students to reduce the habit of tobacco and increase tobacco cessation among them.^{21,22}

Limitations

The results of the present study were limited to the English based undergraduate curriculum only. Regional and local representation of tobacco could have been missed in this study. However, this content analysis included all undergraduate curriculum in AISHE and hence represented all undergraduate courses in India.

CONCLUSION

Knowledge pertaining to health related and tobacco cessation contents were quite limited in the curriculum of the Undergraduate courses in India. In addition, there was completely lack of these information in few undergraduate courses. Furthermore, the content did not comprehensively cover the necessary core components such as method or guidance for tobacco cessation. Improving the appropriate information regarding tobacco available for students in undergraduate textbooks will contribute to more effective prevention of tobacco use among future generation.

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