KNOWLEDGE, ATTITUDES AND SMOKING BEHAVIOR AMONG LAO DOCTORS

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Abstract. The aim of this study was to describe the knowledge, attitudes and smoking behavior among doctors at Mahosot University Hospital in Lao PDR. A cross-sectional, descriptive study used a self-administered anonymous questionnaire. The study population comprised 164 doctors. Answers were retrieved from 151 (92%) of the doctors. The prevalence of smoking among male doctors was 35%, 16% smoked daily and 19% occasionally. None of the female doctors reported to have ever smoked. Out of the five diseases related to smoking, 5% of the doctors recognized all and 10% recognized only one. Doctors were significantly more likely to advise patients with symptoms related to smoking. However, approximately one in two doctors reported that they did not always counsel smokers with severe smoking related symptoms to stop smoking. Almost all doctors, independent of smoking behavior, perceived tobacco prevention to be important. The findings indicate a lack of comprehensive knowledge on tobacco related issues. Most doctors expressed a positive attitude towards tobacco prevention. An effort is needed to get doctors in Lao PDR to stop smoking engage in smoking assation support.

INTRODUCTION

The use of tobacco has been a major public health disaster in the 20th century (Asma *et al*, 2003). In the 1990s, WHO estimated the global prevalence of smokers to be 47% among men and 12% among women (Gajalakshami *et al*, 2000). The epidemic of tobacco addiction, disease and death is continuing to shift rapidly to the developing and transitional market countries (Murray and Lopez, 1996a,b).

Although the health of the populations in developing countries is still mainly influenced by communicable diseases, tobacco related diseases will have an increased impact on health in the future. Of the 500 million smokers alive today who will eventually die from tobacco related diseases, about half are still children and teenagers (Murray and Lopez, 1996a,b). Of the 8.4 million annual deaths from tobacco expected in 2020, 70% will be in developing countries (Murray and Lopez, 1996a,b). Per capita consumption of tobacco is decreasing in the industrialized world. By contrast, per capita tobacco consumption is increasing in many developing countries among both men and women (WHO, 1996).

The World Health Organization states that "unless smoking behavior changes, three decades from now premature deaths in the developing world caused from tobacco will exceed the expected deaths from AIDS, tuberculosis, and complications of childbirth combined" (Collishaw, 1995).

According to the World Bank, the use of tobacco resulted in a net economic loss of 200 billion US$ per year, with half of the losses occurring in developing countries (The World Bank, 1999). Data from China, Malaysia, Philippines and Vietnam showed substantial expenditure on tobacco by households. In China, the estimated cost for 20 cigarettes was equivalent to 25% of the average daily income in 1990 (Jacobs, 2003). Owing to the relatively high cost of tobacco in many developing countries, it is often the more prosperous leaders

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of the community who take up smoking (Richmond, 1996). Consequently, this important element of leadership and skill will be the first to suffer tobacco related diseases and premature death. Unfortunately, this also gives smoking the facet of a status symbol.

In the endeavor to curb the epidemic, doctors have been encouraged to act as role models and influence governmental measures to contain the problem (Richmond, 1996; Masironi, 1994). In countries where the smoking rates of physicians have decreased significantly, the general population has followed (Royal College of Physicians, 1971), illustrating the important influence of doctors' smoking behavior. Lao People's Democratic Republic (Lao PDR) with a population of five million is one of the poorest countries of the world and 80% of the population lives in rural areas. Lao PDR health indicators are among the worst in the world and lack of knowledge of health issues is a major constraint to development (Helling-Borda and Andersson, 2000). Little has been done within the field of tobacco control in Lao PDR. There are well-founded arguments that a comprehensive health system should pay attention to the level of tobacco consumption (Murray and Frenk, 2000). However, few have studied physicians' knowledge and activities in relation to tobacco control in developing countries and no such study has been published in Lao PDR.

The aim of this study was to describe the knowledge, attitudes and smoking behavior among doctors at Mahosot Hospital in Lao PDR.

METHODS

The study population comprised all 164 doctors working at Mahosot University Hospital in the Vientiane Municipality in Lao PDR. The Mahosot Hospital is the largest hospital in the country with 450 beds and functions as a reference hospital. It thus influences opinion of leading clinicians. Out of the total number of 586 personnel working at the hospital, 164 are doctors, and 266 are medical assistants and nurses.

This was a cross-sectional, descriptive study. Data collected using a self-administered anonymous questionnaire, a modified version of a Swedish module for assessing tobacco use, attitudes and knowledge among health care professionals (Bolinder and Himmelman, 1996).

Before collecting data, the questionnaire was pre-tested in a pilot study. Data collection was carried out during four days. Questionnaires were distributed to the doctors at the hospital under supervision of the Center of Health Information and Education. The data was processed and analyzed at the Center for Tobacco Prevention in Stockholm, Sweden.

The module comprised 23 questions. The questions included background information such as professional categories, sex, age, period of working and family status. Knowledge about the known harmful effects of smoking was assessed using a list of diseases including five tobacco-related diseases (Table 3) and four diseases which have not been related to tobacco use. Attitudes towards smoking and preventive measures were assessed using five statements (Table 5). Answer alternatives were "totally agree", "tend to agree", "tend to disagree", "totally disagree". In the analysis we merged those who "totally agree" and "tend to agree". Additional questions assessed the number of cigarettes smoked per day or per month and why and when the respondent smoked. Informed consent was obtained from the doctors. Ethical clearance was obtained from Karolinska Institutet in Stockholm and the Ministry of Health in Lao PDR.

RESULTS

Answers were retrieved from 151 (92%) of the doctors. Relevant characteristics of the respondents are presented in Table 1.

Of all respondents, 8% (12/151) reported to be daily smokers and 9% (14/151) smoked

Table 1
Distribution of 151 doctors at Mahosot Hospital by professional categories, years of working, sex, age, and smoking behavior.

	Number[a] (%)[b]	Smoking (daily/occasional)
Professional categories		
Basic training	117/151 (78%)	17/117 (14%)
Specialists	34/151 (22%)	9/34 (26%)
Years of working		
< 5 years	25/151 (17%)	2/25 (8%)
5-10 years	29/151 (19%)	3/29 (10%)
> 10-15 years	44/151 (9%)	7/44 (16%)
> 15 years	52/151 (34%)	14/52 (27%)
Sex		
Male	75/151 (50%)	26/75 (35%)
Female	76/151 (50%)	0/76 (0%)
Age (years)		
24 - 43	93/151 (62%)	11/93 (12%)
44 - 65	58/151 (38%)	15/58 (26%)

[a]Denominators vary from N owing to missing information.
[b]Percentages may not add up to 100% due to rounding.

occasionally (not in table). Of all male doctors 32% (24/75) reported to have been daily smokers for a period of at least six months some time in their life and an additional 37% (28/75) had smoked occasionally (not in table). None of the female doctors reported to have ever smoked during a period of six months or longer.

At the time of the survey, the prevalence of smoking among male doctors was 35% (Table 1), 16% (12/75) smoked daily and 19% (14/75) occasionally (not in table). All smokers used manufactured cigarettes with an average of 14 cigarettes per day. Among occasional smokers, the average was 22 cigarettes per month. Seventy-one percent (17/24) of the smokers had made a serious attempt to stop smoking (Table 2).

When asked if they perceive themselves as smokers five years from now, nine out of 10 stated they would "certainly not" or "probably not" be smokers (Table 2). Of the smokers, 69% (18/26) stated that they never or almost never smoked in front of a patient while 12% (3/26) did it "quite often" or "often" (Table 2). The relationship between smoking and lung cancer, and myocardial infarction was known by 98% (148/151) and 76% (115/151), respectively. Corresponding numbers for stroke, impotence, and osteoporosis were 68% (103/151), 43% (65/151), and 9% (14/151), respectively (not in table). There was no difference between younger (24-43 years) and older (44-65 years) doctors regarding knowledge with the exception of "impotence" where 51% (47/93) of the younger and 31%(18/58) of the older doctors recognized the risk (<0.5, Fishers exact test) (not in table). No gender differences were found. Five percent (7/151) of the physicians recognized all five diseases as smoking related and 10% (15/151) recognized only one (Table 3).

Fifteen percent (23/151) incorrectly stated that prostate cancer and 13% (19/151) that leukemia were related to smoking (not in table). Seven percent (11/151) considered smoking not to be addictive (not in table). The most common reason why non-smokers did not smoke

Table 2
Aspects of the smokers (daily and occasional) smoking behavior.

	Number (%)
Have seriously attempted to stop smoking?	17/24 (71)[a]
Do you see yourself as a smoker in 5 years?	
Certainly	1/26 (4)
Probably	2/26 (8)
Probably not	10/26 (38)
Certainly not	13/26 (50)
Have smoked in front of a patient?	
Never/Almost never	18/26 (69)
Off and on	5/26 (19)
Quite often	2/26 (8)
Often	1/26 (4)

[a]Two smokers did not answer this question.

Table 3
Classification into groups according to correct answers regarding diseases[a] which have been related to smoking.

	Number	%
Recognized all 5 diseases[a]	7/151	5
Recognized all 4 diseases	42/151	28
Recognized all 3 diseases	51/151	34
Recognized all 2 diseases	33/151	22
Recognized 1 disease	15/151	10

[a]Myocardial infarction, impotence, lung cancer, osteoporosis, stroke.

Table 4
Reasons for not smoking yourself.

Characteristic	All non-smokers	
	Number	%
Protect health	124/125	99
To avoid unpleasant symptoms	105/125	84
Pressure from colleagues	33/125	26
Unpleasantness for others	107/125	85
Setting good example	106/125	85
Pressure from friends or family	35/125	28

was to protect health (Table 4). No significant differences between age groups or gender were found regarding any of the factors presented in Table 4. When smokers were asked why they smoked, the most common answer (35%, 9/26) was to "relieve anxiety and worries" and to "relax" (27%, 7/26) (not in table).

Approximately one in two doctors "always" or "almost always" advised smokers with severe smoking related symptoms to stop smoking. For lung problems the proportion was 50% (76/151), for cardiac complaints 45% (68/151), and for severe respiratory disorders 50% (75/151). Forty-eight percent (73/151) always or almost always advised pregnant women not to smoke (not in table). The doctors were less likely to advise patients with no symptoms (23%, 35/151) related to smoking compared with patients with symptoms (68%, 103/151), the odds ratio (95% CI) was 0.1 (0.1-0.2). There was no statistically significant gender or age-group difference regarding most attitude questions (Table 5).

However, female doctors were less likely (81%, 60/74) than the men (93%, 69/74) to agree that "smoking in hospitals should be restricted or eliminated". The odds ratio with 95% CI being 0.3 (0.1-0.9) (not in table).

Table 5
Proportion of doctors who agree with following statements.

Statements	All (%)
My present knowledge is sufficient to enable me to advise a patient who wants to stop smoking	138/148 (93)
The possibility of smoking in hospitals should be restricted or eliminated	129/148 (87)
Health professionals should receive special training on how to help patients who wish to stop smoking	144/149 (97)
Smoking prevention should be included in the normal training of health professionals	144/149 (97)
Legislation about warnings on package, ban advertisements increase the price	143/146 (98)

DISCUSSION

This study is the first of it's kind in Lao PDR, a country on a continent where smoking is a major and increasing health hazard. An effort is needed to increase awareness of physicians regarding smoking as a risk factor for a variety of diseases. Also, to persuade doctors to quit smoking and to be more active in encouraging smoking cessation especially for patients with tobacco related diseases and symptoms. It is uncertain to what extent the present results reflect the knowledge, attitudes and smoking behavior of Lao doctors in general. The participants comprised doctors working in Lao's only university hospital considered to be the foremost hospital in the country.

Lao doctors' awareness about the relationship between smoking and lung cancer and myocardial infarction was high and generally comparable to Western reports (WHO, 1984). However, there was little awareness about the relationship between smoking and osteoporosis and impotence and only 5% correctly recognized all five disease groups, presented in Table 3.

The present results indicate that one in two smokers with severe symptoms and smoking related diseases like cardiac complaints and lung problems are not encouraged to stop smoking. Whether doctors advise patients to quit smoking may depend on their own smoking behavior. In Sweden where 11% of general practitioners (GPs) are reported to smoke (occasional and daily smoking), over 90% advised patients with smoking-related diseases and symptoms to stop smoking (Helgason and Lund, 2002). It is notable that the Lao doctors stated that their knowledge was sufficient to enable them to advise patients who wanted to stop smoking. In a Nordic study, approximately one in two GPs reported that they lacked knowledge to effectively support patients in smoking cessation (Helgason and Lund, 2002), and those who were most active as lecturers in smoking cessation groups, were also those who most frequently reported lack of knowledge on the subject (Ohida *et al*, 2001). This indicates that physicians not familiar with smoking cessation may tend to underestimate the relative complexity of effective smoking cessation support.

As in other studies assessing smoking behavior of doctors (Bolinder and Himmelman, 1996; Sarkar *et al*, 1990; Grossman *et al*, 1999), concerns regarding potential health hazards was the main reason for not smoking in the present study. Whereas no female doctor reported ever to have smoked, the prevalence of ever smokers among male doctors was 69%. At the time of follow-up, 16% were daily smokers and 19% smoked occasionally. The prevalence of smoking amongst the male doctors is similar to other Asian countries. A recent

study among physicians in Japan reported a prevalence of 65% for ever-smokers amongst men and 27% were smokers at the time of follow-up (Ohida *et al*, 2001). An Indian study reported that 33% of Indian male doctors smoked (Sarkar *et al*, 1990). The smoking prevalence among Asian doctors is presently much higher than in many western countries. A recent study from the Nordic countries showed that in Sweden the number of ever smokers among general practitioners was 43%. At the time of follow-up 8% still smoked occasionally and 3% were daily smokers (Helgason and Lund, 2002). The finding that none of the female doctors smoked in the present study was in accord with two other studies from India (Sarkar *et al*, 1990) and Malaysia (Yacoob and Abdullah, 1993). This is not surprising since smoking among women is generally considered to be culturally inappropriate in Asian countries (Ernster *et al*, 2000). However, there are signs that the smoking rates among women are rising in developing countries where smoking is seen as a symbol of women's liberation and freedom from traditional gender roles (Ernster *et al*, 2000).

Presently, no population based prevalence data on tobacco use have been published in Lao PDR. The neighboring country Vietnam, has the highest reported male smoking prevalence rate (70%) in the world (Jenkins *et al*, 1997). In China, the findings of the 1999 National Prevalence Survey revealed smoking prevalence among men at 63% (Yang *et al*, 1999). Funding for tobacco control is insufficient in Lao PDR and the general population is probably not aware of the harmful effects of smoking on health to the same extent as in western societies. In China where the general educational level is somewhat higher, only a minority of smokers recognized that lung cancer (36%) and heart disease (4%) could be caused by smoking (Yang *et al*, 1999).

All doctors in the present study, independent of smoking behavior, perceived tobacco prevention to be important and there was an unanimous agreement that smoking should be restricted in hospitals, that cigarette packages should carry a specific health warning text, that advertisements on tobacco should be banned, and that cigarette prices should increase. It is important for tobacco prevention in Lao PDR that all health institutions introduce a smoke free policy and that health professionals do not smoke since they may be role models for the community. The positive attitudes towards tobacco prevention in the present study and the fact that most smokers perceived themselves as ex-smokers after five years (Table 2) is encouraging. Data indicates that if smoking prevalence among physicians falls below that of the general population, in a few decades the smoking prevalence among the general population will also decrease (Davis, 1993).

Conclusion

Although doctors in the leading hospital agree that smoking is harmful, many male doctors smoked and many lacked comprehensive knowledge essential for patient counseling. An effort is needed to motivate and empower the doctors to actively engage in smoking cessation support not least for those patients with smoking related symptoms and diseases.

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REFERENCES

Asma S, *et al*. Tobacco. In: Detels R, *et al*, eds. Oxford Textbook of Public Health. Oxford: Oxford University Press, 2003 (in press).

Bolinder G, Himmelman L. Färre röker men fler snusar 28 års uppföljning av svenska läkares tobaksvanor. *Läkartidningen*, 1996; 93: 4437-44.

Collishaw NE. The tobacco pandemic: towards a global solution to a global problem. WHO Tobacco or Health Programme. Bellagio. 1995.

Davis RM. When doctors smoke. *Tobacco Control* 1993; 2: 187-8.

Ernster V, Kaufman N, Nichter M, Samet J, Yoon SY. Women and tobacco: moving from policy to action. *Bull WHO* 2000; 78: 891-901.

Gajalakshami CK, *et al*. Patterns of tobacco use and its health consequences. In: Jha P, ed. Tobacco control policies in developing countries. Oxford: Oxford University Press, 2000.

Grossman DW, Knox JJ, Nash C, Jiménez JG. Smoking: attitudes of Costa Rican physicians and opportunities for intervention. *Bull WHO* 1999; 77: 315-22.

Helgason AR, Lund KE. General practitioners' perceived barriers to smoking cessation: results from four Nordic countries. *Scand J Public Health* 2002; 30: 141-7.

Helling-Borda M, Andersson G. Lao National Drug Policy Programme, Sida Evaluation Programme 00/9. Stockholm: Sida, 2000.

Jacobs R. Economic policies. In: Women and the tobacco epidemic. Baltimore: WHO/Johns Hopkins University School of Public Health 2003.

Jenkins CNH, Dai PX, Ngoc DH, *et al*. Tobacco use in Vietnam - Prevalence, predictors and the role of the transitional tobacco corporations. *JAMA* 1997; 277: 1726-31.

Masironi R. The smoking habits of European doctors-New insight. In: Future Directions in Nicotine Replacement Therapy, Proceedings of a symposium, Paris, October 1993. ADIS International (Chester) 1994: 41-7.

Murray CJL, Frenk J. A framework for assessing the performance of health systems. *Bull WHO* 2000; 78: 717-31.

Murray CL, Lopez AD, eds. The global burden of disease: a comprehensive assessment of mortality and disability from diseases, injuries, and risk factors in 1990 and projected to 2020. Cambridge, MA: Harvard School of Public Health on behalf of the World Health organization and the World Bank, 1996a.

Murray CL, Lopez AD. Assessing the burden of disease that can be attributed to specific risk factors. In: Ad hoc Committee on Health Research Relating to Future Intervention Options. Investing in Health Research and Development. Geneva: World Health Organization. *TDR/GEN/96.1*. 1996b.

Murray CL, Lopez AD. Alternative projections of mortality and disability by cause 1990-2020: global burden of disease study. *Lancet* 1997; 349: 1498-504.

Ohida T, Sakurai H, Mochizuki Y, *et al*. Smoking prevalence and attitudes toward smoking among Japanese physicians. *JAMA* 2001; 285: 2643-8.

Richmond R. Educating medical students about tobacco: planning and implementation. Tobacco Prevention Section, International Union Against Tuberculosis and Lung Disease. Paris: Southwood Press, 1996.

Royal College of Physicians. Smoking and health now. London: Pitman Medical Publishing, 1971.

Sarkar D, Dhand R, Malhotra A, Malhotra S, Sharma BK. Perceptions and attitude towards tobacco smoking among doctors in Chandigarh. *Indian J Chest Dis All Sci* 1990; 32: 1-9.

The World Bank. Curbing the epidemic: governments and the economic of tobacco control. Washington, DC: The World Bank, 1999.

World Health Organization. Guidelines for the conduct of tobacco smoking surveys among health professionals. WHO Geneva. *WHO/SMO/84.1*. 1984.

World Health Organization. Investing in health research and development. Report of AHC on Health Research Relating to Future Intervention Options, 1996.

Yacoob I, Abdullah ZA. Smoking habits and attitudes among doctors in a Malaysian hospital. *Southeast Asian J Trop Med Public Health* 1993; 24: 28-31.

Yang GH, Tan J, Qi GM, *et al*. Smoking in China-Findings of the 1996 National Prevalence Survey. *JAMA*, 1999; 282: 1247-53.