SMOKING BEHAVIOR AND STATUS AMONG MEDICAL DOCTORS IN CANTHO UNIVERSITY OF MEDICINE AND PHARMACY, VIETNAM

DUONG PHUC LAM

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.....

Mr. Duong Phuc Lam
Candidate

.....

Asst. Prof. (Honorable) Nate Hongkrilert
Ph.D.
Major-Advisor

.....

Asst. Prof. Veena Sirisook
Dr.P.H.
Co-Advisor

.....

Lect. Wirat Kamsrichan
Ph.D.
Co-Advisor

.....

Assoc. Prof. Rassmidara Hoonsawat
Ph.D.
Dean
Faculty of Graduate Studies

.....

Assoc. Prof. Sirikul Isaranurug
M.D., Dip. Thai Board of Pediatrics
Chair
Master of Primary Health Care Management
ASEAN Institute for Health Development

Thesis
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was submitted to the Faculty of Graduate Studies, Mahidol University
for the degree of Master of Primary Health Care Management

on
March 16, 2005

.....
Mr. Duong Phuc Lam
Candidate

.....
Asst. Prof. (Honorable) Nate Hongkrilert
Ph.D.
Chair

.....
Asst. Prof. Veena Sirisook
Dr.P.H.
Member

.....
Assoc. Prof. Chanya Sethaput
Ph.D.
Member

.....
Lect. Wirat Kamsrichan
Ph.D.
Member

.....
Assoc. Prof. Rassmidara Hoonsawat
Ph.D.
Dean
Faculty of Graduate Studies
Mahidol University

.....
Assoc. Prof. Sirikul Isaranurug
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Director
ASEAN Institute for Health Development
Mahidol University

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Duong Phuc Lam

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DUONG PHUC LAM 4737967 ADPM/M

M.P.H.M (PRIMARY HEALTH CARE MANAGEMENT)

THESIS ADVISORS: NATE HONGKRILERT, Ph.D., VEENA SIRISOOK, Dr.P.H., WIRAT KAMSRICHAN, Ph.D.

ABSTRACT

Smoking is a serious public health problem worldwide. This cross sectional study aimed to determine smoking status and behavior among medical doctors in Cantho University of Medicine and Pharmacy, Vietnam.

Data were collected from January 10 to February 15, 2005 through a self administered questionnaire. Among 161 physicians, 16.8% were current smokers, 4.3% were ex-smokers and 78.9% were non-smokers. Smoking prevalence was 30% among males and 0% among females,

Smoking was less commons in the younger age group. Most of the smokers began smoking in teenage years and were initiated by their friends. Force of habit was the major reason for present smoking, followed by work and job stress. Many physicians perceived that smoking could relieve anxiety or stress, and most of them mentioned that smoking cessation may increase weight. Those who had never smoked or were ex-smokers reasoned that they wanted to protect their own health and to avoid unpleasant symptoms. The striking smoking habit was that more than half of them smoked in the presence of children. Most physicians rarely advised their patients to stop smoking. They usually paid more attention only to lung and heart patients, but not much to other conditions. For smoking cessation, most of them suggested gradual reduction and nicotine replacement methods.

KEY WORDS: SMOKING STATUS / SMOKING BEHAVIOR / SMOKING MODEL / SMOKING CESSATION

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CHAPTER 1
INTRODUCTION

1.1 Rationale and justification:

Tobacco is the second major cause of death in the world. It is currently responsible for the death of one in ten adults' worldwide (about 5 million deaths each year). If current smoking patterns continue, it will cause some 10 million deaths each year by 2020. Half the people that smoke today, that is about 650 million people, will eventually be killed by tobacco [1].

Smoking is considered the main reason of sickness, handicapped and death. In 2004, U.S. Surgeon General Richard H. Carmona has released a new comprehensive report on smoking and health, revealing for the first time that smoking causes diseases in nearly every organ of the body. Published 40 years after the surgeon general's first report on smoking which concluded that smoking was a definite cause of three serious diseases. This newest report finds that cigarette smoking is conclusively linked to diseases such as leukemia, cataracts, pneumonia and cancers of the cervix, kidney, pancreas and stomach [2].

According to the report, smoking kills an estimated 440,000 Americans each year. On average, men who smoke cut their lives short by 13.2 years, and female smokers lose 14.5 years. The economic toll exceeds $157 billion each year in the United States. Recently, the chief of the WHO has declared: "Cigarette will kill more people than any other sicknesses, including HIV/AIDS". The tobacco epidemic is still expanding, especially in developing countries where, currently, seven out of every ten tobacco-related deaths occur [2].

Tobacco is the fourth most common risk factor for disease worldwide. The economic costs of tobacco use are equally devastating. A 1994 report estimated that

the use of tobacco in an annual global net loss of US$ 200 thousand million, a third of this loss being in developing countries [1].

Physicians might be the most important and strongest group who inform people how smoking affects their health, why it is so harmful for them. Since physicians and professionals who work in the health field are expected to be more concerned than others about risks and hazards of smoking. However the question is that: what are the behavior and reasons of physicians towards smoking and cessation of smoking? What are the factors that influence even doctors to smoke?

In Vietnam, over 50% of men and around 2% of women smoke according to Vietnam's National Health Survey 2001-2002(57). A previous survey of 1995 men and women in Hanoi, Ho Chi Minh City, and two rural communities found that 73% of men smoked but only 4% of women. Vietnam has the highest reported smoking prevalence among men in the world-seven men in 10 smoke. This figure is likely to rise still further because developing countries are increasingly being targeted by international tobacco corporations searching for new markets [3].

Therefore a need arises to highlight this issue. Smoking habit of physician is likely to influence the community. They have responsibility to combat smoking. So in view of the social role the study population can play a leading role in combating smoking-induced diseases. Nevertheless first of all, it needs to be identified what the physician's smoking behavior is, what they thinking, opinion and reasons about smoking and cessation of smoking are.

The World Health Organization (WHO) has recommended that tobacco-smoking surveys be conducted among health professional [4, 5]. Previous studies reported smoking prevalence among Japanese physicians was 27.1% for men and 6.8% for women. Smoking prevalence was higher among male physicians in Japan than those in the United States (3%-10%), United Kingdom (4%-5%) [6]. In Thailand prevalence among Thai physician was 14.9% for men and 0% for women [7]. In Vietnam, no nationally representive surveys of smoking among physician in Vietnam have been

reported. In 1997 there is an only survey of Dr Tran Thu Thuy; smoking prevalence among health workers in this survey was 26 % [8].

Physicians and professionals who work in the health field are expected to be more concerned than others about risks and hazards of smoking, logically questions arise as to wherever smoking prevalence among physicians are less compared to others? The answer is yes, however still a fairly number of physicians is smokers. Moreover, the World Organization has advocated that physicians should not smoke cigarettes. With this research, we would answer the questions as follow:

What is the smoking prevalence among Can Tho physicians?

What are the reasons for the physicians to smoke or not to smoke?

Is there any relationship between smoking model, opinions about smoking; anti-smoking and smoking status?

Is there any relationship between smoking cessation and smoking status?

What is the model concerning smoking behavior?

This study hopes to outline some experiences of individual physician, would be useful ideas.

1.2 Research objectives:

1.2.1 General objective:

To assess smoking behavior and status of physicians in Cantho University of Medicine and Pharmacy, Vietnam.

1.2.2 Specific objectives:

1.2.2.1 To assess smoking status of physicians in CUMP.

1.2.2.2 To describe reasons for current smoking status among physicians in CUMP.

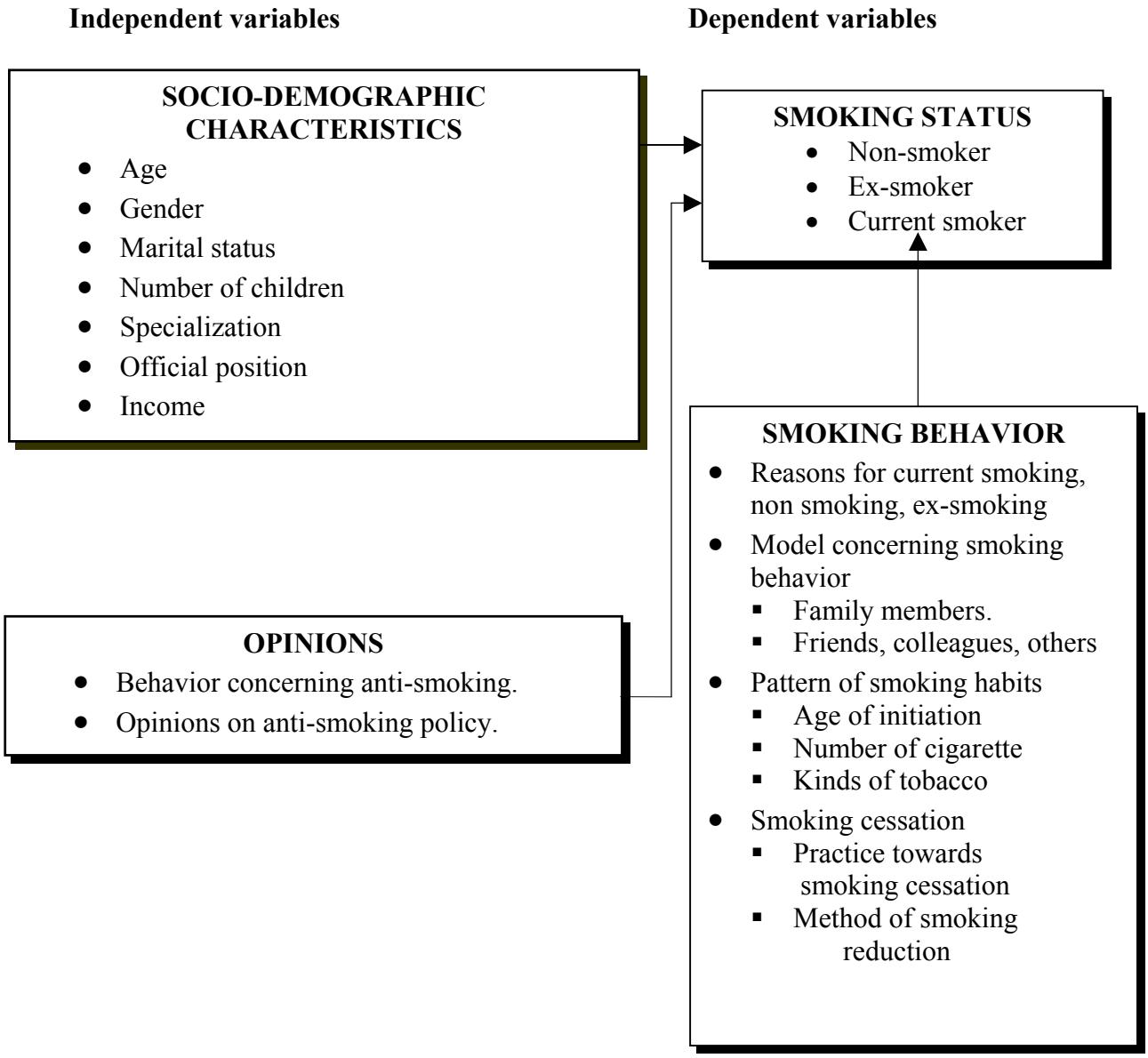
1.2.2.3 To describe pattern of smoking behavior and smoking cessation among physicians in CUMP.

1.2.2.4 To examine relationship between smoking status and demo-sociographic characteristics among physicians in CUMP.

1.2.2.5 To investigate the physicians' opinions about behavior concerning anti-smoking and anti-smoking policy.

1.2.2.6 To identify the relationship between smoking status and opinions about behavior concerning anti-smoking, anti- smoking policy, smoking cessation among physicians in CUMP.

1.3 Conceptual framework



1.4 Operational definitions

1.4.1 Independent variables

1.4.1.1 Socio-demographic characteristics:

Age: referred to age in years, which is number of full years after birth. In this study, the respondents were divided into three age groups: 22-35, 36-45, 46-65 years old.

Gender: Male, and female

Marital status: referred to single, married, separated or divorced, widowed

Number of children: referred to number of living children in each family.

Official position: referred to administration and staff.

Income: Referred to the amount of money in Vietnamese Dong (VND) that all members in the family count earn from their daily work per month divided by the total number of persons in this family. Income variables were grouping into three groups as follows:

Level	Number of VND/person/month
Low	<800,000
Moderate	800,000 – 1,500,000
High	>1,500,000

Specialization: referred to internal medicine, surgical medicine, obstetrics, basic medicine, odontology, pediatrics, specialty, and epidemiology.

1.4.1.2 Opinions: referred to behavior concerning anti-smoking and opinions on policy anti-smoking.

1.4.2 Dependent variable

- Smoking status (Smokers, Ex-smokers, and Non-smokers). There were some different classifications of smoking status on the previous researches. According to the WHO criteria [9]:

Smoking status could be divided into two categories, smokers and non-smokers.

A smoker was someone who, at the time of the survey, smoked any tobacco product either daily or occasionally.

Smokers might be further divided into two categories:

A1. A daily smoker was someone who smoked any tobacco product at least once a day.

A2. An occasional smoker was someone who smokes, but not every day. Occasional smokers include:

A2 i) Reducers- people who used to smoke daily but now do not smoke every day.

A2 ii) Continuing occasional - people who had never smoked daily, but who had smoked 100 or more cigarettes and now smoke occasionally.

A2 iii) Experimenters - people who had smoked less than 100 cigarettes and now smoke occasionally.

A non-smoker was someone who, at the time of the survey, did not smoke at all. Non-smokers could be divided into two categories:

B1. Ex-smokers were people who were formerly daily smokers but currently did not smoke at all.

B2. Never-smokers were those who either have never smoked at all or have never been daily smokers and have smoked less than 100 cigarettes.

B3. Ex-occasional smokers were those who were formerly occasional, but never daily smokers and who smoked 100 or more cigarettes in their lifetime.

In this study target population divided into mainly three groups as: Current smokers: who are currently smoking daily (at least 1 cigarette per day) or occasionally (less than 1 cigarette per day). Ex smokers: who formerly are a daily smoker, but currently do not smoke at all. Non smoker: who never smoke in his/her life? [10]

- **Reasons for present smoking status**: including reasons for present smoking and present non smoking.

- **Model smoking behavior:** model concerning smoking behavior from family members, friends, colleagues and others.

- **Pattern of smoking habits**: Referred to category of smoking, number of cigarettes smoke per day [10] and the age of started smoking.

- **Smoking cessation**: Referred to the practice towards smoking cessation and the methods of smoking reduction for patients and physicians.

1.5 Limitation of the study

Cigarette smoking is social phenomena so it is impossible to study for the whole. The subject is limited within Cantho University of Medicine and Pharmacy in Cantho City. Thus, the result of this study can not be generalized the patterns of smoking behavior to other Medical University physicians.

The cross sectional study design let us know only the prevalence of the smoking behavior. From the result we cannot know about the incidence or trend of becoming new smoker or new ex-smoker.

CHAPTER 2
LITERATURE REVIEW

2.1 Global consequences of smoking

Tobacco was available for a long time in the world, in developed countries as well as in undeveloped countries. At first, tobacco was found in American aborigines in the form of tobacco leaves. After that, tobacco plants were transported from America to Europe and widely spread throughout the world. At the beginning, tobacco was smoked with pipe, then by chewing, and gradually by cigar, cigarette appeared. Manufactured cigarettes and various types of hand-rolled cigarette such as bidis- are common in Southeast Asia and India. Mass production by means of machine and marketing technique of tobacco industry facilitated the rapid growth of tobacco consuming, and now popular in most social communities. Now account for up to 85% of all tobacco consumed worldwide was manufactured cigarette. Cigarette smoking appears to pose much greater dangers to health than earlier forms of tobacco use. Given the deleterious effects of tobacco on cardiovascular, respiratory, and other body system, couple with its addictive properties and widespread use, it is perhaps the most dangerous of all psychoactive drugs. Its effects are soothing and tranquilizing, and ender appropriate circumstances there is also a stimulant action. Physiological and psychological dependence occur, and there are severe withdrawal symptoms [12].

The World Health Organization estimates that there are about 1.25 billion smokers in the world, representing about one third of the global population aged 15 and over. The vast majority of these smokers' lives in the developing countries (800 million) and most are men (700 million). About one third of smokers in the developed world are women, compared to about one in eight in developing countries [13] (see Table 1).

Table 1 Estimated number of smokers in the world (in millions)

Countries	Males	Females	Total
Developed	275	150	425
Developing	700	100	800
World	975	250	1225

Source: WHO. Tobacco: Global trends, July 2001.

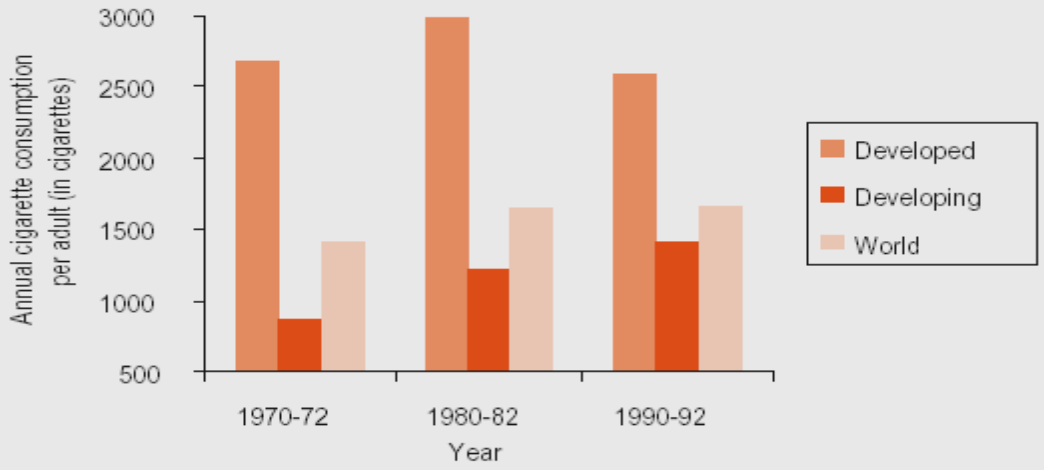
If there are no dramatic changes in cessation rates, no new interventions, and if children start smoking at expected rates, then the current figure of 1.1 billion smokers worldwide is predicted to rise to 1.64 billion by 2025 [13].

Table 2 Estimated smoking prevalence for men and women aged 15 and over.

Countries	Men (%)	Women (%)
Developed	42	24
Developing	48	7
World	47	12

Source: WHO. Tobacco: Global trends, July 2001

The World Health Organization has estimated that each year smokers about 5 million deaths globally. If current smoking patterns continue, it will cause some 10 million deaths each year by 2020 [14].

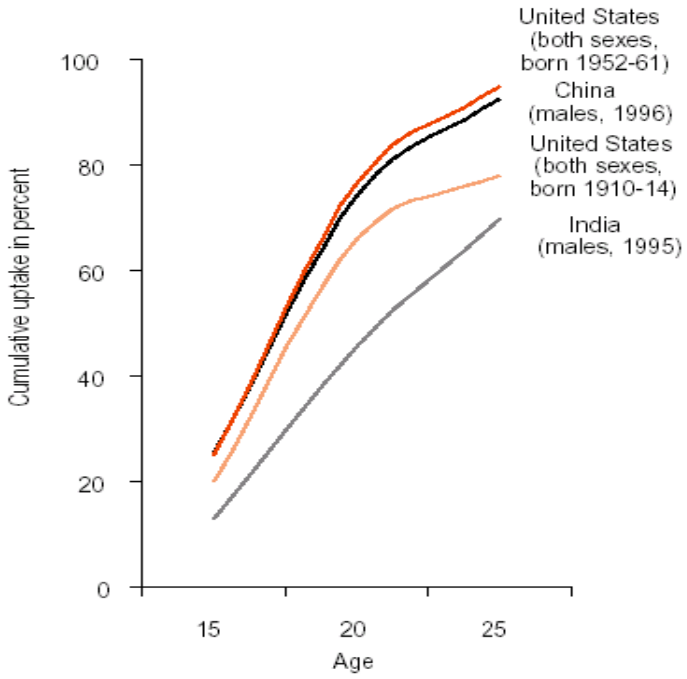


Source: World Health Organization. 1997. *Tobacco or Health: a Global Status Report.* Geneva, Switzerland.

Figure 1 Smoking is increasing in the developing world
Trends in per capita adult cigarette consumption

Tobacco and poverty are inextricably linked. Many studies have showed that in the poorest households in some low-income countries as much as 10% of total household expenditure (see Figure 1). This means that these families have less money to spend on basic items such as food, education and health care. In addition to its direct health effect, tobacco leads to malnutrition, increased health care cost and premature death. It also contributes to a higher illiteracy rate, since money that could have been used for education is spent on tobacco instead [15].

Nowadays, the overwhelming majority of smokers start before age 25, often in childhood or adolescence (see Figure 2) in the high-income countries; eight out of 10 begin in their teens. In middle-income and low-income countries for which data available, it appears that most smokers start by the early twenties, but the trend is toward younger ages [16].



Sources: Chinese Academy of Preventive Medicine. 1997. *Smoking in China: 1996 National Prevalence Survey of Smoking Pattern*. Beijing. Science and Technology Press; Gupta, P.C., 1996. "Survey of Sociodemographic Characteristics of Tobacco Use Among 99,598 Individuals in Bombay, India, Using Handheld Computers." *Tobacco Control* 5:114–20, and U. S. Surgeon General Reports, 1989 and 1994.

Figure 2 Smoking starts early in life

While there is evidence that smoking begins in youth worldwide, the proportion of smokers who quit appears to vary sharply between high-income countries and the rest of the world, at least to date. In environments of steadily increased knowledge about the health effects of tobacco, the prevalence of smoking has gradually fallen, and a significant number of former smokers have accumulated over the decades. In most high-income countries, about 30% of the male populations are former smokers. In contrast, only 2% of Chinese men had quit in 1993, only 5% of Indian males at around the same period. And only 10% of Vietnamese males had quit in 1997 [12].

Since the 1950s, more than 70,000 scientific articles have shown that prolonged smoking causes premature death and disability worldwide. Overall, one in two smokers will die prematurely, with nature of the tobacco epidemic varies from country to country. In developed countries, cardiovascular disease is the most common smoking-related cause of death. In populations where cigarette smoking has been

common fore several decades, about 90% of lung cancer, 15-20% of other cancers, 75% of chronic bronchitis and emphysema, and 25% of deaths from cardiovascular disease at ages 35-69 years are attributable to tobacco. In developing countries, smoking causes about 10% of cancer deaths [17]. Tobacco consumption remains the most important avoidable cancer risk. In the 20th century, approximately 100 million people died worldwide from tobacco-associated diseases (cancer, chronic lung disease, cardiovascular disease, and stroke). Half of regular smokers are killed by the habit and one-quarter will die prematurely during middle age [18].

2.2 Regional patterns in smoking

Data on the number of smokers in each region have been compiled by the World Health Organization using more than 80 separate studies. The result as Table 3 showed, there are wide variations between regions and, in particular, in the prevalence of smoking among women in different regions. For example, in Eastern Europe and Central Asia, 59% percent of men and 26% percent of women smoked in 1995, more than in any other region. In East Asia and the Pacific, where the prevalence of male smoking is equally high, at 59 percent, just 4 percent of women were smokers [12].

Table 3 Regional pattern of smoking

Region	Smoking prevalence			Total smokers	
	Males	Females	Overall	millions	%
East Asia and Pacific	**59**	**4**	**32**	**401**	**35**
Eastern Europe and Central Asia	59	26	41	148	13
Latin America and Caribbean	40	21	30	95	8
Middle East and North Africa	44	5	25	40	3
South Asia (cigarette)	20	1	11	86	8
South Asia (bidis)	20	3	12	96	8
Sub-Saharan Africa	33	10	21	67	6
Low/Middle income	49	9	29	933	82
High income	39	22	30	209	18
World	47	12	29	1,142	100

Source: Tobacco or health: a global Status Report, WHO, 1997.

Table 4 indicated the rates for some countries of the Western Pacific Region. China, Singapore, and Vietnam have the lowest female rates of smoking compare to other countries. While Chinese and Vietnamese men are among the heaviest smokers. Of concern is a trend towards higher tobacco use among young women, as evidence in Australia, the Philippines, Singapore, and Japan.

Table 4 Prevalence of smoking in the countries of the Western Pacific Region

Country	Prevalence	
	Male (%)	**Female** (%)
Australia	29.9	24.2
China	66.9	4.2
Cook Islands	34.4	71.1
French Polynesia	36.0	36.0
Laos	41.0	15.0
Philippine	53.8	11.0
Singapore	26.9	3.1
Vietnam	50.0	3.4

Source: World Health Organization, 2000.

In the developing countries it is likely that tobacco was the cause of about two million deaths in many developing countries (see Table 5) in the year 2000.

Table 5 Mortality Rates in Developed countries – 50 year projection

Fifty year estimates, 1950-2000		
Millions of deaths from smoking in developed countries (60 million)		
Age at death	**Male**	**Female**
35-69	33M	4.8M
70+	19M	5.7M

Source: Peto, Lopez et al 1994

2.3 Smoking trend in Vietnam

2.3.1 Vietnam

Viet Nam lies along the western shore of the South China Sea and stretches some 3260 kilometers along the Eastern coast of the Indochina Peninsula. It has a surface area of 331,114 square kilometers. Approximately 80% of Viet Nam's land

area is mountains, high plateaus and jungles; only 20% is flat land. The country is divided into 64 provincial administrative units, usually grouped into eight ecological regions (see Figure 3).

The 2002 total population is estimated at 79,727,400. The two most populated regions are the deltas of the Red River in the north and the Mekong River in the south. An overwhelming majority of the population, 75% lives in rural areas. The population growth rate is officially estimated at 1.32% per annum [12].

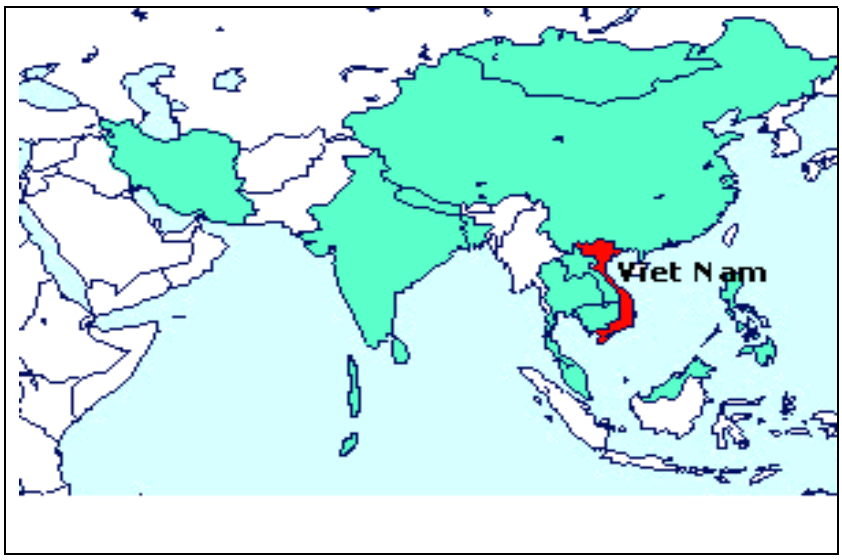


Figure 3 Vietnam map.

2.3.2 Smoking trend:

Smoking as a behavioral health risk factor that has been well established as a contributing risk factor in several diseases. Vietnam has among the highest prevalence of smoking in the world. However, annual consumption of cigarettes per adult (age 15 and over), which is estimated at about 909 from production figures and estimates of smuggled imports of cigarettes, is relatively low in comparison to estimates for other countries in Asia [19].

2.3.2.1 Tobacco production, trade and industry

In 1990, 28,180 hectares were harvested for tobacco, down from 42,390 in 1985. 0.5% of all arable land is used for growing tobacco. It is expected that this will increase in the future [19].

There are 19 cigarette manufacturing factories in Viet Nam. Various joint ventures and agreements have been established between Viet Nam and foreign tobacco interests, including companies from South Korea, Japan, Malaysia, Zimbabwe and the United States [19].

In 1992, Viet Nam produced about 34,200 million cigarettes (accounting for about 0.6% of world production), more than double the amount produced in 1985. Twenty five thousands tones of unmanufactured tobacco were produced or about 0.4% of the world total. Viet Nam imported US $40 million worth of foreign cigarette in 1989 [19] (see figure 4).

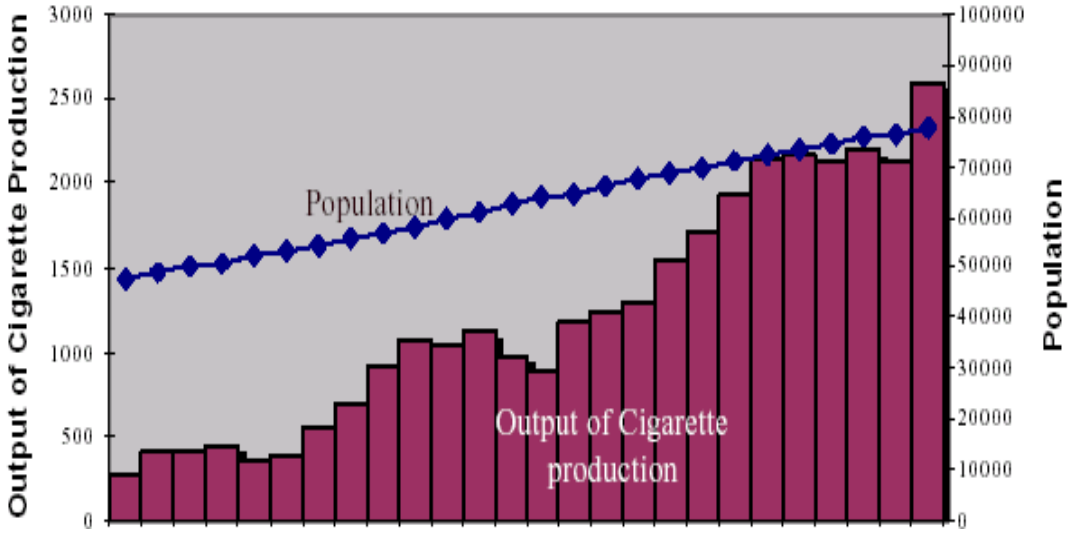


Figure 4 Output of Cigarette and Population overtime

Source: Vietnam National Health Survey 2002

2.3.2.2 Tobacco consumption

In 1987, it was reported that 70% of tobacco was consumed as cigarettes, and 30% as pipe tobacco. Sixty percent of the cigarettes were manufactured and 40% role-your-owns. By 1993, the percentage of tobacco consumed as cigarettes had risen to 93%, approximately 98% of which were manufactured. However, consumption of international brands was mostly limited to foreigners and the rich [19].

Tobacco use in Vietnam consists of smoking cigarettes, pipe tobacco, water pipe and chewing tobacco, sometime in conjunction with chewing areca nut and betel leaves, the latter being more common among women. Indeed, a much larger proportion of female tobacco users are likely to use pipe or chewing tobacco. Among male tobacco users, cigarette smoking is relatively more common than using pipe or chewing tobacco [19].

Table 6 Percentage of tobacco use by per capita expenditure quintiles in Vietnam, 1998

	Men			Women		
Per capita Ex. quinitile	Use tobacco products	Ciga-rettes	Pipe chewing tobacco	Use tobacco products	Ciga-rettes	Pipe chewing tobacco
Bottom	58.46	30.02	33.22	5.55	1.33	4.26
Second	54.19	32.12	26.45	4.53	0.91	3.73
Third	52.60	34.94	21.53	3.02	0.71	2.38
Fourth	47.70	36.34	15.35	2.27	0.95	1.83
Top	43.02	38.06	7.17	2.08	1.06	1.02

Source: Vietnam Living Standard Survey (VLSS), 1998.

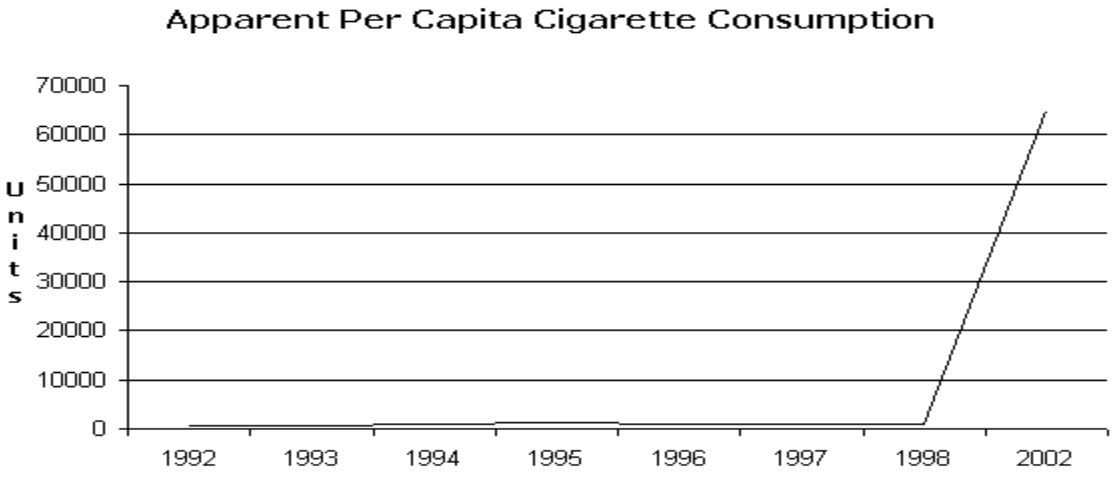
Table 6 indicates that the prevalence of cigarette smoking among men does increase with economic status, while the rate of pipe/chewing tobacco decreases. For women, the relationship for cigarettes is not clear, but as standard of living increases, the prevalence of pipe/chewing tobacco use declines. Another interesting, but expected, finding is that the cigarettes consumed by higher quintiles are higher-priced

cigarettes. This seems to indicate that ability to buy cigarettes has a strong influence on smoking behavior, which suggests that, as incomes rise over time, the number of people smoking cigarettes will also rise unless strong policy interventions make smoking less attractive.

Table 7 indicates that the apparent per capita cigarette consumption increase fast from 2002. Relative cost of cigarettes in 1987, 20 locally produced cigarettes cost only US $0.10. By 1993, the cost had increased to between US $ 0.20- 0.70, amounting to 50-70% of average daily income. Table 6 indicates that the cigarette consumption is increased [19].

Table 7 Apparent Per Capita Cigarette Consumption

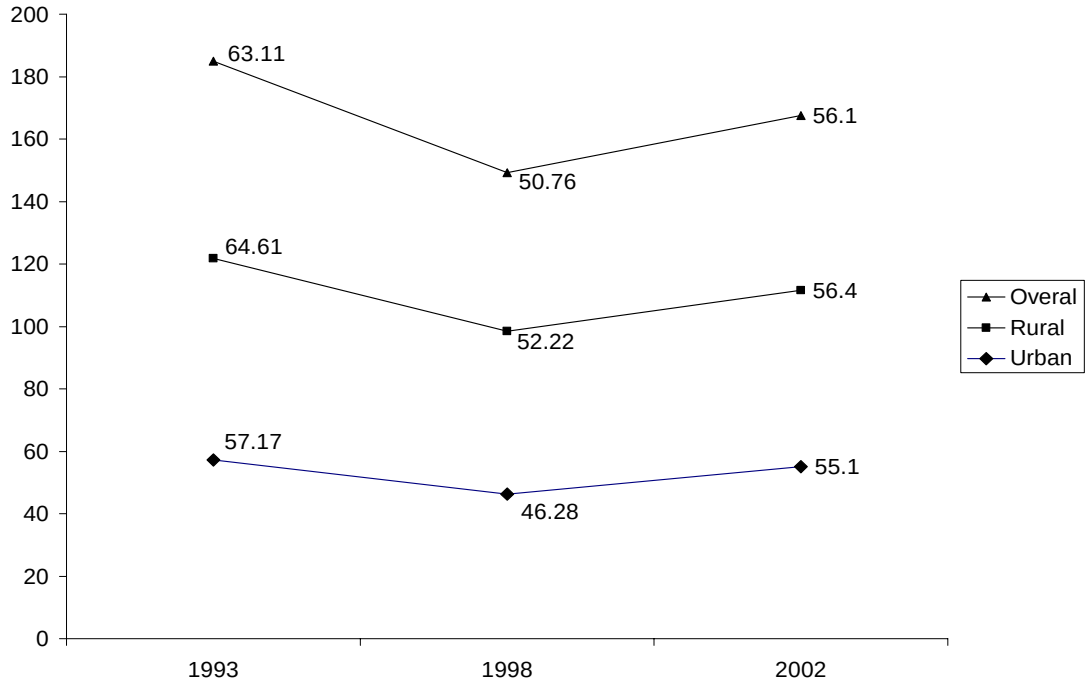
Apparent Per Capita Cigarette Consumption	Unit: Units
Year	Vietnam
2002	65,000.00
1998	844.00
1997	808.00
1996	1,020.00
1995	1,145.00
1994	917.00
1993	644.00
1992	608.00



Source: WHO Global Status Report - Viet Nam -1997

2.3.2.3 Prevalence of smoking

A 1995 survey of 2,000 persons in Hanoi, Ho Chi Minh City and two rural areas reported that 73% of men and 4% of women (18 years of age and above) were smokers. Cigarettes (67%) were the most popular form of tobacco use among men, followed by water pipe (13%) and roll-your-own cigarettes. An additional 12% smoked both cigarettes and water pipe [3]. Data from the 1998 Living standards Survey showed that appropriately 12 million men and approximately 900,000 women in Vietnam smoke [20] (see figure 5).



Source: Vietnam Living Standard Surveys 1992-93, 1997-98, 2002

Figure 5 Smoking Rate change Overtime

According to Vietnam's National Health Survey 2001-2002, over 50% of men and around 2% of women in Vietnam smoke. Male smokes predominately smoke cigarette but the use of water pipes is also common [21].

According WHO global status report, 1997. Smoking prevalence among health worker in Viet Nam was 26% [8].

Tobacco use among population sub-groups data for 1990 (from a relatively small sample) indicate that 95.6% of railway workers in Hanoi smoked and that 75.9% of teachers were current smokers. Among Hanoi medical students 38.3% were reported to be smokers in 1989, of which over half were daily smokers [22].

Education levels have a strong inverse relationship with pipe/chewing tobacco use for both men and women (Table 7). However, for cigarettes, the highest rates of smoking cigarettes are found among individuals with university education and highest among those with only primary education. Prevalence data are available from surveys done in 1995 and 1997 in Vietnam.

Age patterns most smokers (98.6%) start smoking before the age of 20. In 1989, smoking was highest among males in the 25-34 age group (33.6%), and from then on declined (e.g. to 12.6% aged 55-64). In an urban area (Hanoi), 52.7% of young people aged 11-30 smoked. Smoking prevalence was 24.8% in the 11-15 age group, 51% in the 6-20 age group and 85% in the 21-30 age group. In a rural area, smoking was highest among the youngest age group 15-34 (58.4%). Of rural smokers, 46.5% smoked cigarettes, 31.3% water pipe and 22.2% both. 21.9% smoked less than 5 cigarettes a day, 56.7% smoked 5-20 cigarettes a day, and 14.2% more than 20 per day [19].

2.3.2.4 Mortality from Tobacco Use

The data from Table 8 demonstrate that the five major cause of mortality and morbidity in Vietnam [23].

Between 1960 and 1980 the National Institute of Tuberculosis carried out a survey on 173 cases of lung cancer. Of the 151 male cases, 112 (74.2%) were smokers. In the same study, 35% of smokers suffered from bronchitis and 40% had bronchiectasis. In 1993, 81.4% of 338 registered lung cancer patients were smokers. Among all cancer patients registered in 1993 at the National Institute of Cancer, 59.3% were smokers [19].

Table 8 Five leading causes of morbidity and mortality, 2002

Morbidity (rate per 100,000 population)		Mortality (rate per 100,000 population)	
▪ Pneumonia	297.83	▪ Inctracranial	2.67
▪ Acute pharyngitis	251.39	▪ Transport accident	1.88
▪ Acute bronchitis and acute bronciolitis	214.82	▪ Pneumonia	1.76
▪ Diarrhoea and gastroenteritis of presumed infectious origin	209.54	▪ Intracerebral hemorrhage	1.42
▪ Transport accident	159.08	▪ HIV/AIDS	0.99

Source: Vietnamese Ministry of Health, 2002.

2.3.2.5 Tobacco Control Measures

In 1987, the Ministry of Health of Vietnam established the Steering Committee on Tobacco Control. In 1994, a National Committee for Tobacco Control was established. Currently, the Vietnam Committee on Smoking and Health (VINACOSH), under the Ministry of Health [19].

In 1991, a partial ban on tobacco advertising on television, radio, newspapers and billboards and sponsorship was implemented. However, parallel products promotion is widespread, particularly for foreign brands. For local brands, point-of-purchase give away and product sampling is common [19].

Protection for non-smokers, the law on Health Protection adopted by the National Assembly in 1989 stipulates no smoking in halls, cinemas, theatres and other places. In 1995, the Ministry of Health issued instructions to prohibit smoking in all health facilities (hospitals, health centres, and health stations) and offices (national, provincial, and district). Several other Ministries have followed, banning smoking in their offices. Smoking is banned on all domestic and international flights of less than 2.5 hours of the Vietnamese flag carrier, Air Viet Nam [19].

In 1990, Hanoi hosted the First National Conference on Smoking and Health, news and articles about the hazards of smoking are published regularly and presented on the radio and television. A few religious organizations are also encouraging people to stop smoking. World No-Tobacco Day has been celebrated in Viet Nam since 1988, and recent celebrations have involved participation from government representatives, NGOs, medical institutes and schools. Educational programmers on tobacco are integrated into other health promotion and health education activities [19].

2.4 Physiological effects of smoking

2.4.1 Type of smoking:

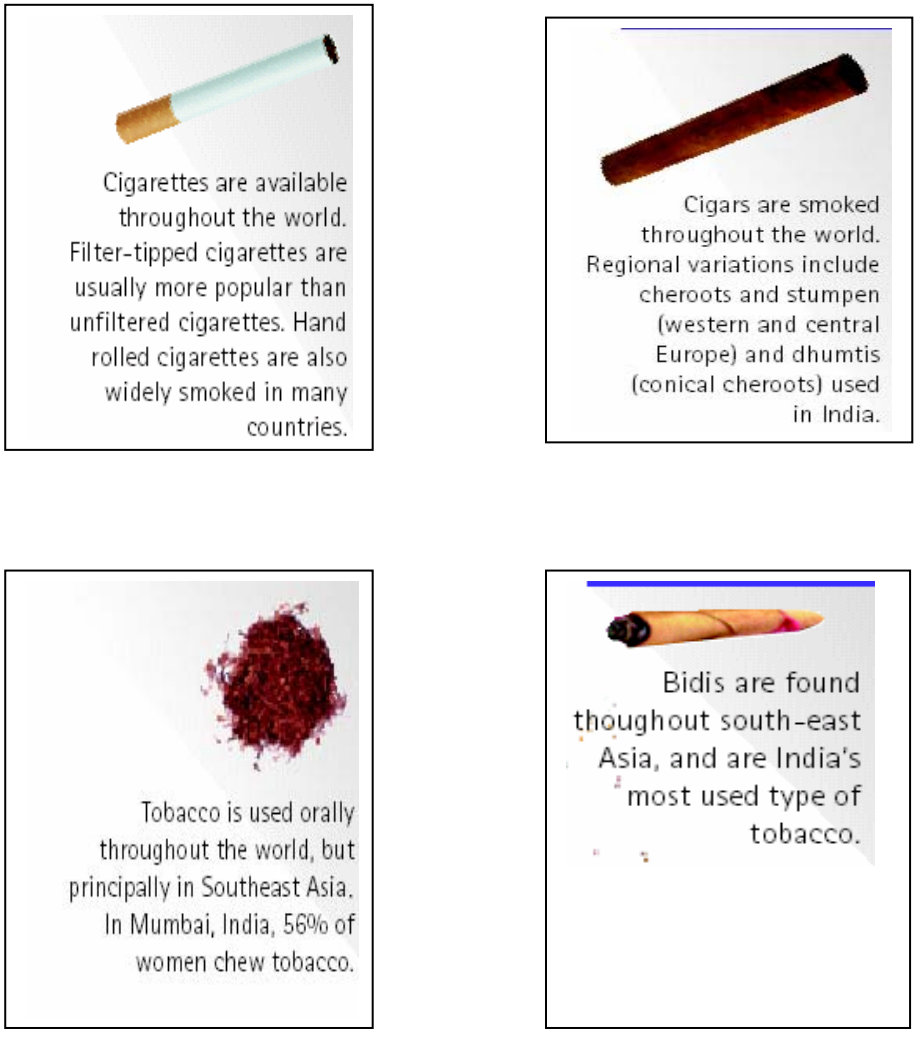
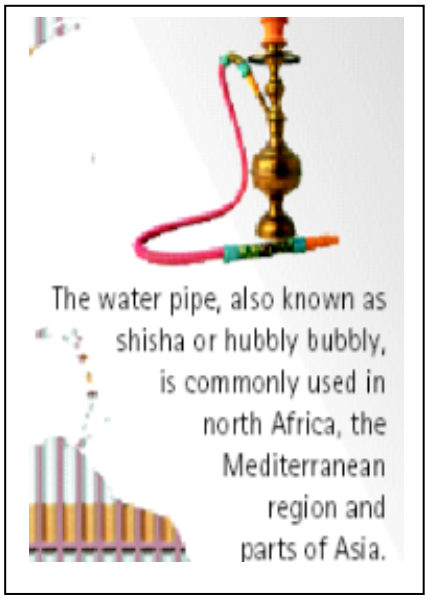


Figure 6 Types of tobacco



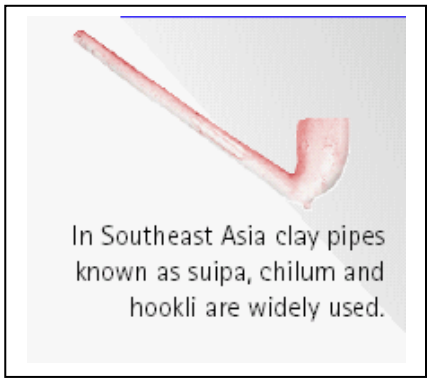


Figure 6 Types of tobacco (cont.)

Source: WHO, 2003.

2.4.2 Composition and effects of smoking

Tobacco smoke contains over 4,000 chemicals, some which have marked irritant properties and some 60 are known or suspected carcinogens [24].

The effects of nicotine, like those of other drugs with potentials for abuse and dependence, are centrally mediated; its effect begins with the stimulations on brain and central neural system and causes depression afterwards. Nicotine also causes increasing cholesterol and heart beats, as well as decreasing artery movement, poor appetite, and poor digestion. American Psychologists Association categorized tobacco as an addicted chemical and agreed that nicotine cause smoking addict. American Surgical Association also took nicotine as an addicted chemical as heroin and cocaine and stated clearly that among drugs cigarette is the usual cause of death. There are

300,000 cases of death annually because of cigarette as compare to wine - 125.000, heroin- 4,000, and cocaine – 2000 [25].

The dose-related effect of nicotine on neurotransmitter and neuroendocrine responsible therefore constitute a critical component of its pharmacologic action-effects that are responsible for both reinforcement of nicotine self-administration and pathophysiological consequences [7].

2.5 Behavioral implications

-Nicotine is the principal alkaloid contained in cigarette smoke which is responsible for influencing functions of various organs of the body. Nicotine affects the hormone levels in the blood. Control of sympathetic tone via noepenephrine takes place, for example: it may facilitate ability to focus and concentrate. Its release involves the memory and task performance, thereby implicating the cholinergic component of the nervous system. In addition, it has an antidiuretic and vasoconstrictive effect; vasopressin has been associated with memory consolidation and retrieval. Endorphin is associated with anxiety reduction. Stimulation of ACTH hormone modulates attention [26].

By increasing central Dopaminergic turnover, for example, nicotine can elicit or enhance pleasure. Increase in norepenephrine and β-endorphin may be implicated in these effects as well.

Task performance may be facilitated by the effects of nicotine on acetylcholine. Brief improvement in memory recall is likely related to effects on acetylcholine, norepinephrine, and perhaps Vasopressin, whereas anxiety and tension may be relieved by increase in β-endorphins. Dopamine and norepinephrine may be in evolved in avoidance of weight gain possibly because of a reduction of hunger

.

- Tar: is a condensed solution, black-brown, including hundreds of chemicals. Tar is a cancer generation. Studies on animals showed that tar causes skin cancer and lung cancer. The more people contact with tar, the higher risk it is.

- Carbonmonoxide: is a non-colored, non-smelled, and poisonous gas. It affects on the movement of oxygen to tissue; and the aftermath is oxygen-lacking brain condition. Concentration of carboxyhemoglobine in smoker's blood is 2-6 time higher than non-smoker.

- Hydrogen Cyanide: is a poisonous gas in smoke. Its safety is 160 time as compared with safety in industry. Hydrogen Cyanide is the most essential substance causing lung capillary injury and affecting respiratory enzyme causing lung swelling.

- Nitrogendioxide: is a lung stimulation causing grand phagocyte injury, decreasing the destroy of micro-organism creating disease and causing respiratory sickness.

- Stimulations consist of formaldehyde, acetaldehyde, aerolein, methanol, acetone, ketone, ammonia and other substances. These substances can stimulate respiratory system and lung, decrease cleaning capacity and increase disease-catching capacity [26].

2.6 How smoking affect our health

There are 2 effects of cigarette on health: short-term and long term-effect towards smokers and non-smokers.

- Short-term effect: Poison of nicotine can cause symptoms such as dizziness, vomiting, fast heart beat. Smoking also causes poor appetite, poor taste and poor smell. Another chemical such as tar concentrated in teeth and fingers. Furthermore, other stimulations in smoke can affect eyes, respiratory system causing cough and

respiratory disorder. Besides that, smoking creates bad smell for other people who contact with smokers.

- Long-term effect: Chronic diseases related to cigarette cause an increase in cost for public health, a decrease in production, disablement and death such as cancer, heart disease and chronic lung disease. Cigarette not only affects directly but also affects resonantly with other chemicals, for example asbestos to cause lung cancer. Smoking also has an effect on embryos. It is observed that light-weighted babies, deformed, miscarried, still-birth dead embryos are available with women smokers [27].

2.7 The benefits of stopping smoking

2.7.1 The reasons of quitting smoking

People who stop smoking before age 35 avoid 90% of the health risks attributable to tobacco. Even those who quit later in life can significantly reduce their risk of dying at a younger age [28].

Ex-smokers also enjoy a higher quality of life with fewer illnesses from cold and flu viruses, better self-reported health status, and reduced rates of bronchitis and pneumonia.

In 1990, the Surgeon General concluded:

Quitting smoking has major and immediate health benefits for men and women of all ages. Benefits apply to people with and without smoking-related disease.

Former smokers live longer than continuing smokers. For example, people who quit smoking before age 50 have one-half the risk of dying in the next 15 years compared with continuing smokers.

Quitting smoking decreases the risk of lung cancer, other cancers, heart attack, stroke, and chronic lung disease.

Women who stop smoking before pregnancy or during the first 3 to 4 months of pregnancy reduce their risk of having a low birth weight baby to that of women who never smoked.
The health benefits of quitting smoking far exceed any risks from the average 5-pound weight gain or any adverse psychological effects that may follow quitting [28].

One year after quitting: The excess risk of coronary heart disease is half that of a smoker's. Five years after quitting: Your stroke risk is reduced to that of a nonsmoker 5-15 years after quitting. Ten years after quitting: The lung cancer death rate is about half that of a continuing smoker's. The risk of cancer of the mouth, throat, esophagus, bladder, kidney, and pancreas decrease. Fifteen years after quitting: The risk of coronary heart disease is that of a nonsmoker's [29].

Kicking the tobacco habit also offers benefits that you'll notice immediately and some that will develop gradually in the first few weeks. These rewards can improve your day-to-day life substantially:

- Food tastes better.
- Sense of smell returns to normal.
- Ordinary activities no longer leave you out of breath (climbing stairs, light housework, etcetera.)

The prospect of better health is a major reason for quitting, but there are others as well. Smoking is expensive. The economic costs of smoking are estimated to be about $3,391 per smoker per year.

Social Acceptance, smoking is less socially acceptable now than it was in the past. While decisions may not be based entirely on social acceptance, most workplaces have some type of smoking restrictions. Some employers prefer to hire nonsmokers.

Smoking not only harms your health but the health of those around you. Exposure to secondhand smoke (also called environmental tobacco smoke or passive

smoking) includes exhaled smoke as well as smoke from burning cigarettes. Studies have shown that secondhand smoke causes thousands of deaths each year from lung cancer and heart disease in healthy nonsmokers. Smoking by mothers is linked to a higher risk of their babies developing asthma in childhood, especially if the mother smokes while pregnant. It is also associated with sudden infant death syndrome (SIDS) and low-birth weight infants. Babies and children raised in a household where there is smoking have more ear infections, colds, bronchitis, and other respiratory problems than children from nonsmoking families. Secondhand smoke can also cause eye irritation, headaches, nausea, and dizziness [29]. The previous study by Doll R, 2001 [30], the findings denoted that The excess mortality associated with smoking chiefly involved vascular, neoplastic, and respiratory diseases that can be caused by smoking. Men born in 1900-1930 who smoked only cigarettes and continued smoking diet on average about 10 years younger than lifelong non-smokers. Cessation at age 60, 50, 40, or 30 years gained, respectively, about 3, 6, 9, or 10 years of life expectancy. The excess mortality associated with cigarette smoking was less for men born in the 19th century and was greatest for men born in the 1920s.

2.7.2 Social Learning Theory (A. Bandura)

The social learning theory of Bandura emphasizes the importance of observing and modeling the behaviors, attitudes, and emotional reactions of others. Bandura (1977) states: "Learning would be exceedingly laborious, not to mention hazardous, if people had to rely solely on the effects of their own actions to inform them what to do. Fortunately, most human behavior is learned observationally through modeling: from observing others one forms an idea of how new behaviors are performed, and on later occasions this coded information serves as a guide for action." Social learning theory explains human behavior in terms of continuous reciprocal interaction between cognitive, behavioral, an environmental influences. The component processes underlying observational learning are: (1) Attention, including modeled events (distinctiveness, affective valence, complexity, prevalence, functional value) and observer characteristics (sensory capacities, arousal level, perceptual set, past reinforcement), (2) Retention, including symbolic coding, cognitive organization, symbolic rehearsal, motor rehearsal), (3) Motor Reproduction, including physical

capabilities, self-observation of reproduction, accuracy of feedback, and (4) Motivation, including external, vicarious and self reinforcement.

Because it encompasses attention, memory and motivation, social learning theory spans both cognitive and behavioral frameworks. Bandura's theory improves upon the strictly behavioral interpretation of modeling provided by Miller & Dollard (1941). Bandura's work is related to the theories of Vygotsky and Lave which also emphasize the central role of social learning.

Scope/Application:

Social learning theory has been applied extensively to the understanding of aggression (Bandura, 1973) and psychological disorders, particularly in the context of behavior modification (Bandura, 1969). It is also the theoretical foundation for the technique of behavior modeling which is widely used in training programs. In recent years, Bandura has focused his work on the concept of self-efficacy in a variety of contexts (e.g., Bandura, 1997).

Principles:

1. The highest level of observational learning is achieved by first organizing and rehearsing the modeled behavior symbolically and then enacting it overtly. Coding modeled behavior into words, labels or images results in better retention than simply observing.

2. Individuals are more likely to adopt a modeled behavior if it results in outcomes they value.

3. Individuals are more likely to adopt a modeled behavior if the model is similar to the observer and has admired status and the behavior has functional value [65].

2.7.3 The Health Belief Model:

Researchers have looked into how and why people stop tobacco use. They have some ideas, or models, of how this happens.

The Health Belief Model says that you will be more likely to stop tobacco use if you [29]:

- believe that you could get a tobacco-related disease and this worries you
- believe that you can make an honest attempt at quitting
- believe that the benefits of quitting outweigh the benefits of continuing tobacco use
- know of someone who has had health problems as a result of their tobacco use

The stages of change model identify the stages that you go through when you make a change in behavior. Here are the stages as they apply to quitting tobacco use:

Pre-contemplation: At this stage, the tobacco user is not thinking seriously about quitting right now.

Contemplation: The tobacco user is actively thinking about quitting but is not quite ready to make a serious attempt yet. This person may say, "Yes, I'm ready to quit, but the stress at work is too much, or I don't want to gain weight, or I'm not sure if I can do it."

Preparation: Tobacco users in the preparation stage seriously intend to quit in the next month and often have tried to quit in the past 12 months. They usually have a plan.

Action: This is the first 6 months when the user is actively quitting.

Maintenance: This is the period of 6 months to 5 years after quitting when the ex-user is aware of the danger of relapse and take steps to avoid it.

2.8 The methods of smoking reduction

2.8.1 It's so hard to quit smoking

Nicotine is a drug found naturally in tobacco. It is highly addictive as addictive as heroin and cocaine. Over time, the body becomes physically and psychologically dependent on nicotine. Studies have shown that smokers must overcome both of these to be successful at quitting and staying quit [31].

When smoke is inhaled, nicotine is carried deep into the lungs, where it is absorbed quickly into the bloodstream and carried throughout the body. Nicotine affects many parts of the body. During pregnancy, nicotine freely crosses the placenta and has been found in amniotic fluid and the umbilical cord blood of newborn infants [31].

Nicotine produces pleasurable feelings that make the smoker want to smoke more. It also acts as a depressant by interfering with the flow of information between nerve cells. As the nervous system adapts to nicotine, smokers tend to increase the number of cigarettes they smoke, and hence the amount of nicotine in their blood. After a while, the smoker develops a tolerance to the drug, which leads to an increase in smoking over time. Eventually, the smoker reaches a certain nicotine level and then smokes to maintain this level of nicotine [31].

When smokers try to cut back or quit, the absence of nicotine leads to withdrawal symptoms that can include any of the following:

- depression
- feelings of frustration and anger
- irritability
- trouble sleeping
- trouble concentrating
- restlessness
- headache

- tiredness
- increased appetite

These uncomfortable symptoms lead the smoker to again start smoking cigarettes to boost blood levels of nicotine back to a level where there are no symptoms.

If a person has smoked regularly for a few weeks or longer and abruptly stops using tobacco or greatly reduces the amount smoked, withdrawal symptoms will occur. Symptoms usually start within a few hours of the last cigarette and peak about 2 to 3 days later. Withdrawal symptoms can last for a few days to several weeks. For information on coping with withdrawal [31].

2.8.2 The method of smoking reduction

- **Gradual reduction method (GRM):** Using techniques such as reducing the number of cigarettes in their pack at the start of the day, increasing the time gaps between smoking, smoking less and less of each cigarette. 'Nicotine fading' by switching to brands yielding less nicotine. However, such brand switching leads to smoking more cigarettes and taking larger and more frequent puffs [32]. Most smoking cessation professionals do not recommend self-control approaches as success rates are poor compared to therapist-paced target-setting [33].

The problem for most smokers, particularly those who have previously tried to stop, is that they know that abruptly stopping is going to be a painful and difficult experience, demanding significant willpower and resilience and would prefer to use a gradual reduction method [34].

Gradual reduction is an effective procedure [35]. Moderate-to-heavy smokers who reduce their consumption prior to their quit date are more likely to stop smoking; even those who continue to smoke consume on average 11.4 fewer cigarettes per day [36]. Among relapses, those who stop abruptly tend to return to their previous smoking levels while the gradual reducers relapse to significantly below their original levels [37].

- **Nicotine replacement method:**

If you're hooked on nicotine or if you've tried quitting before, think about using nicotine replacement therapy. This method gives you a small dose of nicotine to help cut down the urge to use tobacco once you quit. Nicotine replacement therapy costs about the same as a pack of cigarettes per day. You will only have to use replacement therapy for a short period of time [38].

Nicotine replacement therapy only deals with the physical aspects of addiction. It is not intended to be the only method used to help you quit smoking. It should be combined with other smoking cessation methods that address the psychological component of smoking, such as a stop smoking program [38].

Types of Nicotine Substitutes

Nicotine patches (transdermal nicotine systems): Patches provide a measured dose of nicotine through the skin.

Nicotine gum (nicotine polacrilex): Nicotine gum is a fast-acting form of replacement that acts through the mucous membrane of the mouth.

Nicotine nasal spray: The nasal spray delivers nicotine quickly to the bloodstream as it is absorbed through the nose.

Nicotine inhalers: It is a plastic tube with a nicotine cartridge inside. When you puff on the inhaler, the cartridge provides a nicotine vaporare

Nicotine lozenges: These are the newest form of NRT on the market.

Tobacco lozenges: Lozenges containing tobacco,

Nicotine lollipops and lip balms: These lollipops often contained a product called nicotine salicylate with a sugar sweetenerlozenge [39].

- **Other tools**

Hypnosis might be useful for some people.

Acupuncture has been used for quitting tobacco, but as of yet there is no strong evidence to support its effectiveness.

Filters that reduce tar and nicotine in cigarettes [40].

2.9 The role of medical doctor to combat smoking

Physician can play a very important role in the overall public health effort to create a smoke-free society. A major barrier to physicians intervening with smokers is the physician's belief that most people to do change. The problem is partly how professionals think about change, how physicians can potentially help the majority of their patients who smoke.

Physicians have a unique opportunity to provide patients with smoking cessation intervention. It is assumed that more than 75% of the population contacts a physician at least once a year and more than 95% contact physicians at least once every 5 years. Moreover, patients also view their physicians as having considerable influence with respect to their behavior. A British national survey reported that they are very likely to follow their physician’s advice about ways to reduce their chances of getting cancer, and 76% of smokers reported that if they were asked by their physician to quit, they would give it a try. Because each smoker has an average of 4.3 physician visits annual, physicians have multiple opportunities for intervention. Thus, a relatively small increase in the effectiveness of smoking cessation interventions in the medical setting is likely to have a significant public health impact [7].

Too many patients and perhaps physicians as well, believe that will power is all that is needed to quit smoking. The physician can suggest or teach some of the specific behavior, goal setting and self re-enforcement, stimulus control, coping skills training,

relapse-prevention training and social support. The American Journal of Medicine reported about that "the most successful smoking -cessation programs are conducted in a specified place and within a set time frame. In our one study, opinion data of 865 smokers(factory employee) indicated that if employees needed, wanted or were required to enter a smoking cessation program, they would prefer to attend sessions in the medical office or that the work site. The same group of smokers preferred programs with physician involvement. 1 hour weekly session for 12-16 weeks was the most regularly attended and successful. In our experience most smoking cessation program lose 7 out of 10 people during first 2 weeks, owing to the discomfort of withdrawal symptoms can be medically treated and attrition dramatically reduced [41].

CHAPTER 3
RESEARCH METHODOLOGY

3.1 Study design

This research was a cross-sectional study in which data were collected by a self-administered questionnaire.

3.2 Place of study

Cantho University of Medicine and Pharmacy, Cantho City, Vietnam, was established in 1979 and is the only state institute for higher education in medicine and pharmacy in third region with almost 19 million inhabitants. The teaching staff consisted of 02 Associate Professors, 14 Doctors, 38 Master, 161 Medical Doctors and 120 Bachelors degrees.

3.3 Study population

The target populations in this study are all medical doctors who are working in Cantho University of Medicine and Pharmacy, Vietnam.

3.4 Sample size

The sample size is the study population, 161 medical doctors of the Cantho University of Medicine and Pharmacy.

3.5 Research instruments

- The questionnaire includes 3 variables. Such as socio-demographic characteristics, smoking status and behavior, and opinions about behavior concerning anti-smoking, opinions on anti-smoking policy.

- The questionnaire was first prepared in English and translated to Vietnamese.

- Pre-testing of the questionnaire was conducted a small sample of 31 respondents. After pretest, four questions had been deleted because of its practically limited value; one question had been corrected in Vietnamese language, so it would make the respondents easy to understand. The Cronbach's alpha statistic, to determine internal reliability of 12 questions concerning to practice towards smoking cessation had alpha equal 0.9037 (see Appendix B). Internal reliability referred to the extent to which items on a scale were tapping a single underlying construct, and therefore there was a high level of interview-item correlation. It was commonplace to assume that high an alpha statistic indicated the scale was tapping an underlying construct and hence was reliable.

3.6 Data collection:

Data were collected according to the following steps:

- Contact with different division and department of Cantho University of Medicine and Pharmacy with the introduction of AIHD/MAHIDOL UNIVERSITY.

- Questionnaire was administered to the respondents.

- The questionnaire was filled-out according to the convenience and availability of time of the Physicians.

- The questionnaire was distributed to all physicians and collected after one or two days completely filled up.

3.7 Data analysis

After examining and correcting of returned questionnaire, the data were entered into an electronic database, and multivariable analysis was carried out with SPSS version 12 software statistic packages. The data were analyzed by using the following statistics:

- Frequency distribution of all the variables.
- Total score, mean and standard deviation for smoking behavior
- The Kolmogorov-Smirnov test was used for normally distributed on continuous variables.
- The $\chi 2$ test was used to compare associations between discrete variables, to determine statistical significance. The 2 tailed significance level was set at 5% ($P < .05$).
- Cross tabulation was used to study some variables among current smoker, ex smoker and non smoker.
- The Levene test and the Brown-Forsythe test were used for variances equal or not.
- The difference between means was assessed by T-Test, ANOVA test, the Mann-Whitney, Kruskal-Wallis test, Spearman's rho test and multiple regressions.

3.8 Scoring method

Practice smoking cessation had been set from the question number 22 to the question number 23.

For question no 22 (a - i) which consist of 9 questions, respondents who almost always advised patients to stop smoking were given 2 scores, for those who answered sometimes were given 1 score and for those who have never advised patients to stop smoking were given.

For question no 23 (a - c) respondents who often advised patients or other to stop smoking were given 4 score; those who always provide stop smoking advice were

given 3, those who sometimes provide stop smoking advice were given 2; those who seldom provide the advice were given 1 score and for those who never advised at all were given 0 score.

Minimum - Maximum scores would then be 0 - 27.

On the basis of total score, mean and standard deviation respondents are divided into three groups.

Classify level:

‘POOR ' = mean - 1 standard deviation

‘MODERATE ' = mean.

‘HIGH ' = mean + 1 standard deviation

CHAPTER 4
RESULTS

This cross-sectional study exploring information about smoking behaviors and status, among medical doctors in Cantho University of Medicine and Pharmacy, Vietnam. The purposes of this research are to describe the smoking status, the pattern of smoking behavior, smoking cessation and reasons for current smoking status. Concurrently, the study try to determine the relationship between the smoking status of medical doctors and the contributing factors that are comprised of socio-demographic characteristics of the physicians, and smoking cessation among medical doctors. Finally, the research investigates the physicians' opinions about smoking and anti-smoking, as well as its relationship with smoking status.

The results have been tabulated and presented into four parts according to the conceptual framework. These include:

Part I : Socio-demographic characteristics of the medical doctors

Part II : Smoking behavior and status among the medical doctors.

Part III: Opinions about behavior concerning anti-smoking and opinions on anti-smoking policy.

Part IV: Relationship between the independent variables and smoking status.

Since this is a cross sectional descriptive study, most of the results have been summarized into frequency and percentage tables. The relationships between the contributing factors and smoking status among the target population were statistically analyzed by using Kolmogorov-Smirov test, Chi-square test, T-test, ANOVA test, Mann Whitney U Test, Kruskal Wallis Test, Spearman's rho test and multiple regression with the level of significance set at $\alpha = 0.05$.

4.1 Socio-demographic characteristics of the respondents.

Table 9 shows the socio-demographic characteristics of the 161 respondents. Male respondents were slightly over female (55.9 % and 44.1 %) and the ratio between men and women was 1:0.78.

Age of the respondent was 25 to 65 years old, the distribution of age was not normal with the mean of age, which was equal 37 years. It was then divided into three groups according to the ten-year scale. The highest age group was 46-65 years old (17.4 %), and the lowest age group (49.7 %) was 22-35 years old.

Regarding marital status, the majority of the respondents were married (69.6 %), 26.7 % were single and few respondents were widowed, separated or divorced (.6 %); nearly half of the respondents did not have children (41.6%), and more than half of respondents had children (58.4%).

In terms of specialization. It was divided into eight groups. The highest specialty group was external medicine (surgeons) (18.0 %), and the lowest specialty group was obstetricians and epidemiologists (8.1 %).

The position of the medical doctors was categorized into two groups:

1. Administrator: including the rector, deans, vice-deans, chiefs and deputy chiefs of the departments or sections. They were 30.4 % and
2. Staff: - which is 69.6 % of general physicians.

Up to now, there was no standard classification for monthly average household income applied in Cantho city, so in this study, the monthly income of the respondents was divided into three groups depending on the real daily living. The distribution of income of the respondents in this study was not normal with median income of 1,500,000 VND. The majority of the respondents (47.2%) had a monthly average

income more than 1,500,000 VND, and only 13.0% had a monthly average income less than 800,000 VND.

Table 9 Socio-demographic characteristics of the respondents

Socio-demographic characteristics	Number n=161	Percentage %
Gender		
Male	90	**55.9**
Female	71	44.1
Age group (years)		
22 – 35	80	**49.7**
36 – 45	53	32.9
46 – 65	28	17.4
Mean =37.8, SD=8.7		
Marital status		
Single	43	26.7
Married	112	**69.6**
Widow	1	2.5
Separated or divorced	4	.6
Other	1	.6
Children		
No child	67	41.6
Have children	94	**58.4**
Specialization		
Internal medicine (Internists)	25	15.5
External medicine (Surgeons)	29	**18.0**
Obstetricians	13	8.1
Basic medicine	29	**18.0**
Odontology	18	11.2
Pediatrics	11	6.8
Epidemiology	13	8.1
Specialty	15	9.3
Others	8	5.0

Table 9 Socio-demographic characteristics of the respondents (cont.)

Socio-demographic characteristics	Number n=161	Percentage %
Position		
Administrators	49	30.4
Staff	112	**69.6**
Monthly Income (VND)		
<800,000	21	13.0
800,000 – 1,500,000	64	39.8
>1,500,000	76	**47.2**
Mean = 1,929,354; SD = 1,507,486; Min = 573,000; Max = 10,000,000		

4.2 Smoking behavior and status among the medical doctors

4.2.1 Percentage distribution of smoking status

Table 10 showed the smoking status of 161 respondents, classified into three groups namely: Current smokers, Ex-smokers, and Non-smokers. It was found that current smokers were only 27 physicians (**16.8 %**), Ex-smokers were 4.3 %, and Non-smokers were the highest group (78.9 %).

Table 10 Smoking status of the respondents (n=161):

Smoking status	Frequency (n = 161)	Percentage %
Current smokers	27	**16.8**
Ex-smokers	7	4.3
Non-smokers	127	78.9

4.2.2 Reasons for present smoking status

4.2.2.1 Reasons towards effects of smoking

Table 11 Opinions towards effects of smoking

Variables	Agree		Disagree	
	Freq	%(*)	Freq	%(*)
Relief effects				
Smoking can relieve anxiety	24	14.9	55	34.2
Helps to get rid of stress	48	29.8	53	32.9
Helps to get rid of irritation	16	9.9	66	41.0
Helps to get rid of frustration	10	6.2	62	38.5
Helps to get rid of anger	21	13.0	60	37.3
Helps to get rid of sorrow	23	14.3	49	30.4
Helps to get rid of troublesome	25	15.5	51	31.7
Enhancing effects				
Helps to get creative ideas	20	12.4	52	32.3
Helps to concentrative on doing something	32	19.9	47	29.2
Helps to feel easy at critical events	12	7.5	56	34.8
Physical effects				
Smoking cessation may increase weight	87	54.0	25	15.5
Helps to be attractive	7	4.3	64	39.8

(*) The percentage was calculated from total number (161 cases).

Table 11 shows the justification of smoking. The opinions towards smoking were divided into three parts: relief effect, enhancing effect and physical effects. The findings showed that only small proportion seemed to see the positive effects of smoking i.e. half of them agreed about the usefulness of smoking in controlling body weight. Under category of relief effects, nearly thirty percent (29.8 %) respondents stated that smoking could help to get rid of stress, and 15.5 % stated that it could help to get rid of troublesome.

4.2.2.2 Reasons for non-smoking among ex and non-smokers.

Table 12 shows the reasons of non smoking. Majority of them (77.6 %) mentioned about the health reasons. Only one third of them stated about social reasons (37.6 %). The highest reason (99.3 %) was to protect own health. On the other hand, the lowest reason was due to pressure from friends or family (22.4%).

Table 12 Reasons for present non-smoking

Reasons	Important	
	Frequency	%(*)
Health reasons		
• To protect own health	133	**99.3**
• To avoid unpleasant symptoms	75	56.0
Social reasons		
• Pressure from colleagues	42	31.3
• Not to create discomfort people nearby	74	55.2
• To set a good example for others		
• Pressure from friends or family	56	41.8
	30	22.4

(*) The percentage was calculated from total number of non-smokers and ex-smokers (134 cases).

4.2.2.3 Reasons for present smoking

Table 13 demonstrates the reasons for smoking. Five probable reasons had been set in the questionnaire which was answered by “agree”, “disagree”, and “no opinion”. One third of current smokers (37 %), justified that for reasons of anxiety or stress from the job/work; 11.1% stated that anxiety or stress from family; 7.4 % mentioned that anxiety or stress from friends or colleagues, and 66.7 % mentioned that force of habit was the reason of their smoking, but only 7.4 % of them mentioned about frustration about prospect.

Table 13 Reasons for present smoking

Reasons	Agree	
	Freq.	%(*)
Anxiety/stress from family	3	11.1
Anxiety/stress from friends/colleagues	2	7.4
Anxiety/stress from job/work	10	37.0
Frustration about prospect/future	2	7.4

(*) The percentages were calculated from total number of current smokers (27 cases).

4.2.3 Model of smoking behavior

Table 14 shows the factors influencing on smoking. For current and ex-smokers, most of them were influenced by friends (44.1%) and self initiation (38.3%) to start smoking. Nearly fifteen percent of them were influenced by colleagues. Only 2.9 % of them admitted that the advisors were family members.

Table 14 Who influenced to smoke?

Variable	Frequency n=34	Percentage %
Family members	1	2.9
Friends not at work	15	44.1
Colleagues at work	5	14.7
Self initiation	13	38.3

4.2.4 Patterns of smoking behavior among the respondents

Table 15 indicates that the frequency and percentage distribution of smoking habits and patterns which are applicable only for current smokers.

All of the current smokers mentioned that they had been using manufactured tobacco for smoking.

Regarding style of smoking, the majority of the current smokers who smoked everyday (63.0%).

Number of cigarettes consumed per day varied from 1 to 15. The majority of the current smokers smoked less than 5 cigarettes per day (63.0%). Approximately thirty percent of the respondents (29.6 %) smoked less than or equal number of 10 cigarettes per day. More than 10 cigarettes smoked per day were found 7.4 % of them.

Half of the physicians who ever smoked a cigarette, started smoking between the ages of 13 to 19 years. Nearly half of them (44.1%) started smoking later or equal to 20 years of age; the rest of them started their smoking at the age of less than 20, and at the average age was equal to 20 years old.

Table 15 Respondents' smoking patterns of current smokers

Smoking patterns	**Frequency (n = 27)**	**Percentage %**
Type of smoking		
Manufactured cigarettes	27	100
Style of smoking		
Everyday	17	63.0
Sometimes	10	37.0
Number of cigarettes smoked per day		
< 5	17	63.0
6 – 10	8	29.6
> 10	2	7.4
Mean = 5.85; SD = 4.12; Min = 1; Max = 15		
Age of Initiation by age group (yrs) (*)		
Childhood (9-12)	2	5.9
Teenager (13-19)	17	50.0
Adolescent (≥ 20)	15	44.1
Mean = 20; SD = 5.03; Min = 10; Max = 35.		

(*) The percentages were calculated from total number of current and ex-smokers (34 cases)

4.2.5 Smoking prevention and anti-smoking.

4.2.5.1 Opinions on the role of medical doctors in behavior concerning smoking prevention and anti-smoking

Table 16 shows the role of medical doctors in cessation of smoking. Almost all of them stated that they have sufficient knowledge to provide counseling on smoking cessation (72.0%). Also most of them disagreed that physicians smoking negatively affects themselves and their profession. In terms of that, more than 83.9% respondents disagreed that smoking influences the image of medical doctors, and 63.4 % of them stated that smoking among physician was decreasing.

Table 16 Opinions on the role of medical doctors on smoking

Opinions	Frequency (n = 161)	Percentage %
• Having sufficient knowledge to provide smoking cessation counseling	116	72.0
• Smoking among physician is decreasing	102	63.4
• Effects when physicians smoke?		
On image	135	83.9
On prestige	105	65.2
On respect	62	38.5
On trust	61	37.9
On social personally	49	30.4

4.2.5.2 Opinions of the current smokers about smoking cessation

Table 17 Opinions on trying to stop smoking

Opinions	Frequency n=27	Percentage %
Try to stop smoking		
Ever tried to stop smoking	18	66.7
One year from now to stop	7	25.9
One year from now might not be smoking	14	51.9
Certainly do not want to stop.	5	18.5
Cut down tobacco consumption last two year	12	44.4

Table 17 shows that, more than half of the current smokers mentioned that they have tried seriously to stop smoking (66.7%), and 25.9 percent mentioned that one year from now they will stop smoking. Especially, half of them thought that, they might not be smoking by the next year (51.9%). Nearly half of them (44.4%) mentioned that they have cut down their tobacco consumption for during the past two years.

4.2.5.3 The practice of providing advice among medical doctors

Table 18 demonstrates that, the practice of providing advice among medical doctors. Most of them did not seem to give their importance of giving advice to stop smoking to their patients. From Table 15, it revealed that most doctors gave advice to patients only “sometime” in every condition. Except the case of lung, upper respiratory and heart condition, about more than half of the physicians “always” gave advice to their patients. However, there were 60.9 % of the doctors advising their patients to stop smoking at every time when they saw the patients with heart problems. Moreover, the results showed that about one third of medical doctors did not give advice to their patients with the conditions of nervousness, mouth or lip lesions; 14.9 % of them did not give to patients with the condition of peptic ulcer, and very few of the doctors advised patients with using oral contraceptive to stop smoking.

However, with patients having symptoms/diagnosis of smoking related diseases, almost all of the physician (67.7 %) always advesed them to stop smoking, but when the patients raised the question of smoking disregard of having disease or not, only more than one third of them (34.2 %) had given advice, and there were 19.9 % of medical doctors did not give advice to their patients.

Table 18 Conditions considered giving advice on smoking cessation

Conditions		Provide suggestions		
		Always	Sometime	Never
		%	%	%
Lung		67.7	29.8	2.5
Upper respiratory		62.7	33.6	3.7
Heart		60.9	30.4	8.7
Peptic ulcer		29.8	55.3	14.9
Pregnancy		37.9	42.2	19.9
Use of oral contraceptive		17.4	39.7	42.9
Mouth or lip lesions		31.7	37.9	30.4
Nervousness, loss of appetite		23.0	45.3	31.7
Any condition being treated		16.1	52.8	31.1
• With symptoms or diagnosis about smoking related diseases.	67.7	29.8	2.5	0
• Questions about smoking raised by patients	34.2	54.0	6.2	5.6
• Without symptoms about smoking related diseases	19.9	46.7	13.7	19.9

Table 19 shows the smoking cessation practice by scoring. Score varied from 3 to 27 considering the conditions mentioned under questions on how often they provide stop smoking advice to the patients or people nearby. The respondents who answered that most cases they always advised to stop smoking were given the highest score, and for those who answered that they never or seldom advised their patients to stop

smoking were given lower score. On the basis of mean and standard deviation, respondents were divided into three groups, such as high, moderate and poor. There were only 15.5 % of the respondents who always advised their patients to stop smoking. More than half of the respondents who advised patients to stop smoking sometime. Very few of the physicians (19.3 %) were found to be those who seldom or never advised patients or others to stop smoking. It was interpreted by Figure 7.

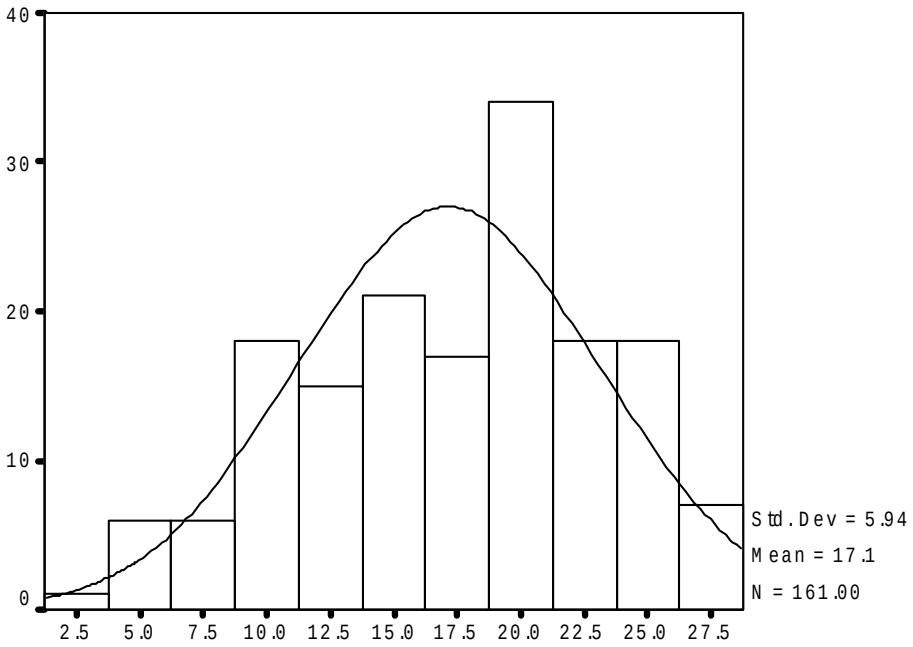


Figure 7 The histogram of practice towards smoking cessation score

Table 19 Level of advice to the cessation of smoking.

Level	Score	Frequency n=161	Percentage %
High	24 - 27	25	15.5
Moderate	12 - 23	105	65.2
Poor	3 - 11	31	19.3

4.2.5.4 Methods of smoking reduction

Table 20 shows the smoking reduction methods for the physicians. Majority of the current smokers stated that they would use the gradual reduction method for

their smoking cessation (76.5 %). Few of them would use the nicotine replacement method (11.8 %), and none of them used the acupuncture and hypnosis methods.

Table 20 Smoking reduction methods among the physicians

Method	Use	
	Freq.	%
Gradual reduction method	26	76.5
Nicotine replacement	4	11.8
Acupuncture	0	0
Hypnosis	0	0

Table 21 shows the smoking reduction methods for their patients. Most of the medical doctors advised to their patients to apply the gradual reduction methods (96.3 %). About half of them suggested their patients with nicotine replacement methods (49.1%). Only 6.2% and 3.7% of the medical doctors suggested acupuncture and hypnosis methods.

Table 21 Smoking reduction methods which were advised for patients

Method	Use	
	Freq.	%
Gradual reduction method	155	96.3
Nicotine replacement	79	49.1
Acupuncture	10	6.2
Hypnosis	6	3.7

4.3 Opinions about behavior concerning anti-smoking and opinions on anti-smoking policy

4.3.1 The Current smokers' smoking habit

Regarding smoking habits, Table 22 showed that, one third of current smokers mentioned that they smoked in the presence of patients (29.6 %). Interestingly, 96.3

percent and 74.1 percent of them smoked in the presence of boy friends and girl friends, especially more than half of them mentioned that they smoke in the presence of children (66.7%) and 59.3 percent of them smoked in presence of students.

Table 22 Smoking habits of the current smokers.

Variables	Frequency n=27	Percentage %
Smoking habit		
Smoking in the presence of patients	8	29.6
Smoking in the presence of children	18	66.7
Smoking in the presence of girl friend	20	74.1
Smoking in the presence of boy friend	26	96.3
Smoking in the presence of students	16	59.3

Table 23 Opinion concerning anti-smoking policy

Opinion	Freq. (n =161)	%
Policy		
• Smoking in hospital should be restricted or abolished	157	97.5
• Smoking should be restricted in public places including at work	155	96.3
• Tobacco advertising and promotion should be banned	141	87.6
• Policies on smoking should be introduced in the help care system	143	88.8
• Health warning on tobacco packaging should be strengthened	156	96.9
• A strong health education campaign on tobacco and health should be establish	153	95.0
• The price of tobacco should be increase progressively at the rate of greater than the inflation, by means of taxation	126	78.3

Table 24 Opinion concerning anti-smoking policy (cont.)

Opinion	Freq. (n =161)	%
Medical education		
• Health professionals should get specific training on how to help patients who want to stop smoking.	151	93.8
• Smoking prevention program should be included in the regular training curriculum.	145	90.1
• Health professionals should be encouraged to get more involved in advising and help people to stop smoking	156	96.9
Law enforcement		
• A law forbidding the sale of tobacco products to children (age under 18 years) should be Introduce and enforce	156	96.9

Most of the respondents agreed about anti-smoking policy implication, enforcement of law and the introduction of anti-smoking training curriculum in medical education. This was showed in the Table 23.

4.4 Relationship between smoking status and independents variables.

4.4.1 Relationship between smoking status and socio-demographic characteristics

The analyzed data in table 24 showed that there was a significant relationship between age group, gender, marital status, number of children, position, monthly income, and the smoking status.

Younger age group was found relatively more in none and ex-smoker group.

The prevalence of current smokers among 161 respondents was 30.0 % to male and 0 % to female. Among male, two third of them were non-smokers, and one third of them were current smokers, but among females all of them were found as non-smokers.

After re-categorizing the marital status, the current smokers found in the married, widowed, separated, and divorced groups were more than the single group.

It was interesting to note that, the respondents who hadn't got children, were found as non-smokers.

Among administrative and staff groups majority of them were found as none and ex-smokers, but the staff respondents had the percentage of none and ex-smoker higher than administrative respondents.

Table 25 Smoking status and socio-demographic factors

Socio-demographic factors	Number	**Smoking status**		P-value
		Current smokers	**Ex and Non-smokers**	
Age group (years)				
22 – 35	80	3.7	**96.3**	**<.001**(*)
36 – 45	53	24.5	75.5	
46 – 65	28	39.3	60.7	
Gender				
Male	90	**30.0**	70.0	**<.001**(**)
Female	71	**0.0**	100	
Marital status				
• Single	43	4.7	95.3	**.013**(***)
• Married, widowed, separated, and divorced	118	**21.2**	78.8	
Number of children				
No child	67	4.5	**95.5**	**<.001**(***)
Have children	94	25.5	74.5	

Table 26 Smoking status and socio-demographic factors (cont.)

Socio-demographic factors	Number	Smoking status		
		Current smokers	**Ex and Non-smokers**	P-value
Specialization				
Clinic	96	14.6	85.4	.610(*)
Paraclinic	42	**21.4**	78.6	
Specialty	23	17.4	82.6	
Position				
Administrators	49	36.7	63.3	**<.001**(*)
Staff	112	8.0	**92.0**	
Monthly income (VND)				
<800,000	21	4.8	95.2	**.001**(*)
800,000 – 1,500,000	64	6.2	93.8	
>1,500,000	76	**28.9**	71.1	

(*) Chi-Square Test, (**) Fisher's Exact Test, (***) Mann Whitney U Test.

The majority of respondents whose income from moderate and low were found as non-smoker.

4.4.2 Relationship between opinions about concerning anti-smoking, anti-smoking policy and smoking status

Table 27 opinions of anti-smoking and smoking status

Opinions	Smoking status			
	Current smokers	**Ex-smokers**	**Non-smokers**	P-value
Policy				
• Smoking in hospital should be restricted or abolished	92.6	100.0	98.4	.106(*)
• Smoking should be restricted in public places (at work)	100.0	85.7	96.0	.260(**)

Table 28 opinions of anti-smoking and smoking status (cont.)

Opinions	Smoking status			
	Current smokers	**Ex-smokers**	**Non-smokers**	P-value
Policy				
• Tobacco advertising and promotion should be banned	85.1	100.0	87.4	.428(*)
• Introduce smoking policies in the help care system	85.1	85.7	89.7	.621(*)
• Health warning on tobacco packaging should be strengthened	96.2	100.0	96.8	.571(*)
• Establish a strong health education campaign on tobacco and health	85.1	100.0	96.8	.411(*)
Law enforcement				
• Introduce and enforce a law forbidding the sale of tobacco products to children	100.0	100.0	96.0	.551(*)

(*) ANOVA one way Test, (**) Kruskal-Wallis Test.

Table 25 showed the percentage of the medical doctors expressing their opinions on anti-smoking steps. Almost all the groups agreed to opinion more or less similarly. But the difference was not statistically significant.

4.4.3 Relationship between reasons of non-smoking and smoking status

Table 29 Reasons of non-smoking and smoking status

Reasons	Smoking status		
	Ex-smokers (n = 7)	**Non-smokers** (n = 126)	P-value
Health reasons			
To protect own health	100.0	99.2	.948(*)
To avoid unpleasant symptoms	71.4	55.1	.331(*)
Social reasons			
Pressure from colleagues	28.6	31.5	.618(*)
Not to create discomfort people nearby	100.0	52.8	**.014**(*)
To set a good example for others	57.1	40.9	.321(*)
Pressure from friends or family	42.9	21.3	.187(*)

(*) Fisher's Exact Test

Table 26 showed the respondents agreeing on the stated reasons which were applicable only for ex-smokers and non-smokers. Almost both the entire group indicated the health reasons and around half of them mentioned social reasons. However, there wasn't significant relationship between the smoking status and reasons of non-smoking to except social reason about not to create discomfort people nearby.

4.4.4 Relationship between smoking cessation practice and smoking status

Table 27 showed the relationship between smoking status and smoking cessation practice group. When recording smoking cessation practice there were 12 conditions mentioned (quest. No 22, 23). Each respondent was given some score according to their answer. The majority of practice towards cessation of smoking was found moderate

Table 30 Smoking cessation practice and smoking status

Smoking cessation	Smoking status		
	Current Smokers (n=27)	**Ex and Non-Smokers (n=134)**	P-value
High	7.4	17.2	.411(*)
Moderate	**74.1**	**63.4**	
Low	18.5	19.4	

(*) Chi-Square Test

4.4.5 Relationship between suggesting methods of smoking reduction and smoking status

Table 31 Methods of smoking reduction and smoking status

Smoking cessation method	Smoking status		
	Current smokers	**Ex and Non-smokers**	P-value
Gradual reduction method	96.3	96.3	.736(*)
Nicotine replacement	33.3	52.2	.056(*)
Acupuncture	7.4	6.0	.525(*)
Hypnosis	7.4	3.0	.264(*)

(*) Fisher's Exact Test

Table 28 demonstrated that, the percentage according to smoking group and relationship with smoking reductive method was suggested by medical doctors. Trends of giving advice to patient's methods of smoking cessation were found more or less similar in each smoking group. The majority of them suggested about the gradual reduction and nicotine replacement methods.

CHAPTER 5
DISCUSSION

This study was conducted on the medical doctors at Cantho University of Medicine and Pharmacy, Vietnam, attempting to describe the smoking behavior and status among physicians, and also the relationship between potential contributing factors to cigarette smoking. These independent variables included demo-sociographic variables, opinions about behavior concerning anti-smoking and opinions on anti-smoking policy.

This chapter will discuss the results obtained from the study in the three major parts following the conceptual framework and comprises of:

Part I : Smoking behavior and status among physicians.
Part II : Socio-demographic characteristics of the respondents.
Part III : Opinions about behavior concerning anti-smoking and opinions on anti-smoking policy.

5.1 Smoking behavior and status among respondents

Definitely, all physicians perceive that smoking leads too health risks but the question is that how they perceive about smoking habits. Do they agree at any point which can lead to smoking? What about their practice towards cessation of smoking for themselves and for others. What is their promotive behavior regarding future on smoking. It brings about many questions.

The prevalence of smoking among medical doctors at Cantho University of Medicine and Pharmacy as revealed by the study is 16.8%. This result higher than the findings of the previous researches by Begum Shamsun Nahar, that had conducted in Thailand, 1994 [7] 8.7% but lower than previous study by Heleen M.Dekker, 2002 [42] 38%,

Tomson T, 2003 [43] 35%, Sanchez P, 2003 [44] 32.4%, Sansores RH, 2000 [45] 22%, Hodgetts G, 2002 [46] 40%, and Fernander Ruiz ML, 2001 [47] 37%.

Another study conducted on physician members of the Japan Medical Association in the year 2000 showed that the prevalence of cigarette smoking among physicians was 27.1% for men and 6.8% for women [6], in some other developed countries, such as France [48] (males, 33%; females, 24%), Italy [49] (males, 34%; females, 29%), and the Netherlands [50] (males, 41%; females, 24%).

And in another study conducted in some developing countries, such as Kuwait [51] (current smoking physician 18.4%), Bahrain [51] (14.6%), Morocco [52] (16.2% in doctors), Rio Grande [53] (18.3%).

According to WHO, the smoking prevalence among health professionals in many countries is the same if not higher than the average of population. In Albania in 2000, 44% of medical students smoked, compared with 39% of the population. In Saudi Arabia, 20% of the doctors smoke whereas the average for the population is 13% [54].

Generally, the prevalence of smoking among medical doctors in this study was lower than the study in developed countries. And it was also lower than the study among health professionals by Tran Thu Thuy that was conducted in Vietnam, but was rather close with the findings from developing countries. It might be due to recent wide movements launched by field level young doctors about anti smoking all over Vietnam, and a high number of female respondents who belonged to the non-smoking group. However, it was unaceptable because of the physicians are highly respected in their communities. They act the role models in issues related to health, and people turn to them for advice and consultation, for this reasons, they are very important in advancing any tobacco control policies. Physicians, however, often do not seriously address the issue of smoking, or perhaps smoke themselves, which makes it even more difficult to discuss this problem with their patients or take an active role in anti-smoking efforts.

It has been reported that if smoking prevalence among physician decreases, in a few decades the smoking prevalence among the general population will also decrease [55]. Hence, the prevalence of smoking among physicians at Cantho University of medicine and pharmacy will be constantly lowered.

Regarding reasons for smoking and non-smoking, the purpose is to investigate how they excuse their smoking behavior. Most of them admitted that they smoke from force of habit (66.7%), and one third of them justify that for reason of anxiety or stress from the job or work. Very few of them mentioned about anxiety or stress from family, friends, colleagues and frustration about future prospect.

The respondents who are ex-smokers and never smokers were asked reason of their non-smoking; almost all of them mentioned the reason to protect their own health (99.3%). More than half of them stated that to avoid unpleasant symptom (56.0%) and not to discomfort people nearby (55.2%). Consequently, the physicians were expected to take care of others as well as themselves. Almost all of respondents stated about reason to protect own health were found as ex-smokers and non-smokers, but there was not significant relationship between the smoking status and reason of non-smoking to except social reason about not to discomfort people nearby (p-value = .014).

With the opinions towards smoking, the findings showed that only small percentage of the respondents seemed to see the positive effects of smoking. The highest rate was 54% who agreed that smoking cessation may increase weight. It seems that after stopping smoking they might have gained their weight. In fact some people do, partly because smoking loses appetite. After stopping smoking, they can eat more, and partly because of metabolic changes. Majority of the respondents who agreed on smoking cessation may increase weight was found as current smokers, but for those who were none and ex-smokers disagreed of that, and there was no statistical significance (p-value > .05). 29.8% respondents agreed that smoking helps to get rid of stress. The 15.5% stated that smoking helps to get rid of troublesome. The 14.9% mentioned that smoking can relieve anxiety. Thirteen percent mentioned

that smoking helps to get rid of anger. Though the overall percentage is small, almost all of the opinion goes towards smoking majority given by current smokers. The people who were none and ex-smokers are not likely to have any personal feelings, and there was statistical significance (p-value = .008).

About model smoking behavior, in this study the finding showed that the friends had a clear influence to start smoking of the respondents and 38.2% of the respondents admitted that self initiation was the cause of their smoking habit. And only 2.9% of them mentioned that it was due to family members. After re-categorizing the smoking model, it was divided into two groups. The finding indicated that the social environment should be a potential influential factor in starting smoking of respondents. The majority of the respondents having model of smoking from their friends, colleagues and family were found as current smokers, and the respondents had model of smoking from self initiation were also found as current smokers, but the statistical test did not find significant relationship between the smoking status and model of smoking (p-value >.05).

About smoking patterns, half of smokers in the study started smoking at the age of 13-19. The highest rates of started smoking with the age of initiation at the age of 18 (41.2%). The finding was closely the previous findings by Piryani RM, 2004 [56]. 44% had started smoking in their teenage. The youngest physician that started smoking was 10 years old, and the oldest began smoking at the age of 35. Results also obtained on model smoking behavior identified that friends pressure could have been the most dominant influencing factor to initial onset of smoking among these physicians.

Practice towards cessation of smoking is mostly a remarkable side for physicians. The recent study reported by Susan Aldridge, the physician is the healthcare provider to help people take most notice of when it comes to giving up smoking. Nearly 70% of patients who smoke are seen by their physician each year. This can be a good opportunity to discuss smoking cessation. In a study from the University of Pittsburgh, it was revealed that a three minute intervention by the doctor

led to a 30% increase in smoking cessation, and a ten minute intervention led to a 60% increase [57]. However, the benefit of that would be minimal if the patient realized that the physician himself was a smokers, in term that a smoking physician is also less likely to seriously address the problem of smoking in his patients.

In this study smoking cessation is evaluated by some structured questionnaire: How often do the respondents advise their patients to stop smoking under different conditions. For instance, lung and pulmonary condition, upper respiratory condition, heart conditions etc. or when somebody comes with the symptoms of smoking related diseases or raising the question with or without the symptoms of smoking related diseases? Each respondent was given some score according to their answer. Less than one sixth of respondents practice was found as high, 65.2% moderate and 19.3% poor. Majority advised to stop smoking during suffering from lung, pulmonary disease and heart disease, although smoking cessation interventions by physicians have important influences on patients' smoking behaviors [64], the practice of smoking cessation interventions by physicians has not been common if not very low in Vietnam. Most of the Vietnamese physicians, especially those who smokers, fail to perceive their role as an example to the general population concerning smoking behavior. The rate of physician non-smoker who practice toward smoking cessation was higher than for smoking physicians, but there was no evidence to identify the relationship between smoking status and smoking cessation (p-value >.05).

Comparing to a previous research by Gegum Shamsun Nahar in Thailand, 1994 [7] the practice of smoking cessation interventions by physicians who seldom or never advised their patients was lower than among Vietnamese physicians.

In another survey conducted on Swedish doctors, 2001 [58] the finding showed that 16% physicians never gave advice about smoking cessation to smokers. The result obtained is nearly consistent with findings of results described in this study in Vietnam.

No doubt, the role of the physicians in advising smoking cessation is very important. The counseling by health professionals on the risks of smoking and importance of quitting is one of the most cost-effective methods of reducing smoking. Dr Vera Luiza da Costa Silva, director of WHO's Tobacco Free Initiative says that the involvement of health professionals is of key importance in successfully curbing the tobacco epidemic [54]. They should act as role-models for their patients, by ceasing to smoke, and by ensuring their workplaces and public facilities to be smoke and tobacco-free. World Health Organization officers in Europe began a project on prevention of smoking with the observation that in those countries where the medical professionals who actively fought against tobacco were often those that had been most successful in reducing smoking prevalence and tobacco consumption. The challenge was then to try to stimulate physicians to do more, by making suggestions and providing tools for action. On the world wide scale, doctors working together and individually have done much to combat tobacco use, and not only the medical professionals, but many others could benefit by sharing the stories of their success and failures.

About smoking reduction methods, the majority of physicians stated that they used the gradual reduction method for their smoking cessation and for their patients who smoke. The use of nicotine replacements and acupuncture, hypnosis method has not yet become popular in Vietnam, although nicotine gum and nicotine patches were present in Vietnam.

5.2 Socio-demographic characteristics of the respondents

In this study, the sample was 161 respondents, who returned completed surveys, including 90 males and 71 females aged from 25 to 65. The number of male respondents (55.9%) was slightly higher than those females ones (44.1%), and the ratio between men and women was 1:0.79. It was slightly difference from statistical data of Siriraj and Ramathibodi Hospital Bangkok, Thailand [59], which was 1:0.71.

Regarding to smoking status by gender, 30% of male respondents was current smokers, and 0% of female's respondents. The statistical test found a significant association between smoking status among males and females (p-value = <0.001). These data was close with the previous study of Gegum Shamsun Nahar on smoking status for females and was higher than among males [7], which were conducted at Siriraj and Ramathibodi Hospital Bangkok, 1994 by interviewing 196 respondents, current smokers were 8.7% among males and 0% among females.

This finding is consistent with findings of other studies where male smokers were always more than females. Results on the smoking among males and females in countries all over the world are shown in table 3, and it is obvious from these results that males tend to smoke much more than females [60]. Anyway, being a non-smoker, female physicians can play an efficient role to combat smoking as well as male colleague.

The study had grouped physicians into three different age groups. It was found that the highest number of physicians was between the age group from 22-35 (49.7%), but smoking prevalence was found in this group was the lowest (3.8%) compared to 24.5% and 39.3% of age group 36-45 and more than 46 years respectively, and a significant association between smoking status among age group was also found (p-value = <0.001). This situation might reflect that nowadays the young adult, educated generation especially physicians are cautious about smoking and health hazards.

With regards to marital status, the majority of the current smokers were married, widowed, separated or divorced (21.2%), and few of them (4.7%) was single. The difference of marital status, after re-categorized, among smoking status was statistically significant (p = .034).

According to number of children, the study had grouped physicians into two different groups. The majority of the respondents who have children were found as smokers, and a statistical significance between current smokers and number children group was identified (p-value < .001).

About specialization of the respondents, majority of them was both external medicine (18%) and basic medicine (18%). After re-categorizing the specialization, it was divided into three groups; the finding was found that, the smoking prevalence among paraclinic doctors (31%) (Including: basic medicine, epidemiology), more than among clinic (Including: internal medicine, surgery, obstetrics, pediatrics, and odontology) and specialty doctors (24.1%), and there was no evidence to identify the relationship between smoking status and their specialization (p-value > 0.05).

There were two categories of physicians included in this study administrators (30.4%) and, staff (69.6%). Smoking prevalence among the physicians who are working in administrative field (36.7%) was higher than the staff (8.0%). The statistical test found a significant association between smoking status and categories of physicians (P-value <0.001). This situation reflects that administrators suffered from pressure from their work. In that way, they are very hard to advise others to stop smoking. Because if the heads of the department or section is a non-smoker their subordinate or student must be discouraged.

In terms of monthly average income of the respondent's family, nearly half of the respondents had high income; the research also found that the high income respondents had high percentage among current smokers (23.2%). But the rest of them was 8.9% and 0% current smokers from the moderate income and low income respondent and a statistically significant between current smokers and their monthly average income (p-value = 0.001). This result might indicate that the financial ability to buy cigarettes had strong influence on smoking behavior as reported by World Bank in 2001 [61], which suggested that, as income rose over time, the number of people smoking cigarettes would also rise unless strong policy interventions make smoking less attractive.

5.3 Opinions about behavior concerning anti-smoking and opinions on anti-smoking policy

Opinions about behavior concerning anti-smoking and opinions on anti-smoking policy. Almost all of them (95 – 97.5%) agreed that smoking in hospitals, public places and working places should be restricted or abolished; health warning on tobacco packaging should be strengthened; a strong health education campaign on tobacco and health should be established; health professionals should get specific training on how to help patients who want to stop smoking; health professionals should be encouraged to get more involved in advising and helping people to stop smoking; laws forbidding the sales of products to children of age under 18 years should be introduced and enforced. 88.8% of the respondents mentioned that policies on smoking in the help care system should be introduce. According to 87.6% of respondents, tobacco advertising and promotion should be banned, and 78.3% of them stated that smoking prevention curriculum should be included in regular training. It means that most doctors expressed a positive attitude towards tobacco prevention. Opinions on anti-smoking are more or less similar between current smokers, ex-smokers and non-smokers, and there isn't statistical significance.

The respondents were asked whether they smoke in the presence of patients, children, girl/boy friends and students. Almost all of current smokers mentioned that they smoke in the presence of their boy friends (96.3%) and girl friends (74.1%), especially more than half of them admitted that they smoke in presence of children (66.7%). The data from Vietnamese National Health Survey showed that there are over 70% of Vietnamese children less than 10 year of age live in households where someone smokes [62]. A study in Hanoi has shown that 50% of children under 5 years of age and 56% of school age children (age 4-14 years) are exposed to passive smoking [63]. This means that passive smoking in Vietnam is a big question. According to WHO summary report 1991 cigarette fumes cause hazard to non smoker who got cigarette fumes. Cigarette fumes can cause diseases such as heart disease, respiratory disease, hazard to the infant's lungs, and to those who were pregnant.

Cigarette fumes can result in pregnancy complications, low baby birth rate, and an increased risk of birth defects.

To promotive health, as doctors, we have a duty to promote health. We know that certain lifestyle choices can predispose a person to disease. As a result, we advise our patients to avoid these behaviors. People who work in health care should be role models for health. How about asking healthcare workers to stop their colleagues from smoking if we cannot convince people having been trained in health sciences for decades to quit. It is necessary to actively integrate anti-smoking education into medical education. Recently, the Vietnamese Ministry of Health released a new policy and campaign to strengthen smoking-cessation guidance in medical practice [19]. We expect the prevalence of smoking among the Vietnamese physicians and population will decrease in the near future.

CHAPTER 6
CONCLUSION AND RECOMMENDATION

6.1 Conclusion

The World Health Organization has advocated that physicians should not smoke cigarettes and surveys on this issue should be conducted among medical professionals. However, no representative surveys of smoking among physicians in Vietnam have been reported. Nevertheless Vietnam has been recognized as being one country that has been able to make efforts for achieving of these goals of WHO.

This research covered the study of smoking behavior and status among physicians who are working in Can Tho University of Medicine and Pharmacy, Vietnam. The main objectives of this study were to describe the smoking behavior and status of 161 respondents aged from 23 to 65 with both males and females, and the relationship between smoking status and other variables. Although the prevalence of smoking in Vietnamese physicians was lower than that observed among population, it is still unacceptable, since this class has a decisive role in the prevention and fight against smoking, and a specific campaign against tobacco among these professionals would greatly justify.

The study was able to describe that most of the physicians' practice toward smoking cessation was found to be moderately positive. Although most of the doctors had positive opinions on smoking prevention, most of them did not seem to advise their patients to stop smoking is important. Most doctors only "sometime" gave advice to their patients, and one fifth of the doctors had never advised their patients or others to stop smoking.

Some smoking patterns such as passive smoking seemed to be striking that most of current smokers smoked in presence of children and friends.

Out of 34 current and ex-smokers, half of them started their smoking in their teenage, and nearly half of them initiated their smoking by their friends while the other 38.2% by self initiation. It could be concluded that the smoking pattern of smoking starting age in this study is very dangerous.

Among current smokers, nearly half of them admitted that they had cut down their smoking for the past two years, but it was interesting that more than half of the current smokers stated that they might not be smoking in the coming year.

The number of cigarette that a physician smoked per day indicated that, most of the current smokers were not heavy smokers, smoking less than 5 cigarettes per day (63%).

Approximately, one sixth of physicians perceived that smoking has impact of relief effects. However more than half of them stated that smoking cessation may increase weight. These opinions were perceived among current smokers higher than among ex and non-smokers.

Almost all of the physicians had positive opinions concerning anti-smoking. More than 93% of them gave a strong opinion about anti smoking policy, enforcement of law, medical education curriculum development for smoking control and prevention. Especially, nearly 100% of them mentioned that encouraging health professionals to get more involved in advising and helping people to stop smoking and introduce and enforce a law forbidding the sale of tobacco products to children of age under 18 years were needed. These opinions would be the baseline information for policy makers to execute in planning and implementation.

6.2 Recommendations

Based on the findings from this study, the recommendations are suggested as follows:

It is known that smoking is a behavior which is difficult to give up. Those are the reasons why apart from of health education smoking cessation programs aiming at individual behavior changes, tobacco control law and act must be approved and implemented strictly. It is necessary to actively integrate anti-smoking education into medical education, releasing a new policy to strengthen smoking cessation guidance in medical practice. Smoking cessation programs should be introduced among Vietnamese physicians to reduce the number of smoking physicians, also. A continuing education program should be instituted to motivate physicians about their role in society.

Physicians should be strengthened and encouraged to give advice to stop smoking.

Prevent smoking programs should be formulated to in teenagers.

The education programs of health promotion should make more effective. Stress reduction and relaxation programs such as exercise, yoga, music and massage should be implemented to attract health worker to participate in instead of using smoking as a habit to relieve stress.

The positive effects of social support on smoking behavior should be motivated.

Recommentation for further studies:

The recommendations in this study lead to further studies:

Further studies should be conducted to determine the smoking status of the large sample size in physicians at a national level.

Practice towards smoking cessation in professional health should be used qualitative approach techniques.

Further longitudinal study is needed to identify the correlation between smoking status and smoking model. The meaning of this cross-sectional relationship is unclear because smoking may be associated with other variables with a causal role.

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APPENDIX

APPENDIX A

QUESTIONNAIRE

SMOKING BEHAVIOR AND STATUS AMONG MEDICAL DOCTORS IN CANTHO UNIVERSITY OF MEDICINE AND PHARMACY, VIETNAM.

Date of registration___/___/___ Registration No.___/___/___

Part 1 Socio-demographic characteristics:

1. Sex [ ] 1. Male
[ ] 2. Female

2. How old are you?: ..... years old

3. What is your marital status?
[ ] 1. Single [ ] 4. Widow
[ ] 2. Married [ ] 5. Other (specify).....
[ ] 3. Separated or divorced

4. How many children have you got? ..... .Specify.....

5. What is your specialization?
[ ] 1. Internal medicine [ ] 4. Pediatrics
[ ] 2. External medicine [ ] 5.Epidemiology or community medicine
[ ] 3.Obstretrics [ ] 6. Specialty
[ ] 7. Other (specify)……

6.What is your present official position?
[ ] 1. Administrator
[ ] 2. Staff

7. What is the average income of your family per month? VND per month.....

Part 2 Smoking behavior and status:

a. Smoking status:

8. Do you smoke?

[ ] 1. No, I have never smoked

[ ] 2. Yes, presently I smoke

[ ] 3. Yes, smoker before, but not any more

b. Reasons for smoking or non-smoking:

9. What are the following reasons for current smoking?

	(1) Yes	(2) No
a. Anxiety/stress from family	[ ]	[ ]
b. Anxiety/stress from friends/ colleagues/others	[ ]	[ ]
c. Anxiety/stress from job/work	[ ]	[ ]
d. Frustration about prospect/future	[ ]	[ ]
e. Inherited	[ ]	[ ]
f. From force of habit	[ ]	[ ]

10. What are your following reasons for being a non-smoking person?

	(1) Important	(2) Not important
a. To protect your health	[ ]	[ ]
b. To avoid unpleasant symptoms	[ ]	[ ]
c. Pressure from professional colleagues not to smoke.	[ ]	[ ]

d. Not to create discomfort for people nearby [ ] [ ]

e. To set a good example to others. [ ] [ ]

f. Pressure from friends or family. [ ] [ ]

g. Other (please specify)……

c. Smoking behavior model:

11. By whom was impressed/influenced you to smoke, when you first started smoking?

[ ] 1. Parents
[ ] 2. Elder brothers
[ ] 3. Other family members
[ ] 4. Friends not at work
[ ] 5. Colleagues at work
[ ] 6. Self initiation
[ ] 7. Others specify).....

d. Pattern of smoking behavior:

12. What type of tobacco do you smoke?

[ ] 1.Manufactured cigarettes
[ ] 2.Handrolled cigar
[ ] 3. Piperfuls of tobacco
[ ] 4. Cigar
[ ] 5. Water pipe

13. If you are a smoker, how often do you smoke?

[ ] 1. Everyday.
[ ] 2. Sometime.

14. How many cigarettes do you smoke per day now? .....cigarettes.

15. What was your age when you first stared smoking?.....…of age (If do not remember exactly please roughly estimate)

16. If you do not smoke at present, How many months do you quit smoking?.....months

e. Smoking cessation:

- **Role of the medical doctors:**

17. Do you think that prevalence of smoking among physicians is increasing or not?

[ ] 1. Increasing
[ ] 2. Same
[ ] 3. Decrease
[ ] 4.Don't know.

18. Do you think that physicians who smoke have effect on him and profession in the following aspects?

	(1) Better	(2) No effect	(3) Not good
a. Image	[ ]	[ ]	[ ]
b. Prestige	[ ]	[ ]	[ ]
c. Respect	[ ]	[ ]	[ ]
d. Trust	[ ]	[ ]	[ ]
e. Social personality	[ ]	[ ]	[ ]

19. Have you ever tried to stop smoking? [ ] 1. Yes
[ ] 2. No

20. Next year from now do you think you will quit smoking?

[ ] 1. certainly
[ ] 2. probably yes
[ ] 3. probably not
[ ] 4. certainly not

21. Have you cut down your tobacco consumption for the past two years?

[ ] 1. yes.
[ ] 2. no

- **Practice smoking cessation:**

22. Do you provide explicit "stop smoking" advice to patients when there is an opportunity with the following condition of what or whom?

	(1) Almost	(2) Sometime	(3) Never
a. Lung and pulmonary condition.	[ ]	[ ]	[ ]
b. Upper respiratory condition.	[ ]	[ ]	[ ]
c. Heart conditions.	[ ]	[ ]	[ ]
d. Peptic ulcer.	[ ]	[ ]	[ ]
e. Pregnancy.	[ ]	[ ]	[ ]
f. Use of oral contraceptive.	[ ]	[ ]	[ ]
g. Mouth or lip lesions.	[ ]	[ ]	[ ]
h. Nervousness, loss of appetite and insomnia.	[ ]	[ ]	[ ]
i. Another condition being treated	[ ]	[ ]	[ ]

23. How often do you advise patients or other person associated with you to stop smoking?

	(1) Often	(2) Sometime	(3) Seldom	(4) Never
a. When he/she has symptoms /diagnoses of smoking related diseases.	[ ]	[ ]	[ ]	[ ]
b. When he/she themselves raise the question of smoking	[ ]	[ ]	[ ]	[ ]
c. When he/she is smoker without symptoms/diagnoses of smoking related diseases and do not raise the question of smoking.	[ ]	[ ]	[ ]	[ ]

- **Method of smoking reduction**

24. If you want to suggest your patient, what is the effective method to suggest them?

a. Gradual reduction method. [ ]
b. Nicotine replacement method. [ ]
c. Acupuncture. [ ]
d. Hypnosis. [ ]
e. Other (specify).....

25. What is the effective method you have done to quit smoking?

a. Gradual reduction method. [ ]
b. Nicotine replacement method. [ ]
c. Acupuncture. [ ]
d. Hypnosis. [ ]
e. Other (Specify).....

Part 3 Opinions about behavior concerning anti-smoking and opinions on anti-smoking policy:

26. What are your opinions about following justification of smoking?

	(1) Agree	(2) Disagree	(3) No opinion
a. Smoking can relive anxiety	[ ]	[ ]	[ ]
b. It helps to concentrates to do something	[ ]	[ ]	[ ]
c. It helps to get creative idea.	[ ]	[ ]	[ ]
d. It can hold to get rid of stress	[ ]	[ ]	[ ]
e. It can hold to get rid of irritation	[ ]	[ ]	[ ]
f. It can hold to get rid of frustration.	[ ]	[ ]	[ ]
g. It can hold to get rid of anger.	[ ]	[ ]	[ ]
h. Smoking cessation may increase weight.	[ ]	[ ]	[ ]

i. It helps to feel easy at critical events. [ ] [ ] [ ]
j. It helps to be attractive. [ ] [ ] [ ]
k. It helps to forget sorrow. [ ] [ ] [ ]
l. It helps to forget troublesome. [ ] [ ] [ ]
m. Others (specify).....

27. Do you agree or disagree with the following statements?

	(1) Agree	(2) Disagree	(3) No opinion
a. My current knowledge is sufficient as a basic for counseling patients who want to stop smoking.	[ ]	[ ]	[ ]
b. Smoking in hospitals should be restricted or abolished	[ ]	[ ]	[ ]
c. Health professionals should get specific training on how to help patients who want to stop smoking.	[ ]	[ ]	[ ]
d. Smoking prevention should be included in the regular training	[ ]	[ ]	[ ]

28. What is your opinion about following plans?

a. Restrict smoking in public places including at work. [ ] [ ] [ ]
b. Ban tobacco advertising and promotion [ ] [ ] [ ]
c. Introduce and enforce a law forbidding the sale of tobacco products to children (age less than 18 years) [ ] [ ] [ ]
d. Increase the price of tobacco products progressively, at the rate of greater than the inflation, by means of taxation. [ ] [ ] [ ]
e. Introduce policies on smoking into the health care system. [ ] [ ] [ ]
f. Encourage health professionals to get more involved in advising and helping people to stop smoking. [ ] [ ] [ ]

g. Strengthen the health warnings on tobacco packaging.	[ ]	[ ]	[ ]
h. Establish a strong health education campaign on tobacco and health.	[ ]	[ ]	[ ]

29. Do you ever smoke when you are with a patient?

[ ] 1. Yes

[ ] 2. No

30. Do you ever smoke when you are with :

	(1) Yes	(2) No
a. Your children	[ ]	[ ]
b. Your male friends	[ ]	[ ]
c. Your female friends	[ ]	[ ]
d. Your students	[ ]	[ ]

APPENDIX B

Test of reliability
of 12 questions on supportive from medical doctors

RELIABILITY ANALYSIS – SCALE (ALPHA)

Item-total Statistics

Items	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item Total Correlation	Alpha if Item Deleted
Q14A	15.4783	31.5886	.5666	.8991
Q14B	15.5404	31.0749	.6093	.8928
Q14D	15.9814	29.6059	.7297	.8912
Q14E	15.9503	28.6975	.7536	.8893
Q14F	16.3727	29.6102	.6297	.8957
Q14G	16.1180	28.3297	.7454	.8895
Q14H	16.2174	28.5587	.7782	.8880
Q14I	16.2795	29.6026	.7064	.8921
Q15A	14.4783	32.5386	.4004	.9050
Q15B	14.9441	30.1781	.5355	.9007
Q15C	15.4658	28.6879	.5086	.9074

Reliability Coefficients

N of Cases = 161.0 N of Items = 12

Alpha = .9037

APPENDIX C

THE RESULTS OF TEST NORMAL DISTRIBUTION

Table 29 The results of test distribution (Kolmogorov-Smirnov Test)

Variables	No	Mean	SD	Test-value	P-value
One sample	161	37.08	8.741	1.998	**.001**
• Age of physician					
• Number of children	161	.96	.904	3.471	**.000**
• Income/month	161	1,929,354	1,507,487	3.428	**.000**
• Total practice of physicians toward smoking cessation	161	17.1304	5.93520	1.293	.071
• Group of age	161	1.6770	1.6770	3.958	**.000**
• Sex	161	.75500	.498	4.708	**.000**
• Marital status	161	1.79	.575	4.775	**.000**
• Speciazation	161	4.2	2.457	1.911	**.001**
• Position	161	1.7	.462	5.593	**.000**
Two samples					
• Group smoking status	161	1.1677	.37477	1.890	.355
Sex	161	1.44	.498		
• Group smoking status	161	1.1677	.37477	.928	.355
Group marital status	161	1.7329	.44382		
• Group smoking status	161	1.1677	.37477	1.317	.062
Group number of children	161	1.5839	.49446		
• Group smoking status	161	1.1677	.37477	1.676	**.007**
Position	161	1.7	.462		

APPENDIX D

THE RESULTS OF TEST CORRELATION

Table 30 Correlation analysis between Socio-demographic characteristics and smoking status by Spearman's rho test.

Socio-demographic	Smoking staus	
	r_s	P-value
Sex	-.430(**)	**.000**
Age	.296(**)	**.000**
Marital status	.034	.667
Number of children	.548(**)	**.000**
Specialization	.084	.290
Position	-.173(*)	**.028**
Income	.349(**)	**.000**

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 31 Correlation analysis between smoking model and smoking status by Spearman's rho test.

Smoking model	Smoking status	
	r_s	P-value
Who was influenced	-.300	.085

Table 32 Correlation analysis between opinions about smoking and anti-smoking and smoking status by Spearman's rho test.

Smoking model	Smoking status	
	r_s	P-value
Opinion-b	.023	.776
Opinion-a	-.020	.805
Opinion-1b	-.067	.399
Opinion-e	.038	.633
Opinion-g	-.042	.596
Opinion-h	.115	.146
Opinion-c	.056	.479
Opinion-d	.055	.486
Oipinion-f	-.085	.286
Opinion-1c	-.083	.297

APPENDIX E

THE RESULT OF TEST LOGISTIC REGRESSION

Table 33 Regression between smoking status and demo-sociographic characteristics

Variables	Unstandardized Coefficients		Standardized Coefficients	t	P-value
	B	Std.Error	ß		
(Constant)	-.750	.284		-2.637	.009
Age	.016	.009	.251	1.858	.065
Group of age	-.114	.091	-.150	-1.260	.210
Sex	.075	.051	.065	1.457	.147
Group marital status	1.077	.085	.832	12.601	**.000**
Group number of children	-.010	.086	-.009	-.116	.908
Group specialty	.002	.011	.007	.157	.876
Position	.157	.073	.126	2.137	**.034**
Group income	-.047	.046	-.057	-1.010	.314

Table 34 Regression between smoking status and smoking model

Variables	Unstandardized Coefficients		Standardized Coefficients	t	P-value
	B	Std.Error	ß		
(Constant)	2.703	.346		7.809	.000
Group who influence	-.104	.071	-.251	-1.466	.152

Table 35 Regression between smoking status and opinions about smoking and anti-smoking.

Variables	Unstandardized Coefficients		Standardized Coefficients	t	P-value
	B	Std.Error	ß		
(Constant)	1.382	.231		5.979	.000
Opinion-b	.096	.199	.045	.482	.630
Opinion-a	-.055	.053	-.084	-1.034	.303
Opinion-1b	-.134	.095	-.141	-1.399	.164
Opinion-c	.088	.138	.068	.640	.523
Opinion-d	.144	.108	.126	1.335	.184
Oipinion-f	-.373	.178	-.227	-2.094	**.038**
Opinion-1c	-.089	.195	-.049	-.458	.648

BIOGRAPHY

NAME	DUONG PHUC LAM
DATE OF BIRTH	Feb 16, 1956
PLACE OF BIRTH	Quang Tri Province, Vietnam
INSTITUTION ATTENDED	University of Medicine and Pharmacy of Ho Chi Minh City, Vietnam. 1976-1982 Medical Doctor.
FELLOWSHIP/ RESEARCH GRANT	Vietnam-Netherlands Cooperation (MHO)
PRESENT POSITION	Chief of Administrative Department Cantho University of Medicine and Pharmacy, Vietnam.