

## Medical Students' Knowledge and Attitude Concerning Cigarette smoking : A study in medical students at faculty of Medicine, Khon Kaen University, Khon Kaen, Thailand.

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ความรู้และทัศนคติของนักศึกษาแพทย์ต่อการสูบบุหรี่ : ศึกษากรณี  
นักศึกษาแพทย์ คณะแพทยศาสตร์ มหาวิทยาลัยขอนแก่น  
จังหวัดขอนแก่น ประเทศไทย

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วัตถุประสงค์ของการวิจัยครั้งนี้เพื่อศึกษาทัศนคติ และความรู้ทั่วไปของ  
นักศึกษาแพทย์ คณะแพทยศาสตร์ มหาวิทยาลัยขอนแก่น ประเทศไทย เกี่ยวกับ  
การสูบบุหรี่ การศึกษาได้หาความสัมพันธ์ระหว่างความรู้ ทัศนคติต่อการสูบ  
บุหรี่ และพฤติกรรมสูบบุหรี่ ได้มีการควบคุมตัวแบบทางเศรษฐกิจและสังคม  
บางตัวที่มีอิทธิพลต่อการสูบบุหรี่

ประชากรตัวอย่างที่ใช้ในการวิจัยครั้งนี้ได้แก่ นักศึกษาแพทย์ซึ่งกำลัง  
ศึกษาในชั้นปีที่ 1 และชั้นปีที่ 5 ที่คณะแพทยศาสตร์ มหาวิทยาลัยขอนแก่น,  
ประเทศไทย ระหว่างปีการศึกษา 2530-2531. จำนวนผู้ตอบแบบสอบถาม  
ทั้งหมด 145 คน จากจำนวนนักศึกษาทั้งหมด 192 คน การวิเคราะห์แบบ  
สอบถามและทดสอบสมมติฐานใช้ทดสอบด้วยไคสแควร์ (Chi-Square test)

ผลการศึกษาแสดงให้เห็นว่า นักศึกษาแพทย์ส่วนใหญ่ไม่สูบบุหรี่และนักศึกษาแพทย์หญิงสูบบุหรี่น้อยกว่านักศึกษาแพทย์ชาย. จากการศึกษาพบความสัมพันธ์ระหว่างความรู้เรื่องผลของการสูบบุหรี่กับจำนวนปีที่ศึกษา และพบความสัมพันธ์ระหว่างทัศนคติและจำนวนปีที่ศึกษา โดยพบว่านักศึกษาแพทย์ชั้นปีที่ 1 มีทัศนคติต่อการสูบบุหรี่ดีกว่านักศึกษาแพทย์ชั้นปีที่ 5

นอกจากนี้ ยังพบว่าทัศนคติและความคิดเห็นบางเรื่องมีความสัมพันธ์กับพฤติกรรมการสูบบุหรี่ของผู้ไม่สูบบุหรี่ หรือสูบบุหรี่ประจำวัน หรือบางโอกาสที่ระดับนัยสำคัญทางสถิติ 0.05

The objective of this project was to study the attitude and general knowledge of Medical students at Khon Kaen University (KKU), Thailand concerning cigarette smoking. The study examines the relationship between knowledge, attitude to smoking and smoking habits. Certain socio-economic factors known to influence smoking behaviour were controlled in this study.

The population used in this research was the medical students studying in the first and fifth years in the faculty of Medicine, Khon Kaen University, Thailand during the academic year 1987-1988. A total number of 145 responses were returned out of possible 192. The questionnaires were analysed and the chisquared test was used to test the hypothesis.

The study shows that most medical students are nonsmokers with less females smoking than males. A relationship was found between knowledge of the effects of smoking and year of study. Fifth year students have greater knowledge than the first years. A relationship was also found between attitude and year of study; the first year medical students had a better attitude than the fifth years.

In addition, it was discovered that some specific combinations of attitude and opinion have a relationship with smoking habits (nonsmokers, daily and occasionally smokers) at a significance level of  $P < 0.05$ .

## INTRODUCTION

In control of smoking, it is now widely accepted that doctors have a vital role to play at various levels. (Ockene JK, 1987)

The smoking of cigarettes is an important cause of morbidity and mortality. In Britain 50,000 excess deaths per year are laid at its door and in the United States of America 325,000. In Thailand, the National Statistics offices reported that 10,000,000 of Thai people were smokers in 1981 and that most of them were teenagers.

A physician may have some difficulty persuading patients to stop smoking, however, the main problem lies in preventing them from restarting the habit because of the many withdrawal symptoms they suffer. These unpleasant symptoms, include : tension, irritability, depression, aggression, insomnia tremor, irrationality and weight gain. The most troublesome symptom of all is craving for another cigarette (Steele C, 1987).

It is important, therefore, for doctors to have a better understanding of smoking habits and to have better attitudes and to convey these to their patients as they practise medicine. The present study was undertaken in a group of medical students in KKU (Khon Kaen University). Thailand. So as to determine their potential as future advisors of patients.

## METHODOLOGY

This study took the form of a survey research and studied the attitude and general knowledge of Medical students concerning cigarette smoking. The analysis was made by chi-square test to find the relationship between the independent and dependent variables.

## POPULATION

The population in this study was the 192 medical students and the sample was 145 students studying in the first year and the fifth years of the faculty of Medicine Khon Kaen University, Khon Kaen, Thailand during the academic year 1987-88.

## QUESTIONNAIRE

The questionnaire was that used in the international study on medical students organized by the International Union Against Tuberculosis and Lung Diseases which consisted of four parts.

The first part concerned the general characteristics and smoking habits of respondents.

The second part concerned the general attitude for not smoking.

The third part concerned the general knowledge which requested to assess the aetiological relationship between smoking and a number of diseases.

The last part concerned the respondents' opinion on the role of doctors in smoking cessation.

## COLLECTION

The researcher requested the permission from Professor Paul Freour to adopt his questionnaire and to use this questionnaire with KKU medical students.

The questionnaire was given to the medical students in faculty of Medicine, Khon Kaen University Thailand. Most students (145 out of 192) received the questionnaire in person,

the remainder received it by mail. The subjects were asked to return the questionnaire by mail.

## RECORDING

Questionnaires were returned by 145 out of 192 students. The data was recorded and analysed using programme computer, SPSS-X.

## ANALYSIS

Various methods were used to analyse the data. The general characteristics and smoking habits of respondents were analysed by using percentages. The significance of the various relationships was determined by the use of the chi-square test. A level of  $P < 0.05$  was used as the criterion.

Another analysis was performed by dividing respondents into two groups based on their scores in the attitude section of the questionnaire. The first group were those with scores above the mean and were said to have "Good attitude." The second group, those with scores less than the mean, were described to have "Poor attitude." The chi-square test was then used to find relationships between attitude and other variables.

General knowledge was analysed in a similar way to the attitude. The students were divided into two groups; those with "Good knowledge" having scores above the mean, and those with "Poor knowledge" having scores below the mean. Again the chi-square test was used to find the significance of relationships between these groups and other variables.

## RESULTS

The respondents were the 145 medical students who were studying in the first and the fifth years in the faculty of Medicine, Khon Kaen University (Thailand)

There were 84 (57.9 per cent) from the first year and 61 (42.1 per cent) from the fifth year. 98 (67.6 per cent) of them were men and the

remaining 47 (32.4 per cent) were women. Their ages ranged from 16 to 35 with a mean of 20.1 years and the mode was 18 years. Most of them live in towns 77(53.1 per cent) and cities 46(31.7 per cent) only 7(4.8 per cent) live in village.

### SOMKING HABITS

Among the 145 medical students only 20 (13.8 per cent) were smokers of these 19 out of the 98 men were smoker, ie 19.4 percent. One out of the 47 women were smoker, ie 2.1 percent.

Among the smoker, only 7 men (35.0 percent) smoked daily. The other 12 men (60.0 per cent) and the only smoking woman (5.0 per cent) smoke occasionally.

There were 125(86.2 per cent) non-smoker and of this group 50(40.0 per cent) had smoked previously and 10(8.0 per cent) had smoked longer than 6 months. The remaining 55 (44.0 per cent), had never smoke at all. However 9 (7.2 per cent) of the non-smokers consider themselves likely to become smokers in the next 5 years.

### KNOWLEDGE

The measurement of respondents' knowledge about smoking was by asking them to access the aetiological relationship between smoking and various diseases. The possible responses for each item were "major cause", "contributory cause", "associate with", "no association" or "don't know." Reference for correct results was based partly on the book name "the health consequences of smoking." Most of respondents were able to point out that smoking was the major cause of Lung cancer and chronic bronchitis. However, for coronary heart disease, emphysema and peripheral vascular disease, many of them did not think that smoking was a major cause. Furthermore, relationship between smoking and oral and Laryngeal cancers were causal or that smoking was associated with bladder cancer.

### KNOWLEDGE-ADJUSTED LEVEL

The knowledge-adjusted level was found by giving a score of 1 for each correct answer and 0 for each in correct answer. For all students was found and from it the students divided into "Good Knowledge" and "Poor knowledge" groups based on their personal score.

Form the table 1 shows that the respondents have good knowledge only 79 (54.5 per cent) and have low knowledge 66 (45.5 per cent)

**Table 1 Knowledge-adjusted level of respondents**

Knowledge-adjusted level	N	Percentages (%)
* Poor Knowledge	66	45.5
* Good knowledge	79	54.5
<b>Total</b>	<b>145</b>	<b>100.0</b>

\* Poor is below mean value of knowledge

\* Good is above mean value of knowledge

### ATTITUDE

The respondents' attitude to smoking was assessed by asking them, their reasons for not smoking, their opinion on advising patients against smoking and their opinion on following the attitude statements. Some question were provided with a four point answer either high, moderate, Low and none, or often, sometimes, seldom and never. The other question used a five point scale (strongly agree, somewhat agree, neither agree nor disagree or strongly disagree)

Ten different reasons were suggested for either not smoking or for stopping smoking. The proportion of respondents who rated the reasons to be of "high" or "moderate" importance.

The top four reasons in non-smokers were : to protect health, self-discipline, to set

a good example for patients and to prevent discomfort in people nearby. Of less importance were : to set a good example for health workers, for children and adults friends. Saving money or pressure from colleagues were influential in a much smaller proportion of respondents. 122 (97.6 percent) of the non-smokers and 19(95.0 per cent) of the daily and occasional smokers strongly agree that smoking was harmful to their health, showing that in this area there is no significant difference between the two groups.

### ATTITUDE AND PRACTICES

Respondents were asked the likelihood (often, sometimes, seldom or never) that they would advise patients against smoking under three different circumstances of encountering patients, 139 (95.9 per cent) of the respondents said that they would often advise when patients had symptoms/confirmed diagnosis of smoking related diseases and no difference was found between the daily, occasionally and non smokers at significance level  $P < 0.05$ . 133 (91.7 per cent) of the respondents said that they would often advise when the patient himself raises the question about smoking and have a significant difference was found between the non smoker and daily & occasionally smoker. 98 (78.4 per cent) of non smoking respondents and 11 (55.0 per cent) of daily and occasionally smoking respondents said that they would often advise when a patient is a smoker who has no symptoms/ diagnosis of smoking-related diseases and does not himself raise the question of smoking but no significant difference was found between the non-smokers and daily & occasionally smokers.

Respondents' opinion on the role of doctors in smoking cessation and a number of legislative control measures were expressed on either a four-point scale (strongly, agree, somewhat agree, neither agree or nor disagree, strongly disagree) and or a five-point scale (strongly agree, some what agree, neither agree or disagree, somewhat disagree, strongly disagree). The significant difference was found between the non smokers and daily & occa-

sionally smokers according to the statements "It is annoying to be near a person, who is smoking," ( $P < 0.04$ ). "(Doctors) should set a good example by not smoking." ( $P < 0.05$ ). "The price of tobacco products should be increased sharply." ( $P < 0.05$ ) "To sale of tobacco the children should be completely prohibited." ( $P < 0.01$ )

### ATTITUDE-ADJUSTED LEVEL

The Attitude-adjusted level found by giving the score according to the degree of positive Attitude base on Likert's scale is strongly agree = 5, somewhat agree = 4, neither agree or disagree = 3, somewhat disagree = 2, and strangely disagree = 1

Poor attitude was defined as below mean score and good attitude as above mean score. From the table 2 shows that the respondents had good attitude only 84 (57.9 per cent) and the remaining 61 (42.1 per cent) were poor attitude.

Table 2 Attitude-adjusted level of respondents

Attitude-adjusted Level	N	Percentages (%)
* Poor Attitude	61	42.1
* Good Attitude	84	57.9
<b>Total</b>	<b>145</b>	<b>100.0</b>

\* Poor is below mean value of Attitude

\* Good is above mean value of Attitude

### THE RELATIONSHIP BETWEEN KNOWLEDGE-ADJUSTED LEVEL AND THE INDEPENDENT VARIABLES

A significant difference was found between the respondents' adjusted level and year of study. (significant difference : chi-square = 4.47958,  $P < 0.05$ ) Table 3.

**Table 3 The relationship between knowledge-adjusted Level of respondents and year of study**

Knowledge-adjusted Level	Year of study		Total (N)
	1 <sup>st</sup> year	5 <sup>nd</sup> year	
Poor knowledge	45	21	66
Good knowledge	39	40	79
<b>Total</b>	<b>84</b>	<b>61</b>	<b>145</b>

$$\chi^2 = 4.47958 \quad df = 1 \quad \text{Sig} \quad P < 0.05$$

#### THE RELATIONSHIP BETWEEN ATTITUDE-ADJUSTED LEVEL AND THE INDEPENDENT VARIABLES

A significant difference was found between attitude adjusted level of respondents and year of study. (significant difference : chi-square = 16.27187,  $P < 0.05$ ) Table 4. A relationship was also found between Attitude-Adjusted level of respondents and smoking habits (smoker, nonsmoker) which significant difference : chi-

square test = 6.15663  $P < 0.05$  (Table 5)

A significant difference was found between attitude-adjusted level of respondents and smoking habits (ever smoked more than 6 months) which significant difference : chi-square = 9.26494,  $P < 0.05$  (Table 6) A further relationship was found between Attitude-adjusted level of respondents and smoking habits (try to have smoking habits 5 years from now, with significant difference : chi-square = 6.04009,  $P < 0.05$  (Table 7)

**Table 4 The relationship between Attitude-adjusted Level of respondents and year of study.**

Attitude-adjusted Level	Year of study		Total (N)
	1 <sup>st</sup> year	5 <sup>nd</sup> year	
Poor Attitude	23	38	61
Good Attitude	61	23	84
<b>Total</b>	<b>84</b>	<b>61</b>	<b>145</b>

$$\chi^2 = 16.27187 \quad df = 1 \quad \text{Sig} \quad P < 0.05$$

**Table 5 The relationship between Attitude-adjusted Level of respondents and smoking habits. (smoker, non smoker)**

Attitude-adjusted Level	Smoking habits		Total (N)
	Smoker	Non smoker	
Poor Attitude	14	47	61
Good Attitude	6	78	84
<b>Total</b>	<b>20</b>	<b>125</b>	<b>145</b>

$$X^2 = 6.15663 \quad df = 1 \quad sig \quad P < 0.05$$

**Table 6 The relationship between Attitude-adjusted Level of respondents and smoking habits. (ever smoked more than 6 months)**

Attitude-adjusted Level	Smoking habits (ever smoked more than 6 months)			Total
	yes	no	no answer	
Poor Attitude	9	51	1	61
Good Attitude	2	82	0	84
<b>Total</b>	<b>11</b>	<b>133</b>	<b>1</b>	<b>145</b>

$$X^2 = 9.26494 \quad df = 2 \quad sig \quad P < 0.05$$

#### THE RELATIONSHIP BETWEEN ATTITUDE-ADJUSTED LEVEL AND KNOWLEDGE-ADJUSTED LEVEL WHEN THE INDEPENDENT VARIABLES ARE CONTROLLED

There was no relationship between Knowledge-adjusted level and Attitude-adjusted level at significance level  $P < 0.05$  when considering both years together, however on considering the years separately a relationship was found, particularly among the first year

students. (significant difference : chi-square = 9.18923,  $P < 0.05$ )

Significant difference were found between Attitude adjusted level and knowledge-adjusted level of respondents when smoking habits (smoker, non smoker) were controlled for, with significant difference : chi-square = 4.08636,  $P < 0.05$

A relationship between Attitude-adjusted level and Knowledge-adjusted level of respon-

dents was demonstrated when home was considered. Those from towns showed the strongest relationship (significant difference : chi-square = 4.40203,  $P < 0.05$ )

A significant difference was found between Attitude-adjusted level and Knowledge-adjusted level of respondents when the variable "ever smoke more than 6 months" was controlled. The relationship was particularly strong among the gap who had never smoked for more than 6 months. (significance difference : chi-square = 3.87466,  $P < 0.05$ )

### COMPARISON OF ATTITUDE AND KNOWLEDGE BETWEEN THE FIRST YEAR AND THE FIFTH YEAR OF RESPONDENTS

From the table 8 it can be seen that there is a difference with respect to attitude and knowledge of smoking between first year and fifth year respondents in the first year they have poorer knowledge than the fifth year, however attitude in the first year is better than the fifth year (significance difference : t-value = 4.27  $P < 0.01$  for Attitude and t-value = -2.65,  $P < 0.01$  for Knowledge)

**Table 7 The relationship between Attitude-adjusted Level of respondents and smoking habits. (try to have smoking habits 5 years from now)**

Attitude-adjusted Level	Smoking habits			Total
	<u>(try to have smoking habits 5 year now)</u>			
	smoke daily probably not certainly not			
	smoke daily	smoke daily		
Poor Attitude	7	10	44	61
Good Attitude	2	10	72	84
Total	9	20	116	145

$$X^2 = 6.04009 \quad df = 2 \quad sig \quad P < 0.05$$

**Table 8 Comparison of Attitude and knowledge between the first year and the fifth year of respondents.**

Variable	Group		T-Value*	P-Value
	first year	fifth year		
Attitude	60.65	57.11	4.27	0.000
Knowledge	3.33	4.16	-2.65	0.009

\* In T-test for difference % in mean scores, % groups

## DISCUSSION

This study reemphasizes the need for doctors to have a better understanding of smoking habits, to have better Attitudes and to convey these to their patients as they practise medicine.

This research was intended a knowledge base for future useful studies on smoking. The response rate of 75.5 per cent in this study was quite satisfactory even if somewhat lower than a number of similar surveys among the medical profession (Cheng KK & Lam TH, 1987) and lower than a number of similar surveys among the medical students (NaNa A & Bovornkitti S, 1988)

It was encouraging to find that only 20 (13.8 per cent) of KKU Medical Students surveyed were smokers and that only 7(35.0 per cent) of the smokers smoked daily. This is lower than the rates reported in studies carried at elsewhere in the past on physicians of all ages (Burgess & others, 1963-1973; Fortmann SR & others, 1985; Weng XZ, 1987) but higher than the rates reported in studies among newly - qualified doctors in Hong Kong (Cheng KK & Lam TH, 1987)

Although we are aware that less female KKU Medical Students Smoked than their male colleagues in many other places (Weng XZ, 1987; Hay DR, 1976; Cheng KK & Lam TH, 1987) it was a pleasant surprise for us that none of our 47 female respondents smoked daily.

On comparing the smoking habits of the first and fifth years we found that of the 20 smokers 16 were fifth year medical students and only 4 were first years. This was similar to a Chulalongkorn University (N Songkla Y & Sanghirun S, 1985)

The role of smoking in common diseases is lung cancer, chronic bronchitis where it is the most important cause; was recognized by most of our respondents. However, in the less common disease like laryngeal cancer, Oral cancer and leukoplakia or in coronary heart disease where there are other major causes besides smoking

fewer respondents were able to identify smoking to be a major cause. This study was similar to the study of smoking habits, attitudes and practices among newly - qualified doctors in Hong Kong. (Cheng KK & Lam TH, 1987) and similar to medical & students in Siriraj Hospital (NaNa A & Bovornkitti S, 1988)

As most respondents claimed that they would advise their patients to stop smoking if they have symptoms of smoking related diseases, This deficiency in knowledge may mean that sometimes, advice is not given simply because the doctor is unaware of the relationship. It is crucial that improvements in the medical curriculum be made to bridge this gap. This was similar to newly-qualified doctors in Hong Kong (Cheng KK & Lam TH, 1987) and similar to medical students in Siriraj Hospital (NaNa A & Bovornkitti S, 1988)

A large proportion (Over 90.0 per cent) of respondents believed that it was the doctors responsibility to convince people to stop smoking and that doctors should be more active than they have been in speaking to lay groups about smoking. This was higher than the rate reported in the study of newly qualified doctors in Hong Kong (Cheng KK & Lam TH, 1987)

Proportions of respondents who were in favour of the various anti-smoking measures differed from on measure to another. There was general support for having a health warnint on cigarette packages, restricted smoking in hospitals and closed public places as well as prohibition of sales of tobacco to children, with the exception of banning the sales to children, all these measures were already in force at the time of the study.

However, there seemed to be some controversy surrounding the ideas of banning completely the advertising of tobacco and in cereasing the price of tobacco products sharply, both of which are yet to be adopted. It showed that they were not fully ready to translate health issues and knowledge into political control measures. This also reflects the success of the tobacco industry in their relentless advocacy of "personal freedom" and freedom to express

oneself. If such efforts did have an effect on our young doctors, many of whom are convinced that smoking is harmful to health, then it is not surprising that members of the public who are considerably less knowledgeable on the health effects of smoking will speak against a tighter control. In Thailand, the government is currently trying to reduce smoking habits in our population by measures such as stop smoking campaign.

In conclusion, although we are pleased that few of our KKU Medical Students smoke, there is still substantial potential for improvement in their Knowledge and Attitude on smoking and their practices in advising patients against smoking. Since students are often taught in a haphazard manner in this important area of smoking, we believe that a specific organized course on all aspects of smoking and health should be introduced into our undergraduate curriculum. There may also be an urgent need to examine the situation among more experienced practitioners so that further education and updates can be provided accordingly.

### ACKNOWLEDGMENTS

We thank the many people with whom we have worked, with whom we have discussed our ideas and whose ideas in return have contributed to this report.

We wish to express our gratitude to all the KKU Medical Students who participated in this study.

In particular, we thank Professor Paul Freour for his kind permission, allowing us to adopt his questionnaire in our study.

The encouragement from Dr. S Piniwatsoontorn, Miss Belinda Sustin, Miss Lita Lo,

Mr. CM Wong have made the presentation of this paper possible.

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