Understanding of Tobacco and Lung Cancer Among Medical Students in Kathmandu University School of Medical Sciences (KUSMS)

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ABSTRACT

Background

Often, lung cancer is diagnosed at terminal stages. Poor awareness about the symptoms or risk factors of lung cancer among medics may be one of the factors for delayed diagnosis.

Objective

We explored the knowledge of medical students and their behavior with the patients of lung cancer.

Method

Qualitative and quantitative approaches were used for data collection from 153 medical student of Kathmandu University School of Medical Sciences from December 2011 to May 2012.

Results

Among the results, eighty-nine students had over 80% knowledge of the 14 cancer warning signs, among them 83% knew the nine risk factors for lung cancer. Twenty-three students told lung cancer can be hereditary. Sixty five percent of all participants believed that lung cancer can be detected at early stage; of them 81% told that it can be treated. About 24% of the total students were current or ex-smokers and about half of them believed that lung cancer does not occur in light smokers. Only 10% have heard of Framework Convention on Tobacco Control in Nepal.

Conclusion

Study finds that all medical students who know about any cancers may not necessarily have knowledge about lung cancers. Their perception about the cause of lung cancer may be influenced by their smoking behavior and there was little knowledge of public health measures for smoking control. Awareness about national policies needs to be increased.

KEY WORDS

knowledge, lung neoplasm, medical education, smoking, tobacco

INTRODUCTION

Lung cancer is the most common cancer worldwide, with an estimated 1,600,000 new cases and 1,380,000 deaths in 2008.[1,2] Seventy five percent of patients with lung cancer present with symptoms due to advanced local or metastatic disease that is not amenable to cure.[3] Despite advances in therapy, five-year survival rates average approximately 16 % for all individuals with lung cancer.[2,4] Prevention, rather than screening, is the most effective strategy for reducing the burden of lung cancer. The promotion of smoking cessation is essential, as cigarette smoking is felt to be causal in almost 90 % of all lung cancer.[5] A high percentage of lung cancer occurs in former smokers, since the risk for lung cancer does not decline for many years following smoking cessation.[6-10]

Despite the predominance of tobacco smoking as its presumed etiology, lung cancer is also a significant health problem in those with no history of smoking.[11,12] Emerging information supports the notion that lung cancer in never smokers is distinct enough from an epidemiologic and

biologic standpoint to be considered a separate entity.[13-16] Worldwide, lung cancer in never smokers comprises an estimated 15 to 20 % of cases in men and over 50 % in women.[17] There are major geographic differences, particularly in Asia, where 60 to 80 percent of women with the disease are never smokers.[11] Secondhand smoke is an important risk factor for lung cancer among never smokers.[18-22] However, the extent of this problem is not clear. Several studies suggest that approximately 15 to 35 % of lung cancer among never smokers is due to secondhand smoke,and that risk may be increased in those with exposure prior to age 25. [23-27,28]

Medical students are the backbone of health care of tomorrow. Their knowledge, attitude and practice directly correlate with the morbidity, mortality and the expenses of the patient. Medical students are expected to play a major role in the future physician-scientist workforce and act as visible role models and may unintentionally affect the behavior of others. The increasing of knowledge about cancer and also increasing prevalence of the disease warrants students to expand the horizon of the subject and also change their attitude towards the disease.

METHODS

Mixed, qualitative and quantitative approaches were used for data collection from 153 medical student of Kathmandu University School of Medical Sciences (KUSMS) from December 2011 to May 2012. Quantitative aspect of the study involved questionnaire based descriptive, cross sectional, survey study handed out to medical undergraduates of KUSMS among second, third and fourth year students; and qualitative part involved discussions carried out in three volunteer groups of ten students representing each medical year. Only MBBS undergraduates in their clinical year's education were approached as inclusion criteria. Of the total 180 students, 27 did not participate in either study, and only 30 students were approached for focused group discussion, to avoid data saturation. Sample size for the qualitative aspect was based on voluntary, random case selections among medical student.

Three separate groups of ten medical students each participated in group discussion. Medical students, were selected after they had filled the questionnaire portion of the study and time was limited to 15 minutes each and these were audiotaped. Group discussions were based on semi structured interviews related to tobacco, lung cancer and its epidemiology, prevention and cure. Transcribed transcripts were not returned to the respondents. From the transcripts we developed categories or themes.[29] Sections of text were marked and linked to sections of text from other interviews that covered similar issues or experiences.[30] Themes were considered in the context of all the interviews.[31,32] Inter-rater reliability scores were not developed as the interviews had little structure—as such

scores are not appropriate to data that have little or no predefined coding.[33]

The study is approved by the KUSMS Ethical board and follows all its rules, with approved consent taken from all medical students that participated. Descriptive statistical analysis was done using SPSS 11.0 for Windows PC (Statistical Package for Social Sciences, Chicago, Illinois).

RESULTS

Study Demography

Of the total 153 participants, 90 were male and 63 were females. Only 15 (10%) have heard of Framework Convention on Tobacco Control (FCTC) in Nepal. Thirty one (20.3%) were smokers and of them 6(3.9%) were ex-smokers and remaining 122 did not smoke. All of those who smoke, have at least, once tried to cut back and succeeded on smoking control. Of the total, 114 (75%) of responses knew all their friends that smoke tobacco and this knowledge was evenly divided among both gender. Sixty one (39.9%) know/knew someone (friends/family) who had suffered from cancer of which 31 of them had family members who suffered from cancer and 6 know/knew friends who suffered from cancer. (table 1)

Table 1. Demographic characteristics.

Variable	Categories	Number (n=153)		
Gender	Male	93		
	Female	60		
Religion	Hindu	149		
	Buddhist	4		
Family Type	Nuclear Family	130		
	Joint Family	23		
Knowledge of FCTC	Yes	15		
Know/Knew someone with Cancer	Yes	61	Friends Family Acquaintance	6 31 23
	No	92		
*Top three warning signs of lung cancer	Sign One	Hemoptysis		
	Sign Two	Chest Pain		
	Sign Three	Weight Loss		

*As per the responses collected from the participants. FCTC - Framework Convention on Tobacco Control.

Epidemiology of Lung Cancer

Of the 14 signs/symptoms given, respondents were asked to identify the warning sign for cancer. Their responses summated and calculated percent wise on a scale of 70. Ninety nine (58 %) of the responses had 80% or more knowledge of the 14 cancer warning signs, 62 (40.5 %) of the responses had average knowledge (60-80 %) of the 14 cancer warning signs, 18 of the respondents who are currently smoking have good knowledge of warning signs (>80%). Of the 9 factors given, respondents were asked

Table 2. Knowledge of Warning signs and risk factors – Likert Scale (n=153).

	Strongly disagree (1)	Disagree (2)	I don't know / neutral (3)	Agree (4)	Strongly agree (5)
Warning signs of Lung Cancer					
Unexplained weight loss	-	3	4	74	72
Persistent chest infection	1	5	27	42	77
Cough that does not go away	2	4	13	57	76
Shortness of breath	1	7	13	52	78
Persistent tiredness	-	4	23	41	83
Persistent chest pain	2	9	22	36	83
Persistent shoulder pain	3	20	79	16	34
Coughing up blood	-	2	8	80	62
Ache or pain when breathing	1	4	32	41	74
Loss of appetite	1	1	12	63	76
Painful cough	3	9	32	41	66
Changes in shape of finger (nail)	2	6	29	60	55
High-pitched sound when breathing	1	8	50	31	61
Change in existing cough pattern	1	2	46	47	55
Risk factors for Lung Cancer					
Cigarette smoke exposure	4	3	5	105	36
Being a smoker	4	1	7	88	53
Exposure to radon gas	3	4	76	25	44
Past cancer treatment	4	8	56	38	47
Close relative with lung cancer	15	22	42	26	48
Exposure to chemicals for example asbestos	1	2	15	74	61
Past history of head and neck cancer	2	7	39	41	64
Air pollution	2	9	11	47	84
History of lung disease, for example COPD	5	17	30	39	61

to identify the risk factors for cancer. Their responses summated and calculated percent wise on a scale of 45. All participant identified smoking as one of the primary risk factors of lung cancer. Eighty two (53.59 %) of the responses had 80 % or more knowledge of the 9 risk factors for cancer. Sixty nine (45 %) of the responses had average knowledge (60-80 %) of the 9 risk factors for cancer 12 of the respondents who are currently smoking have good knowledge of risk factors for smoking (knowledge level >80%). (table 2)

A mix picture seen regarding the epidemiological of lung cancer; with 75.3 % believing that lung cancer was found more in developing countries like Nepal, and 16.2 % believing its cause to be religious associated. Twenty six (26%) percent believed that people may be immune to lung cancer and 14.9 % said lung cancer to be inheritable. (table 3)

Group Discussion

Participants reported a range of interrelating factors that influenced smoking and steps that lead to lung cancer. Tobacco (smoke) was seen as the main cause of lung cancer, and lack of awareness and education was responsible for its prevalence. There seemed to be very less knowledge about

FCTC and this was attributed to inadequate advertisement, lack of awareness on passive smoking, and inadequate medical information relay. Group talks focused on some of the problems regarding smoking and lung cancer, along with some suggestions as outlined in table 4.

DISCUSSION

A hospital based study shows 16.4 % prevalence of lung cancer in Nepal and in regional level of Pokhara, this is up to 20.9 % with CI (18.4-23.6)[34-36] Lung cancer awareness study is important in Nepal, as the prevalence of smoking is as high as 38.4 % as per global youth tobacco survey country report 2009.[37] This study had 31 smokers, with 6 ex-smokers, among the medical students, and all of them were male. This is in lieu with other studies in Nepal, related to youth specific smoking status, where male smokers are predominant[38,39] Since, all the participant were in medical/ health field, all identified smoking as health hazard and had tried to cut back on it.

Awareness of smoking as a primary risk factor for lung cancer was found to be 100 % amongst all medical students. A study by Chawla et al. in Pokhara, Nepal in 2010 identifies

Table 3. Knowledge of Epidemiology of Lung Cancer (n=153).

Epidemiology	Yes %	No %	I don't Know %
Lung cancer is a common cancer in Nepal.	92.9	2.6	3.9
Lung cancer is found more in poor country like Nepal	75.3	18.8	5.2
Lung cancer occurs more commonly in old people.	82.5	11	5.8
Lung cancer can be inherited from mother to daughter / father to son	14.9	53.9	30.5
Lung cancer can be caused due to disregard to religious/cultural factors	16.2	63.8	18.8
Lung cancer happens to those who are lazy	5.2	86.4	7.8
Lung cancer happens to those who are heavy smokers	95.5	3.9	-
Lung cancer doesn't happen to those who are light smokers	11	74.7	13.6
Lung cancer happens to those who are fat	5.8	65.6	27.9
Some people are immune to lung cancer	26	39	33
Diagnosis and Treatment			
Cancer can be detected in early stage	72.7	18.2	8.4
Lung cancer can be detected in early stage	64.9	21.4	13
Lung cancer can be treated if detected in early stage	81.2	7.8	10.4
Observing one's smoking habit and controlling it to minimum is useful in early detection of lung cancer	7.08	12.3	16.2
Surgery is the only treatment available for lung cancer	20.7	55.8	22.7
Early detection improves the outcome of treatment	95.5	2.6	1.3
There are few oral medication to treat lung cancer	50.6	13.6	35.1

this knowledge on non-medical population at 100% amongst male and 88 % among female.[39] The prevalence of smoking among medical students appears to vary widely from country to country. From literature review it appears that smoking rates among male medical students range between 3 % in the United States and 58 % in Japan.[40,41] Smoking prevalence rates below 10 % of the medical student population were shown to occur in Australia (4-6%), China (6%), India (7%), Thailand (7%), the US (7%) and Malaysia (9%).[40,42-47] Marked differences in smoking rates were found by gender in almost all studies, with male students generally having the higher rates. Fifteen percent of responses were aware of the lung cancer as hereditary factor in the causation of the disease. A study by Swartz in 1996 has shown 6.1 fold increases in the incidence of lung cancer in families in which the proband (a patient who is the initial member of a family to come under study) contracted lung cancer between the age of 40-59 years.[39,48]

Table 4. Topic and Solutions suggested during qualitative data collection – via group discussion.

Topic	Solution	Group
Tolerance for public smoking	Cultural Awareness should be strengthened	Group 1, 3
	Media (Television, Radio, Internet, Newspaper) led awareness should be carried out	Group 2, 3
	Priority on School Health education	Group 1,2 3
Tolerance for passive smoking	Media (Television, Radio, Internet, Newspaper) led awareness should be carried out	Group 2
	Priority on School Health education	Group 1, 2 , 3
	Priority on Office/Work place health education	Group 3
Lack of knowledge on FCTC rule in Nepal	Media (Television, Radio, Internet, Newspaper) led awareness should be carried out	Group 1, 2 ,3
	Pamphlets and posters in public places	Group 1, 2 ,3
	Priority on School Health education	Group 1, 2 ,3
	Information dissemination on public/ private properties	Group 2,3
Lung cancer diagnosis and its treatment	Media (Television, Radio, Internet, Newspaper) led awareness should be carried out	Group 1, 2
	Information centers on Health Institution	Group 1, 2, 3
Awareness intervention for lung cancer	Media (Television, Radio, Internet, Newspaper) led awareness should be carried out	Group 1, 3
	Support groups for lung cancer patient/survivors	Group 1, 2, 3

Regarding qualitative data from the 30 medical students interviewed, it was encouraging to note that no medical students reported that they began smoking after joining medical school. Our expectation of increased quit rates as the students progressed through their education the increasing knowledge about adverse effects of smoking and increased patient contact was seen with little changes in smoking habits, plans to quit, during the course of medical education, which consistent with studies that have found that medical and nursing students' smoking habits were not modified by their education programs.[49-51] However, the findings should be considered preliminary since our survey was cross-sectional, the numbers of former smokers were small, and definitive conclusions may require longitudinal studies with larger sample sizes. Students had adequate knowledge regarding epidemiological information on lung cancer, but lacked local and national policies for smoking and lung cancer prevention and cure.[52] All agreed on extensive prevalence of cultural tolerance for smokers in Nepali society, and the lack of awareness regarding passive smoking and its effects.

Results from this study must be interpreted in light of the limitations of a self-report survey design. These include recall and nonresponse bias and reporting errors. The main limitation was that approximately 27(15%) of sample

did not return the survey, introducing a non-responder bias that may have affected the findings. Also, due to our attempt to maintain anonymity, the possibility of some degree of duplication of surveys cannot be excluded. A follow-up study recommended with more comprehensive and longitudinal assessment of smoking habits of medical students during their medical school years.

CONCLUSION

In conclusion, knowledge about lung cancer and smoking is relatively stable among medical students of KUSMS. Study finds that, medical students who currently smoke have tried to leave smoking in past. Results emphasize the need to strengthen health education programs that enhance tobacco and lung cancer knowledge among students. Awareness to non-medical population via social marketing is a way of developing education messages which tackle cultural influences on tobacco and its cause leading to lung cancer and for these medical students have a potential role in developing and disseminating messages.

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