Smoking among Lao medical doctors: challenges and opportunities for tobacco control

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ABSTRACT

Background Smoking is an increasing threat to health in low-income and middle-income countries and doctors are recognised as important role models in anti-smoking campaigns.

Objectives The study aimed to identify the smoking prevalence of medical doctors in Laos, their tobacco-related knowledge and attitudes, and their involvement in and capacity for tobacco prevention and control efforts.

Methods This was a cross-sectional national survey by a researcher-administered, face-to-face questionnaire implemented at provincial health facilities throughout the central (including national capital), northern and southern regions of Laos in 2007. Both descriptive and inferential statistics were used.

Results Of the 855 participants surveyed, 9.2% were current smokers and 18.4% were ex-smokers; smoking was least common in the central region (p<0.05) and far more prevalent in males (17.3% vs 0.4%; p<0.001). Smoking was concentrated among older doctors (p<0.001). Over 84% of current smokers wanted to quit, and 74.7% had made a recent serious attempt to do so. Doctors had excellent knowledge and positive attitudes to tobacco control, although smokers were relatively less knowledgeable and positive on some items. While 78% of doctors were engaged in cessation support, just 24% had been trained to do so, and a mere 8.8% considered themselves ‘well prepared’.

Conclusion The willingness of doctors to take up their tobacco control role and the lower smoking rates among younger respondents offers an important window of opportunity to consolidate their knowledge, attitudes, skills and enthusiasm as cessation advocates and supports.

INTRODUCTION

Historical evidence from high-income countries suggests that smoking rates in the general population followed—at some distance in time—increases and decreases in prevalence among doctors.1 Doctors are seen as role models by the public, patients and their colleagues,2 and as such can act in reducing societal smoking prevalence3 4 and thus contribute to stemming the projected increase in mortality and morbidity from tobacco-related diseases.5 6 By contrast, health professionals who smoke ‘send an inconsistent message’ to patients whom they have urged to quit.7

Laos (Lao People’s Democratic Republic) is a landlocked South East Asian nation of approximately 6.2 million people, about 27% of whom live in urban areas. Most recent estimates put life expectancy at birth at 65 years and literacy rates (age 15+) at 75%. Laos is a low-income country, with 32% of children under 5 malnourished, although economic growth reached 7.5% per annum in 2009.8 Up to half of district hospitals do not have fully qualified medical doctors.9

Smoking prevalence in male doctors at Mahosot University Hospital in the Lao capital, Vientiane, in 2003 was found to be 55%.10 In the same year a national survey found 40.3% of the population were smokers, with rates among males over four times those of females (67.7% vs 16%).11 This large disparity by sex is found in neighbouring countries,12 reflecting gender norms that encourage male smoking and discourage female smoking.13 Smith and Leggat argue that convincing the public of tobacco’s dangers may be difficult if doctors are smoking, so monitoring their smoking behaviour is important.14 Data related to tobacco use patterns, knowledge, attitudes and determinants among health professionals in Laos are scarce. This study was undertaken in 2007 to document Lao doctors’ current smoking prevalence, knowledge and attitudes towards smoking as well as control efforts, and to investigate associations between variables.

Methods

Laos has 17 provinces plus the capital city (a separate administrative entity). The system of formal health service provision is provided by hospitals, primary healthcare (PHC) and vertical programmes. The hospital system comprises facilities at central, regional, provincial and district levels.

Three provinces were chosen purposively in each of the country’s geographical zones. Northern provinces included Luangprabang, Oudomxay and Xiengkhouang; southern provinces included Champassack, Saravanne and Attapeu; and central provinces Vientiane province, Khammouane, Savannakhet and Bolikhamsay; Vientiane the capital city (regarded as norm-leading) was also added, to make a total of 10 study sites. Provinces were chosen because of their relatively high population density and greater number of medical doctors; they were diverse in terms of socioeconomic development, with the central region most affluent. Respondents were sourced from provincial hospitals, province-level health departments, and (for Vientiane) the University of Health Sciences (former Faculty of Medical Sciences), four central hospitals and nine centres involved in prevention and control of diseases. District hospitals were excluded owing to low numbers of medical doctors.

The sampling frame for each province/capital city comprised a full list of all fully-trained medical
against a null hypothesis of no association, unless otherwise
and exposure to secondhand tobacco smoke was also gathered.
integration of tobacco concerns into curriculum or training.
models, promotion of smoke free zones, cessation support and
attitudes (1=strongly disagree, 2=disagree, 3=agree and
highest (16.9%) in the oldest cohort (51–65), followed by 11%
and 15 (19%) smoked 11–20 cigarettes per day per
day and 15 (19%) smoked 11–20 cigarettes per day.
Forty three per cent smoked their first cigarette within
60 minutes after waking up and an additional 33% within
60–180 minutes. Weekly expenditure on smoking had a large
range (nearly 10-fold), with a mean of nearly 12 000 kip (approx
US$1.38).
Among current smokers, 41.8% were around other smokers at
places other than home or work for 4–7 days a week, with
a mean of 3.3±2.6. Most current smokers (84.8%) said they
wanted to quit and 74.7% indicated they had made a serious
attempt to do so during the last year.
Smoking-related knowledge, attitudes and perceptions
Table 1 summarises responses to statements that were correct or
deemed ‘positive’ about smoking-related knowledge and atti-
dudes or perceptions, respectively, among current smokers, ex-
smokers and never smokers. Across all groups, including current
smokers, over 90% gave the desired responses on 17 of a total 25
items.
There were high knowledge levels on 6/10 questions.
Proportions answering correctly were lower on neonatal and
maternal health questions, and nearly half of every group was
unaware that tobacco kills more people than illegal drugs, AIDS
and road accidents combined. The only one reaching statistical
significance related to the similar addictive potential of tobacco
and heroin, answered correctly by just over two-thirds of
smokers versus over four-fifths of the other groups (p<0.003).
High levels of positive attitudes towards tobacco control—including
bans on smoking in public places and healthcare facilities—were expressed by all groups except for
banning of sports sponsorship, although even here a majority
concurred. Smokers were less likely to endorse advertising bans
(p<0.00) and large health warnings on packs (p=0.01), but over
completed the questionnaires. The response rate was highest in
Vientiane city (91.9%), while the two lowest were Xieng-
khouang (47.4%) and Khammouane provinces (65.2%).
Slightly more than half the sample (52.9%) were males, with
no variation by sex between regions. However, the number of
doctors in the central region cohort was much larger than in the
other two regions, reflecting their concentration in and around
the capital. The age of respondents ranged from 24 to 65 years.
About two-thirds had a basic bachelor’s degree in medicine and
20.6% were specialists. A few (0.8%) had a PhD and 11.2% had
master’s degrees. Among those who were in administration,
6.5% were directors or vice directors of provincial hospitals, and
about a quarter were heads of divisions.
Smoking patterns
Overall, 9.2% of doctors surveyed were smokers (5% daily and
4.2% occasionally), 18.4% were ex-smokers and 72.4% had never
smoked. Statistically significant differences in smoking were
found by region, with rates lowest in the northern region
(p=0.049), and by sex (17% for males vs 4% for females,
p<0.001). Only two female doctors reported current smoking,
while one had quit. Smoking rates (daily plus occasional) were
highest (16.9%) in the oldest cohort (51–65), followed by 11%
(41–50), 7.8% (51–60) and 2.6% (24–50) (p<0.001).

RESULTS
Demographic characteristics
Owing to unavailability or absence at the time of survey, we
were able to enrol a total of 855 doctors out of 1060, all of whom
were from the list of Health Sciences, after which the questionnaire was modi-
ed. The eight interviewers had medical backgrounds from the
Postgraduate Studies and Research Department, University of
Health Sciences. A pilot study was conducted with lecturers,
pharmacists and dental health professionals from the University of
Health Sciences, after which the questionnaire was modified.
The fieldwork was supervised by the first author. Ethical clear-
ance was obtained from the National Ethical Review Board for
Research, Ministry of Health, Vientiane (ref No 132/NECHR).
Informed consent was obtained from each respondent.

Data analysis
The data were checked for completeness and validity and
entered into Epilinfo, then analysed using SPSS 10.0. Frequency
distributions were used to describe the data.
Smoking status among doctors was grouped into three cate-
gories: (1) current smokers (occasional and daily smokers at the
time of the study); (2) ex-smokers (former smokers who had
stopped); (3) never-smokers (never tried a cigarette in their
time).
Bivariate analysis was used to measure associations between
selected variables by region and by smoking status, with
statistical significance based on the χ² and Fisher’s exact test for
independence for categorical variables, and a t test for contin-
uous variables.
Adjusted ORs and 95% CIs were estimated using logistic
regression to identify factors associated with current smoking
after controlling for confounding. Only male doctors were
included in the multivariate analysis because of the small
number of female smokers (two). The factors adjusted include
age, education, duties, provision of treatment, knowledge of
health consequences of smoking and attitudes and perceptions
towards tobacco control and the role of doctors.
Two-sided tests of significance were based on the 0.05 level
against a null hypothesis of no association, unless otherwise
indicated.

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91% were supportive of each. ‘Sharply’ increasing the price of tobacco was supported by significantly fewer smokers, though still a majority (58.2%), versus ex-smokers and never-smokers (77.7% and 73.5%, respectively) (p<0.005).

In relation to perceptions of the role of health professionals, all subgroups concurred at high levels (94.9%+) that they ‘should’ actively support cessation with patients and community, and acknowledged their symbolic value as role models. Rather lower levels of agreement (between two-thirds and four-fifths) were found for the statement that health professionals who smoke ‘are less likely to advise people to stop smoking’, with no significant differences by smoking status. Smokers were

Table 1  Doctors’ tobacco-related correct knowledge and positive attitudes and perceptions, by smoking status (n=855)

<table>
<thead>
<tr>
<th>Statements by category</th>
<th>Current smokers (n = 79), % correct/positive</th>
<th>Ex-smokers (n = 157), % correct/positive</th>
<th>Never-smokers (n = 619), % correct/positive</th>
<th>χ² or Fisher’s exact test</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge on health hazards of active smoking</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smoking is harmful to your health</td>
<td>98.7</td>
<td>100</td>
<td>100</td>
<td></td>
<td>0.09*</td>
</tr>
<tr>
<td>Nicotine in tobacco is highly addictive</td>
<td>96.2</td>
<td>90.4</td>
<td>95.2</td>
<td>5.78</td>
<td>0.056</td>
</tr>
<tr>
<td>People can get addicted to cigarette just as they can get addicted to cocaine or heroin</td>
<td>68.4</td>
<td>81.5</td>
<td>83.8</td>
<td>11.411</td>
<td>0.003</td>
</tr>
<tr>
<td>Tobacco kills more people each year than illegal drugs, AIDS and road accidents</td>
<td>50.6</td>
<td>56.1</td>
<td>54.4</td>
<td>0.625</td>
<td>0.732</td>
</tr>
<tr>
<td>Knowledge on health hazards of secondhand smoking</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neonatal death is associated with passive smoking</td>
<td>69.6</td>
<td>72.6</td>
<td>70.8</td>
<td>0.288</td>
<td>0.866</td>
</tr>
<tr>
<td>Maternal smoking during pregnancy increases the risk of sudden infant death</td>
<td>79.7</td>
<td>82.8</td>
<td>79.6</td>
<td>0.801</td>
<td>0.670</td>
</tr>
<tr>
<td>Passive smoking increases the risk of heart diseases in non-smoking adults</td>
<td>96.2</td>
<td>94.3</td>
<td>92.9</td>
<td>1.464</td>
<td>0.481</td>
</tr>
<tr>
<td>Passive smoking increases the risk of lung diseases in non-smoking adults</td>
<td>97.5</td>
<td>99.4</td>
<td>99.4</td>
<td>3.145</td>
<td>0.207</td>
</tr>
<tr>
<td>Paternal smoking increases lower respiratory infections such as pneumonia in exposed children</td>
<td>94.9</td>
<td>96.8</td>
<td>96.9</td>
<td>0.884</td>
<td>0.643</td>
</tr>
<tr>
<td>Smoke from cigarettes is harmful to people who are repeatedly exposed, not just smokers</td>
<td>98.7</td>
<td>97.5</td>
<td>98.5</td>
<td></td>
<td>0.490*</td>
</tr>
<tr>
<td>Attitudes towards tobacco control policy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tobacco sales to children and adolescents should be banned</td>
<td>96.2</td>
<td>99.4</td>
<td>98.5</td>
<td>3.572</td>
<td>0.186</td>
</tr>
<tr>
<td>There should be a complete ban on advertising of tobacco products</td>
<td>91.1</td>
<td>98.1</td>
<td>99.2</td>
<td>&lt;0.001*</td>
<td></td>
</tr>
<tr>
<td>Health warning on cigarette package should be in large print</td>
<td>93.7</td>
<td>98.1</td>
<td>98.7</td>
<td></td>
<td>0.012*</td>
</tr>
<tr>
<td>Sport sponsorship by tobacco industry should be banned</td>
<td>59.5</td>
<td>61.1</td>
<td>66.4</td>
<td>2.586</td>
<td>0.274</td>
</tr>
<tr>
<td>Smoking in all enclosed public places should be banned</td>
<td>97.5</td>
<td>99.4</td>
<td>97.3</td>
<td>0.283*</td>
<td></td>
</tr>
<tr>
<td>Smoking should be banned at hospitals/healthcare centres and medical facilities</td>
<td>97.5</td>
<td>99.4</td>
<td>99.0</td>
<td>0.311*</td>
<td></td>
</tr>
<tr>
<td>The price of tobacco should be increased sharply</td>
<td>58.2</td>
<td>77.7</td>
<td>73.5</td>
<td>10.551</td>
<td>0.005</td>
</tr>
<tr>
<td>Attitudes and perceptions of role of health professionals (HP) in tobacco control</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HPs should routinely ask about their patients’ smoking habits</td>
<td>96.2</td>
<td>98.1</td>
<td>98.5</td>
<td>0.236*</td>
<td></td>
</tr>
<tr>
<td>HPs should routinely advise their smoking patients to quit smoking</td>
<td>98.7</td>
<td>98.7</td>
<td>98.7</td>
<td>1.000*</td>
<td></td>
</tr>
<tr>
<td>HPs who smoke are less likely to advise people to stop smoking</td>
<td>69.6</td>
<td>79.0</td>
<td>74.6</td>
<td>2.588</td>
<td>0.274</td>
</tr>
<tr>
<td>HPs should routinely advise patients/people who smoke to avoid smoking around children</td>
<td>100</td>
<td>100</td>
<td>99.4</td>
<td>0.721*</td>
<td></td>
</tr>
<tr>
<td>HPs should get specific training on cessation techniques</td>
<td>96.2</td>
<td>100</td>
<td>99.2</td>
<td>0.028*</td>
<td></td>
</tr>
<tr>
<td>HPs should speak to community groups about smoking</td>
<td>98.7</td>
<td>98.7</td>
<td>99.0</td>
<td>0.620*</td>
<td></td>
</tr>
<tr>
<td>HPs should serve as role models for their patients and the public</td>
<td>100</td>
<td>99.4</td>
<td>99.2</td>
<td>1.000*</td>
<td></td>
</tr>
<tr>
<td>Patients’ chances of quitting smoking are increased if HP advises them to quit</td>
<td>94.9</td>
<td>98.7</td>
<td>98.2</td>
<td>0.142*</td>
<td></td>
</tr>
</tbody>
</table>

Current smokers include daily and occasional smokers; Never-smokers are those who have never smoked.

*For values less than 5, Fisher’s exact test was used.
Determinants of smoking

As noted above, logistic regression was undertaken to identify factors associated with current smoking among male doctors after controlling for confounding. Regression analysis found that, with each year’s increase in age, the odds of smoking increased by 3.8% (p=0.028). Odds of smoking were inversely related to more positive attitudes towards tobacco control (p=0.001). Factors not found to be significantly associated after regression analysis included levels of education or position, experience in providing cessation support, knowledge of the health consequences of tobacco or having smoking bans in workplaces.

DISCUSSION

The preamble to the 2003 WHO Framework Convention on Tobacco Control\(^{15}\) (ratified by Laos in 2006) notes the significant potential role of health professionals. Doctors are uniquely placed because they are generally seen as trusted sources of information and role models; thus, their behaviour can send non-verbal messages are either pro-tobacco or anti-tobacco. There is some historical evidence from high-income countries that declines in smoking among doctors were typically followed by declines in community prevalence\(^ {17}\).

This is the first nationwide study of smoking-related practices, knowledge, attitudes and perceptions among medical doctors in Lao PDR, a low-income South East Asian nation. The 2007 study found the prevalence of current smoking in doctors was 9.2% (17.3% in males and 0.4% in females), compared to national adult rates of 40.5% (67.7% in males and 16% in females) reported in a 2003 survey.\(^ {11}\) The very high prevalence of community smoking in Laos poses a challenge for the country’s policy-makers and health professionals, including doctors,

Table 2.  Workplace smoking practice and policy by smoking status among those aware of smoking policy (n=691)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Current smokers (n=66)</th>
<th>Ex-smokers (n=129)</th>
<th>Never-smokers (n=466)</th>
<th>Total (n=691)</th>
<th>(\chi^2)</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoking bans in place</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have smoking policy</td>
<td>28.8</td>
<td>31.8</td>
<td>36.3</td>
<td>34.7</td>
<td>7.888</td>
<td>0.096</td>
</tr>
<tr>
<td>Have smoking room</td>
<td>12.1</td>
<td>12.4</td>
<td>6.3</td>
<td>8.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No smoking allowed at all on premises</td>
<td>59.1</td>
<td>55.8</td>
<td>57.5</td>
<td>57.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smoking bans enforced</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes, always</td>
<td>39.2</td>
<td>35.7</td>
<td>35.2</td>
<td>35.7</td>
<td>11.447</td>
<td>0.075</td>
</tr>
<tr>
<td>Yes, sometimes</td>
<td>30.4</td>
<td>33.8</td>
<td>28.6</td>
<td>29.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No/don’t know</td>
<td>30.4</td>
<td>30.6</td>
<td>36.2</td>
<td>34.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prohibit selling tobacco in the hospital/office</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.514</td>
<td>0.774</td>
</tr>
<tr>
<td>Yes</td>
<td>97.5</td>
<td>97.5</td>
<td>98.2</td>
<td>98.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>2.5</td>
<td>2.5</td>
<td>1.8</td>
<td>2.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prohibit selling tobacco near hospital</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.347</td>
<td>0.841</td>
</tr>
<tr>
<td>Yes</td>
<td>78.5</td>
<td>80.9</td>
<td>78.5</td>
<td>79.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>21.5</td>
<td>19.1</td>
<td>21.5</td>
<td>20.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Policy for indoor public or common areas</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6.558</td>
<td>0.384</td>
</tr>
<tr>
<td>Not allowed in any public or common areas</td>
<td>25.6</td>
<td>27.6</td>
<td>24.7</td>
<td>25.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Allowed in some public or common areas</td>
<td>46.5</td>
<td>41.0</td>
<td>46.2</td>
<td>45.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Allowed in all public or common areas</td>
<td>0</td>
<td>1.9</td>
<td>0.8</td>
<td>0.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No official policy</td>
<td>27.9</td>
<td>29.5</td>
<td>28.4</td>
<td>28.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
whose much lower smoking rates implies a real potential for their contribution to tobacco control.

Smoking rates among doctors vary between countries, and by sex and age. In their review of studies from 1974 to 2004, Smith and Leggat found rates as low as 2%–4% in Australia, the USA and Britain in the survey’s final decade. Recent figures were generally much lower in high-income compared to low and middle-income countries. Indeed, a 1996 study in China found doctors’ rates had actually increased in previous years to 61% (males) and 12% (females), although much lower figures were found in a 2003 study: 52% (males) and 0% (females). A 2004 study in doctors in Yerevan, Armenia, found current rates in males were 55.3% and in females 17.3%. Rates in Japan (males) and 12% (females), although much lower

<table>
<thead>
<tr>
<th>Variables</th>
<th>Current smokers (n=79), %</th>
<th>Ex-smokers (n=157), %</th>
<th>Never-smokers (n=619), %</th>
<th>Total (n=855), %</th>
<th>χ²</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ever received formal training on smoking cessation approaches</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2.580</td>
<td>0.275</td>
</tr>
<tr>
<td>Yes</td>
<td>23.4</td>
<td>28.7</td>
<td>20.3</td>
<td>24.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>76.6</td>
<td>71.3</td>
<td>79.7</td>
<td>75.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Received formal training during medical school</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.452</td>
<td>0.798</td>
</tr>
<tr>
<td>Yes</td>
<td>7.6</td>
<td>10.8</td>
<td>9.4</td>
<td>9.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>92.4</td>
<td>89.2</td>
<td>90.6</td>
<td>90.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Received formal training in the workplace</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.971</td>
<td>0.373</td>
</tr>
<tr>
<td>Yes</td>
<td>15.9</td>
<td>20.5</td>
<td>16.3</td>
<td>16.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>84.1</td>
<td>79.5</td>
<td>83.7</td>
<td>83.3</td>
<td></td>
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<tr>
<td>Received formal training as part of specialist training</td>
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<tr>
<td>Yes</td>
<td>11.6</td>
<td>8.3</td>
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<tr>
<td>No</td>
<td>88.4</td>
<td>91.7</td>
<td>95.9</td>
<td>94.7</td>
<td></td>
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<td>Received formal training at conference</td>
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<td>0.120</td>
<td>0.942</td>
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<td>12.2</td>
<td>13.0</td>
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<tr>
<td>No</td>
<td>88.4</td>
<td>87.8</td>
<td>87.0</td>
<td>87.3</td>
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<tr>
<td>Ever received training on providing health education on smoking cessation</td>
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<td></td>
<td></td>
<td></td>
<td>1.639</td>
<td>0.441</td>
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<tr>
<td>Yes</td>
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<td>12.2</td>
<td>8.8</td>
<td>9.5</td>
<td></td>
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</tr>
<tr>
<td>No</td>
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<td>87.8</td>
<td>91.2</td>
<td>90.5</td>
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A study by Ohida et al also suggests that non-smoking doctors have more unfavourable views towards smoking and are more active in encouraging patients not to smoke. Smoking doctors in our study were significantly less likely to have advised patients to quit (p=0.017) or offered information on the health benefits of cessation (p=0.023) than ex-smokers or non-smokers. A 2004 study in Yerevan, Armenia, found many doctors smoked in front of patients (sending an ambiguous message), and smokers were less likely to ask patients about smoking or to perceive their own behaviour could influence patients. In Greece, Japan, Finland and Estonia—though not in Israel—smoking doctors were less likely to discuss tobacco use with patients or assist them in cessation.

In practice, 78% of doctors in Laos claim they are already engaged in supporting cessation. However, helping individuals to quit requires skills. In our cohort, just 24% had been trained in this domain, and a mere 8.8% considered themselves ‘well prepared’ to assume the role, a figure even lower than the approximately one-third of doctors surveyed in Armenia. The 2005 Global Health Professionals Survey, conducted among students in health professional training in 10 countries, found nearly all respondents felt they should offer cessation advice, but just 5%–37% had undergone such training.

WHO in 2008 reported that the vast majority of countries do not sufficiently support users who want to quit. Effective services include brief routine advice from health professionals,
Irregular and unevenly enforced bans on public smoking and Irregular monitoring of prevalence in adults and youths; and Relatively affordable cigarettes, even for a low-income selling. The general absence of these in Laos acts as a further smoking programmes and specialised smoking cessation counselling. The general absence of these in Laos acts as a further impediment for these doctors (and their patients).

Although Laos has ratified the Framework Convention on Tobacco Control, it still has gaps in its national tobacco control efforts. A third of our sample said their workplace had no official policy. Although more than half (57.5%) stated that smoking is not allowed at all on the premises, only 35.7% said bans were ‘always enforced’. In addition to insufficiency in cessation counselling support, the WHO 2009 global report noted the following in relation to the Lao PDR:

▸ Relatively affordable cigarettes, even for a low-income country (most popular brand priced at about US$0.57);
▸ Low rates of tobacco taxation (41%) compared to, for example, Fiji (77%) and Thailand (64%);
▸ Nicotine replacement therapy and other cessation medication not commonly available;
▸ Irregular monitoring of prevalence in adults and youths; and
▸ Irregular and unevenly enforced bans on public smoking and industry promotion.

Limitations of the study
One limitation of this study is its cross-sectional nature. Thus, causes and effects could not be examined. The target group of this study is medical doctors who are working in administration and treatment, including researchers and public health workers; hence generalisation of the findings cannot extend to other types of health professionals. It is possible that recall bias, or reluctance to acknowledge smoking behaviour, may have affected responses.

Recommendations
The study findings in relation to doctors’ smoking prevalence, knowledge, attitudes and involvement in tobacco cessation work indicate a timely opportunity to engage them in tobacco control more actively, thus potentially making a significant contribution to tobacco use prevention and cessation. However, doctors will be constrained in reaching this potential without further support. To this end, we offer the following suggestions for consideration by the Lao Ministry of Health.

▸ Targeted cessation support for doctors to assist their quit attempts and bolster their image as role models for non-smoking;
▸ Training programmes for doctors (and medical students) on brief advice and cessation counselling to enable them to support patients and community;
▸ Training programmes for lower level health professionals in cessation support to reach greater numbers of the Lao population;
▸ Expansion to all regions of nicotine replacement therapy and medications of proved effectiveness to aid cessation;
▸ Medical school and in-service education for doctors (and health professionals) on the health, financial and other costs of tobacco use;
▸ Raising consciousness for doctors and the broader community about the negative impacts of gender norms for men and boys that encourage tobacco uptake; and
▸ Implementation of FCTC measures of greatest impact on prevention and cessation of tobacco use, including price rises and strict enforcement of bans on smoking in workplaces and public spaces.

Conclusion
Doctors in Lao PDR, a low-income country where community smoking prevalence is high, are prepared to contribute to tobacco control programmes if equipped with the appropriate tools.

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Competing interests
None.

Ethics approval
This study was conducted with the approval of the National Ethical Review Board for Research, Ministry of Health, Vientiane, Lao PDR ref No 132/NECHR.

Contributors
SV, study design, data collection, initial analysis and drafting manuscripts. MM further analysis, drafted modification and June 2010 revision. AP, study design, data analysis and commenting drafts; VH, data collection and review manuscript; SP, study design and data analysis; TT, study design writing and commenting drafts. All authors read and approved the final draft of the manuscript.

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