

**STAGES OF CHANGE IN SMOKING CESSATION BEHAVIOR
AMONG CONSCRIPT ANTI-AIRCRAFT ARTILLERY DIVISION 1**



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STAGES OF CHANGE IN SMOKING CESSATION BEHAVIOR AMONG
CONSCRIPT ANTI-AIRCRAFT ARTILLERY DIVISION 1

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ABSTRACT

The purpose of this research was to study the stages of change in smoking cessation behavior and their association with personal factors. The differences in the process of change, decisional balance, and self-efficacy in each stage of smoking cessation behavior among the conscripts were also studied. The research was designed as a cross-survey. Research samples were taken from the conscript population in Antiaircraft Artillery Division 1, with total of 176 conscripts selected by using systematic random sampling method. Data were gathered by using a questionnaire, and analyzed by using the following statistics: percentage, Chi-square, Fisher's exact, and ANOVA test.

The study found that 31.25 per cent of the samples were in the contemplation of quitting stage. The results of Chi-square and Fisher's exact test also showed that personal factors such as start smoking age and average number of tobacco consumed per day were significantly associated with the stages of change in smoking cessation behavior. There were 6 independent factors affecting the process of change, which were dramatic relief, self reevaluation, environmental reevaluation, counter condition, self liberation, and reinforcement management. All of them were significantly different in each of the 5 stages of smoking cessation behavior (precontemplation, contemplation, ready to action, action, and maintenance stage). The self-efficacy about habit and a craving for smoking was significantly different in each stages of change in behavior.

The results from this research suggest that the process of change and self-efficacy can be used as a guideline in order to provide smoking cessation programs that are effective and fit to the needs of the conscripts.

KEY WORDS: STAGES OF CHANGE / SMOKING CESSATION /
CONSCRIPT

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ขั้นตอนการเปลี่ยนแปลงพฤติกรรมการเลิกสูบบุหรี่ ของทหารกองประจำการกองพลทหารปืนใหญ่ต่อสู้อากาศยานที่ 1 (STAGES OF CHANGE IN SMOKING CESSATION BEHAVIOR AMONG CONSCRIPT ANTI-AIRCRAFT ARTILLERY DIVISION 1)

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บทคัดย่อ

การวิจัยครั้งนี้เป็นการวิจัยเชิงสำรวจ แบบภาคตัดขวาง มีวัตถุประสงค์เพื่อศึกษาการอยู่ในขั้นตอนการเปลี่ยนแปลงพฤติกรรมการเลิกสูบบุหรี่ ความสัมพันธ์ระหว่างปัจจัยส่วนบุคคลและการอยู่ในขั้นตอนการเปลี่ยนแปลงการเลิกสูบบุหรี่ ความแตกต่างของกระบวนการเปลี่ยนแปลงพฤติกรรมการเลิกสูบบุหรี่ ความสมดุลในการตัดสินใจ ความคาดหวังในตนเอง ในแต่ละขั้นตอนการเปลี่ยนแปลงพฤติกรรมการเลิกสูบบุหรี่ของทหารกองประจำการ คัดเลือกตัวอย่างตามสัดส่วนประชากรจากกองพลทหารปืนใหญ่ต่อสู้อากาศยานที่ 1 จำนวน 176 คน เก็บรวบรวมข้อมูลโดยใช้แบบสอบถาม แล้วนำมาวิเคราะห์ ร้อยละ Chi-square, Fisher's exact, ANOVA

ผลการวิจัยพบว่า ทหารกองประจำการส่วนใหญ่มีขั้นตอนการเปลี่ยนแปลงพฤติกรรมการเลิกสูบบุหรี่ในระยะซั้งใจร้อยละ 31.25 ผลการวิเคราะห์ข้อมูลโดยใช้ Chi-square, Fisher's exact พบว่าปัจจัยส่วนบุคคล ได้แก่ อายุที่เริ่มสูบบุหรี่ ปริมาณการสูบบุหรี่เฉลี่ยต่อวัน มีความสัมพันธ์กับขั้นตอนการเปลี่ยนแปลงพฤติกรรมการเลิกสูบบุหรี่ กระบวนการเปลี่ยนแปลงพฤติกรรมมี 6 องค์ประกอบย่อย ได้แก่ การระบายนารมณ์ การประเมินตนเอง การประเมินสิ่งแวดล้อม การเผชิญเงื่อนไขทางพฤติกรรม การประกาศอิสรภาพต่อตนเองและการเสริมแรงในการจัดการมีความแตกต่างกันในแต่ละขั้นตอนการเปลี่ยนแปลงพฤติกรรม พฤติกรรมและความต้องการสูบบุหรี่มีความแตกต่างกันในแต่ละขั้นตอนการเปลี่ยนแปลงพฤติกรรม

การศึกษาครั้งนี้สามารถนำกระบวนการเปลี่ยนแปลงพฤติกรรมการเลิกสูบบุหรี่มาเป็นแนวทางชี้แนะในการจัด โปรแกรมการงดสูบบุหรี่ที่ตรงกับความต้องการของแต่ละบุคคลและเหมาะสมกับกลุ่มทหารกองประจำการต่อไป

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CHAPTER I

INTRODUCTION

1.1 Background and Rationale

Smoking is a health behavior problem that is related to lung cancer, chronic obstructive pulmonary disease, cardio-vascular disease, and chronic bronchitis, ninety per cent of lung cancer caused by smoking. Additionally, smoking causes cancer of pharynx, oral cavity, and upper esophagus. In medical report, smoking people have risk of cancer, e.g. pancreas, urinary bladder, leukemia and cervix. Smoking is not only harmful to smokers but also to non- smokers, especially childhood those can get risk of respiratory tract infection. Smoking during pregnancy causes abortion, premature labor, fetal mortality and low birth weight. (Prakit Vateesatakit.1995: 6-12)

In Thailand, around 10.6 million people have been smoking. Of these number 10 million are men and 0.6 million are women. There are 0.1 per cent of smokers with age between 11 to 14 year olds, and 13.5 per cent of smokers with age between 15 to 24 years old. An average age of Thai smokers is 18.4 year olds with the average number of tobacco consumed per person per day of 10.62. (National Statistic Office.2001)

About smoking behavior in teenager, the studied of Chanuanthong Thanasugan & Phayao Thanmanee (1991: 47-48) found that 94 per cent of smokers start to smoking at around 12-18 years old. The reasons of smoking were satisfaction, stress relief, and imitation.

Most of drug addicts e.g. alcohol, heroin, opium, marihuana and cocaine, were started with tobacco (Prakit Vateesatakit.1995: 58) because it is lawful, well known, sold everywhere, and cheap. And most of teenagers those smoke tobacco have high potential to get addicted to other addictions.

Conscript is a group of young men that are 18-20 years old. Their life styles are different from general young Thai people. They have to learn Military subject with training everyday. Soldiers' life styles have strict rules, acts in step, and must stand in

army everyday. The routines are morning exercise, taking a bath and dressing. Then gathering into a line, eating, training until evening, pray and go to bed on time. All of activities are timely strict with regulations. They are allowed to go home only the on the weekend. They stand on guard at night. Sometimes they must labor on, cleaning the sleep pavilions and the barracks. These surrounding stimulate stress and pressure. Many of them smoke to feel relieve because there is no rule forbidden. There are free trades of tobaccos and most of conscripts like to smoke. Public health personals have not approached to the problem so the problem is remained unsolved. In the study of Chiang Mai University in 1993-1997, revealed that the trend of drug addiction in conscripts of 33rd Military division have increased especially with tobacco, opium, evaporating, and amphetamine. The rate of drug addiction accounted for 41 per cent

The researcher had a pilot studied in May, 2001 with 30 conscripts of Antiaircraft Artillery Division. And found that they were 19-24 years old. There were 27 smokers, which accounted for 90 per cent. They started smoking during 13-22 years old with the average of 12 tobaccos consumed per day. There were several problems of respiratory system found among them, e.g. productive cough with or without sputum, dyspnea, hoarse in 26 smokers, which accounted for 96.29 per cent. There were 23 smokers wanted to quit, which accounted for 85.18 per cent and 22 smokers wanted to participate reduction or quit smoking activities, which accounted for 81.41 per cent.

There were varieties of theories on health education program to quit smoking, e.g. Motivation Theory, Self Efficacy Theory, and Social Learning Theory. These programs consist of teaching demonstration group about smoking cessation process, but they were not successful because the programs were short and lack of understanding individual capacity that caused the smokers not to quit smoking or quit for a short period and return to smoke again. (Diclemente & Prochaska, 1982, Prochaska & Diclemente, 1983; Prochaska, Diclemente, Velicer, Ginpil & Norcross, 1985)

In Thailand, Transtheoretical theory had been applied to health education programs and self care in chronic disease e.g. diabetes mellitus, hypertension, HIV infection. The health education programs provided a set of activities according to

Transtheoretical theory for everyone in different stages, so the effectiveness of activities could be measured.

Prochaska & Diclemente (1983:390-395) studied the measurement to divide persons into stages of decisions by using instrument called “Change Assessment Scale”. Smokers, who want to quit, were divided into 5 stages; precontemplation stage, contemplation stage, ready for action stage, action stage, and maintenance stage. In addition, each stage consists of important factors such as

1. Process of change consists of 10 steps that lead to the change in each stage of change in smoking cessation behavior.
2. Decisional balance is pros and cons of changing behavior that developed from Decision-Making Model by Janis & Mann.
3. Self-efficacy is the perception in self-ability to change behavior that developed from Social learning theory by Bandura.

In addition, there are personal factors, those related to stages of change in smoking cessation behavior, such as start smoking age, average number of tobacco consumed per day. All factors are important and affect to the change of behavior in each stage. So understanding the structures and factors those affect to the change of behavior is important and it is useful in explaining the stages of change in smoking cessation behavior. However those studies were in abroad, and there are different in context from Thai tradition, culture, idea, especially the conscript that have difference life style from other young people. So in order to providing health education for the conscript, we must understand about stages of change in smoking cessation behavior among them.

In preliminary study of the conscripts, who had smoked and wanted to quit. The researcher need to study stages of change and related factors, such as Process of change, Decisional balance, Self-efficacy and personal factors; such as start smoking age, average number of tobacco consumed per day. This information could help in providing suitable smoking cessation program. All of these benefits are to the conscript in the army, enhancing physical and mental health for themselves and family.

1.2 Research Question

1. How the conscript's smoking cessation behavior distribute in each stage of change?
2. Do the conscript's personal factors e.g. start smoking age, average number of tobacco consumed per day, associated to each stage of change, or not?
3. How the Process of change, Decisional balance and Self-efficacy are difference in each stage of change?

1.3 Research Objectives

1. To study the distribution of the conscripts smoking cessation behavior in each stage of change.
2. To study the association between personal factors, such start smoking age, average number of tobacco consumed per day and being in each stage of change.
3. To compare the difference of Process of change, Decisional balance, and Self-efficacy in each stage of change.

1.4 Research Hypothesis

1. The personal factors in 1.1 and 1.2 are associated in each stage of change
 - 1.1 Start smoking age.
 - 1.2 Average number of tobacco consumed per day.
2. The conscripts in each stage of change have different process of change.
3. The conscripts in each stage of change have different decisional balance.
4. The conscripts in each stage of change have different Self-efficacy.

1.5 Research Variable of This Study

1. Change in smoking cessation behavior
2. Personal factors such as start smoking age, average number of tobacco consumed per day
3. Process of change
4. Decisional balance
5. Self efficacy

1.6 Scope of the Study

This study focused on personal factors, which are related to change in smoking cessation behavior, as well as the difference of Process of change, Decisional balance, Self efficacy in each stage of change of the conscripts in Antiaircraft Artillery Division 1, Bangkok Army, 2003.

1.7 Operation Definition

1. **Stages of change in smoking cessation behavior** are the stages of change from smoking to quit smoking, composed of 5 stages

1.1 **Precontemplation** is a stage that a person never thinking about quit smoking in the last 6 months.

1.2 **Contemplation** is a stage that a person thinking about quit smoking in the last 30 days.

1.3 **Ready to action** is a stage that a person thinking about quit smoking in the next 30 days and plan to quit by using several methods e.g. decrease amount of tobacco in each day.

1.4 **Action** is a stage that a person quit smoking for less than 6 months.

1.5 **Maintenance** is a stage that a person quit smoking for more than 6 months.

2. **Process of change** is a component that is used in the stage for forcing to change behavior in each stage, which is divided into 10 processes:

2.1 **Conscious rising:** when a person remembers article, advertise or information about benefit or method of smoking cessation.

2.2 **Dramatic relief:** when a person releases tension about disease from smoking, warning and image of smoker.

2.3 **Self-reevaluation:** when a person reviews harm of smoking and benefit of smoking cessation.s

2.4 **Environmental reevaluation:** when a person considers and assesses outcome of smoking to environment and closed people.

2.5 **Counter condition:** when a person selects some activities to do instead of smoking.

2.6 Self-liberation: when a person believes and announces the capacity of quit smoking to other and promise to do.

2.7 Stimulus control: when a person gets rid of something that reminds him about smoking from home and office, or provides some reminders of quit smoking instead.

2.8 Helping relationship: when a person have someone to talk or consult about smoking cessation or give will power and accept in changing behavior.

2.9 Reinforcement management: when a person gives reward to own self or receives reward or recognition from other.

2.10 Social liberation: when a person realizes about the policy, social changes that are benefit to non-smokers and realize the campaign to quit smoking.

3. Decision balance in smoking cessation is self-decision to quit smoking by weighting between benefits and barriers to quitting; the decision to quit is assessed by using questionnaire. The questionnaire of decision balance consists of 2 sections, 1. Benefit and satisfaction of smoking. 2. Barrier of quitting and harm of dissatisfaction of smoking.

4. Self-efficacy is the belief of own self to quit although there are many stimulus to relapse that led to outcome expectation, assessed by using questionnaire about self-efficacy. There are 3 stimulus to assess self-efficacy. 1. Positive situations such as in party or closed to smokers. 2. Negative situation such as stress, anxiety and 3. Habit and craving for smoking.

5. Conscript is a man with age more than 18 years old, and are registered to a voluntary soldier and work for the government, with suitable qualification by summon or willing to apply government official for 2 years.

6. Start smoking age is age that accounts absolutely by year at first time smoking.

7. Average number of tobacco consumed per day is average number of tobacco smoked per day.

CHAPTER II

LITERATURE REVIEW

There are concepts, theories, and related researches in the research those are studied in details, such as:

Section I Knowledge about tobacco

- 1.1 History of tobacco
- 1.2 Toxins in tobacco
- 1.3 Harms of smoking
- 1.4 Causes of smoking in teenager
- 1.5 Methods and stages of smoking cessation
- 1.6 Benefits of smoking cessation

Section II Theory and concept in research

- 2.1 Transtheoretical theory

Section III Related Researches

- 3.1 Smoking in teenager
- 3.2 Smoking cessation program
- 3.3 Transtheoretical theory

Section IV Conceptual framework

Section I Knowledge about tobacco

1.1 History of tobacco

Tobacco is a drug addiction, World Health Organization (WHO) defined drug addiction as drugs or chemical substances, which cause toxic in chronic condition to the body, destroy physical, mental and social status. (Prasong Kunanuwatchaidaj, 1986:157) Act of legislation to protect non-smoker in 1992 defined tobacco as tobacco, cigar, and pipe tobacco.

History of tobacco, tobacco was introduced in century 16th (Hathai Chitanondh, 1988:3-4). Spain is the first country to use tobacco to produce tobacco that propagated by African, American, and Latin American. In 1761, Dr. James Hills, a British man, is the first person to report the relationship between tobacco and cancer. Tobacco industry started in America in 1884 and distributed to Europe since time of King Mays 1st of Britain in half century 17th. Then, British knew the hazardous chemicals and King James 1st said in smoking announce “Tobacco is harm to the lung”. However tobacco business became favor and grows rapidly, and became manufacturing good.

In Thailand, it is uncertain about the beginning of smoking, but Majesty Krompraya dumrhongrajanuphab assumed that it should have been in Ayutthaya session (Supha Malakul, 1983:1). Thailand constructed tobacco factory called “Thailand Tobacco Monopoly” in 1900, under Excise Department, Ministry of Finance (Ministry of Finance, 1969). Then it grows and generates a lot of income.

1.2 Chemical toxic in tobacco

There are various chemical substances in smoke, moreover 4,000 types, some have effect to body function, some are toxic, some make cell abnormal, some cause cancer, some are anti-immunity (Uraiwan Kachashewa, 1988:53-57). It had been found that there are over 42 types of carcinogen in smoke (Prakit Vateesatakit, 1995:24-26, Sirisak Phuriphat, 1988:46-52).

1.2.1 Nicotine is a natural substance found in tobacco. It's like oil, no color and cause addiction. It stimulates brain and central nervous system, then it depresses nervous system. 95 per cent of nicotine catch to the lung, effect to adrenal

gland that cause hypertension, stimulate to heart rate, stimulate contraction of large intestine, decrease appetizing, and slow digestion. There is about 15-20 mg of nicotine in 1 tobacco, the hazardous of toxic substance is the same as cyanide, and it does not cause sudden dead because it gradually accumulates. Our body metabolized nicotine rapidly, and then excretes to outside all the time. Thus smokers have low nicotine level.

1.2.2 Tar is oil from burning tobacco in tobacco. It is fluid, sticky, with dark brown color. Tar consists of many substances that are brown bonding. Mostly is harm and carcinogen e.g. cancer of lung, larynx, trachea, esophagus, kidney, stomach, urinary bladder and others. The important substances in Tar are Benzopyrene. 90 per cent of Tar causes cancer in oral cavity. 50 per cent of Tar catch in the lung, and irritate mucous membrane in oral cavity, throat, bronchus and lung that cause chronic cough, sputum, dyspnea easily, and pulmonary emphysema. Whenever smokers smoking tobacco 1 pack/day, their lungs will receive Tar around 30 mg.

1.2.3 Carbon monoxide generated by incomplete combustion, it grabs with hemoglobin instead of oxygen that cause inadequate oxygen in blood stream, the smoke combines Carbon monoxide 4 per cent could make dizziness, fatigue and weakness. If the heart and brain lack of oxygen, it causes stroke, unconsciousness or death. This gas is cause of heart disease. If there are more over 60 per cent in blood stream, it will cause death and it causes lipid to accumulate in blood vessel that lead to Atherosclerosis.

1.2.4 Hydrogen cyanide destroys mucous membrane of trachea. Trachea's function is natural protecting from dirt, dust and germ in breath. It decreases natural resistance and then causes inflammation, wound, vasculitis, chronic bronchitis, chronic cough with sputum, especially in the morning.

1.2.5 Nitrogen dioxide destroy mucous membrane of bronchiole and alveoli that cause alveoli's wall become thin and rupture, if it assembled into a big one it will cause emphysema. Alveoli inflate like balloon and compress good tissue, lead to inadequate oxygen and feel suffocated, chronic cough, dyspnea, and weakness. Chronic can not be cured and suffer through life time.

1.2.6 Ammonia effect is irritate to soft tissue, eye, nose, bronchitis, cough with sputum.

1.2.7 Radioactivities there are polonium 210 in smoke, which are alpha ray, cause lung cancer. Smoke conducts radioactivity to non-smoker who inhales this toxic air.

1.2.8 Insecticide is substance remained in tobacco after spray insecticide it causes toxic in the body.

1.3 Hazard of smoking

1.3.1 Smoker

One tobacco produce smoke approximates 1 liter, which contain many carcinogens. So smoking is breathing toxin into the body, one tobacco shorten life 5 minute and 3 seconds. The mortality study, mortality rates of smoker are 30-80 per cent more than non-smokers. From researches, smoking is related to illness such as: (Chuchat Areejitranusorn, 1987:87-91; Prakit Wateesatakit, 1995:6-29)

1.3.1.1 Cancer is mostly found, smokers have risk of getting cancer more than non-smoker 20 times, it depend on amount of tobacco consumed, character of smoking and period of smoking. There are oral cavity cancer cases in smokers more than non-smokers 5 times, especially smoker who usually drink alcohol, have risk of getting oral cavity cancer and depend on amount of alcohol consumed. Moreover, smokers have risk of getting cancer of larynx, esophagus, urinary bladder, pancreas, kidney, and stomach.

1.3.1.2 Cardio-vascular disease. Smoking increase amount of free fatty acid in plasma and platelets aggregation that smokers become cardio-vascular diseases 2 times more than non-smokers, and ischemic heart disease causes sudden death 3 times more than non-smokers. The chance of cardio-vascular disease depends on amount of tobacco consumed and period of smoking. In the case of ischemic heart disease patient who still smoking, it could leads to atherosclerosis, inflammation and thrombosis of peripheral blood vessel, neurosis, pain, and finally leads to amputated. Paralyse in smokers are more than in non-smokers because of stroke.

1.3.1.3 Respiratory tract disease. Smoke irritates to mucous membrane of bronchus and bronchiole that cause cough and asthma these were found in smokers more than in non-smokers. Smoking causes bronchitis, pulmonary

emphysema increase to 70 per cent. Toxins in smoke destroy mucous membrane of bronchus and rupture. If it assembled into a big one it would cause suffocated feeling, cough, asthma, tired and weakness.

1.3.1.4 Digestive system disease. Smoking cause stomach excretes acid to increase. Mortality rate of peptic ulcer in smokers are 2.9 times more than in non-smokers and increase rate of bleeding in stomach, delay wound healing but decrease excretion of intestinal juice from small intestine and pancreas. So smokers have dyspepsia, no appetite, gas pain and gastric reflux. In addition it causes esophagus cancer and large intestinal cancer 2.4 times than non-smokers.

1.3.1.5 Reproductive system. Women who smoke a lot will early be menopause and difficult to be pregnant. These are thromboses that cause sexual incompetence in men. The research found that sexual incompetence is most likely character of smoker, especially for a man who smokes a lot. In many cases got asthma while having sexual intercourse, cause them to fear and not do it.

1.3.1.6 Gum and teeth. Smokers have gum and teeth problems more than non-smoker, yellow teeth. For smoker who has prolonged smoking, teeth become black, bad smell and decayed teeth.

Although some smokers try to smoke less tobacco but its harm to health is in every tobacco. In fact, it is difficult to smoke less. From research, a man who smoke only 2 tobaccos per day from young to adult, have 2 times more risk of lung cancer. Thai people smoke average 11.7 tobacco/day and 1 in 3 of them smoke 1 pack/day.

1.3.2 Closed people. Smoking is not only harm to smokers but also others who intakes smoke. That causes problem called “secondary smoker” Hathai Chitanondh, (1991:1-3) mentioned smoke in 2 types, smoke that smokers inhale and blow called “mainstream smoke” and smoke that float in the air from tip of tobacco called “side stream smoke”. Most of smoke comes from side stream smoke or about 85 per cent. Mainstream smoke have less toxin because lung of the smoker absorbs some toxin but side stream smoke has more toxins (Winter and Difranza, 1985:11).

1.3.2.1 Child group. Smoking in family causes increase incident of bronchitis and pneumonitis in infants. It also has affects teenagers and adults continuously

1.3.2.2 Pregnancy group. Pregnancy women who smoke have 2 times more problems than non-smokers, such as low weight infant, abortion, premature labor, and ante/post partum hemorrhage. In addition, it causes placenta previa, low birth weight and length mental retardation and may be abnormal nervous system (Hathai Chitanondh, 1991:143-148).

1.3.2.3 Smoking in couple. This creates risk of lung cancer 2 times more than non-smokers couple, 3 times more of coronary heart disease, and early death than normal for 4 years.

1.3.2.4 General people. Side stream smoke irritates eyes, headache, and stuffed nose, especially some with asthma, heart disease and bronchitis. The Government of United States of America has announced the environmental tobacco smoke to be the most severe carcinogen called "Class a Carcinogen" since January 1993.

Smoke causes non-smokers in the smoking environment to be secondary smokers and cause diseases to people who stay in the room of smoker. If smoker smoke 20 tobaccos secondary smokers will receive smoke as they smoke 1 tobacco. So smokers must consider impact to others. Smoking in public is not personal right, but it is social right, according to law of health protection of non-smokers and law of tobacco control in 1922.

1.3.3 Impact to economy. In each year, Thai people smoke more than 30,000 million-tobaccos, which accounted for 150,000 million baht. Now, Thailand has approximate 11.4 million smokers or 1 in every 5 people of all population. And if the government pays for medical cost at 10,000 baht/person/year for these smokers, the government will have to pay 1,000 million baht and lose human labor, low quality of human resource because suffering from toxin.

1.3.4 Impact to social. Smoking is closely related to use of other addictions, 95 per cent of teenagers addicted to cocaine and heroine, 75 per cent of teenagers addicted to marijuana and opium, 62 per cent of teenagers drink alcohol, most of them start with smoking. So smoking in teenagers lead to other addiction, which is an important social problem.

1.3.5 Impact to environment. Tobaccos don't only cause dirty and air pollution, especially in crowded place. It is also a cause of losing life and wealth.

1.4 Causes of smoking in teenager

Somjit Suprantas (1979:10-12) analyzed causes of smoking, which are influenced by several factors. Those factors are:

1.4.1 Imitation in-group. One usually has reference group in the view of thinking, feeling, and acting because he wants to be the part of group and want to be accepted. So whenever the reference groups smoke, he will smoke too. Teenagers have many friends and depend on group, so friends influence to teenager on opinion, value and behavior.

1.4.2 Craving to try. Teenager is a period of finding distinctive they have earnest, liberty, trial, want to have experiences, and want to be own self. So smoking is a thing that they want to try.

1.4.3 Imitation the others. There are many types of people smoke in every social e.g. families, teachers, monks, doctors, actors, singers, leaders, those are model of smoking.

1.4.4 Social activity. In social, there are not only various activities e.g. social gathering, drinking and smoking. And tobaccos are provided to welcome participants while they feel that they must drink and smoke to join the social.

1.4.5 Tradition. In Thai social, somewhere used tobaccos to welcome visitors or deliver to manifest goodwill, that lead to smoking to maintain friendship.

1.4.6 To avoid critic. Teenager or men have value to show gender. If whoever can't smoke, he could be criticized. So they must to train smoking. Although these are smoking campaigns but existing value stills appear.

1.4.7 Adaptation mechanism. Many people smoke to release tension when they are worry confused and have problem. They select to smoke because they hope that it can restrain symptoms.

1.4.8 Availability and propaganda. Tobaccos are available, which provoked to smoke and various types of propaganda persuade to try smoking. Now there is law of tobacco control since 1992 that control and decrease smoking propaganda.

1.5 Methods and steps of smoking cessation

Method 1 is a method from health education department, Mission Hospital, by using principle of will power, intention to quit, and practice.

What to do when they want to smoke (Health education department, 1982)

1. Strengthen power will to quit
 - 1.1 Make decision to throw tobacco away and quit immediately, do not just reduce smoking because there is a chance to return to relapse.
 - 1.2 Find reasons of smoking cessation e.g. quit for better life, quit for save money.
 - 1.3 Change habit in daily life. Try to avoid situation that leads to relapse.
 - 1.4 Speak loudly to yourself “I choose not to smoke” that add will power.
 - 1.5 Try to be cheerful. Avoid the stress, whenever you return to smoke, don't feel discourage, and try to quit again.
 - 1.6 Try to persuade your friends to quit because they can help and give power will reciprocally.
 - 1.7 Faith in higher power. This is the way to create will power.
2. Performance to eliminate craving for smoking.
 - 2.1 Drink water 8–10 glasses/day. This excretes nicotine decrease craving for smoking.
 - 2.2 Don't eat too much and don't eat food that is difficult to digest because you will feel craving to smoke after full stomach.
 - 2.3 Eat more vegetable and fruit. It gives necessary vitamins and minerals in period of smoking cessation.
 - 2.4 Stop drinking tea, coffee, and alcohol because all of these stimulate craving for smoking.
 - 2.5 Whenever you feel moody, not enjoy, you can correct by eating vitamin B1 in unpolished rice, green vegetable, vitamin B1 tablet.
 - 2.6 To exercise everyday but not overexert, such as walking or deep breathing.

Method 2 A simple method of smoking cessation is to quit unexpectedly with slide intention to quit. Whoever wants to quit, you should perform the following steps: (Boonsom Martin and Sumarng Paungboot, 1990:164, Suphat Teeravejchareoanchai, 1990:141-142)

1. Record reasons of quitting or motivation to quit and carry on to remind your self. May start to quit in important day e.g. your birthday, son's birthday, and wedding day.

2. Tell to your wife, near relatives, closed friends about your decision because these give will power and support you to quit.

3. Prepare step of smoking cessation plan. Planning to win yourself when you want to smoking by:

3.1 Keep tobaccos and equipment far from your body.

3.2 Don't stay close to smokers.

3.3 Drink a lot of water; especially drink warm water in the morning or on wake up and after lunch or afternoon, 2 glasses/time. Drinking a lot of water will help to excrete nicotine pass through urine. The less nicotine, the less craving for smoking. If you drink water 8–10 glasses/day, the body will excrete all nicotine within 3-4 days.

3.4 Whenever you feel drowsy or moody while quitting smoking, you should wash your face with cold water or take a bath and rub skin with a towel to improve blood circulation that make you feel fresh.

3.5 Stop drinking alcohol, tea, coffee, depressant, and stimulant drug because they cause stress and craving to smoke.

3.6 Eating on time, don't eat too much, should eat vegetable and fruit, avoid intense taste, fried food, raw meat and desert with high sugar. When you eat enough, you should get up and walk.

3.7 Eat vitamin supplement e.g. vitamin B complex because it recovers nerve system that was depressed by nicotine, vitamin C destroy toxin of nicotine.

3.8 Exercise for health and relaxation.

3.9 Have enough rest in order to feel fresh.

3.10 In first period of smoking cessation, you should avoid going to drinking and smoking party.

3.11 Whenever you want to smoke, find something to substitute smoking, such as snack, water-melon seed, lozenge etc. or drink a glass of water and think about promise and intention to quit or take a bath, immediately.

Doing a period of performance to quit, after 2-3 day of quitting, you would feel craving for smoking, weak, and have headache. This period is important to overcome temptation to quit. If the smokers past this period, they will be better and they will be able to quit finally. After quitting 2 weeks, they will feel healthy, improve cough, fresh, powerful, and fresh.

1.6 Benefit from smoking cessation

Physical benefit

1. The five senses improved to normal function and feel enjoy to eating.
2. General health is getting better, improved blood circulation that leads to bright skin, whitening teeth, and fresh breath.
3. Decrease coughs sputum and finally disappears.
4. Health problems, e.g. cough, eye irritation, conjunctivitis, dry mouth and tongue will be disappeared.
5. Decrease risk of coronary artery disease, bronchitis, gingivitis, and cancer.
6. Improve sexual competency.

Social benefit

1. Have more time to learning or working.
2. Don't disturb others with smoke.
3. Don't have body odor, fresh breath.
4. Don't have bad smelling on clothe.
5. Property will not be damaged by burning from careless.
6. Feeling happy in social.
7. Be better listener, don't have to go out and smoke during the conversation.

8. Reduce risks to social.
9. Be warmly welcomed and be loved by families and friends.

Economic benefit

1. Save money from buying tobacco.
2. Save money from medical health care.
3. Can invest and make profit instead of buying tobacco.
4. Don't spend health expenditure for treatment.

Mental-Emotional benefit

1. Be happy from using money wisely and making something useful.
2. To enhance self confident in solving problem.
3. Be proud in success with strong will power.
4. Be happy and proud with being such model to young people, confident in vision.
5. Don't feel wrong later.
6. Less worry and agitation.
7. Don't suffer from smoking blame.

The literature review found that tobacco is an addicting drug. There are many toxic substances and harm to the body that cause various diseases and impact to others, economy, and social. There are many reasons to smoke, most are imitate their groups or wanting to try, or because tobacco is easy to access and it is lawful to smoke. There are many methods of smoking cessation such as exercise, take a bath, and find some activities to substitute smoking. Whoever can quit smoking, will receive benefit from better health, and include mental and physical health. But it is not easy to quit smoking because a person may feel uncomfortable and irritable from quitting, which may cause them to smoke again. So health education program must concern the individual ability of the smokers.

Section II Theory and concept in research

2.1 Transtheoretical Theory or Stages of Change model (Chanuanthong Thanasugan and Suree Chantaramolee, 1995:5-10 cited in Pitsamai Jaruchavarit, 1995:23-27)

Transtheoretical Theory was introduced in 1970 for smoking cessation and weight control project. The psychologist applied the model to change knowledge, emotion, and practice. Prochaska and Diclement had studied many behavior change theories and gave noticed that there were many theories for behavioral modification in 1970. The occurrence of many new theories seems to show that prior theories were not good enough.

Prochaska reviewed the direction of changing behavior including the same and different issue, the analyzed and classified factors by selection of the same components in 29 types of psychotherapy. The result show 10-12 variables or co-characters that can explain the stages those are used to confirm the research about changing behavior.

Prochaska found 2-3 main issues, which are:

1. The man will not change behavior unless he is forced to change or he want to change with the expression “Yes, I will do”. Without these conditions, he will not change behavior although he receives a lot of information.
2. Change behavior when he thinking about the impact to others and the environment.
3. Change behavior when received support from others

Prochaska had selected smoking cessation behavior to be his example. He interviewed smokers who had quitted, about the quit smoke stage. Prochaska expected about know-how and events to quit smoking. But the answers change as the time change, during the period between smoking and quit smoking.

Prochaska concluded that there were many stages between smoking and quit smoking, and when the time change the behavior also change. Those stages are called “stages of change”, which divided into 5 stages as follow:

1. Precontemplation is a stage that a person never thinking of quitting and never paying attention to quit smoking.

2. Contemplation is a stage that a person is expecting to quit whenever he thinks that smoking is bad or doesn't feel good to smoke.

3. Ready for action is a stage that a person desire to change, planing to change, and finding some clinics to quit and thinking about "How to quit?"

4. Action is a stage that a person is trying to make change, e.g. going to clinics to quit.

5. Maintenance is a stage that a person already quitted, and thinks about what to do if someone gives him tobacco.

Prochaska not only found that the stages of change depend on period of time , but he also developed guideline to classify smoker into each stage as follow:

Stages of change in smoking cessation behavior	Period and behavior
1. Precontemplation	1. Never think is quit in the last 6 months.
2. Contemplation	2. Think about quitting in the last 30 days
3. Ready to action	3. Think about quitting in the last 30 days and plan to quit by using several methods, such as decrease amount of tobacco consumed in each day.
4. Action	4. Started to quit smoking for less than 6 months.
5. Maintenance	5. Quitted smoking for more than 6 months.

Transtheoretical Theory can be used to explain the relationship between behavior and intention in each stages of change in smoking cessation behavior, as follow:

Stage	Conduct of smoking cessation	Concentration
1. Precontemplation	Still smoking	No attention
2. Contemplation	Realized but still smoking	May do
3. Ready to action	Still smoking but quit sometimes	Will do, immediately
4. Action	Quit sometime and usually to do	
5. Maintenance	Quitted smoking for a long time	

There are some details about activities in each stage of Transtheoretical Theory, as follow:

Stage 1 Precontemplation

1. To make the smoker realize by his consciousness raising, not by commanded him to do.
2. Give the smoker a chance to talk about feeling of smoking and story of smoking, and then give information to the smoker.
3. Environmental reevaluation is an activity to show the hazardous chemical in smoking to others, not only own self. This activity related to this stage because many people change behavior for others, not for own self.

Stage 2 Contemplation

Activities in this stage focus on self-evaluation. Help the smoker to think about own self, such as result of smoking cessation.

Stage 3 Ready for action

Stage of planning, it helps smokers to think about how to quit? And what information could help the smoker to quit, what skill is needed in order to quit.

Stage 4 and Stage 5 Action and Maintenance

Activities in these stages help the smoker to believe that they can quit and stimulate the smoker to quit. There are activities or processes to change the environment to support quitting.

The guideline to design activities to target behavior by Transtheoretical Theory, are listed in the table below:

Stage	Target behavior
1. Precontemplation	Realize about risk Expect the outcome Realize social norm
2. Contemplation	Expect the outcome Realize about social norm Realize about self-efficacy
3. Ready to action	Realize about self-efficacy Realize about social norm Expect the outcome
4. Action	Realize about self-efficacy Realize about social norm Expect the outcome
5. Maintenance	Realize about social norm Realize about self-efficacy

The purpose of Transtheoretical theory is to measure change of behavior in each stage, namely:

1. Classify each smoker into stages of change, and provide suitable activities for him.
2. Measures the effectiveness of activities by testing the change of stage after they did the activities. (Canuanthong Thanasugan and Suree Chantaramolee, 1999:63)

Each of 5 stages of change consists of several activities, which lead to the change into the next stage, based on problems and individual characteristics, as follow:

1. Conscious Raising

In generally smokers have data to encounter smoking cessation situation. The smokers are stimulated by information about prevalence and guideline to make decision to quit. Sometimes conscious rising by risk may affect related behavior, such

as smokers believe that smoking causes lung cancer but also believe that they are healthy and may not have risk of lung cancer.

2. Dramatic Relief

Emotions effect smokers in assessing situation and making decision. So stimulate activity with emotion could provide stimuli to motivate and change behavior, e.g. picture, movie, change each other.

3. Self Reevaluation

The process that smokers review smoking experience, analyzes loss and gain, and keeps reminding themselves. The simulation could lead smokers to have expectation on outcome.

4. Environmental Reevaluation

It is stage that smokers evaluate about quitting smoking because it affects to others. So activities in this stage are provided to make smokers feel better if they can quit, or understand impact of smoking.

5. Counter Condition

It means smokers select substitute behaviors to do instead of smoking.

6. Self Liberation

It means the belief in self-efficacy to quit and promise to do.

7. Stimulus Control

It is easy to quit without any stimuli. So they must change the environment to decrease chance of smoking.

8. Helping Relationship

Having somebody to talk or respond is a beneficial process. So smokers who want to quit, need somebody give will power, evaluation and understanding.

9. Reinforcement Management

To receive stimuli those make them feel good and want to continue quitting. The punishment causes smokers not to quit continuously.

10. Social Liberation

It is a process that smokers pronounce to other people and social to realize benefit and accept in changing behavior.

Table Process of change and details of the components in each stages of change behavior

Precontemplation	Contemplation	Ready to action	Action	Maintenance
1. Conscious Raising				
2. Dramatic Relief				
3. Self Reevaluation	1. Self Reevaluation			
4. Environmental Reevaluation	2. Environmental Reevaluation			
5. Counter Condition	3. Counter Condition	1. Counter Condition		
	4. Self Liberation	2. Self Liberation		
		3. Stimulus Control	1. Stimulus Control	1. Stimulus Control
		4. Helping Relationship	2. Helping Relationship	2. Helping Relationship
			3. Reinforcement Management	3. Reinforcement Management
				4. Social Liberation

There are not only 2 main components in Transtheoretical theory, stages of change in behavior and process of change, but there are also other factors, decisional balance, and self efficacy that effect individual to move in each stage.

Decisional balance

It is evaluation of pros and cons to change health behavior. The purpose and concept of decision is to make comparison between pros and cons (Janis and Mann, 1997). The decision to quit is based on weighting between benefit and obstacle or negative result to quit. Pros are expressed in positive view or satisfaction. Cons are

expressed in negative view or thinking that is obstacle to change behavior. This concept is from Decision-Making Model by Janis and Mann (1997)

Velicer, et al (1985) found that the measurement of pros and cons divide persons in to each stage of change. Decisional theory helps persons to understand in profoundly changing own behavior. Janis and Mann (1997) studied decisional balance pattern and found 8 structures, namely:

1. To be something benefit to self
2. To be something benefit to other
3. To be something impact to self
4. To be something impact to other
5. To be something that is self approval
6. To be something that is other approval
7. To be something that is not self approval
8. To be something that is not other approval

The behavior problems, led to developing instrument of decisional balance, there are 2 characters, namely pros and cons, benefit and cost in each behavior (O'Connell and Velicer, 1988; Velicer, et al, 1985)

Pattern of pros and cons that was studied in 12 health behaviors e.g. smoking, exercise, lose weight, found that cons is more valuable than pros in precontemplation stage and is contrary to contemplation and ready to action stage. The pattern is that cons decrease and pros increase until peak in maintenance stage. The studies found that decisional balance can change behavior and can be integrated into stages of change.

Self - efficacy

Self-efficacy concept may be developed from Self-efficacy Theory of Bundura (1982). It means that persons believe in their ability to do or conduct things that lead to desirable outcome or behavior. The perception of self efficacy is provided to conduct in 2 directions, namely: create self confident in situation of changing behavior problem and situation of temptation that caused to return to have behavior

problem. In cross-sectional study about stages of smoking cessation by Prochaska, it was found that the confidence in smoking cessation increase nearly straight line from the lowest in precontemplation stage to the highest in maintenance stage. Perception of self-efficacy in precontemplation stage is hard to interpret because of low confidence, some means the perception of incompetency and no attention to change behavior. In action stage, persons can evaluate more ability and confidence. In study of smoking cessation, confidence is an important indicator of action and maintenance. In reverse, temptation is an important indicator of relapse (Prochaska, et, al, 1994:473-479)

Self-efficacy is a main concept in Social Learning Theory (Bandura, 1997, 1998) provided to evaluate choice, impact and benefit thinking to emotional reaction and behavior. Self-efficacy is a level of self confidence to avoiding from problem behavior.

In the first stage to fifth stage of stages of change, Self-efficacy increase gradually and temptations decrease. In precontemplation stage, self-efficacy is low and temptation is high. In contemplation and ready to action stage, the gap between self-efficacy and temptation will decrease. In action stage, balance of self-efficacy and temptation is different because the effect of risk factors. In maintenance stage, temptation decrease and self-efficacy increase, same as contemplation stage. At the end, self-efficacy increases the higher and temptation decreases the lowest.

Self-efficacy is a good predictor of progression in changing behavior. Whoever has high self-efficacy in early stages of change, applied usual process of change, but in later stages of change, applied few process of change. The study found that self efficacy can be used to describe the change in stages of change.

Literature review found that Transtheoretical theory emphasized 5 stages in changing behavior; precontemplation stage, contemplation stage, ready to action stage, action stage, maintenance stage. Each stage consists of process that force person to past the stage. In addition, there are other related factors that effect to change behavior in each stage, such as decisional balance which is pros and cons of changing behavior and self efficacy although there are various temptations, which are provided to describe stages of change in smoking cessation behavior. However the study of all

factors was base on foreign context. But in Thailand, stages of change and some factors may be different. So we must know about stages of change and these factors in Thai context in order to apply the theory.

Section III Related literatures

The study of literature review and related research about smoking in Thailand and foreign found that there were similar and different in research designs. The researcher presented the results by dividing into 3 items:

- 3.1 Literature related to smoking in teenager
- 3.2 Literature related to smoking cessation program
- 3.3 Literature related to Transtheoretical theory

3.1 Literature related to smoking in teenager

Wanee Thipathom and Kritsana Sriwanwat (1977:85-92) National Institute of Cancer had studied about smoking in student boy at in high school, Bangkok. The study found most children, 89.76 per cent start to smoking at 10 years old and 40 per cent imitate friends, 40.37 per cent smoked for sociability.

Mala Raksaphrom (1984:๗-๙) had studied about social and psychological factors, predict intention to smoke in student boy at high school. The study found relationship between smoking in closed friends and intention to smoking.

Orawee Thanuphrapat (1989:๗-๙) had studies about smoking in 480 students that are members and not members of Friends for Friends, Bangkok. The study found that most of them never smoked. For smoking group, most started in early teenage. The motivation of smoking is craving to try, imitate friends, relations and teachers.

Varee Rungsuriyaviboon (1992:๗-๙) had studies about attitude and behavior respond in student at private vocational school, Bangkok. The study found that most students or 32.5 per cent had started to smoking since 15 years old; Brand of favorite

tobacco is Khrongthip. Motivation of smoking is to release stress, craving to try, imitate friends. Most students agree with antismoking in community, with negative attitude to smoking in community and approved smoking is harm to smokers' body and closed persons, altogether destroy environment and economy.

Nipon Kulanit (1995:79-80) had studied the comparison of difference between factors that are effect the start smoking and factors that are effect to quit smoking in 1,017 students at secondary high school, Chiangmai. The study found that Government policy factor (tobacco is a lawful addicting drug), health factor (don't know about smoking cause diseases), Social factor (persuasion, sociability, imitation), psychological factor (craving to try, relieve stress) effected to start to smoking.

Krohn (1987:337-349) had studied intimacy social theory and smoking in teenagers. The study found that teenagers smoked became of attachment with friends who smoke and found that dissatisfaction with social, family and school, all are cause of smoking.

Castrol (1987:273-289) researched to predict about smoking in teenagers. The study found that factor affected to smoking was a group of friends. So, smoking cessation program should be considering about friend.

Botvin, et, al (1944:67-73) had studied about smoking cessation in 757 young Americans. The study found that friends were the most important social factor of smoking. And mental factors such as hopeless, discouraged in ability and lose of self confident are related to smoking.

The literature review about smoking in teenager can divide the causes of smoking into 2 aspects. 1) External factors, such as family, friends and closed people who have smoking behavior, environment at home and school. 2) Internal factors, such as self confident, self-efficacy. All factors effect to smoking in teenager

3.2 Literature related to smoking cessation program

Panomporn Lekachareoan (1989:๗-๙) had studied the effectiveness of smoking cessation program to smoking behavior of 80 labors in factory industry, in

Bangkok area. The study found that in the posttest, mean of knowledge, self-efficacy, self-expectation and behavior to quit is more than pretest. In addition, age, smoking expenses and number of tobacco consumed per day were related to smoking cessation.

Chatchawan Singharathanasiri (1991:๓-๗) had studied the effectiveness of smoking cessation program in 90 students of technique Supranburi college. The study found that in the posttest, mean of self-expectation and self-efficacy in experiment group were significantly higher than comparison group and significantly higher than pretest. And found that age, education level, branch of education, the beginning of smoking, and duration of smoking are not related to smoking cessation.

Nittaya Yenchum (1992:๓-๗) had studied about health and belief in smoking cessation in male, personnel officers at hospital. The study found that health belief was significantly and positively related to the conduct of smoking cessation, age, average income/month were significantly negative related to conduct for smoking cessation, but with number of family smoking and closed friends smoking were significantly and positively related to conduct for smoking cessation. Health motivation was the best predictor to predict conduct for smoking cessation.

Kanya Boonchuy (1992:๓-๗) had studied about the effectiveness of self control to quit in 37 volunteer men, personnel officers at Vachira Hospital. They were divided into 2 groups, experimental group of 50 and comparison group of 47. The study found that in the posttest, knowledge and attitude about smoking was significantly better than pretest. The experimental group could quit 10 per cent, in addition, socio-economic factors such as education level was significantly related to smoking cessation knowledge, age was significantly related to attitude about smoking, but conduct for smoking cessation is not significant related to social factor and economic sufficiency factor.

Chutharat Julrod (1993:๓-๗) had studied about the effectiveness of health education program with social supportive by friends, about smoking cessation in 120 grade 1 students of Technique Shongkla College. They were divided to experimental

group comparison group. The study found that in the posttest, students changed knowledge, attitude to tobacco and behavior of smoking cessation were significantly better than pre test, is significantly. In addition, conduct for relieve stress is related to smoking cessation. And social support factors, such as number of smoking person in family, smoking friends, income, and economic sufficiency were not significantly related to smoking cessation of students.

Pensri Pleankum (1993:ก-ข) had studied about the effectiveness of health education program with social supportive in smoking cessation of 128 boys, primary high school students, Ratchaburi Province. They were divided into experimental group of 58 persons and comparison group of 70 persons. The study found that in the posttest, the experimental group provided susceptibility and severity of disease, benefit of compliance and conduct for smoking cessation were significantly better than pretest and significantly better than comparison group. In addition, the experimental group could quit 70 per cent that was significantly more than in the comparison group that could quit 5 per cent.

Kumlaithip Ranoi (1993:ก-ข) had studied about the effectiveness of health education program by applying Health Belief Model with self-efficacy theory in 103 boys, student of Physical education college, Bangkok. They were divided into experimental group of 54, and comparison group of 49. The study found that in the posttest the experimental group perceived susceptibility, severity, self-efficacy, self-expectation and conduct for smoking cessation were significantly better than pretest, and significantly better than comparison group. In addition, the perception of susceptibility, severity, self-efficacy, self-expectation were significantly related to conduct for smoking cessation. And in the posttest experimental group could quit 48 per cent that was significantly more than in the comparison group that could quit 6 per cent. And the beginning of smoking, duration of smoking, family smoking, closed friends smoking were not significantly related to smoking cessation, but conduct for smoking cessation is significantly related to smoking cessation.

Rena Thitibenjapol (1993:๓-๖) had studied about the effectiveness of health education program with social support in smoking cessation in boy student, at primary high school, in Nonthaburi Province, by apply Social learning theory. The group processed with social support from friends and parents were provided to health education program. Samples were smoking boy students in high school, which were divided into experimental group of 49, and a comparison group of 50. The study found that in the posttest the experiment groups have knowledge in self-efficacy and conduct smoking cessation significantly better than pre test. And the experimental group could quit 71.4 per cent, couldn't quit 28.57 per cent but can decrease amount of tobacco to average of 2 tobaccos/day and found that knowledge and self efficacy were significantly related to conduct for smoking cessation, but self expectation was not significantly related to conduct for smoking cessation. Duration of smoking and tobacco expenses has significantly negative relation to conduct for smoking cessation. Closed friends smoking all over in and out school were not significantly related to conduct for smoking cessation. In the experimental group, ratio of students who could quit was significantly more than comparison group.

Nittaya Pensirinapa (1995:๓-๖) had studied about the effect of empowerment in smoking prevention program for primary high school students by training leaders of students to participate in smoking prevention. The study found that in the posttest all of leaders and general students changed self-respect, self-efficacy and behavior of smoking more significantly than in the control group. And it was found that the experimental group smoked significantly less than the control group.

Pathagon Kanjanophat (1995:๓-๖) had studied about the effectiveness of Friends Help Friends Project in smoking cessation behavior of Technique school's students, in Chaiyaphum Province, by applying Social Learning Theory and concept of friends teach friends to provide health education activity. The research is one group experimental design. Samples were 94 professional diploma students, grade 1 and 2. The health education program was undertaken mutually by 40 friends. The study found that in the posttest the sample changed knowledge, self-efficacy, and self-expectation conduct for smoking cessation significantly better than pretest and could

quit 42.5 per cent. In addition, it was found that self-efficacy and self-expectation were significantly related to conduct for smoking cessation.

Curry, et al (1991:318-340) had studied the comparison of the internal and external motivation in smoking cessation program. From the 1,217 samples, and found that the external motivation group, gave money as a reward, and were interested in information and conduct for smoking cessation significantly less than internal motivation group. The internal motivation group had self-control that was drive to be interested in information and conduct for smoking cessation. In period of following 3-12 months, internal motivation group had better self-control and rate of cessation is 2 times more that that of external motivation group.

Orlean,et al, (1991:439-480) compared 4 methods of smoking cessation by randomly selected people who wanted to quit and had moderated and intensed smoking. There were 2,021 samples, divided into 4 experimental groups and 1 control group. Group 1 advice to quit. Goup2 advise to quit with social support from family and friends. Group3 advise to quit with phone recall support. Group 4 given with a reward to quit. The study found that the rate of smoking cessation of group 1 is more than the control group and it is the same level as group 4. Group2 is not affected to smoking cessation. And group3 has the highest rate of smoking cessation.

The literature review about program of smoking cessation found that personal factors are related to smoking cessation behavior, such as average number of tobacco consumed per day, the start smoking age. There were various theories and concepts applied to smoking cessation, such as self efficacy, self esteem, motivation, social support, life skill. The result of program found that the posttest rate of smoking decrease, knowledge and attitude about smoking is better. But due to the limitation of time and budget, the assessment in the long run is unidentified. In addition, it lacks of understanding of the nature of demand and self-efficacy in each person, cause to smokers not to quit at the end of the program and return to smoke.

3.3 Literature related to Transtheoretical theory

Pitsamai Jaruchawarit (1995:๗) had studied the effectiveness of health education activity to change behavior to prevent HIV infection in pregnancies by applying Transtheoretical theory. There were experimental group of 62 and comparison group of 62, provided with health education activity for experimental group during 12 weeks. The study found that the experimental group had knowledge and attitude significantly better than pretest. And the attitude is significantly related to prevention behavior of HIV infection.

Kulwan Nararak (1997:๓) had studied the effectiveness of health education program about smoking cessation behavior in male students at primary high school, by applying Transtheoretical theory with social support and group processing. There were experimental group of 42, and comparison group of 44, provided with activities during 10 weeks according to process of change. The result, the experimental group change attitude toward smoking, knowledge about risk and harm from smoking, self efficacy and conduct were significantly better than pretest and significantly better than comparing group, and Self efficacy was significantly related to conduct.

Prochaska, et al, (1982:983-990) had studied the samples that could but return to smoking. And found that persons quit permanently because of smoking cessation activity and self-awareness. Persons return to smoking because of personal and environmental factors. So activity should be providing to create self-awareness in changing behavior.

Prochaska and Diclemente, (1983:390-395) had studied the assessment to divided persons into various stages base on decision by using instrument called “Change Assessment Scale” to divided target group for activity of smoking cessation. The study found that the reliability is 88 per cent, and Prochaska and Diclemente studied the cause of changing in persons from smoking to quit, base on timing to change as same as the study in persons who want to quit smoking.

Precontemplation	Never think about smoking cessation in the last 6 months.
Contemplation	Never think about smoking cessation in the last 6 months, but think about smoking cessation in the last 30 days.
Ready to action	Think about smoking cessation and plan to quit in next 30 days by using several methods, such as decrease amount of tobacco every day.
Action	Start to quit for less than 6 months.
Maintenance	Quitted for more than 6 months.

The information from the study can help to provide activity to enhance prevention behavior.

Snow, Prochaska and Rossi (1992) had studied stage in change of smokers who drank alcohol. The study found that stages of change are just like other smokers. Decisional balance in precontemplation stage, pros of smoking are higher than cons. Changing behavior from contemplation stage and ready to action stage, cons of smoking increase more than pros, and self efficacy increase in precontemplation and contemplation stages of change in behavior.

Marcus, Rakowski and Rossi (1992) had developed the measurement of decisional balance and self-efficacy on exercising program for smoking cessation (Velicer, et al, 1985). The study found that pros and cons in decisional balance were related to stage of exercise adoption, which was the as same as smoking cessation (Velicer, et al, 1985), weight control (O'Connell and Velicer, 1988), mammogram (Rakowski, et al, 1992). In addition self-efficacy was a good predictor of exercise in the next 6 months by assess the perception of cost and benefit in exercise.

Marcus and Owen (1992) had studied the relationship between decisional balance, self-efficacy and stages of change on exercise program in workers, USA, Australian. The study found that self-efficacy related to stages of change in 2 sample groups, and self-efficacy in each stage was different (Diclemente, et al, 1985). Decisional balance related to stages of change in 2 sample groups, which agreed with smoking cessation (Velicer, et al, 1985) and weight control (O'Connell and Velicer, 1988)

Prochaska, et al, (1994:39-46) had studied the cross-sectional research to show the relationship between stages of change and decisional balance on 12 behavior

problems of 3,858 samples. Samples were divided into 12 groups according to behavior problems and every one of investigated and divided into 5 stages according to Transtheoretical theory. The problem behaviors were

1. Smoking cessation
2. To take cocaine
3. To control weight
4. To restrict high lipid food
5. Bad behavior of teenager
6. Safety sex
7. Condom used
8. Sun-block used
9. Gas touching
10. Exercise
11. Mammogram
12. Medical protective behavior and smoker

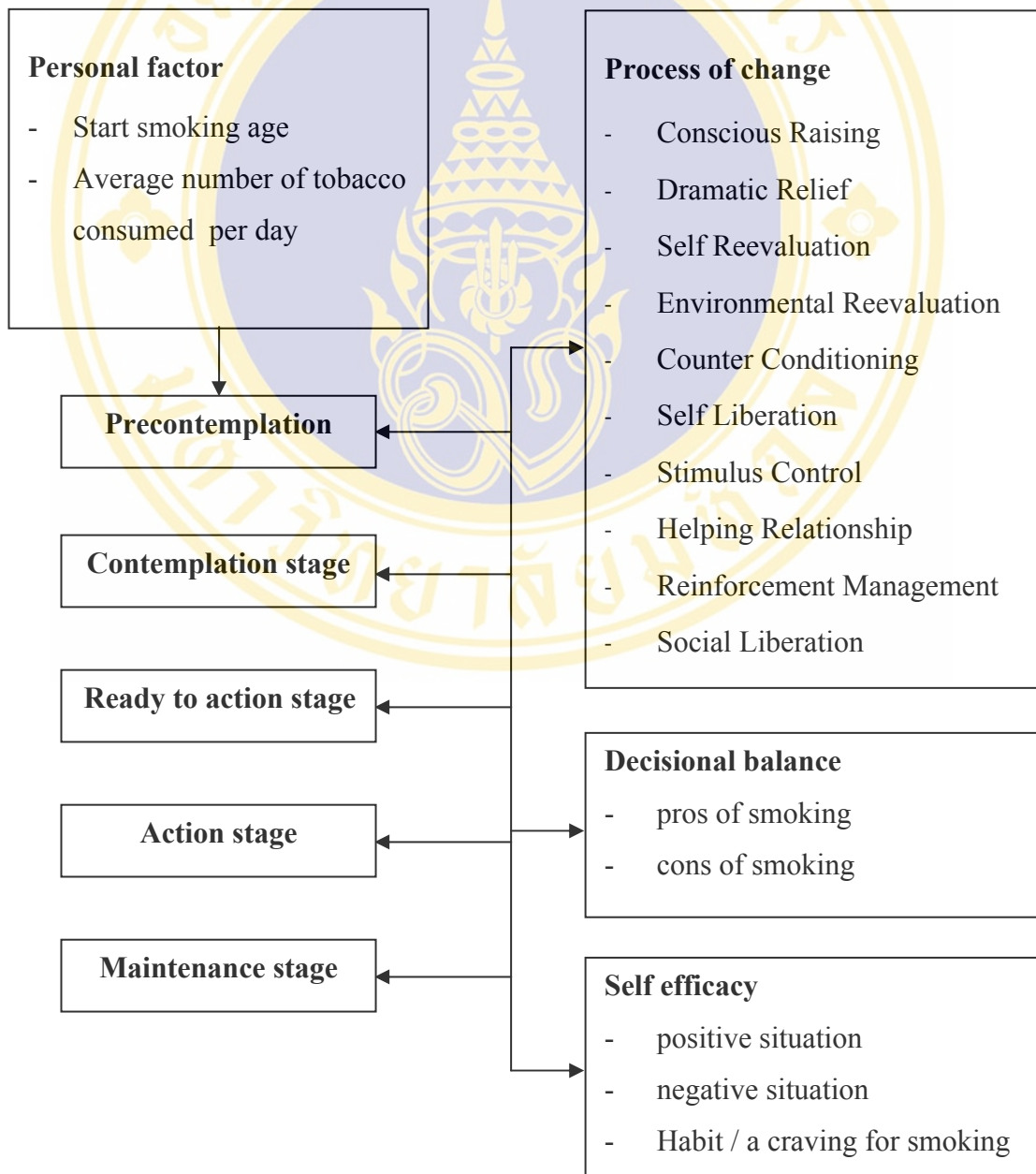
The study compared the score of pros and cons or obstacle to change behavior by using standard T-score, the result showed progression from contemplation to action stage depend on decreasing of cons and increasing pros to decisional balance.

Prochaska, et al, (1994:39-46) had reviewed the related literature to show that Transtheoretical theory can be used to describe method of changing HIV prevention behavior. There were independent variables such as 10 basic processes that are forced to change in each stage and dependent variables such as decisional balance, self-efficacy. The study found that conscious raising process and dramatic relief processes are used in contemplation and ready to action stage. Helping relationship and reinforcement are used in action and maintenance stage.

To studies and review literatures about applying stages of change found that it can be used to changing health behavior, and continuously maintaining behavior. The program was provided according to the demand in each stage. In Thailand, there were applications of theory to provided smoking cessation program, but it was not divided samples according to Transtheoretical theory, and provided just one program to all samples, so it does not fit to the individual needs. Samples did not continue the activity and returned to smoke at the end of program. So it is importance to study about stages

of change in smoking cessation behavior and personal factors such as, the start smoking age, number of tobacco consumed per day. Minor components of stages of change in smoking cessation behavior are process of change, decisional balance, and self-efficacy in conscript can help in providing suitable program that fit the needs of individual. So these factors and components are utilized as a conceptual framework.

Section IV Conceptual framework



CHAPTER III

RESEARCH METHODOLOGY

This research studied factors those were related to stages of change in smoking cessation behavior of conscript, Antiaircraft Artillery Division 1, and explain the research methodology in details, as listed below:

3.1 Research design

This research is a Cross-sectional Survey about distribute in each stages of change in smoking cessation behavior of conscript, Antiaircraft Artillery Division 1 and factors that effected to stages of change in smoking cessation behavior of conscript. It was considered in 4 aspects, Personal factors, Process of change, Decisional balance, and Self-efficacy.

3.2 Population and Sampling

Populations of the study were 1,507 conscripts, Antiaircraft Artillery Division 1, under Bangkok Army, 2003.

Determine the Sample size

The pilot study of 30 conscripts the Antiaircraft Artillery Division 1, found that there were 27 smokers, which accounted for 90 per cent. So the researcher picked up to determine the sample size in this study.

Determine the Sample size

$$n = \frac{Z^2 \times NP(1 - P)}{\alpha/2} + \frac{Z^2 \times P(1 - P) + Nd^2}{\alpha/2}$$

(Vilai Kusolvisitkul, 1981:17)

If n = sample size that adjust the parameter or know number of finite population

N = population size = 1,507

P = ratio between smokers and population from pilot study = 0.90

Z = statistical significant at .05 = 1.96

D = maximum error at 5 per cent = .05

$$\begin{aligned} \text{Compute } n &= \frac{1.96^2 \times [1,507 \times 0.90 \times (1 - 0.90)]}{1.96^2 \times [0.90 \times (1 - 0.90) + 1,507 \times .05^2]} \\ &= 126.33 \text{ persons} \end{aligned}$$

In this study, add 50 samples to protect the lost of questionnaires and data. So the samples size for this study should not be less than 176 persons.

3.3 Sample selection

The sample calculation found that the samples in this study should be at least 176 from the total of 1,507 conscripts. And the selection is done by using systematic proportional random sampling method.

1. Calculate samples by proportional in Antiaircraft Artillery Division 1, which consists of 11 minor battalions, to determining the required sample size distribution from each minor battalion.

Table Proportional samples of 176 conscripts from 1,507 populations

Unit	Number of conscript	
	Number of population	Number of sample
1 st adr	206	24
2 nd adr	204	24
3 rd adr	132	16
4 th adr	200	23
5 th adr	225	26
6 th adr	220	26
7 th adr	135	16
Quartermaster Battalion	32	4
13 th RA. Battalion	55	6
13 th Signal Battalion	50	6
Armored Battalion	40	5
Total	1,507	176

2. Take list of conscripts in each minor unit and select the required samples by using systematic random sampling method.
3. Interview the conscripts who had smoking behavior in the last 6 months.
4. Select only samples that smoked and had been smoked before. And passing the case that didn't fit the requirement to the next until all the required numbers of samples are taken.

3.4 Research Instrument

The instrument used to gathering required data was questionnaire "Study of factors effect to stages of change in smoking cessation behavior of conscript, Antiaircraft Artillery Division 1. It was divided into 5 parts, which consist of:

Part 1 Questionnaire for general data and smoking behavior

The researcher constructed questionnaire, which asking about age, place of birth, education level, economic sufficiency, marital status, average number of tobacco consumed per day, start smoking age, the used to other additions, type of tobacco

consumed, manners of smoking, time of smoking, and duration time between wake up and first tobacco smoking. The type of questions were checklists and fill in the blank. The questionnaire also included questions about smoking behavior of family and friends, motivation to smoking, method of smoking cessation, cause of still smoking, to be answer in rating scale.

Part 2 Questionnaire for stages of change in smoking cessation behavior

The researcher applied the stages of change measurement of Diclemente, Prochaska, Fairhurst, Velicer, Rossi, Velasquez (1995), which was multiple choices, in order to classify the samples into 5 stages of smoking behavior, as follow:

1. **Precontemplation** is a stage that a person never thinking of smoking cessation in the last 6 months.
2. **Contemplation** is a stage that a person thinking about quit smoking in the last 30 days.
3. **Ready to action** is a stage that a person thinking about quit smoking in the next 30 days and plan to quit by using several methods e.g. decrease amount of tobacco in each day.
4. **Action** is a stage that a person quit smoking for less than 6 months.
5. **Maintenance** is a stage that a person quit smoking for more than 6 months.

Part 3 Questionnaire for process of change

The researcher applied the process of change measurement, which was component that is used in stages of change, forcing to move to the next stage. The 10 processes of Prochaska, Velicer, Diclemente, Fava (1988) were rating scale of 40 items to assess frequency of practice in smoking behavior.

Frequency criteria

- Never = 1
- Rare = 2
- Sometimes = 3
- Often = 4
- Regular = 5

This was divided into

- Conscious Raising item 6 ,8,10,17
- Dramatic Relief item 11,30,31,32
- Self Reevaluation item 25,35,36,38
- Environmental Reevaluation item 9,21,34,39
- Counter Conditioning item 5,26,27,28
- Stimulus Control item 15,23,29,37
- Helping Relationship item 1,3,14,40
- Reinforcement Management item 12,19,22,33
- Social Liberation item 2,7,20,24
- Self Liberation item 4,13,16,18

Part 4 Questionnaire for Decisional Balance

The researcher applied the decisional balance measurement of Velicer, Diclemente, Prochaska, Brandenburg (1985), which weighted rating scale between benefit, and obstacle or negative result of smoking cessation. It consisted of 2 parts, part 1 refer to benefit, smoking satisfaction and part 2 refer to dissatisfaction to smoke from social, family and self assessed, weighted between benefit and harm of smoking to decide to quit. Those are 20 rating scale questions.

Decision criteria

- Extremely agree = 5
- Agree = 4
- Uncertain = 3
- Not agree = 2
- Extremely not agree = 1

by Pros item 1,3,5,7,9,11,13,15,17,19

Cons item 2,4,6,8,10,12,14,16,18,20

Part 5 Questionnaire for Self-efficacy

The researcher applied the self-efficacy measurement of Velicer, Diclemente, Prochaska (1990). There were 3 situations that stimulated to smoke, which are: positive situation, such as in the party or stay close to person who is smoking. And negative situation, such as stress, anxiety, and when they are craving for smoking. To estimate self-efficacy in situation those stimulate to relapse. Those are 20 Rating scale questions.

Level of stimulating situation

- Most = 5
- Many = 4
- Moderate = 3
- Few = 2
- Least = 1

By	Positive situation	item	1,4,6,9,10,16
	Negative situation	item	3,5,7,8,17,18,19
	Habit / a craving for smoking	item	2,11,12,13,14,15,20

3.5 Instrument construction

Processes of instrument construction

1. Conduct pilot study with 30 conscripts, Antiaircraft Artillery Division 1, in May 2001 to gathered required information.
2. Study literatures from books, journals, and researches about smoking cessation and some effectiveness of smoking cessation programs.
3. Study literatures from books, journals and researches about stages of change in smoking cessation behavior, Process of change, Decisional balance, Self-efficacy in various groups and make research's conceptual framework.
4. Construct questionnaire to gather general information of conscript to study relationship between personal factors and stages of change, and use as basic data in the study.
5. Review questionnaire about related factors and apply to measure 5 parts as follow:
 - Stages of change in smoking cessation behavior.
 - Personal factors.
 - Process of change of smoking cessation.
 - Decisional balance of smoking cessation.
 - Self-efficacy of smoking cessation.

3.6 Instrument testing

1. All questionnaires were examined by advisers and revised according to the recommendation.
2. All questionnaires were examined by 5 qualified experts to examined content and linguistics. Revised questionnaires according to recommendation.
3. Submit revised questionnaires to adviser to finalized.
4. Try out with 30 conscripts of Patrol Company, 1st division, the King's Guard. Then revised and tested statistical qualification.
5. Analyze reliability of questionnaires with alpha coefficient of Cronbach. The reliability is as following.

Factor category	Alpha coefficient
Process of change	0.93
Decisional balance	0.73
Self efficacy	0.90

3.7 Data Collection

Processes and methods of gathering data

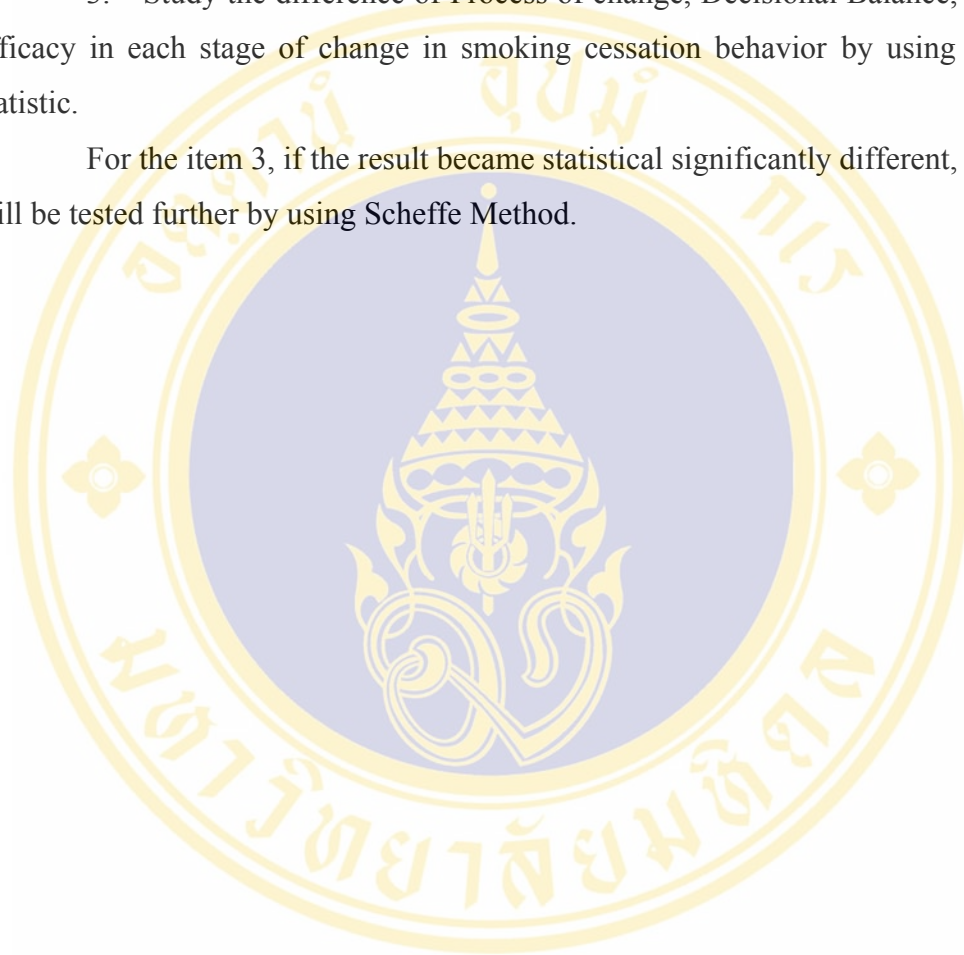
1. Take a letter from Faculty of Graduate study, Mahidol University to the superior of Antiaircraft Artillery Division 1 for approval of the proposal.
2. Co-ordinate with health cares officers and welfare department of the conscript.
3. The researcher collected data on appointment by applying the questionnaire to the selected samples who smoke and quitted smoking in the last 6 months.
4. Give questionnaire and introduce the researcher, purpose of research, describe details of the questionnaires. Sample answered the question within 1 hour.

3.8 Statistical Analysis

After collecting data, the researcher prepares and completed data processing by using SPSS software, with the following statistics.

1. Study personal factors, stages of change in smoking cessation behavior by using descriptive statistics such as number, percentage.
2. Study the relationship between personal factors and stages of change in smoking cessation behavior by using Chi-square Test, Fisher's exact Test.
3. Study the difference of Process of change, Decisional Balance, and Self-efficacy in each stage of change in smoking cessation behavior by using ANOVA statistic.

For the item 3, if the result became statistical significantly different, each pair will be tested further by using Scheffe Method.



CHAPTER IV

RESULT

The aim of the research is to study the stages of change in smoking cessation behavior among conscript Antiaircraft Artillery Division1 under Army. The sample size of 176 conscripts, were interviewed by using questionnaire. The results are presented and divided as follows:

Part 1 Descriptive analysis, general background, and the stages of change in smoking cessation behavior in each of conscript.

Part 2 The associations between personal factors and stages of change of smoking cessation behavior among conscripts.

Part 3 A comparison of process of change, decisional balance, and self-efficacy in each stage of change of smoking cessation behavior.

Part 4 Summarization of the set of the independent factors related to stages of change in the smoking cessation behavior among conscripts.

Part 1 Descriptive analysis, general background, and the stages of change in smoking cessation behavior being in each of conscript

Table 1 Number and percentage of the samples were classified according to the stages of change in smoking cessation behavior

Stages of change in smoking cessation behavior	number	percentage
Precontemplation	46	26.14
Contemplation	55	31.25
Ready to action	43	24.43
Action	7	3.98
Maintenance stage	25	14.20
Total	176	100.00

As shown in table 1, it was found that nearly 31 per cent of all were in the precontemplation stage. And the percentage of 26.14, 24.13 and 14.20 were in the stage of contemplation, ready to action and maintenance accordingly. Only 4 per cent were in the action stage.

4.1 General characteristic

Age From table 2, it was found that 60.23 per cent were older than 22 years old. Nearly 34 per cent were in the cessation of contemplation.

Place of birth. Nearly 63 per cent of the samples whom born in the countryside were in contemplation stage and 29.09 per cent were in ready to action stage, 34.85 percent of the samples whom born in Bangkok were in the contemplation stage (Table 2)

Level of Education 55 per cent of the samples had completed their education at the high school level. Among this group, 37.11 per cent were in the contemplation stage. However, 36.13 and 33.33 per cent of the samples those graduated for professional diploma and bachelor degree were in the stage of precontemplation.

Intestinally, 32.26 per cent of the respondents with elementary were in the stage ready to action of the smoking cessation behavior (Table 2).

Marital statuses about 88.07 per cent of the samples were single and 31.61 per cent were being in contemplation stage. The 28.57 per cent of married group were in precontemplation stage (Table 2).

Income Nearly 59 per cent of the samples had income less than 2,190 baht. Among this group 30.77 per cent were in the precontemplation stage. And 40.28 per cent had income higher than 2,190 baht, were in the contemplation stage (Table 2).

Economic sufficiency 48.86 per cent of the samples had no saving. Among this group 36.05 per cent were in the contemplation stage. The 32.14 per cent of saving group were in the contemplation stage and 32.35 per cent of in dept group were being in precontemplation stage, as same as ready to action stage (Table 2).

Table 2 Number and percentage of the samples classified by individual characteristic and stages of change in smoking cessation behavior.

Individual characteristic	Stages of change in smoking cessation behavior						Total Number (%)
	Precontem - plation	Contem- plation	Ready to action	Action	Main- tenance		
	Number (%)	Number (%)	Number (%)	Number (%)	Number (%)	Number (%)	
Age							
< 22 years	17 (24.29)	24 (34.29)	20 (28.57)	4 (5.71)	5 (7.14)	70 (100.00)	39.77
≥ 22 years	29 (27.36)	31 (29.25)	23 (21.70)	3 (2.83)	20 (18.87)	106 (100.00)	60.23
Total	46 (26.14)	55 (31.25)	43 (24.43)	7 (3.98)	25 (14.20)	176 (100.00)	100.00
Place of birth							
Bangkok and a field	17 (25.76)	23 (34.85)	11 (16.67)	4 (6.06)	11 (16.67)	66 (100.00)	37.50
Countryside	29 (27.36)	32 (29.09)	32 (29.09)	3 (2.73)	14 (12.73)	110 (100.00)	62.50
Total	46 (26.14)	55 (31.25)	43 (24.43)	7 (3.98)	25 (14.20)	176 (100.00)	100.00

Table 2 (Continued)

Individual characteristic	Stages of change in smoking cessation behavior						
	Precontem - plation	Contem- plation	Ready to action	Action	Main- tenance	Total	
	Number (%)	Number (%)	Number (%)	Number (%)	Number (%)	Number (%)	(%)
Level of Education							
Elementary	8 (25.81)	8 (25.81)	10 (32.26)	0 (0.00)	5 (16.13)	31 (100.00)	17.61
High school	21 (21.65)	36 (37.11)	23 (23.71)	5 (5.15)	12 (12.37)	97 (100.00)	55.11
Professional diploma	12 (36.36)	10 (30.30)	6 (18.18)	2 (6.06)	3 (9.09)	33 (100.00)	18.75
Bachelor's degree or higher	5 (33.33)	1 (6.67)	4 (26.67)	0 (0.00)	5 (33.33)	15 (100.00)	8.52
Total	46 (26.14)	55 (31.25)	43 (24.43)	7 (3.98)	25 (14.20)	176 (100.00)	100.00
Marital status							
Single	40 (25.81)	49 (31.61)	39 (25.16)	7 (4.52)	20 (12.90)	155 (100.00)	88.07
Married	6 (28.57)	6 (28.57)	4 (19.05)	0 (0.00)	5 (23.81)	21 (100.00)	11.93
Total	46 (26.14)	55 (31.25)	43 (24.43)	7 (3.98)	25 (14.20)	176 (100.00)	100.00
Income							
≤ 2,190 baht	32 (30.77)	26 (25.00)	29 (27.88)	3 (2.88)	14 (13.46)	140 (100.00)	59.09
> 2,190 baht	14 (19.44)	29 (40.28)	14 (19.44)	4 (5.56)	11 (15.28)	72 (100.00)	40.91
Total	46 (26.14)	55 (31.25)	43 (24.43)	7 (3.98)	25 (14.20)	176 (100.00)	100.00
Economic sufficiency							
Have saving	17 (30.36)	18 (32.14)	13 (23.21)	1 (1.79)	7 (12.50)	56 (100.00)	31.82
No saving	18 (20.93)	31 (36.05)	19 (22.09)	6 (6.98)	12 (13.95)	86 (100.00)	48.86
In debt	11 (32.35)	6 (17.65)	11 (32.35)	0 (0.00)	6 (17.65)	34 (100.00)	19.32
Total	46 (26.14)	55 (31.25)	43 (24.43)	7 (3.98)	25 (14.20)	176 (100.00)	100.00

4.2 Smoking behavior and external factors

Start smoking age 61.36 per cent of the samples start to smoke at the age of 16-22 years old, and 37.04 per cent of them were in the contemplation stage. 36.76 per cent among the group age 10-15 years old, were in the precontemplation stage (Table 3).

Smoking behavior combined with the use of other addictive drugs 37.50 per cent of all were smoked and used of other addictive drug. 34.85 per cent of these groups were in the contemplation stage. Nearly 62.50 per cent of all were smokers who were not using any other of addictive drugs, were in the contemplation stage, and 29.09 per cent were in ready to action stage (Table 3).

Type of tobacco smoked 88.07 per cent of all smokes the filter type tobacco and 31.62 per cent were in the contemplation stage. 30.51 per cent of smokers who smoke the tobacco type with the non-filter were in the contemplation and ready to action stage (Table 3).

Average number of tobacco consumed per day Most of respondents (75.57 per cent) have experience of smoking on the average of 4 to 16 roll per day, and 34.59 per cent were the in contemplation stage. 42.31 per cent of smokers who smoke the tobacco more than 16 rolls per day were in the precontemplation stage. 47.06 per cent of smokers who smoke the tobacco less than 4 cigarettes were in the maintenance stage (Table 3).

Manners of smoking the two combined manners, inhale and exhale deeply to the lung was popular among the respondents and accounted for 56.82 per cent. 33 per cent were in the contemplation stage. 32.61 per cent who had manners exhaled of smoking were in the contemplation stage. 46.67 per cent that had manners inhale smoke to lung were in the precontemplation stage (Table 3).

Time of smoking 30.53 per cent of the samples likes to smoke before/after eating or drinking beverage and 30.63 per cent were in the contemplation stage. Nearly 31.20 per cent smokes after wake up, and rest or other was in the percontemplation stage. 29.27 per cent of whoever smokes when they are stress and anxiety were in percontemplation, as the same as contemplation stage. 34.48 per cent of whoever smokes doing activity were in the stage of contemplation (Table 3).

Duration time between wake up and first tobacco smoking Nearly 35 per cent of the samples start to smoke the first tobacco of the day after wake up for more than 30 minutes and 39.34 per cent were in the stage of contemplation. 32.76 per cent of smokers who had duration time of first tobacco of the day less than 15 minutes were in precontemplation and 29.82 per cent duration time of first tobacco of the day 15 to 30 minutes were in ready to action stage (Table 3).

Smoking behavior of the related person Nearly 40 percent of the samples had closed friends who smoke and 30.23 per cent were being in the contemplation stage. 30.60 per cent and 34.13 per cent of the smokers, who had smoking commander and parents, were in the stage of contemplation.

Motivation to smoking Reason for smoking was reported by smokers differently, 34.75 per cent said that they want to try. Among this group 24.39 per cent were in the stage of contemplation following by ready to action and maintenance stage with 24.39 per cent, and 24.39 per cent respectively. Another motivation was for relaxation and imitation from their friends, teachers, and commander stages of change in smoking cessation behavior in precontemplation stage 35.90 per cent and 33.33 per cent respectively (Table 4).

Motivation to quit The study found from the samples those gave high priority to the answer that. 27.65 per cent of the samples reported the motivation to quit, as they were requested from surrounding people and among this group 35 per cent were in ready to action stage, motivation to quit smoking were fear of the smoking harm, health problem and social offence. And 39.22 per cent, 30.00 per cent, 41.18 per cent and 43.75 per cent of those reasons mentioned above were in the contemplation stage (Table 4).

Method of smoking cessation The study found from the samples those gave high priority to the answer that 28.68 per cent reported the method of smoking cessation by exercising and 35.14 per cent of this group were in contemplation stage. 23.64 per cent used stop-smoking method and 42.62 per cent of them were in the precontemplation stage (Table 4).

The reasons of relapse smoking (precontemplation, contemplation, action stage) The study found from the cases that the samples select the most important answer. 41.76 per cent reported the reason of relapse to smoking again, that weak in

mind and among this group was ready to action stage for 34.21 per cent. 51.61 per cent of the sample who were in the precontemplation smoke because loneliness and stress, (Table4).

Table 3 Number and percentage of the samples, classified by smoking behavior and stages of change in smoking cessation behavior.

Smoking behavior	Stages of change in smoking cessation behavior						Total (%)
	Precontem- -plation	Contem- -plation	Ready to action	Action	Main- tenance	Total	
	Number (%)	Number (%)	Number (%)	Number (%)	Number (%)	Number (%)	
Start smoking age							
10-15 years old	25 (36.76)	15 (22.06)	18 (26.47)	1 (1.47)	9 (13.24)	68 (100.00)	38.64
16-22 years old	21 (19.44)	40 (37.04)	25 (23.15)	6 (5.56)	16 (14.81)	108 (100.00)	61.36
Total	46 (26.14)	55 (31.25)	43 (24.43)	7 (3.98)	25 (14.20)	176 (100.00)	100.00
Smoking combined with the use of other addictive drugs							
Yes	17 (25.76)	23 (34.85)	11 (16.67)	4 (6.06)	11 (16.67)	66 (100.00)	37.50
No (Only smoking)	29 (27.36)	32 (29.09)	32 (29.09)	3 (2.73)	14 (12.73)	110 (100.00)	62.50
Total	46 (26.14)	55 (31.25)	43 (24.43)	7 (3.98)	25 (14.20)	176 (100.00)	100.00
Type of tobacco							
Non filter	14 (23.73)	18 (30.51)	18 (30.51)	3 (5.08)	6 (10.17)	59 (100.00)	11.93
Filter	32 (27.35)	37 (31.62)	25 (21.37)	4 (3.42)	19 (16.24)	117 (100.00)	88.07
Total	46 (26.14)	55 (31.25)	43 (24.43)	7 (3.98)	25 (14.20)	176 (100.00)	100.00
Average number of tobacco consumed per day							
< 4 Rolls	2 (11.76)	3 (17.64)	2 (11.76)	2 (11.76)	8 (47.06)	17 (100.00)	9.66
4-16 Rolls	33 (24.81)	46 (34.59)	37 (27.82)	5 (3.76)	12 (9.02)	133 (100.00)	75.57
> 16 Rolls	11 (42.31)	6 (23.08)	4 (15.38)	0 (0.00)	5 (19.23)	26 (100.00)	14.77
Total	46 (26.14)	55 (31.25)	43 (24.43)	7 (3.98)	25 (14.20)	176 (100.00)	100.00

Table 3 (Continued)

Smoking behavior	Stages of change in smoking cessation behavior						Total (%)
	Precontem- -plation	Contem- -plation	Ready to action	Action	Main- -tenance	Total	
	Number (%)	Number (%)	Number (%)	Number (%)	Number (%)	Number (%)	
Manners of smoking							
Inhale smoke	14 (46.67)	7 (23.33)	5 (16.67)	1 (3.33)	3 (10.00)	30 (100.00)	17.05
Exhale smoke	9 (19.56)	15 (32.61)	14 (30.34)	3 (6.52)	5 (10.87)	46 (100.00)	26.14
Both Manners	23 (23.00)	33 (33.00)	24 (24.00)	3 (3.00)	17 (17.00)	100 (100.00)	56.82
Total	46 (26.14)	55 (31.25)	43 (24.43)	7 (3.98)	25 (14.20)	176 (100.00)	100.00
Time of smoking (answer more than 1)							
While doing activity	34 (29.31)	40 (34.48)	29 (25.00)	4 (3.45)	9 (7.76)	116 (100.00)	22.14
Before/after eating or beverage drinking	45 (28.31)	49 (30.63)	38 (23.27)	7 (4.38)	21 (13.13)	160 (100.00)	30.53
When feel stress/anxiety	36 (29.27)	36 (29.27)	32 (26.02)	5 (4.07)	14 (11.38)	123 (100.00)	23.47
After wake up, rest or other	39 (31.20)	37 (29.60)	29 (23.20)	6 (4.80)	14 (11.20)	125 (100.00)	23.85
Total	154 (29.39)	162 (30.92)	128 (24.43)	22 (4.20)	58 (14.07)	524 (100.00)	100.00
Duration time between wake up and first tobacco smoking							
Less than 15 minutes	19 (32.76)	15 (25.86)	13 (22.41)	4 (6.90)	7 (12.67)	58 (100.00)	32.95
15-30 minutes	15 (26.23)	16 (28.07)	17 (29.82)	1 (1.75)	8 (14.04)	57 (100.00)	32.39
more than 30 minutes	12 (19.67)	24 (39.34)	13 (21.31)	2 (3.28)	10 (16.39)	61 (100.00)	34.66
Total	46 (26.14)	55 (31.25)	43 (24.43)	7 (3.98)	25 (14.20)	176 (100.00)	100.00

Table 4 Number and percentage of the samples classified by external factor about smoking and stages of change in smoking cessation behavior.

External factor about smoking	Stages of change in smoking cessation behavior						Total Number (%)
	Precontem- -plation	Contem- -plation	Ready to action	Action	Main- tenance		
	Number (%)	Number (%)	Number (%)	Number (%)	Number (%)	Number (%)	
Smoking behavior of related person (especially in the person who are currently active smoking)							
Parents/relatives	32 (25.40)	43 (34.13)	31 (24.60)	5 (3.97)	15 (11.90)	126 (100.00)	29.17
Commanders	37 (27.61)	41 (30.60)	34 (25.37)	5 (3.73)	17 (12.69)	134 (100.00)	31.02
Closed friends and lover	46 (26.74)	52 (30.23)	43 (25.00)	7 (4.07)	24 (13.95)	172 (100.00)	39.81
Total	115 (26.62)	136 (31.48)	108 (25.00)	17 (3.94)	56 (12.96)	432 (100.00)	100.00
Method of smoking cessation (specific selection from most important answer)							
Avoid from stimulate smoking situation	12 (27.91)	13 (30.23)	8 (18.60)	3 (6.98)	7 (16.28)	43 (100.00)	16.67
Gradually decrease amount of smoking/day	8 (15.69)	14 (27.45)	18 (35.29)	2 (3.92)	9 (17.65)	51 (100.00)	19.77
Exercise	26 (35.14)	25 (33.78)	14 (18.95)	1 (1.35)	8 (10.81)	74 (100.00)	28.68
Stop smoking	26 (42.62)	13 (21.31)	9 (14.75)	2 (3.28)	11 (18.03)	61 (100.00)	23.64
Sucking lozenge/ chewing gum	6 (20.69)	8 (27.59)	13 (44.83)	0 (0.00)	2 (6.90)	29 (100.00)	11.24
Total	78 (30.23)	73 (28.29)	62 (24.03)	8 (3.10)	37 (14.34)	258 (100.00)	100.00

Table 4 (Continued)

External factor about smoking	Stages of change in smoking cessation behavior				
	Precontemplation	Contemplation	Ready to action	Total	
	Number (%)	Number (%)	Number (%)	Number (%)	(%)
The reasons to relapse smoking (select only the most important answer)					
Weak in mind	12 (31.58)	13 (34.21)	13 (34.21)	38 (100.00)	41.76
Think disease is not happen to yourself	1 (21.50)	6 (75.00)	1 (12.50)	8 (100.00)	8.79
Friends persuaded	2 (33.33)	3 (50.00)	1 (16.67)	6 (100.00)	6.59
Feel lonely/stress	16 (51.61)	8 (25.81)	7 (22.58)	31 (100.00)	34.07
Don't want to quit	2 (25.00)	1 (12.50)	5 (62.50)	8 (100.00)	8.79
Total	33 (36.26)	31 (34.07)	27 (29.67)	91 (100.00)	100.00

Part 2 The associations between personal factors and the stages of change of smoking cessation behavior among conscripts

The presentation was divided the stages of change in smoking cessation behavior into 5 stages, but the action stage and maintenance stage have samples less than 5 person, and it is not fit to the precondition of Chi-square statistic. So researcher would like to present by including of action stage and maintenance stage, together.

Table 5 Number and percentage of the samples cross-tabulated by start smoking age and the stages of change in smoking cessation behavior.

Start smoking age	Stages of change in smoking cessation behavior					Total (%)
	Precontem- -pation	Contem- -plation	Ready to action	Action and Maintenance		
	Number (%)	Number (%)	Number (%)	Number (%)	Number (%)	
10-15 years old	25 (36.76)	15 (22.06)	18 (26.47)	10 (14.71)	68 (100.00)	38.64
16-22 years old	21 (19.44)	40 (37.04)	25 (23.15)	22 (20.37)	108 (100.00)	61.36
Total	46 (26.14)	55 (31.25)	43 (24.43)	32 (18.18)	176 (100.00)	100.00
		$X^2 = 8.71$	$df = 3$	$p\text{-value} = 0.03$		

From Table 5, the samples had start smoking age of 16-22 years old, among this group, 37.04 per cent were in the stage contemplation following by ready to action, action and maintenance stage with 23.15 per cent, 20.37 per cent, respectively. But in the samples who had start smoking age of 10-15 years old, 36.76 per cent were in the stage of precontemplation following by contemplation and ready to action stage with 22.06 per cent, 26.47 per cent, respectively. However, the association was found significantly at 0.03 levels between start smoking age and the stages of change in smoking cessation behavior. It is shown that the samples who had start smoking age of 16-22 years old has trend in stages of change in smoking cessation behavior higher than the samples who had start smoking age of 10-15 years old.

Table 6 Number and percentage of the samples cross tabulated by average number of tobacco consumed per day and the stages of change in smoking cessation behavior.

Average number of tobacco consumed per day	Stages of change in smoking cessation behavior					Total	Total (%)
	Precontem- - plation	Contem- - plation	Ready to action	Action and Maintenance			
	Number (%)	Number (%)	Number (%)	Number (%)	Number (%)		
< 4 Rolls	2 (11.76)	3 (17.64)	2 (11.76)	10 (58.85)	17 (100.00)	9.66	
4-16 Rolls	33 (24.81)	46 (34.59)	37 (27.82)	17 (12.78)	133 (100.00)	75.57	
> 16 Rolls	11 (42.31)	6 (23.08)	4 (15.38)	5 (19.23)	26 (100.00)	14.77	
Total	46 (26.14)	55 (31.25)	43 (24.43)	32 (18.18)	176 (100.00)	100.00	
		X² = 26.28		df = 6		p-value = 0.00	

From Table 6, the respondents have experience for average number of tobacco of cigarettes per day in the range less than 4 Rolls, 58.85 per cent were in the action and maintenance stage. In the range of 4-16 Rolls, 34.59 per cent were in the contemplation stage and the range more than 16 Rolls, 42.31 per cent were in the precontemplation stage. However, the association was found significantly at 0.03 levels between average number of tobacco consumed per day and the stages of change in smoking cessation behavior. That shows average number of tobacco consumed per day less than that of the terminal stage.

Part 3 Comparisons of process of change, decisional balance, and self-efficacy in each stage of change of smoking cessation behavior

Table 7 Comparison of process of change in each stage of change in smoking cessation behavior

Process of change	Stages of change in smoking cessation behavior					F-Value	df	Sig.
	Precontem- plation	Contem- plation	Ready to action	Action	Main- tenance			
Conscious Raising	12.59 (3.82)	13.76 (3.19)	13.49 (2.86)	14.14 (3.44)	13.88 (3.73)	1.042	4	.39
Dramatic Relief	11.37 (3.57)	13.44 (2.35)	12.74 (2.72)	14.14 (2.73)	12.96 (4.29)	3.265	4	.01*
Self Reevaluation	12.22 (3.53)	13.62 (3.02)	13.58 (2.67)	15.86 (3.39)	16.44 (3.34)	8.138	4	.00*
Environmental Reevaluation	11.76 (3.81)	13.47 (3.12)	12.70 (3.38)	13.43 (2.44)	14.40 (3.67)	2.902	4	.02*
Counter Conditioning	10.22 (4.38)	13.47 (3.13)	11.58 (3.00)	13.00 (3.00)	14.52 (3.51)	8.549	4	.00*
Self Liberation	10.48 (4.43)	13.87 (3.28)	12.51 (3.52)	13.86 (3.98)	14.24 (3.33)	6.801	4	.00*
Stimulus Control	10.02 (4.37)	11.38 (3.94)	10.39 (3.37)	11.57 (3.51)	11.96 (4.03)	1.462	4	.22
Helping Relationship	11.13 (3.70)	11.33 (3.73)	12.28 (3.16)	13.00 (3.11)	12.58 (3.07)	1.378	4	.24
Reinforcement Management	10.35 (4.30)	12.07 (4.33)	12.60 (3.42)	13.57 (3.31)	13.52 (3.96)	3.330	4	.01*
Social Liberation	14.80 (3.44)	14.78 (3.02)	14.42 (2.61)	14.14 (2.12)	14.96 (2.98)	0.224	4	.93

*=Significant at $P < .05$, standard deviation (SD) show in bracket below average

From Table 7, it was found that there was no significantly different between the process of change in each stage of change in smoking cessation. However, the difference was found significantly between six independent factors in each stage of change such as dramatic relief, self reevaluation, environmental reevaluation, counter conditioning, self-Liberation, and reinforcement management at .01, .00, .02, .00, .00, .01 level, respectively. Details of the difference in each process is shown in Table 8 –13

Table 8 A comparison of dramatic relief process used in each stage of change in smoking cessation behavior.

Stages of change in smoking cessation behavior		Mean Difference (Significant)				
		Precontem- - plation	Contem- - plation	Ready to action	Action	Main- - tenance
	\bar{X}					
Precontemplation	11.37	-	2.07* (0.03)	1.37 (0.37)	2.77 (0.31)	1.53 (0.38)
Contemplation	13.44	-	-	0.69 (0.88)	0.71 (0.99)	0.48 (0.98)
Ready to action	12.74	-	-	-	1.40 (0.88)	0.22 (1.00)
Action	14.14	-	-	-	-	1.18 (0.94)
Maintenance	12.96	-	-	-	-	-

* = Significant at $P < .05$

From Table 8, the significantly difference was found in dramatic relief at .03 level between the contemplation and precontemplation stage. The average scores of the contemplation stage were higher than that of the precontemplation stage.

Table 9 A comparison of self-reevaluation process used in each stage of change in smoking cessation behavior.

Stages of change in smoking cessation behavior		Mean Difference (Significant)				
		Precontem- - plation	Contem- - plation	Ready to action	Action	Main- - tenance
	\bar{X}					
Precontemplation	12.22	-	1.40 (0.30)	1.36 (0.39)	3.64 (0.09)	4.22* (0.00)
Contemplation	13.62	-	-	0.04 (1.00)	2.24 (0.54)	2.82* (0.01)
Ready to action	13.58	-	-	-	2.28 (0.53)	2.86* (0.01)
Action	15.86	-	-	-	-	0.58 (1.00)
Maintenance	16.44	-	-	-	-	-

* = Significant at $P < .05$

From Table 9, the significantly difference was found in self-reevaluation at .00 level between the maintenance and precontemplation stage. Also 0.01 level was significantly different of self-reevaluation between the maintenance and contemplation stage. And .01 was significantly different of self-reevaluation process between the maintenance and ready to action stage. The average score of self-reevaluation in the maintenance stage were higher than the precontemplation, contemplation, and ready to action stage.

Table 10 A comparison of environmental reevaluation process used in each stage of change in smoking cessation behavior.

Stages of change in smoking cessation behavior		Mean Difference (Significant)				
		Precontem- - plation	Contem- - plation	Ready to action	Action	Main- - tenance
	\bar{X}					
Precontemplation	11.76	-	1.71 (0.19)	0.94 (0.80)	1.67 (0.84)	2.64* (0.05)
Contemplation	13.47	-	-	0.78 (0.87)	0.04 (1.00)	0.93 (0.87)
Ready to action	12.70	-	-	-	0.73 (0.99)	1.7 (0.42)
Action	13.43	-	-	-	-	0.97 (0.98)
Maintenance	14.40	-	-	-	-	-

* = Significant at $P < .05$

From Table 10, the significantly difference was found in the environmental reevaluation at .05 level between the maintenance and precontemplation stage. The average score of the environmental reevaluation in the maintenance stage were higher than the precontemplation stage.

Table 11 A comparison of Counter condition process used in each stage of change in smoking cessation behavior.

Stages of change in smoking cessation behavior	\bar{X}	Mean Difference (Significant)				
		Precontem- - plation	Contem- - plation	Ready to action	Action	Main- - tenance
Precontemplation	10.22	-	3.26* (0.00)	1.36 (0.51)	2.78 (0.44)	4.30* (0.00)
Contemplation	13.47	-	-	1.89 (0.14)	0.47 (1.00)	1.05 (0.82)
Ready to action	11.58	-	-	-	1.42 (0.91)	2.94* (0.03)
Action	13.00	-	-	-	-	1.52 (0.91)
Maintenance	14.52	-	-	-	-	-

* = Significant at $P < .05$

From Table 11, the significantly difference was found in the counter condition at .00 level, between the contemplation and precontemplation stage. There was also significantly different of counter condition between the maintenance and precontemplation stage at 0.00. And there was significantly different of counter condition between the ready to action and maintenance stage at 0.03. The average score of counter condition in the contemplation stage were higher than the precontemplation stage; the maintenance stage has average score of counter condition higher than precontemplation and ready to action stage.

Table 12 A comparison of self-liberation process used in each stage of change in smoking cessation behavior.

Stages of change in smoking cessation behavior	\bar{X}	Mean Difference (Significant)				
		Precontem- - plation	Contem- - plation	Ready to action	Action	Main- - tenance
Precontemplation	10.48	-	3.39* (0.00)	2.03 (0.16)	3.38 (0.29)	3.76* (0.00)
Contemplation	13.87	-	-	1.36 (0.52)	0.02 (1.00)	0.37 (1.00)
Ready to action	12.51	-	-	-	1.35 (0.94)	1.73 (0.49)
Action	13.86	-	-	-	-	0.38 (1.00)
Maintenance	14.24	-	-	-	-	-

* = Significant at $P < .05$

From Table 12, the significantly difference was found in self-liberation at .00 level between the contemplation and precontemplation stage. And there was also significantly different of self-liberation between the maintenance and precontemplation stage at 0.00. The average score of self-liberation in the contemplation stage were higher than the precontemplation stage. And maintenance stage has averaged score of self-liberation higher than that of the precontemplation stage.

Table 13 A comparison of reinforcement management process used in each stage of change in smoking cessation behavior.

Stages of change in smoking cessation behavior	\bar{X}	Mean Difference (Significant)				
		Precontem- -plation	Contem- -plation	Ready to action	Action	Main- -tenance
Precontemplation	10.35	-	1.72 (0.34)	2.26 (0.14)	3.22 (0.43)	3.17* (0.04)
Contemplation	12.07	-	-	0.53 (0.98)	1.5 (0.93)	1.45 (0.70)
Ready to action	12.60	-	-	-	0.97 (0.99)	0.92 (0.94)
Action	13.57	-	-	-	-	0.05 (1.00)
Maintenance	13.52	-	-	-	-	-

* = Significant at $P < .05$

From Table 13, the significantly difference was found in the reinforcement management at .04 level, between the maintenance and precontemplation stage. The average score of reinforcement management in the maintenance stage were higher than the precontemplation stage.

Table 14 A comparison of decisional balance of smoking cessation in each stage of change in smoking cessation behavior.

Decisional balance of smoking cessation	Stages of change in smoking cessation behavior					F-Value	df	Sig.
	Precontem- -plation	Contem- -plation	Ready to action	Action	Main- -tenance			
Pros of smoking	36.00 (5.20)	37.84 (5.64)	36.14 (5.71)	39.29 (4.19)	38.80 (5.71)	1.898	4	.11
Cons of smoking	32.39 (5.07)	29.62 (5.50)	29.86 (6.77)	33.00 (3.92)	30.00 (5.85)			

* = Significant at $P < .05$

From Table 14, the study found that there was no significantly different between decisional balance of smoking cessation and the stages of change in smoking cessation behavior.

Table 15 A comparison of self-efficacy of smoking cessation in each stage of change in smoking cessation behavior.

Self efficacy of smoking cessation	Stages of change in smoking cessation behavior					F-Value	df	Sig.
	Precontem- plation	Contem- plation	Ready to action	Action	Main- tenance			
Positive situation that affect to smoking cessation	20.30 (4.33)	18.67 (2.93)	19.00 (4.62)	20.00 (5.42)	18.32 (5.12)	1.376	4	.24
Negative situation that affect to smoking cessation	22.98 (5.99)	21.82 (4.32)	21.30 (5.77)	21.00 (7.75)	20.56 (8.25)	0.835	4	.51
Habit and a craving for smoking	22.78 (4.35)	21.49 (3.65)	20.81 (4.61)	20.57 (8.38)	18.72 (6.59)	3.077	4	.02*

* = Significant at $P < .05$

From Table 15, the significantly difference was found no statistical in self-efficacy of smoking cessation in each stage of change in smoking cessation behavior. However, it was found that there was significantly different of minor component about habit and a craving for smoking in each stage of change in smoking cessation behavior at .02. The difference of Self-efficacy of smoking cessation in each stage of change in smoking cessation behavior about habit and a craving for smoking in shown in Table 16

Table 16 A comparison of self-efficacy of smoking cessation about habit and a craving for smoking in each stage of change in smoking cessation behavior.

Stages of change in smoking cessation behavior		Mean Difference (significant)				
		Precontem- - plation	Contem- - plation	Ready to action	Action	Main- - tenance
	\bar{X}					
Precontemplation	22.78	-	1.29 (0.77)	1.97 (0.44)	2.21 (0.86)	4.06* (0.02)
Contemplation	21.49	-	-	0.68 (0.98)	0.92 (0.99)	2.77 (0.22)
Ready to action	20.81	-	-	-	0.24 (1.00)	2.09 (0.56)
Action	20.57	-	-	-	-	1.85 (0.94)
Maintenance	18.72	-	-	-	-	-

* = Significant at $P < .05$

From table 16, the significantly difference was found in the habit and a craving for smoking at .02 level between the precontemplation and maintenance stage. The average score of habit and a craving for smoking in the maintenance stage were less than the precontemplation stage.

Part 4 Summarization of the set of the independent factors related to stages of change of the smoking cessation behavior among conscripts.

Table 17 Summarization of the set of the independent factor related to stages of change of the smoking cessation behavior among conscripts.

Precontemplation	Contemplation	Ready to action	Action	Maintenance
1. Dramatic relief 2. Self reevaluation 3. Environmental reevaluation 4. Counter condition 5. Self liberation 6. Reinforcement management	1. Self reevaluation	1. Self reevaluation 2. Counter condition		

As shown in Table 17, considered the smoking cessation behavior, it was found that most of the respondents were in the early stages. Which were precontemplation stage, contemplation stage, and ready to action stage. Consistently, the associations between the set of independent variables and smoking cessation behavior were found only for 3 early stages. Statistically, the six independent factors related differently to each stage of smoking cessation, which were dramatic relief, self reevaluation, environmental reevaluation, counter condition, self liberation and reinforcement management. In the precontemplation stage, the average score was the lowest for those six independent factors. Only self-reevaluation was the lowest in the contemplation stage. Anyway, ready to action stage had the lowest average score for self-reevaluation and counter condition.

CHAPTER V

DISCUSSION

The purpose of the study is to investigate the distribution of the sample population in the stages of change in smoking cessation behavior among conscript, Antiaircraft Artillery Division 1, as well as other interested topics listed below:

5.1 Distribution of the sample in the stages of change in smoking cessation behavior of conscripts.

5.2 Personal factors, which are associated with the smoking behavior of the conscripts.

5.3 Association between personal factors and distribution in stages of change in smoking cessation behavior of the conscript

5.4 Difference between Process of change, Decisional balance, Self efficacy in each stage of change in smoking cessation behavior of the conscript

5.1 Distribution of the sample population in the stages of change in smoking cessation behavior

From this study, the distribution of the sample population revealed that Precontemplation stage accounted for 26.14 per cent, Contemplation stage accounted for 31.25 per cent, Ready for action stage accounted for 24.43 per cent, Action stage accounted for 3.98 per cent, and Maintenance stage accounted for 14.20 per cent.

5.2 Personal factors that are related to smoking

Personal factors of samples in this study are listed as follow:

Age samples were ≥ 22 years old, according to the military rule, conscript must be atleast 21 years old, and samples were conscript who had worked for the government for more than 1 year.

Place of birth Most samples have place of birth in countryside.

Marital status Most samples were single.

Education level Most samples have education at high school level.

Income per month Samples had income \leq 2,190 Baht per month because regular salary is 2,190 Baht per month. So whoever had income \geq 2,190 Baht per month mean that they received supportive money from the others.

Economic sufficiency Samples had economic sufficiency in level of sufficiency, not saving, anyhow it is depended on expenses of each person.

Starting smoking age Samples started to smoke at the age of 16 - 22 years old. And it can be described by developmental theory that this is a period of middle and late teenage, they are curious and want to try smoking that cause them to smoke. This result was consistent with the Nationwide Statistical Office 2001. It was found that the beginning of that first smoking is around 18 years old.

Average numbers of tobacco consumed per day Samples smoke \geq 10 Rolls of tobacco per day, and the average amount is 10 Rolls per day. This finding was consistent with the Nationwide Statistical Office 2001. It was found that the average number of tobacco consumed per day is 10.5 Rolls.

Type of tobacco Most of the samples smoked tobacco with filter.

Manners of smoking Manners of smoking of the samples were combined with inhale smoke to lung and exhale.

Time of smoking Most samples smoke before/after meal or drinking beverage because it is relaxed period, and it is not forbidden during this period.

Duration time between wake up and first tobacco smoking Samples have different duration time between wake up and the first tobacco smoking, which were $<$ 30 minutes, 15-30 minutes and $>$ 30 minutes.

Smoking behavior combined with the use of other addictive drugs 35.80 per cent of samples smoked and also used other addictive drugs, as smoking could cause a person to use other addicting drugs. Consistently, studied of Prakit Vathesathakit also found that whoever use other addicting drugs e.g. alcohol, heroin, amphetamine, and cannabis had started with smoking.

Smoking behavior of closed person Most samples had parents, relatives, bosses, and closed friends that were active smoker. These intimation and relationship is smoking model for the samples.

Motivation to smoking Most of the samples start smoking, as they were wanted to try. The studied of Chanuanthong Thanasugan and Phayao Thanmanee was also found that the cause of smoking, were mainly because satisfaction from smoking, relieves stress, trial, and persuasion.

Motivation to quit Motivation to quit smoking of the sample was from the request of surrounding people, and afraid of harm from smoking.

Method of smoking cessation Smoking cessation method of the conscripts were exercise and find substitute activities.

Motivation to continue smoking the results from samples those still smokes shown that the motivation was because loneliness and stress. This means that smoking cessation is also depended on feeling.

5.3 Association between personal factors and the stages of change

Discussion of hypothesis 1.1 and 1.2 were association between personal factors such as start smoking age, average number of tobacco consumed per day and the stages of change

Hypothesis 1.1 Start smoking age is associated with the stages of change

Start smoking age. Statistical significant association was found between start smoking age and each stage of change, which was consistent with hypothesis 1.1. Most samples began to smoke since the age of 16 – 22 years old, the middle and late period of teenage that have more maturity than 10 - 15 years old teenager, the early teenage. So the group that started smoking since 16 - 22 years old age range was in the contemplation stage. And the group that started smoking since 10 - 15 years old age range was in the precontemplation stage. Meaning that whoever smokes during youth will be in the early stages of change and is difficult to quit smoking than older people. It was consistent with Phanomporn Laekachalearn (1989:A-B) that age was a factor related to smoking cessation and disagree with Chatchawan Singharathanasiri (1991:A-B) and Kumlaithip Ranoi (1993:A-B), who found that start smoking age and number of years smoking was not related to quit cessation. So the prevention of smoking behavior needed to be applied to young people by giving them health education, to have the correct social values, because it is more difficult to convince older people than young people.

Hypothesis 1.2 Average number of tobacco consumed per day is associated to stages of change.

Average number of tobacco consumed per day It was found that the average number of tobacco consumed per day was significantly associated to the stages of change, which consistent with hypothesis 1.2. Whoever smoked tobacco more than 16 rolls per day was classified into the precontemplation stage. And whoever smoked tobacco less than 16 rolls were classified into the action and maintenance stage. It means that whoever smoked very few tobaccos can quit smoking easier than those who smoked a lot. This result was consistence to the result of Phanomporn Laekachalearn (1989:๗-๙), who found that the number of tobacco consumed per day was related to smoking cessation.

5.4 Difference between Process of change, Decisional balance, and Self-efficacy in each stage of change.

The explanations of the difference between process of change, decisional balance, and self-efficacy in each stage of change according to the hypothesis are listed below:

Hypothesis 2 Process of change is different in each stage of change

The study found that the total of the ten processes were not significantly different in each stage of smoking cessation behavior, which was contrast to hypothesis 2. However, there were six independent factors in the processes of change, which were significantly different in each stage of change in smoking cessation behavior, such as dramatic relief, self-reevaluation, environmental reevaluation, counter condition, self-liberation, and reinforcement management.

Dramatic relief

There was significantly different of dramatic relief between the precontemplation and contemplation stage. Dramatic relief is the feeling or emotion about the disease, harmful, and smoking caution. In the precontemplation stage, nobody thinks about quit smoking, because the feeling or emotion about the disease, harms, and smoking caution is low. But the feeling and emotion were increased in the

contemplation stage. So there is slightly difference of dramatic relief in the precontemplation and contemplation stage. The results recommended that the activity about dramatic relief should be provided specially in the precontemplation stage, this finding was also consistent with Chanuanthong Thanasugan and Suree Chantaramolee (1999:63).

Self-reevaluation

There was significantly different of self-reevaluation between the maintenance and precontemplation stage, between maintenance and contemplation stage, and between maintenance and ready to action stage. Self-reevaluation is the revision of the previous experience, knowledge, and understanding, as well as impact of smoking. So whoever are in the maintenance stage can revise the previous experience about knowledge, understanding and impact of smoking, they can quit smoking easier than those persons who are in the precontemplation, contemplation, and ready to action stage. But the conscripts who are in the maintenance stage will be able to revise previous behaviors, and describe about harm of smoking better than those who in the early stage. So the result of this study suggested that the activities should provided self reevaluation in the precontemplation stage and maintain this activity until ready to action stage, this result was also consistent with Chanuanthong Thanasugan and Suree Chantaramolee (1999:63), who said that Self-reevaluation should be continued until the ready to action stage. It is certainty good if the smokers have correct self-reevaluation before they come to the action stage.

Environmental reevaluation

There was significantly different of environmental reevaluation between the maintenance and precontemplation stage. Environmental reevaluation is the consideration and evaluation about the impacts of smoking to closed people and the environment. So whoever are in the maintenance stage will consider and evaluate about the impact of smoking that will effect to people and environment much more than those who are in the percontemplation stage. Most of the conscripts, who smoked have low awareness about the impact of smoking to the others. The result suggested that the environmental reevaluation activity should be providing in the precontemplation stage, which this was consistent with Chanuanthong Thanasugan and Suree Chantaramolee (1999:63).

Counter condition

There was the difference of the counter condition in: (1) the contemplation and precontemplation stage, (2) maintenance and precontemplation stage, (3) maintenance and ready to action stage. Counter condition is the substitution of any good activity instead of smoking. So whoever are in the precontemplation stage will not think about quit smoking, and they will not select the benefit activity instead of smoking. But in the contemplation stage, a person would care more about quit smoking. A turning point to start thinking about quit smoking is in the maintenance stage when they can quit. Whoever are in the ready to action stage may begin to select the benefit activity instead of smoking, so they have counter condition less than those who are in the maintenance stage, but conscripts may have limitation to select activity because of rule, regulation and environment. This study suggests that the counter condition activity should be providing in the precontemplation stage, ready to action stage. To continue this activity, it may be provided in the contemplation stage, which also consistent with another studied (Chanuanthong Thanasugan and Suree Chantaramolee, 1999).

Self liberation

There was the difference of counter condition between the contemplation and precontemplation stage, between maintenance and precontemplation stage. Self-liberation is the belief that people can quit and promise to do so. Whoever are in the precontemplation stage will have low self-liberation and will not think about quit smoking, but whoever are in the contemplation stage will begin to think about that. So whoever are in the precontemplation stage have more self-efficacy than those who are in the maintenance stage. This will happen when they have a lot of self-liberation so they can quit. This study suggest that the self-liberation activity should be provided in the contemplation stage. Anyway, the study of Chanuanthong Thanasugan and Suree Chantaramolee (1999:63), also suggest that self liberation activity should be provide in the ready to action stage as well, since the smokers can be awaken by the harm of smoking before the behavior is in the next step of smoking cessation.

Reinforcement management

Reinforcement management is self-rewarding, that a person gives to himself for the success in continuing smoking cessation. There was the difference in

reinforcement management between the maintenance and precontemplation stage. So whoever are in the precontemplation stage will have low self-reward giving, but those who are in the maintenance stage have higher sense of self-reward giving. This study suggests that the reinforcement management activity should be providing in the precontemplation stage. Since of the conscripts have low education, in order to educate and train them about smoking cessation, the training might stimulate the idea to quit smoking. But among low to medium education groups, the reward or admiration may be giving in the early stage to enhance power to quit successfully. Anyway, the study of Chanuanthong Thanasugan and Suree Chantaramolee (1999:63), provide reinforcement management activity in the action and also in the maintenance stage, which was emphasize to maintain smoking cessation behavior.

The difference of some independent factors in each stage of change was consistent with the study of Chanuanthong Thanasugan and Suree Chantaramolee (1999:63). Each stage of change, consisted of some independent factors, and we must take them into consideration.

The samples in this study are different from the other young people in particular life style, living far from family, and the regulation's strictness. To provide the independent factors in each stage of change, we have taken their uniqueness into consideration. Then the result of the study can be used as a guideline to generate the smoking cessation program.

Hypothesis 3 Decisional balance is difference in each stage of change, it consist of pros and cons of smoking.

This study found that decisional balance was not statistically different in each stage of change, and was not consistent with hypothesis3. However, the disadvantages of smoking were increased slightly in the maintenance stage, while the benefit of smoking was slightly decreased. Because all of smokers who had quitted can realize benefit and harm of smoking from campaign and public relation from the various media but they didn't practice seriously and continuously. This is not consistent with Snow, Prochaska, Rossi (1992) and Marcus, Rakowski, Rossi (1992). They study about smoking in the person who drinks alcohol. In the precontemplation stage, pros of smoking was higher than cons, the transition from the contemplation stage to the ready to action stage, cons increased more than pros until changing to the maintenance

stage. In the previous studies, decisional balance caused the effectiveness of activity, evaluated progression of person about solving problem and showed problem, which protect a relapse.

Hypothesis 4 Self-efficacy is difference in each stage of change that consists of self-efficacy to positive/negative simulative situation and a craving for smoking.

The study found that self-efficacy was not significantly difference in each stage of change. This was not consistent with the hypothesis 4. But the component of craving for smoking was statistically different in each stage of change. There was difference of the craving for smoking between the precontemplation and maintenance stage. There was the craving for smoking in the precontemplation stage at a peak level and it was decreased sharply in the maintenance stage. Prochaska (1988) also found that behavior and the craving for smoking was at high level in the precontemplation stage. The discrepancy between self-efficacy and the craving for smoking was decreased in the action stage. The craving for smoking is lowest in the maintenance stage. The previous studies found that the self-efficacy in the precontemplation stage was lowest, which was showed that the perception of inferior complex and these is no intention to change the behavior while it was high. The action stage was increased, which was important indicator of progression to the action and maintenance stage. In this study, it was found that a craving for smoking was gradually decreased to the lowest level in the maintenance stage. This means that the simulative situation to smoking come from a craving for smoking has effect to the smoking behavior of the conscript. Provision of the intervention for conscripts need to consider the way of protection, and the way to decrease the craving for smoking.

CHAPTER VI

CONCLUSION AND RECOMMENDATION

This study is a survey research. The objectives of this research were to study the stages of change in smoking cessation behavior of the conscripts, study the association between personal factors e.g. age, education, economic sufficiency, smoking behavior of family and friends, start smoking age, average number of tobacco consumed per day. Including the difference of process of change, decisional balance, and self-efficacy in each stage of change in smoking cessation behavior of the conscripts. The Transtheoretical theory of Prochaska was applied as a conceptual framework of research.

The samples of this study were 1,507 conscripts Antiaircraft Artillery Division 1, under Army, Ministry of Defense Bangkok, 2001. Duration of the data collecting was from June 1- 30, 2004.

Instrument of data collection was a questionnaire, constructed by the researcher, aimed to collect general data, experience, smoking behavior, stages of change in smoking cessation behavior, process of change, decisional balance, and self efficacy. The researcher made the appointment with the sample population and used self-administered questionnaire to collect the data. The statistics used in the research analysis include number, percentage, Chi-square, Fisher's exact test and ANOVA. The conclusion of the research results are listed below:

6.1 Conclusion

1. Stage of changes in smoking cessation behavior.

From the study, it was found that nearly 31 per cent of all were in the precontemplation stage. While the contemplation, ready to action, and maintenance stages accounted for 26.14 per cent, 24.13 per cent, and 14.20 per cent accordingly. And only about 4 per cent were in the action stage.

2. General characteristic, experience, and smoking cessation behavior of conscript

From the study, it was found that 60.23 per cent of respondents were older than 22 years old, and nearly 63 per cent were born in the countryside. About 55 per cent of the samples had completed their education at the high school level, and 88.07 per cent were single. Nearly 59 per cent of the samples had income less than 2,190 Baht, and 48.86 per cent of the sample had not reached economic sufficiency level.

Around 61.36 per cent of samples started to smoke since 16-22 years old, and 75.57 per cent of them smoked on average number of 4-16 tobaccos per day. And 88.07 per cent of all smoked the filter type tobacco, in two combined manners, inhale and exhale, 56.82 per cent of the respondents like to inhale deeply to the lung. 30.53 per cent of the samples like to smoke before/after eating or drinking beverage. Nearly 35 per cent of the samples smoke the first tobacco of the day after wake up for 30 minutes. And 37.50 per cent of all do smoke and use other addictive drugs.

Nearly 40 per cent all of samples had closed friends who smoked. The reasons of smoking were reported by smokers differently, 34.75 per cent said that they want to try, 27.65 per cent reported the motivation to quit, because they were requested by surrounding people. 28.68 per cent of them reported the methods of smoking cessation, which was exercise, and 41.76 per cent reported the reason of relapse to smoking again because they cannot make up their mind to quit.

3. The associations between the start smoking age, average number of tobacco consumed per day and the stages of change.

The study found that start smoking age was significantly related to the stages of change in smoking cessation behavior with the coefficient of .03, average number tobacco of consumed per day is significantly related to the stages of change in smoking cessation behavior at p-value less than .00.

4. The difference of process of change, decisional balance, and self-efficacy in each stage of change in smoking cessation behavior.

The study found that there was no significantly different between the process of change and the stage of change in smoking cessation behavior. However, the six independent factors, which are dramatic relief, self-reevaluation, environmental

reevaluation, counter conditioning, self-liberation, and reinforcement management was significantly different in each stage of change in smoking cessation behavior.

Decisional balance consists of pros and cons, but there was no significantly different of decisional balance in each stage of change in smoking cessation behavior.

Self-efficacy consists of positive simulative situation, negative simulative situation, behavior and a craving for smoking. The study was found that it was significantly different at .02, from the habit and a craving for smoking in each stage of change in smoking cessation behavior.

6.2 Recommendation

The recommendation policy implication and the suggestion for the future researches are providing as follow:

Recommendation to utilize

1. The study found that most conscripts were in contemplation stage that they never think about quitting in the last 6 months but they thinking and planing to quit smoking in the next 30 days. It was a good chance of the policy maker to provide the health education program and smoking cessation program for conscript. The programs should be provided by considered the individually stage of change, which would be more effective and are able to protect the relapsed smoking behavior.

2. It was found in the study that the average number of tobacco smoked per day was 4-16, which was high amount. In addition, the environment with friends and surrounding peoples smoked tobacco could lead the conscript to start smoking and and use other of addictive drugs later on. Therefore the policy about environmental management, tobacco and other addictive drug availability should be concerned. Additionally, the method of smoking cessation is exercise and just quit instantly, were guideline for the conscripts to quit.

3. The study found that there were different of process of change in each stage that can be used as a guideline for smoking cessation program in each stage of change, which are suitable for the conscripts. By applying self-efficacy to support activity that lead to quit permanently.

Recommendation for the future research

1. This study did not find the association between personal factors, which were age, education, economic sufficiency, smoking behavior of family and friends, and stage of change in smoking cessation behavior. This is the conscripts those have homogeneously characteristic. But for the other groups, who have different personal characteristic, the association may be found between the personal characteristics and stages of change in behavior.

2. This study found that 35.80 per cent of the conscripts used other addicting drugs with smoking. So the future study should concerned and aimed to develop the intervention program to protect or change-addicting drug abused behavior of conscript.

3. The future study can use this research information to design the suitable activity that fit several of the processes of change, including self-efficacy in the teenager groups.

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รายนามผู้ทรงคุณวุฒิตรวจสอบความตรงของแบบสอบถาม

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กรรมการแพทย์ทหารบก โรงพยาบาลพระมงกุฎเกล้า



แบบฟอร์มใบยินยอมให้ทำการวิจัย
การวิจัยเรื่อง ขั้นตอนการเปลี่ยนแปลงพฤติกรรมกรรมการเลิกสูบบุหรี่ ของทหารกองประจำการกองพล
ทหารปืนใหญ่ต่อสู้อากาศยานที่ 1
 วันให้คำยินยอม วันที่.....เดือน.....พ.ศ.

ก่อนที่จะลงนามในใบยินยอมให้ทำการวิจัยนี้ ข้าพเจ้าได้รับการอธิบายจากผู้วิจัยถึงวัตถุประสงค์ของการวิจัย วิธีการวิจัย ข้อเสี่ยงที่อาจเกิดขึ้นจากการวิจัย รวมทั้งประโยชน์ที่จะเกิดขึ้นจากการวิจัยอย่างละเอียด และมีความเข้าใจดีแล้ว

ผู้วิจัยรับรองว่าจะตอบคำถามต่าง ๆ ที่ข้าพเจ้าสงสัยด้วยความเต็มใจ ไม่ปิดบังซ่อนเร้นจนข้าพเจ้าพอใจ

ข้าพเจ้ามีสิทธิที่จะบอกเลิกการเข้าร่วมในโครงการวิจัยนี้เมื่อใดก็ได้ และเข้าร่วมโครงการวิจัยนี้โดยสมัครใจและการบอกเลิกการเข้าร่วมการวิจัยนี้ จะไม่มีผลใดๆต่อข้าพเจ้าต่อไป

ผู้วิจัยรับรองว่าจะเก็บข้อมูลเฉพาะเกี่ยวกับตัวข้าพเจ้าเป็นความลับ และจะเปิดเผยได้เฉพาะในรูปที่เป็นสรุปผลการวิจัย การเปิดเผยข้อมูลเกี่ยวกับตัวข้าพเจ้าต่อหน่วยงานต่าง ๆ ที่เกี่ยวข้อง กระทำได้เฉพาะกรณีจำเป็นด้วยเหตุผลทางวิชาการเท่านั้น

ผู้วิจัยรับรองว่าหากมีข้อมูลเพิ่มเติมที่ส่งผลกระทบต่อการศึกษาข้าพเจ้าจะได้รับการแจ้งให้ทราบโดยไม่ปิดบัง ซ่อนเร้น

ข้าพเจ้าได้อ่านข้อความข้างต้นแล้วและมีความเข้าใจดีทุกประการ และได้ลงนามในใบยินยอมนี้ด้วยความเต็มใจ

ลงนาม.....ผู้ยินยอม

ลงนาม.....พยาน

ลงนาม.....พยาน

ID.....

แบบสอบถามสำหรับงานวิจัยเรื่อง

ขั้นตอนการเปลี่ยนแปลงพฤติกรรมกรรมการสูบบุหรี่ของทหารเกณฑ์กองพลทหารปืนใหญ่ต่อสู้อากาศยานที่ 1

โดย

น.ส.ลลิตา เขตต์กู่ฎี

นักศึกษาหลักสูตรปริญญาวิทยาศาสตรมหาบัณฑิต(สาธารณสุขศาสตร์)

สาขาวิชาเอกพยาบาลสาธารณสุข

คณะสาธารณสุขศาสตร์ มหาวิทยาลัยมหิดล

คำชี้แจงก่อนตอบแบบสอบถาม (โปรดอ่านให้เข้าใจก่อนตอบแบบสอบถาม)

1. แบบสอบถามนี้มี 8 หน้า (รวมทั้งปกหน้า) แบ่งเป็น 4 ส่วนดังนี้
ส่วนที่ 1 ข้อมูลทั่วไปและขั้นตอนการเปลี่ยนแปลงพฤติกรรมกรรมการเลิกสูบบุหรี่ของผู้ตอบ
ส่วนที่ 2 กระบวนการเปลี่ยนแปลงพฤติกรรมกรรมการเลิกสูบบุหรี่
ส่วนที่ 3 การวิเคราะห์ถึงผลดี ผลเสียของการเลิกสูบบุหรี่ (ความสมดุลในการตัดสินใจเลิกสูบบุหรี่)
ส่วนที่ 4 ความคาดหวังในความสามารถตนเองในการเลิกสูบบุหรี่
2. แบบสอบถามของการทำวิจัยครั้งนี้ ใช้เพื่อทำวิทยานิพนธ์ของนักศึกษาปริญญาโท สาขาวิชาเอกพยาบาลสาธารณสุข คณะสาธารณสุขศาสตร์ มหาวิทยาลัยมหิดล คำตอบที่ได้จากท่าน ผู้วิจัยจะเก็บเป็นความลับ และจะไม่มีผลกระทบต่อตัวผู้ตอบ โดยขอแนะนำเสนอในภาพรวมเพื่อเป็นประโยชน์ต่อการวางแผนและการจัดโปรแกรมสุขศึกษาเพื่อการเลิกสูบบุหรี่ที่ถูกต้องแก่ทหารเกณฑ์ต่อไป ผู้วิจัยจึงขอความร่วมมือให้ท่านตอบตามความเป็นจริงและตอบทุกข้อ

ขอขอบพระคุณอย่างสูง

ส่วนที่ 1 ข้อมูลทั่วไป

โปรดเติมเครื่องหมาย ✓ ในช่องว่าง หรือเติมข้อความให้สมบูรณ์

1. ขณะนี้ท่านมีอายุ..... ปี
2. ภูมิลำเนาเดิม กรุงเทพฯ และปริมณฑล ภาคกลาง ภาคเหนือ
 ภาคอีสาน ภาคใต้ ภาคตะวันออก ภาคตะวันตก
3. ระดับการศึกษาสูงสุด
 ไม่ได้เรียนหนังสือ ประถมศึกษา ระบุชั้น..... มัธยมศึกษา ระบุชั้น..... ปริญญาตรี
 สูงกว่าปริญญาตรี ปวช. หรือ ปวส. อื่นๆ ระบุ.....
4. สถานภาพสมรส โสด สมรส ม้าย หย่า แยกกันอยู่
 สำหรับผู้สมรสแล้ว ท่านมีบุตรจำนวน.....คน
5. จำนวนสมาชิกในบ้านของท่าน.....คน
6. รายได้ของท่านโดยเฉลี่ยต่อเดือน.....บาท และรายได้เพียงพอใช้จ่ายหรือไม่
 เพียงพอใช้จ่ายมีเหลือเก็บ เพียงพอใช้จ่ายไม่มีเหลือเก็บ ไม่เพียงพอใช้จ่ายและมีหนี้สิน
7. ท่านเริ่มสูบบุหรี่ตั้งแต่อายุ.....ปี
8. ท่านเริ่มสูบบุหรี่ ก่อน หลัง เข้ารับราชการเป็นทหารกองประจำการ
9. เหตุจูงใจที่ทำให้ท่านสูบบุหรี่ (ทำเครื่องหมาย ✓ ลงในช่องว่างตามความคิดเห็นของท่าน)

เหตุจูงใจที่ทำให้ท่านสูบบุหรี่	สำคัญมากที่สุด	สำคัญมาก	สำคัญปานกลาง	สำคัญน้อย	ไม่สำคัญ
สูบบุหรี่ตามอย่างบุคคลในครอบครัว					
สูบบุหรี่ตามอย่างเพื่อน ครู อาจารย์ ผู้บังคับบัญชา					
อยากทดลองสูบ					
สร้างความมั่นใจ ทำให้รู้สึกเท่ โก้เก๋					
ผ่อนคลายความเครียด					
เพื่อให้เป็นที่ยอมรับของสังคม					
สูบด้วยเหตุจูงใจอื่น โปรดระบุ.....					

10. บุคคลที่เกี่ยวข้องกับท่านต่อไปนี้ สูบบุหรี่หรือไม่

- บิดา สูบ ไม่สูบ เคยสูบแต่ปัจจุบันเลิกสูบแล้ว
- มารดา สูบ ไม่สูบ เคยสูบแต่ปัจจุบันเลิกสูบแล้ว
- พี่น้อง สูบ ไม่สูบ เคยสูบแต่ปัจจุบันเลิกสูบแล้ว
- ผู้บังคับบัญชา สูบ ไม่สูบ เคยสูบแต่ปัจจุบันเลิกสูบแล้ว
- เพื่อนสนิทของท่านส่วนใหญ่ในหน่วยทหาร สูบ ไม่สูบ เคยสูบแต่ปัจจุบันเลิกสูบแล้ว
- เพื่อนสนิทของท่านนอกหน่วยทหาร สูบ ไม่สูบ เคยสูบแต่ปัจจุบันเลิกสูบแล้ว
- คนรัก สูบ ไม่สูบ เคยสูบแต่ปัจจุบันเลิกสูบแล้ว
- อื่นๆ ระบุ..... สูบ ไม่สูบ เคยสูบแต่ปัจจุบันเลิกสูบแล้ว

11. ปัจจุบันพฤติกรรมการสูบบุหรี่ของท่านเป็นอย่างไร (เลือกตอบเพียงข้อเดียว)

- ไม่สูบบุหรี่ โดยเลิกสูบบุหรี่มานานกว่า 6 เดือนแล้ว (ถ้าปัจจุบันท่านไม่สูบบุหรี่ ไม่ต้องตอบข้อ12)
- ไม่สูบบุหรี่ โดยเลิกสูบบุหรี่แต่ยังไม่ถึง 6 เดือน (ถ้าปัจจุบันท่านไม่สูบบุหรี่ ไม่ต้องตอบข้อ12)
- ปัจจุบันยังคงสูบบุหรี่โดยมีความคิดที่จะเลิกสูบบุหรี่ใน 30 วันข้างหน้าและวางแผนเลิกสูบบุหรี่โดยวิธีการต่างๆ เช่น เริ่มที่จะลดจำนวนบุหรี่ที่สูบ
- ปัจจุบันยังคงสูบบุหรี่โดยคิดที่จะเลิกสูบบุหรี่ใน 6 เดือนข้างหน้า
- ปัจจุบันยังคงสูบบุหรี่โดยไม่เคยคิดที่จะเลิกสูบบุหรี่เลยใน 6 เดือนที่ผ่านมา

ถ้าท่านไม่สูบบุหรี่ โปรดข้ามไปหน้าถัดไป

12. **ถ้าปัจจุบันท่านยังสูบบุหรี่อยู่ ท่านเคยพยายามเลิกสูบบุหรี่หรือไม่**

ไม่เคย พยายามเลิกสูบบุหรี่

เคยพยายามเลิก จำนวน.....ครั้ง เคยเลิกสูบบุหรี่เป็นเวลานานที่สุดก็ปีเดือน.....วัน

เหตุผลใจที่จะทำให้ท่านเลิกสูบบุหรี่ (ทำเครื่องหมาย ✓ ลงในช่องว่างตามความคิดเห็นของท่าน)

เหตุผลใจที่จะทำให้ท่านเลิกสูบบุหรี่	สำคัญมากที่สุด	สำคัญมาก	สำคัญปานกลาง	สำคัญน้อย	ไม่สำคัญ
กลัวอันตรายของบุหรี่					
การสูบบุหรี่เป็นการสิ้นเปลือง					
บุคคลรอบข้างขอร้องให้เลิกสูบบุหรี่					
มีปัญหาสุขภาพ					
เป็นที่รังเกียจของสังคม					
อื่นๆ โปรดระบุ.....					

วิธีที่ใช้ในการพยายามเลิกสูบบุหรี่ (ทำเครื่องหมาย ✓ ลงในช่องว่างตามความคิดเห็นของท่าน)

วิธีที่ใช้ในการพยายามเลิกสูบบุหรี่	สำคัญมากที่สุด	สำคัญมาก	สำคัญปานกลาง	สำคัญน้อย	ไม่สำคัญ
หลีกเลี่ยงสถานการณ์ที่ทำให้ต้องสูบบุหรี่					
ค่อยๆลดจำนวนบุหรี่ที่สูบต่อวัน					
ออกกำลังกาย					
อดทน ใจแข็ง					
อมลูกอม/เคี้ยวหมากฝรั่ง					
อื่นๆ โปรดระบุ.....					

สาเหตุที่กลับมาสูบบุหรี่อีกครั้ง (ทำเครื่องหมาย ✓ ลงในช่องว่างตามความคิดเห็นของท่าน)

สาเหตุที่กลับมาสูบบุหรี่อีกครั้ง	สำคัญมากที่สุด	สำคัญมาก	สำคัญปานกลาง	สำคัญน้อย	ไม่สำคัญ
จิตใจไม่เข้มแข็งพอ					
ไม่คิดว่าบุหรี่จะทำให้เกิดโรคร้ายกับตนเอง					
เพื่อนชวน					
เหงา/เครียด					
ไม่อยากเลิก					
อื่นๆ โปรดระบุ					

ถ้าปัจจุบันท่านยังสูบบุหรี่อยู่ไม่ต้องตอบข้อ 13

13. ถ้าปัจจุบันท่านเลิกสูบบุหรี่แล้ว เลิกสูบบุหรี่มาเป็นระยะเวลาประมาณปีเดือน

สาเหตุในการเลิกสูบบุหรี่เพราะ (ทำเครื่องหมาย ลงในช่องว่างตามความคิดเห็นของท่าน)

สาเหตุในการเลิกสูบบุหรี่เพราะ	สำคัญมากที่สุด	สำคัญมาก	สำคัญปานกลาง	สำคัญน้อย	ไม่สำคัญ
กลัวอันตรายของบุหรี่					
การสูบบุหรี่เป็นการสิ้นเปลือง					
บุคคลรอบข้างขอร้องให้เลิกสูบบุหรี่					
มีปัญหาสุขภาพ					
เป็นที่รังเกียจของสังคม					
อื่นๆ โปรดระบุ.....					

ระบุวิธีการเลิกสูบบุหรี่

วิธีการเลิกสูบบุหรี่	สำคัญมากที่สุด	สำคัญมาก	สำคัญปานกลาง	สำคัญน้อย	ไม่สำคัญ
หลีกเลี่ยงสถานการณ์ที่ทำให้ต้องสูบบุหรี่					
ค่อยๆลดจำนวนบุหรี่ที่สูบต่อวัน					
ออกกำลังกาย					
หยุดสูบบุหรี่					
อมลูกอม/เคี้ยวหมากฝรั่ง					
อื่นๆ โปรดระบุ.....					

14. นอกจากบุหรี่แล้วท่านเคยใช้ยาเสพติดประเภทอื่นด้วยหรือไม่

- ใช่ ระบุ..... ไม่ใช่
15. ชนิดของบุหรี่ยี่สูบ (ตอบได้มากกว่า 1 ข้อ)
 บุหรี่ธรรมดา บุหรี่กั้นกรอง ยาเส้น อื่นๆ.....
16. โดยเฉลี่ยแล้วท่านสูบบุหรี่วันละประมาณ.....มวน
17. ท่านเสียค่าใช้จ่ายในการซื้อบุหรี่มาสูบบุหรี่ประมาณเดือนละ.....บาท
18. ลักษณะการสูบบุหรี่ของท่านเป็นเช่นไร
 สูบแบบอัดเข้าปอด สูบแล้วพ่นควันออกมา ทั้งสองแบบ
19. โดยปกติท่านมักสูบบุหรี่เวลาใด (ตอบได้มากกว่า 1 ข้อ)
- | | |
|--|--|
| <input type="checkbox"/> ตอนเช้า | <input type="checkbox"/> ก่อนรับประทานอาหาร |
| <input type="checkbox"/> ขณะทำงาน | <input type="checkbox"/> หลังรับประทานอาหาร |
| <input type="checkbox"/> ขณะพักผ่อน | <input type="checkbox"/> ขณะใช้ความคิด |
| <input type="checkbox"/> เมื่อวิตกกังวล | <input type="checkbox"/> เมื่อเครียด |
| <input type="checkbox"/> ขณะดื่มกาแฟ | <input type="checkbox"/> ขณะดื่มสุรา |
| <input type="checkbox"/> ขณะขับรถ | <input type="checkbox"/> เวลาเข้าห้องน้ำ หรือ สุขา |
| <input type="checkbox"/> อื่นๆ ระบุ..... | |
20. ระยะเวลาตั้งแต่ตื่นนอนจนกระทั่งสูบบุหรี่มวนแรก
- น้อยกว่า 15 นาที
- 15-30 นาที
- มากกว่า 15 นาที

ส่วนที่ 2 กระบวนการเปลี่ยนแปลงพฤติกรรม การเลิกสูบบุหรี่

โปรดทำเครื่องหมายลงในช่องที่ตรงกับสิ่งที่เกิดกับท่านจริงในรอบ 1 เดือนที่ผ่านมา(เพียงคำตอบเดียว)

ข้อความ	เป็นประจำ	บ่อยครั้ง	เป็นครั้งคราว	นาน ๆ ครั้ง	ไม่เคย
1. คนใกล้ชิดของฉันให้การยอมรับในตัวฉันไม่ว่าฉันจะสูบบุหรี่หรือไม่ก็ตาม					
2. ฉันสังเกตเห็นป้ายห้ามสูบบุหรี่ในอาคารสาธารณะ					
3. ฉันมีคนที่ฉันสามารถพูดถึงเรื่องการสูบบุหรี่ของฉันให้ฟังได้					
4. ฉันบอกตัวเองว่าฉันสามารถเลือกได้ที่จะสูบบุหรี่หรือไม่สูบบุหรี่					
5. ฉันเลือกที่จะทำกิจกรรมอย่างอื่นแทนที่การสูบบุหรี่					
6. ฉันจำบทความที่พูดถึงปัญหาในการเลิกสูบบุหรี่ได้					
7. ฉันสังเกตเห็นว่าสถานที่สาธารณะมีส่วนที่จัดไว้ให้ผู้สูบบุหรี่โดยเฉพาะ					
8. ฉันจำข้อมูลที่คนอื่นๆ บอกแก่ฉันถึงประโยชน์ของการเลิกสูบบุหรี่ได้					
9. ฉันมีความเชื่อว่าเมื่อคนเลิกสูบบุหรี่โลกจะน่าอยู่ขึ้น					
10. ฉันนึกถึงข้อมูลที่ได้จากบทความและ โฆษณาเกี่ยวกับวิธีการเลิกสูบบุหรี่					
11. การนึกถึงการศึกษาเกี่ยวกับความเจ็บป่วยที่เกิดจากการสูบบุหรี่ทำให้ฉันกังวล					
12. คนที่อยู่รอบข้างฉันพยายามทำให้ฉันรู้สึกดี เมื่อฉันไม่สูบบุหรี่					
13. ฉันบอกกับตัวเองว่าฉันสามารถเลิกสูบบุหรี่ได้ถ้าฉันต้องการ					
14. ฉันมีคนที่คอยรับฟังเมื่อฉันต้องการพูดถึงการสูบบุหรี่ของฉัน					
15. ฉันขจัดสิ่งที่ทำให้ฉันนึกถึงการสูบบุหรี่ออกไปจากบ้านของฉัน					
16. ฉันบอกตัวเองว่าถ้าฉันพยายามมากพอฉันจะสามารถเลิกสูบบุหรี่ได้					
17. ฉันจดจำได้ถึงข้อมูลที่ผู้อื่นบอกฉันเกี่ยวกับวิธีการเลิกสูบบุหรี่					
18. ฉันให้สัญญากับตัวเองว่าจะไม่สูบบุหรี่					
19. ฉันให้รางวัลกับตัวเองเมื่อฉันไม่สูบบุหรี่ได้					
20. ฉันสังเกตเห็นว่าคนไม่สูบบุหรี่รักษาสิทธิของเขาที่จะป้องกันตนเองจากควันบุหรี่					
21. ฉันพจคิดว่า การสูบบุหรี่เป็นมลพิษต่อสิ่งแวดล้อม					
22. ฉันคาดหวังว่าผู้อื่นต้องชื่นชมและให้รางวัลเมื่อฉันไม่สูบบุหรี่					
23. ฉันจัดสภาพแวดล้อมที่หน่วยงานเพื่อเตือนใจไม่ให้สูบบุหรี่					
24. ฉันพบว่าสังคมเปลี่ยนไปในวิถีทางที่เอื้อประโยชน์มากขึ้นต่อผู้ที่ไม่สูบบุหรี่					
25. ฉันรู้สึกผิดหวังทุกครั้งเมื่อนึกถึงการสูบบุหรี่ของตัวเอง					
26. ฉันพบว่าแทนที่จะคิบบุหรี่ฉันเอามือไปทำอย่างอื่นดีกว่า					

ข้อความ	เป็นประจำ	บ่อยครั้ง	เป็นครั้งคราว	นาน ๆ ครั้ง	ไม่เคย
27. เมื่อฉันอยากสูบบุหรี่ฉันจะพยายามนึกถึงสิ่งอื่นๆ แทน					
28. เมื่อฉันเครียดฉันจะพยายามทำอย่างอื่นที่ไม่ใช่การสูบบุหรี่					
29. ฉันขจัดสิ่งที่ทำให้ฉันนึกถึงการสูบบุหรี่ออกจากที่ทำงาน					
30. คำเตือนเกี่ยวกับอันตรายของการสูบบุหรี่ทำให้ฉันรู้สึกสลดใจ					
31. ภาพลักษณ์ที่เลวร้ายของผู้ที่สูบบุหรี่มีผลต่ออารมณ์ของฉัน					
32. เมื่อมีคนเตือนฉันเรื่องการสูบบุหรี่ฉันจะตอบโต้ทันที					
33. ฉันได้รับรางวัลหรือคำชื่นชมจากผู้อื่นเมื่อฉันไม่สูบบุหรี่					
34. ฉันคิดว่าการสูบบุหรี่เป็นการอันตรายต่อสิ่งแวดล้อม					
35. ฉันพบว่า การเปลี่ยนแปลงพฤติกรรม การสูบบุหรี่ของฉันทำให้ฉันพอใจ					
36. ฉันเห็นว่าการสูบบุหรี่ทำลายภาพพจน์ของการเป็นผู้ที่มีความรับผิดชอบ					
37. ฉันจัดบริเวณบ้านให้เตือนใจในการไม่สูบบุหรี่					
38. ฉันรู้สึกผิดหวังในตัวเองที่ไม่สามารถเลิกสูบบุหรี่ได้					
39. ฉันตระหนักว่าโลกจะน่าอยู่ขึ้นถ้าฉันไม่สูบบุหรี่					
40. ฉันมีคนที่สามารถปรึกษาได้เมื่อฉันมีปัญหาในการสูบบุหรี่					

ส่วนที่ 3 ความสมดุลในการตัดสินใจเลิกสูบบุหรี่

โปรดทำเครื่องหมาย บลงในช่องที่ตรงกับระดับความสำคัญในการตัดสินใจเลิกสูบบุหรี่ของท่านจากสถานการณ์ที่กำหนดให้เพียงคำตอบเดียว

สถานการณ์	สำคัญ มาก ที่สุด	สำคัญ มาก	สำคัญ ปานกลาง	สำคัญ น้อย	ไม่ สำคัญ
1. การสูบบุหรี่เป็นสิ่งที่น่าพอใจ					
2. การสูบบุหรี่ของฉันมีผลต่อสุขภาพคนอื่น					
3. ฉันชอบมาของผู้ที่สูบบุหรี่					
4. บุคคลที่ใกล้ชิดฉันต้องลำบากถ้าฉันป่วยจากการสูบบุหรี่					
5. ฉันรู้สึกผ่อนคลายและพึงพอใจเมื่อได้สูบบุหรี่					
6. การที่ฉันยังคงสูบบุหรี่ทำให้คนอื่นไม่คิดว่าฉันจะเลิกสูบบุหรี่ได้					
7. ถ้าฉันพยายามเลิกสูบบุหรี่ ฉันจะรู้สึกหงุดหงิดไม่สุขสบายตัว					
8. การสูบบุหรี่เป็นอันตรายต่อสุขภาพของฉัน					
9. ครอบครัวและเพื่อนของฉันพอใจที่จะฉันสูบบุหรี่มากกว่าที่จะเห็นฉันทุกข์ทรมานจากการที่พยายามเลิกสูบบุหรี่					
10. ฉันรู้สึกอับอายเมื่อต้องสูบบุหรี่					
11. ฉันรู้สึกชอบตัวเองเมื่อสูบบุหรี่					
12. การสูบบุหรี่ของฉันรบกวนผู้อื่น					
13. การสูบบุหรี่ทำให้ฉันมีสมาธิและทำงานได้ดีขึ้น					
14. คนทั่วไปคิดว่าฉันโง่งที่ไม่สนใจค่าเตือนเรื่องการสูบบุหรี่					
15. การสูบบุหรี่ช่วยผ่อนคลายความเครียด					
16. บุคคลที่อยู่ใกล้ชิดไม่เห็นด้วยกับการสูบบุหรี่ของฉัน					
17. การตัดสินใจเกี่ยวกับการสูบบุหรี่เป็นการตัดสินใจของฉันเอง					
18. ฉันโง่งมากที่ละเลยต่อคำเตือนเรื่องพิษภัยของการสูบบุหรี่					
19. หลังจากหยุดสูบบุหรี่มาพักหนึ่งการได้สูบบุหรี่อีกครั้งทำให้ฉันรู้สึกดีมากๆ					
20. ร่างกายของฉันจะแข็งแรงขึ้นถ้าฉันไม่สูบบุหรี่					

ส่วนที่ 4 ความคาดหวังในความสามารถของตัวเองในการเลิกสูบบุหรี่

สถานการณ์ต่อไปนี้จะมุ่งใจให้ท่านสูบบุหรี่อย่างน้อยเพียงใจจงใส่เครื่องหมายลงในช่องที่ตรงกับความรู้สึกของท่าน

สถานการณ์	มากที่สุด	มาก	ปานกลาง	น้อย	ไม่มุ่งใจ
1. เมื่อฉันอยู่ที่บาร์หรือสถานเริงรมย์และกำลังดื่มของมีนเมา					
2. เมื่อฉันเกิดความต้องการที่จะสูบบุหรี่					
3. เมื่อฉันไม่ได้สิ่งที่ต้องการและรู้สึกคับข้องใจ					
4. เมื่อฉันอยู่กับคู่สมรสหรือเพื่อนฉันที่สูบบุหรี่					
5. เมื่อฉันทะเลาะโต้เถียงหรือขัดแย้งกับครอบครัว					
6. เมื่อฉันมีความสุขหรือต้องการฉลอง จัดงานเลี้ยงสังสรรค์					
7. เมื่อฉันรู้สึกโกรธใครบางคนหรือไม่พอใจในบางเรื่อง					
8. เมื่อฉันเกิดภาวะบีบคั้นทางอารมณ์เช่น อุบัติเหตุหรือการเสียชีวิตของคนในครอบครัว					
9. เมื่อฉันเห็นผู้อื่นสูบบุหรี่อย่างมีความสุข					
10. ระหว่างการดื่มกาแฟ การพูดคุย หรือ พักผ่อน					
11. เมื่อฉันรู้ว่าการเลิกสูบบุหรี่เป็นสิ่งที่ยากมากสำหรับฉัน					
12. เมื่อฉันอยากสูบบุหรี่อย่างมาก					
13. เมื่อฉันตื่นนอนในตอนเช้า					
14. เมื่อฉันรู้สึกว่าการกำลังใจ					
15. เมื่อฉันละเลยการดูแลสุขภาพและเมื่อร่างกายของฉันกระฉับกระเฉงลดลง					
16. เมื่อฉันอยู่กับเพื่อนในงานเลี้ยง					
17. เมื่อฉันตื่นขึ้นมาในตอนเช้าและต้องเผชิญกับวันที่ยุ่งยาก					
18. เมื่อฉันรู้สึกซึมเศร้าอย่างมาก					
19. เมื่อฉันรู้สึกวิตกกังวลและเกิดความเครียดอย่างมาก					
20. เมื่อฉันรู้สึกว่าไม่ได้สูบบุหรี่ไปชั่วระยะเวลาหนึ่ง					

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