# HEALTH PROMOTION PRACTICE IN WORKPLACE AMONG STAFF AT TWO HEALTH EDUCATIONAL INSTITUTES, MAHIDOL UNIVERSITY AT SALAYA, THAILAND

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A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF PRIMARY HEALTH CARE MANAGEMENT
FACULTY OF GRADUATE STUDIES
MAHIDOL UNIVERSITY
2005

ISBN 974-04-5720-7

Thesis
entitled

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for the degree of Master of Primary Health Care Management

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## ACKNOWLEDGEMENT

The successful completion of this thesis was a result of the collaborative and supportive effort from many people. I express my sincere thanks to Asst. Prof. Nonglak Pancharuniti, my major advisor, for her effort, commitment and valuable guidance throughout the thesis process.

I am grateful to Lect. Kitti Shiyalap and Lect. Jintana Yhoung-aree, my co-advisors, for their precious input and contribution to my thesis work. Their fresh ideas and suggestions significant improve the overall outlook of my thesis. Also, I extend my sincere thanks to Assoc. Prof. Prasit Leerapan for his assistance, helpful suggestions and encouragement, especially during the end of my thesis process.

I also express my deep and sincere gratitude to DTEC/ JICA, my sponsor and Assoc. Prof. Sirikul Isaranurug, Director of the ASEAN Institute for Health Development (AIHD) for giving me this golden opportunity to participate in the MPHM course.

I thank all our course work lecturers and AIHD staff in MPHM in office, library, Computer lab and ASEAN house for their hospitality that created a conductive learning atmosphere.

Last but not the least, I am deeply grateful to my grandparents, my parents especially my mother in law, my husband, my brothers and sisters for their encouragement, moral support and for being a role model to me. All your support greatly motivated me to work diligently during my study at AIHD.

Tran Thi Phuong

HEALTH PROMOTION PRACTICE IN WORKPLACE AMONG STAFF AT TWO HEALTH EDUCATIONAL INSTITUTES, MAHIDOL UNIVERSITY AT SALAYA, THAILAND

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ABSTRACT

This cross sectional study was conducted to determine health promotion practice in the workplace among staff of the ASEAN Institute for Health Development (AIHD) and the Institute of Nutrition (INMU), Mahidol University at Salaya campus and its related factors (socio-demographic characteristics, knowledge, perception on health promotion, availability and accessibility to practice health promotion).

The sample was all the staff working in both institutes a total of 242. Data was collected by means of self- administered questionnaire and analyzed by descriptive test and by Chi-square.

Health promotion practice among staff in both institutes in this study was determined by the activities of physical exercise and food consumption, ergonomics, stress management, cigarette smoking, alcohol drinking, participation in medical check up. The study focus on 2 main activities as physical exercise and food consumption.

The frequency of doing exercise was seen more in AIHD than in INMU, and males in both institutes had more frequency of doing exercise than females at p value<0.05. For food consumption, the staff in INMU showed healthier trend by eating less frequency of caloric rich food, Thai fast food, high sugar snacks, and tend to eat fruit with more frequency than AIHD. However, only the type of caloric rich food shows significant difference between the 2 institutes at p value=0.001. And the factors found to be significantly associated with food consumption were: gender, professional position, chronic disease. Females showed healthier trend than males by lower consumption of Thai fast food and more consumption of low sugar snacks as well as fruit at p value<0.05. And supportive staff had more consumption of Western food, high sugar snacks, caloric rich snacks than academic staff. People with certain chronic disease had more consumption of fruit than the staff without chronic diseases.

It is recommended that health promotion activities should be encouraged through staff management in various faculties of Mahidol University including Bangkok campus.

KEY WORDS: HEALTH PROMOTION/ PRACTICE/ WORKPLACE



97 P. ISBN 974-04-5720-7

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# CHAPTER 1
# INTRODUCTION

## 1.1 Rational and justification

Comprehensive health services comprise of health promotion, disease prevention, treatment, and rehabilitation. Basically, health promotion and disease prevention aim at primary prevention, i.e., preventing human from getting diseases. The First International Conference on Health Promotion resulted in The Ottawa Charter defining health promotion as "the process of enabling people to increase control over, and to improve their health. To reach a state of complete physical, mental and social well-being, an individual or group must be able to change or cope with the environment. Therefore, health promotion is not just the responsibility of the health sector, but goes beyond health life-styles to well-being (1).

Health promotion is a continuum ranging from the treatment of disease, to the prevention of disease including protection against specific risks, to the promotion of optimal health. Achieving optimal health includes improving physical abilities in relation to sex and age, improving mental ability, developing reverse capacities and adaptability to changing circumstances of work and life, and reaching new levels of individual achievement in creative and other work (2). Health promotion may be achieved via several strategies such as creating partnership, implementing through various setting approaches such as schools, hospitals, cities, and workplaces.

The workplace provides an important opportunity for health promotion, both in terms of allowing access to a large proportion of the adult population and encouraging developments within the workplace structure to improve health. Workplace are an excellent site for health promotion as time spent at the workplace exceeds that spent in other locations, and it is possible to group people by interests, socioeconomic variables and peer groups. In addition, the workplace is convenient for participants, a

large percentage of the population can be reached, and environmental support can reinforce health education massages, social network support behavioral change and opportunities for follow up, monitoring and reinforcing massages. Workplace programs also have the potential for reducing health costs a well as boosting employee morale, productivity and the company image (3). In one five-year follow-up study of workers enrolled in a physical fitness program, it was found that health care costs were reduced by 24%, with long-term savings 50 % greater than investment (4). Another study , of a comprehensive health promotion program offers at the workplace to nearly 4000 workers in a large organization, show that benefits in the form of declining medical care costs began to emerge 12 to 18 months after the program's introduction. By the fourth year, the annual increases in health care expenses for those workers participating in the health promotion program were running at only about one-half of those for a control group (5).

There is continuous two-way interaction between a person and his or her physical and psychological working environment, the working environment may influence the person's health either positively or negatively, and productivity is in turn influenced by the worker's state of physical and mental well-being. Work, when it is well- adjusted and productive, can be an important factoring health promotion. On the other hand, when work is associated with health hazards, it can cause occupational disease, be one of the multiple causes of other disease, or aggravate existing ill-health of non- occupational origin. In developing countries, where work is becoming increasingly mechanized, a number of working process have been developed that treat worker as tools in production and put their health and lives at risk from a wide variety of sources.

The workplace has several advantages as a location for health promotion activities and the delivery of preventive health services. Workers are easily accessible and environmental monitoring is facilitated, which makes it possible to control at source various environmental pollutants originating from industry.

Nowadays, the physical demands of heavy manual labor and the toxicity of work environments appear to be decreasing as mechanization spreads and the bulk of work is shifting from the manufacturing to the service sectors. Nevertheless, the overall human and economic burden of work- related illness and disability remains high. A number of factors related to workplace such as injured and illness, the physical work environments (e.g., lighting, noise level, toxic exposures, and air quality) and the physical demands and hazards of jobs (e.g., lifting, turning, repetitive movements, etc.) remain relevant (6). And Thailand faces the epidemiological transition resulting from rapid changes in socio-economic and environmental development. There is transition shift from communicable diseases to non-communicable diseases, such as heart disease, accident, cancer, hypertension etc., caused by inappropriate health behavior and life style (7). Therefore, workplace health promotion program setting is important to contribute to prevent and solve the problem.

Ministry of Public Health of Thailand has the objective of the 8th National Health Development Plan to ensure the good health of Thai population and support the country to take leading role in this region and also to ensure that the people are entitled to health insurance, gave access to integrate health activities which are efficient, of good quality, and equitable, particularly regarding the underprivileged and handicapped. The 9th National Health Development Plan are also to foster proactive health promotion, consumer protection, food safety and food security, occupational health and environmental protection, disease prevention and control, to establish health security and equal access to quality health services, to build up people capability in health promotion and in health system management, and to establish mechanism, measures and generating knowledge through research and development utilizing both local and international health wisdom (8).

The ASEAN Institute for Health Development (AIHD) and the Institute of Nutrition (INMU) are health educational institutes located in Mahidol University at Salaya campus. In order to extend the health promotion in workplace program setting all over Thailand, it would be very interesting to explore the practice of people who directly doing the job of health training. As characteristic of the job, it may have good

affect to the health promotion practice of them with active and voluntary activities. To formulate implementing the program, it is important to know what is knowledge and perception of the staff, and how they affect to the practice toward health promotion. There are 89 staff in AIHD and 176 staff in INMU working as civil servants and contracts in the environment of the same university. The setting of workplace health promotion program here is being introduces and preparing to implement. Therefore, this research will be useful to establish baseline data for the program here.

## 1.2 Research questions

1.2.1. What are the practices to promote health among the staff of AIHD and INMU ?
1.2.2. What are the factors contributing to the health promotion practices in term of physical exercise and food consumption among the staff of these two Institutes?

## 1.3 Research objectives

### 1.3.1 General objective

To determine health promotion practices in workplace and factors influencing the practices in term of physical exercise and food consumption among the staff working at AIHD and INMU.

### 1.3.2 Specific objective

To determine health promotion practice among staffs who work at AIHD and INMU.

To determine the predisposing factors of the staffs working at AIHD and INMU toward health promotion practice these include: socio-demographic factors, knowledge on health promotion in workplace, perception on benefits and barriers of practice health promotion in workplace, perception on severity and susceptibility of work related injury and illness.

To determine the factors enable the staffs to practice health promotion these include: availability, accessibility of instruments and setting places

To determine the factors reinforce health promotion practice of the staff these refer to psycho-social supports in term of media advocacy, peer support and network.

To determine the health promotion practices in term of physical exercise and food consumption with its associated factors.

## 1.4 Conceptual framework

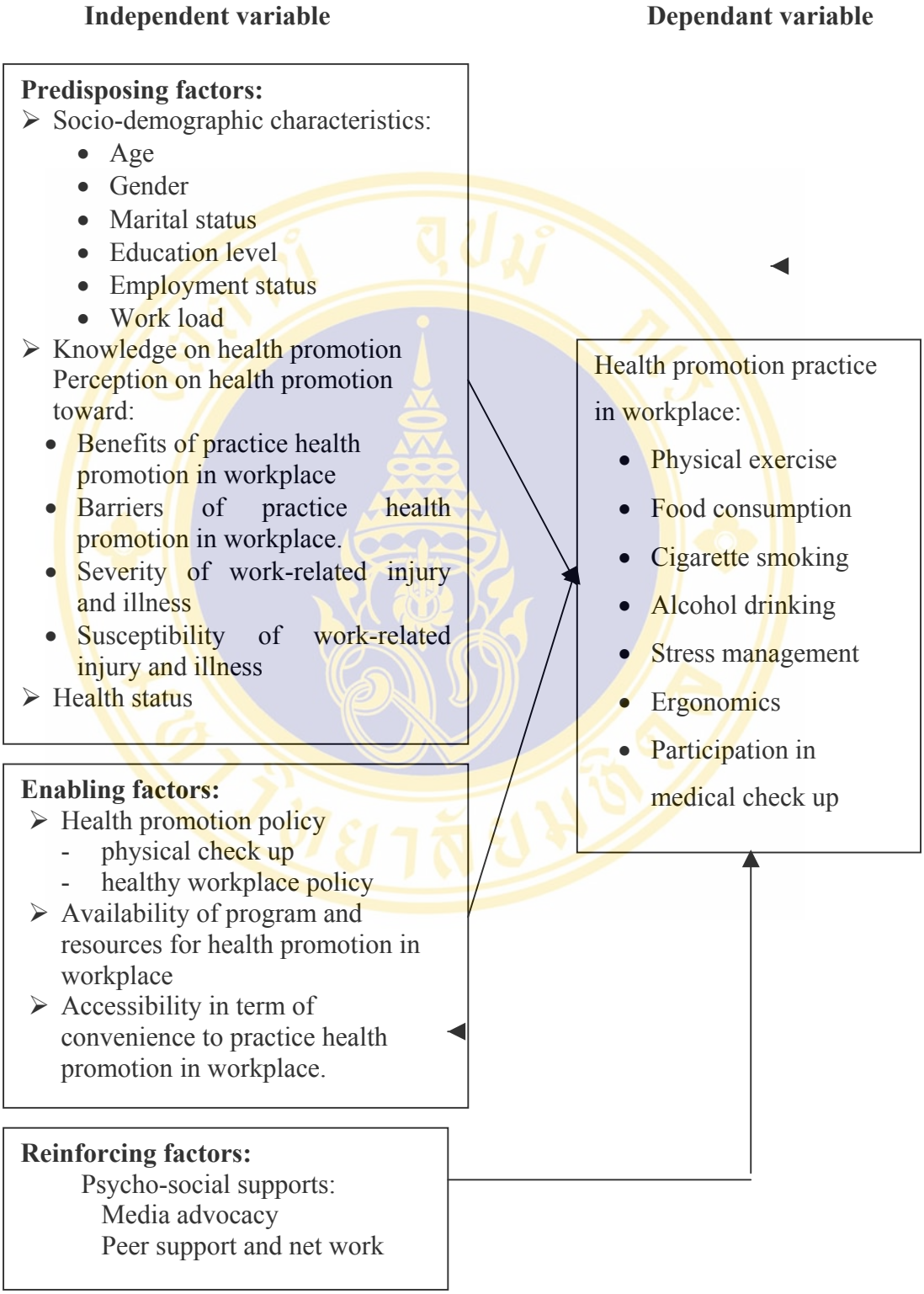


**Figure 1 Conceptual framework on health promotion practice in workplace among AIHD and INMU staff.**

## 1.5 Research hypothesis

There is relationship between heath promotion practice among staff in term of physical exercise and food consumption with the following factors:

- Predisposing factors
- Enabling factors
- Reinforcing factors

## 1.6 Operational definition

### 1.6.1 Predisposing factor

Predisposing factors are the factors that provide the rational or motivation for the staff to practice health promotion in workplace. In this study, it includes of: age, gender, marital status, educational level, employment status, professional position, work load, their own health status, know ledge on health promotion in workplace, perception on health promotion in workplace.

**Gender**

Refer to sex of the staff, include male and female.

**Marital status**

Refer to the status of family these are: single, married, widowed/ separated/divorced.

**Education**

Refer to level of education of AIHD and INMU who practice health promotion in workplace such as: less than bachelor, bachelor, master and doctoral level.

**Professional position**

Refer to the professional background among the staff include academic staff: lecturer, researcher, and supportive staff: secretaries, administrator, permanent and in contract staff.

**Employment status**

Refer to work status of the staff such as: permanent and by contract staff

**Work load**

Refer to time duration that the staff spends for assigned work of the office.

**Knowledge on health promotion in workplace**

Is defined as the knowledge of the staffs to understand about the concept of health promotion practice in workplace.

**Perception on health promotion in workplace**:

Refer to the perception of the staffs on benefits and barriers for practice health promotion in workplace.

**Health status**

Refer to situation of their own health status during the last 1 month, existence of illness in last one month, existence of chronic health problem and treatment, and stress causes and coping technique of respondents

### 1.6.2 Enabling factors

Enabling factor are the factors that facilitate or motivate the predisposing factors to make the staff easy to practice health promotion in workplace. In this study, enabling factors are included availability of the program and resources, accessibility to practice health promotion in workplace in term of convenience to practice.

**Health promotion policy**

Refer to perception of staff on regulations which are set up to enable the implementation of health promotion for staff such as having policy for physical check up and having healthy workplace policy.

**Resources**

Refers to material equipment and place for exercise, sport, recreation which support the staff for health promotion practice.

**Availability**

Refer to perception of the staffs in term of enough and already provision of materials, equipments and setting place to support the staffs to practice health promotion in workplace.

**Accessibility**

Refer to the perception or opinion of the staffs on the convenience of accessibility of places, equipments and materials for the staff to practice health promotion in workplace.

### 1.6.3 Reinforcing factors

In this study, reinforcing factors refer to psycho-social support in which the staff received from media advocacy and peer support and network in term of emotional support and information support.

**Peer support and net work**

Refer to the perception of the staff on psycho-social support received in workplace. It includes media advocacy and emotional support from peer group and network and these are measured in term of details of health information to invite or motivate the staff to joint health promotion program in workplace, in addition to recognition and respect, appreciation on the respondents when participating on health promotion activities.

**Media advocacy**

Refer to information available about health promotion disseminated to staff

### 1.6.4 Practice health promotion

Is defined as the activities of them to promote their health in workplace, it includes physical exercise, food consumption, cigarette smoking, alcohol drinking, stress management, ergonomics and participate in medical check up. In this study, 2 main activities were focus those were:

- Physical exercise
- Food consumption

**Physical exercise**

Refer to activities of respondents in term of physical activities to promote their health such as: aerobic exercise, swimming, outdoor exercise.

**Food consumption**

Refer to frequency of eating certain kinds of food for main dishes and for snacks and beverages of staff in 2 institutes such as: general meal pattern, caloric rich foods, Thai fast food, Western foods, low sugar snacks, high sugar snacks, caloric rich snacks, fruit and its products.

## 1.7 Scope and limitation of the study

**Scope**

Study in the AIHD and INMU staffs who currently working at AIHD and INMU. The sample is included all the staffs. Health promotion in workplace has just been introduced; therefore, conducting this study can be a good suggestion to establish health promotion in workplace in a proper way. It will be useful for the next study in concern with this issue.

**Limitation:**

Can not be generalized to represent the whole country. Data obtained from a self-administered questionnaire, and the study focus on two activities of health promotion

program those were physical exercise and food consumption which was broad, so details of each activities can not be obtained totally.

**1.8 Expected outcome**

It can be used for base line data to improve the projects that aims to support health promotion practice in workplace.

# CHAPTER 2
# LITERATURE REVIEW

Part of literature review displays the details as follow:

1. Health promotion: Components and its implication.
2. Health promotion practice in workplace
3. Precede-proceed Model
4. Factors related to health promotion practice in the workplace

## 2.1 Health promotion: components and its important

In 1986, the first International Conference on Health promotion , held in Ottawa, defined health promotion as the process of enabling people to increase to control over, and to improve their health. To reach the state of completely physical, mental, and social well-being, an individual or group must be able to identify and to realize aspirations, to satisfy needs, and to change or cope with environment. This concept went beyond the traditional boundaries of health education. Health promotion also sought to improve health for all by securing the basic prerequisites of health, an important one being equity. The Fifth International Conference on Health promotion was organized in Mexico in 2000, where the Ministers of Health declared that health promotion must be a fundamental component of public policies and programs in pursing of equity and better health for all. They also called for the establishment of countrywide plans of action for health promotion.

Workplace health promotion programs developed in the 1970s out of a growing emphasis on healthy lifestyle and a belief that such programs would reduce employee health costs. The majority of workplace health promotion programs seek to encourage healthier individual behavior through the provision of support and information and the development of skills.

**Component of health promotion in the workplace**

The Ottawa charter addressed 5 major health promotion actions:

Build healthy public policy

Create supportive environment

Strengthen community actions

Develop personal skills

Reorient health services.

Health promotion in workplace consists of 6 components as follow (9):

1. Policy regarding workplace health promotion
   a. Having policy that addresses the importance of health promotion, prepared in written document and declared to all employees.
   b. Having personnel with knowledge and understanding in health taking the responsibility of workplace health promotion directly (as their primary job or with enough time to do this job).
   c. Having a safety, health and environment committee.
   d. Having health promotion plans: annual plans, short-term plans (shorter than 3 years), and long- term plans (longer than 3 years).
   e. Having laws and regulations for occupational health and safety.
   f. Evaluating health promotion activities and improving accordingly.
2. Workplace health environment.
   a. Employees participate in decision making, planning, implementing, and evaluating health issues.
   b. The time set for each task is appropriate and possible.
   c. Employees have an opportunity to perform various tasks.
   d. Employees have enough break time.
   e. Having good relation among every level of employees.
   f. Shift work is properly managed and least affect employees' health.
   g. Supporting and preparing employees for their retirement.
   h. Employees obtain health information from both health personnel and their self-study in the workplace.

i. Employees participate in correction of and improvement their working environment to be healthier.

3. Physical environment.
   a. Workplace cafeteria has nutritionally correct and safe food for employees.
   b. Lighting is proper for work.
   c. Air ventilation in the workplace is appropriate.
   d. Having measure to control dust and toxic gas in the workplace.
   e. Having measure to control noise in the workplace.
   f. Having equipment to help in handling and moving materials to reduce employees' physical load.
   g. Having enough and clean lavatories for every employee.
   h. Having proper waste management including hazardous waste.
4. Life style and health skill of employees.
   a. Having education and training in occupational health and safety for every employee.
   b. Having education and training in health promotion for every employee.
   c. Operating a nutritional program for employees.
   d. Operating a smoking cessation program for employees.
   e. Operating an alcohol- and drug-free workplace program.
   f. Operating an exercise program for employees.
   g. Operating a stress management program for employees.
   h. Operating a reproductive health program for employees such as family planning, sexually transmitted diseases and AIDS prevention.
   i. Operating an accident reduction program in the workplace.
   j. Operating an accident reduction program outside the workplace.
   k. Workplace has activities to strengthen relationship with employees' families.
   l. Workplace has activities to strengthen relationship with nearby community.
5. Health services.
   a. Having appropriate health and medical records.

b. Having a good system to record occupational diseases and injuries.
c. Having medicine and materials for first aid.
d. Performing replacement examination according to risk factors.
e. Having a regular periodic physical examination according to risk factors.
f. Proper notification of health result to employees.
g. Having a return-to-work physical examination in case of long-term sick leave.
h. Operating and recording the result of occupational health and safety activities.
i. Sick leaves resulting from illness of employee in the past year were decreased.

6. External environmental impact.
a. Preventing pollution of environment outside the workplace.
b. Workplace has a role to support and promote community's healthy life style.

**Implication of health promotion**

The concept of health promotion is well accepted in industrialized countries and is being applied in developing countries as well. It has been described in a number of different ways, as have health education, health communication, and social mobilization. Health promotion can be defined as the result of educational and environmental support for the practical result and the condition of living that leads to healthy condition (Green and Kreter). Kaplan, Sallis and Patterson said that health promotion as trying to ensure that healthy people must have disease prevention and health promotion behavior for their lifestyle. In addition, good health promotion will reduce cost of people's health care. Chantamolee, S., states that health promotion consist of various activities that effected health of people who have well-being and directly affected an increase in happiness, bring healthy to personnel, family, community and sociality.

Health promotion is described as social, educational and political action that enhances public awareness of health, fosters, healthy lifestyle and community action in support of health, and empowers people to exercise their rights and responsibilities in shaping environments, systems and policies that are conductive to health and well-being. Health promotion is in fact enlightened health activism. It is a process of activating communities, policy makers, professionals and the public in favor of health supportive policies, systems and way of living. It is carried out through acts of advocacy, empowerment of people and building of social support systems that enable people to make healthy choices and live healthy life.

Health promotion is the social action dimension of health development. It is the concept that can revitalize primary health care approaches in both developing and industrialized nations. Health promotion and social action for health support the health for all goal in two ways: by promoting lifestyle and community action for health, and by creating condition that make it possible to live a healthy life. The first entails empowering people with the knowledge and skills needed for healthy living. The second calls for influencing policy-makers so that they pursue health supportive public policies and programs. Strong social support for health actions needs to be initiated, accelerated and maintained.

## 2.2 Health promotion practice in workplace

Disability, disease, and death can be viewed within the framework of the four main “health field”, which are human biology, environment, life-style, and health care organization (10). Each health problem is affected by factors from one or more of these elements. This division into four elements, when applied to occupational health, can be useful in identifying preventable problems and their contributing factors. With regard to workplace health problem, it is important to identify both those whose causes include work activities or exposes, and those that have other causes but may be effectively screened, treated, or reduced in severity through interventions in the workplace.

In industrial countries, the major cause of morbidity among workers are respiratory, musculoskeletal, mental, and circulatory; additional causes in developing countries are malnutrition and communicable disease. It would be possible to catalogue each disease and its risk factors, but health promotion is essentially concerned with the modification of life-style and living conditions to increase well-being. Indeed, life-style, particular among the affluent, and social and environmental conditions, particularly among the less affluent, may powerfully inhibit the development of a state of well-being. It is thus more instructive to examine problems associated with life-style and living conditions to determine where health promotion in the work setting will provide the best opportunities for effective action. Here are activities to illustrate the opportunities for health promotion:

### 2.2.1 Physical activity

The problem of inactivity can be demonstrated by the benefits associated with exercise and physical activity.

Exercise affects a range of physiological parameters. Regular exercise has been shown to help reduce body fat and overall weight, reduce blood pressure, slow the resting heart rate, lower level of blood lipids and increase those of high density lipoprotein, improve glucose metabolism, and reduce insulin requirements, decrease platelet aggregation (11). Exercise has also been shown to improve health prospects in various ways. Studies from several countries indicate a favorable effect of exercise on the incident of heart disease (12 ) and stroke (13 ). Most active people also suffer less than inactive people from chronic obstructive pulmonary disease, diabetes and osteoporosis (14). In addition, it has been suggested that the improved strength, balance, and flexibility resulting from participation in exercise programs can reduce the probability of injurious falls among older people , as well as back injuries among certain occupational group (15). In addition to physical benefits, exercise may have psychological rewards. Those who exercise regularly have reported reduced anxiety and depression, improved mood and self-esteem, and a better sense of self-control (16).

We all know that physical activities – taking a walk, riding a bicycle, dancing or playing – simply makes you feel better. But regular physical activity brings about many other benefits. It not only has the potential to improve and maintain goof health, but it can also bring with it important social and economics benefits.

Regular physical activities benefits communities and economies in terms of reduced health care costs, increased productivity, better performing schools, lower worker absenteeism and turnover, increased productivity and increased participation in sports and recreational activities.

In many countries, a significant proportion of health spending is due to costs related to lack of physical activities and obesity. Promoting physical activities can be a highly cost- effective and sustainable public health intervention (17).

### 2.2.2 Food consumption

Nutrition plays an essential role in health and in worker's productivity. Factors generally related to dietary excess are associated with several of the leading causes of death in most developed nations: cancer, heart disease, arteriosclerosis, and diabetes. Weight loss to reduce obesity can decrease blood pressure and blood cholesterol levels (18), which can in turn reduce the risk of the above-mentioned diseases.

Such change can have very real effects on national health profiles. There is still a strong potential for improving the health of workers through weight loss programs. Excess weight has been shown to affect productivity among diabetes people: those who are 40% overweight have twice as many days absent from work as those with normal with normal weight (19).

The workplace can have a significant influence on the dietary habits of workers, and this influence can extend to their families.

A wide variety of nutrition program is offered by employers in industrialized countries, including program for weight control, cholesterol reduction, prenatal nutrition for pregnant woman, and “heart healthy” nutrition, healthier food choices, changing food presentation to encourage healthy choices, providing health information where food is available, placing weighing scale in rest-rooms, and changing the type of food placed in vending machines (20)

### 2.2.3 Cigarette smoking

Smoking is risk factor for cardiovascular diseases, lung cancers, respiratory diseases, and in working population, it is associated with increasing in accident and sickness absence rate. And it is not just the smokers who is at risk from smoking at the workplace. Epidemiological data indicate that involuntary expose of non-smokers to exhale or side stream cigarette smoke from nearby smokes increases their risk of developing lung cancer, cardiovascular disease, and respiratory diseases (21).

### 2.2.4 Alcohol drinking

The use of alcohol underlines many of the most serious accidents causing personal injury and disability in worker. In certain industrial countries, alcohol is involved in over 50% of deaths cause by motor vehicles, and in 55% of homicides, 28% of episodes, of marital violence, 40% of suicides, 18% of burns, and 23% of falls.. It has been estimated that alcohol contributes to 57% of all occupational injuries in the Unite States and to 75% of occupational injuries to workers who have had one or more previous injuries at work (22).

Alcohol-related losses in productivity can be substantial. Workers with alcohol problems have absentee rates that are markedly higher than those for the rest of the workforce, and the use of the health care services is three to eleven time as high (23).

The reason for alcohol use are cultural, social, and psychological. The workplace has great potential for the control and prevention of alcohol use/abuse for the following reasons:

- Most problem drinkers are part of the workforce.

- Excessive alcohol use is identifiable at an early stage by a drop in work performance.

- The possibility of job loss can be used to motivate changes in drinking behavior, and

- The workplace provides a unique opportunity for support and assistance from co-workers.

### 2.2.5 Stress management

Chronic occupational stress is regarded as both a serious public health concern and a major impediment to organizational success. In human term, chronic job stress is associated with a rank of physical, psychological, social, and behavioral health problems. For organizations, occupational stress can contribute to a number of outcomes which are critical to organization success, including absenteeism, labour turnover and job performance. In the working environment, these factors include work overload and under load, poor job management, lack of job security, monotonous tasks, and shift work. Psychological reactions associated with adverse psychosocial factor at work include anxiety, depression, low self-esteem and moral, anger, and dissatisfaction. Physiological reactions include increased secretion of epinephrine, norepinephrine, cortisol, and other hormones, elevated blood pressure, increase levels of blood cholesterol and of gastric secretions, and changes in metabolism (24). Impaired performance, excess use and abuse of cigarettes, alcohol, and assorted drugs, and impaired interpersonal relationship are common behavioral reactions to stress.

In addition to these strain reactions, chronic conditions such as high blood pressure, ulcers, and insomnia, have been associated with unresolved stress. Recent research suggests that the experience of stress, even for short periods, reduces the efficiency of the body's immunological system.

The workplace has been identified as prime source of stress. In particular, stress can result if workers fail to:

- have some degree of influence and control over their work

- perceive the product o work as meaningful and worth while, or
- feel an affinity with the work group as a social support system and identify with it through their work.

### 2.2.6 Ergonomics

The progressive mechanization and automation of industrial process make it essential to pay attention to ergonomics factors in the workplace. Ergonomics problems related to worker/machine interaction, working position, the suitability of instruments to the physical and physiological characteristics of the worker, psychosocial factors, an environmental conditions (heat, cold, noise, air pollution) may affect workplaces in any country and can influence worker's health.

Musculoskeletal syndromes such as "tension neck" and low back pain are a major cause of absenteeism, partially disability, and the granting of disability pensions for people of working age. These syndromes have many causes but the ergonomics problem can con tribute to their development (25).

Ergonomics problems are especially relevant to woman, because the traditional principles of job design and ergonomics were developed for adult male workers, these principle may be inappropriate not only for woman but also for partial disabled, older, and younger workers. Body dimensions are an important consideration in machine design for optimal work performance. Industrial and agriculture processes and machinery are often designed to suit alt male workers, but woman and young workers are generally smaller than men, which makes difficult for the former groups to operate much of the machinery in use in many countries, particularly for agriculture work. Such difficulties may be associated with accidents and fatigue.

### 2.2.7 Medical check up

Medical check up was the first incorporated into the occupational health field as a weapon to prevent occupational disease and injury through pre-placement examinations and periodic checkups. Today, an employee health program generally starts with a pre-placement examination. This help to determine a person's suitability

for a specific job- his technical as well as with the specific job hazards and work environment.

Workplace medical checkups has evolved over the decades, it primary role becoming to enhance and assess the overall effect of the health examinations and health promotion aspects of a comprehensive occupational health program (26).

## 2.3 Precede-proceed model

Precede-proceed are the planning model designed by Lawrence. G and Marshall. K for health education and health promotion programs (27). Its overriding principle is that most enduring health behavior change is voluntary in nature. This principle is reflected in a systematic planning process, which seeks to empower individuals with understanding, motivation, and skills and active engagement in community affairs to improve their quality of life. This is also practical: much research shows that behavior change is most likely and lasting when people have actively participated in decision about it. In the process, they make healthy choices easier by changing their behavior and by changing the policies and regulation, which influence their behavior.

Precede-proceed have nine phages. The first five of which are diagnostic:

Social diagnostic of the self-determined needs, wants, resources, and barriers to them in the target community;

Epidemiological diagnosis of the health problems;

Behavioral and environmental diagnosis of the specific behaviors and environmental factors for the program to address;

Educational and organizational diagnosis of the predisposing, enabling, and reinforcing conditions which immediately affect behavior ; and

Administrative and policy diagnosis of the resource needed and available in the organization, as well as the barriers and support available in the organization and community.

The four remain phages in Precede-proceed are implementation and evaluation (process, impact, and outcome), with emphasize on using the later to improve the former. Evaluation of the process begins as soon as implementation does, in order to detect problems early so they can be corrected. As implementation proceeds, the planer starts evaluating in the order in which program effects are expected. First, its immediate effects (impacts) are evaluated, in order to determine the extent to which the program needs modification. Finally, when enough time has pass- as specified in the objectives-the ultimate intended effects on morbidity, mortality, and quality of life are assessed. This kind of phage evaluation allows you to see what works and what do not.

Theory is most likely to be informative during phage 4 of the planning process suggested by Precede-proceed, or the educational and organizational diagnosis. This phage focuses on examining factors that shape behavioral actions, and environmental factors. Behavioral actions, such as reducing intake of dietary fat, engaging in routine physical activity, and obtaining annual mammograms, are shaped by predisposing, reinforcing, and enabling factors, many of which are amenable to change. Environmental factor, such as availability of prevention services hazardous workplace conditions, and reimbursement for cancer screening, are influenced primarily by enabling factors.

Predisposing factors provide the motivation or reason behind the behavior; they include knowledge, attitude, cultural beliefs, perception, and readiness to change, and so on.

Enabling factors make it possible for a motivation to be realized; that is, they enable persons to act on their predisposition; they include available resources, supportive policies, assistance, and services.

Reinforcing factors come into play after a behavior has begun, and provide continuing rewards or incentives; they contribute to repetition or persistence of

behaviors. Social support, praise, reassurance, and symptom relief might all be reinforcing factors.

## 2.4 Factor related to health promotion practice in the workplace

### 2.4.1 Gender

Pompanchai, P. when compared health promotion practice between two genders in his study in factory workers in industrial factory, Nakhonratchasima province found that proportion of males and females respondents were significant association with health promotion practice (28).

In the study of Addley, K. et at. Concerning physical activities in workplace, they found that almost two- third of participants did not engage in regular moderate physical activities, with females twice as likely not do than males (29).

Sean, F et at study on eating patterns and factors influencing likely change in the workplace found that there were a number of significant difference between males and females in frequency of food consumption of meat, fresh food, vegetables, whole milk and fried foods (30).

The conclusion after review study related to practice health promotion in the workplace is that there is significant association between genders and health promotion practice in workplace.

### 2.4.2 Education level

The association level and health promotion practice were found not significant in the study of Pompanchai because majority of the sampling group were….with low variation. And almost of them can equally get health related information from mass media available in workplace.

### 2.4.3 Knowledge on health promotion in workplace

Pompanchai, P. divided knowledge on health promotion in three levels of high, moderate and low. From that he say the knowledge of workers who wok at industrial factory were not significant related to their practice level in health promotion because almost of them had basis educational level so majority had average knowledge on health promotion, and therefore there were no significant association between knowledge and practice.

### 2.4.4 Perception on health promotion in workplace

The staff of sampling group who was considered at three levels of perception had no significant difference with health promotion practice in the study of Pompanchai. He say that because majority of respondents spent more time in factory than in house, so the daily living like eating, exercise depend on the regulation of factory, hence there was no significant association between perception and practice health promotion in workplace.

### 2.4.5 Availability

In the study of Pompanchai, it was revealed that, availability of facilities and place can encourage the practice of health promotion in workplace among the worker in the industrial factory of Nakhonratchasima province. People who confirmed about availability of facilities and place showed better practice than other group.

### 2.4.6 Psycho-social support

Psycho-social support plays an important role to reinforce the practice of health promotion in the workplace. From the result in the study of Pompanchai, it was found that workers of sampling group who received the support from the colleagues had higher level of practice at p value $< 0.01$.It was explained that the workers had overwork and did not care much about their health, so they need the enabling from colleagues and it can lead to better practice of them.

Generally, a combination of factors contributes to establish of health promotion activities in the workplace. In some countries, the primary driving force for the

introduction of workplace health promotion is economic, a successful of thee program provides quantifiable saving for the enterprise. In other countries, programs are introduced predominantly for social reason, as part of national policies for health. In yet others, there are statutory requirements for regular medical examinations of al workers. Or of specific occupational groups, at which informal discussion about lifestyle may take place, but planned health promotion programs are rare.

"To make work fit for man and man fit for work" is a widely accepted definition of the role of occupational health service. The main thrust of contemporary occupational health care is towards thee identification and control of work- related disease and injury- the making of work" fit for man". This is prerequisites for promotion health. However, WHO has repeated emphasized that occupational health programs should not be limited to the prevention and control of work-related hazards, but should deal with the full relationship between work and health and include general health promotion.

# CHAPTER 3
# RESEARCH METHODOLOGY

## 3.1 Study design

This was cross-sectional study in which its main purpose was to determine practice health promotion in workplace among AIHD and INMU staff.

## 3.2 Study population

The target population are the staff in AIHD and INMU who are current working there as civil servant and contract employee.

## 3.3 Sample size and sampling technique

Select all AIHD and INMU staff who have been working as civil servant and contract employees, include 85 staff in AIHD and 157 staff in INMU.

## 3.4 Research instrument for data collection

Research instrument is self-administered questionnaires.

The questionnaire will be divided into 6 parts as follow:

Part I: Personal information and nature of responsibility.

Age

Gender

Education level

Professional position

Marital status

Employment status

Workload

Part II: Availability of facility and environmental condition of workplace

Availability of the instruments and setting places for health promotion practice in workplace.

Accessibility to practice health promotion in workplace in term of convenience to practice.

Health promotion policy

Part III: Health related performance in workplace

Physical exercise

Part IV: Food consumption:

Practice food consumption among staff

Part V: Health status of respondent:

Their health status

Practice stress management

Participate in medical check up

Part VI: Knowledge and perception about health promotion

Knowledge on health promotion in workplace

Perception on health promotion in workplace toward:

Benefits of practice health promotion in workplace

Barriers of practice health promotion in workplace.

Susceptibility of work-related injury and illness

Severity of work-related injury and illness

### 3.5 Pre-test of instrument

Before going to the process of data collection, the researcher submit the questionnaire sheet to thesis advisors in order to check its content validity. Then, the questionnaire are adjusted according to comments and suggestions of the thesis

advisors. The questionnaires are pre-test with 30 staffs in Faculty of Social Science and Humanity

The results are analyzed for its reliability. After that, the questionnaires are adjusted again and are ready to use for data collection

### 3.6 Data collection

Before data collection, the permission to carry out this study granted by director of AIHD and INMU. The questionnaire was made in English and then translated into Thai language. All of the returned questionnaire were examined in order to ensure the completeness of the responses to questionnaire items.

### 3.7 Data management and analysis

The processing and analyzing of data are done by SPSS program. The presentations of the statistical results of this study are divided in to the following parts:

#### 3.7.1 Univariate analysis

Descriptive statistic using frequency, mean, standard deviation and percentage to describe the distribution of independent variables and independent variable.

**Predisposing factor**

Socio-demographic characteristics:

Age

Gender

Education level

Work status

Professional position

Marital status

Work load

Health status

Knowledge on health promotion in workplace

Perception on health promotion in workplace toward:

Benefits of practice health promotion in workplace

Barriers of practice health promotion in workplace.

Susceptibility of work-related injury and illness

Severity of work-related injury and illness

**Enabling factors:**

Accessibility to practice health promotion in workplace in term of easy and convenience to practice.

Availability of the materials, equipments, setting place for practice health promotion in workplace.

**Reinforcing factors:**

Media advocacy

Peer support and net work

**Health promotion practice:**

Physical exercise

Food consumption

### 3.7.2 Bivariate analysis

Using the Chi- square test to determine the significant association between the dependent and independent variables. The critical significance level of all statistical test is set at alpha = 0.05.

# CHAPTER 4
# RESULTS

The study of health promotion practice in work place among the staffs at two health education Institutes Salaya campus, Mahidol University was conducted to determine health promotion practice and factors influencing the practice among the staffs of ASEAN Institutes for health development and Institute of Nutrition.

The data was collected by means of self- administered questionnaire through trained data collector in January 2005.

The factors which were examined are as bellow:

**Predisposing factors**

Socio demographic factor

Knowledge on health promotion

Perception related to health promotion

Health status

**Enabling factors:**

Health promotion policy

Availability of program and resource

Accessibility of health promotion

**Reinforcing factors**

Psycho-social support

Peer support and net work

In the end, dependent variables those are: health promotion practice in workplace was examined by mean of studying the physical exercise, food consumption, cigarette smoking, alcohol drinking, ergonomics and participation in medical check up. And 2 main activities to be focus were physical exercise and food consumption.

## 4.1 Personnel information and nature of responsibility

Table 1 present the personnel information and nature of responsibility of respondents such as age, gender, marital status, educational level, professional role, employment status, working time every day and nature of assignment.

The research was conducted to cover 242 staff of 2 academic institutes; 85 (35%) belongs to ASEAN Institute for Health Development (AIHD) and 157 (65%) staff of Institute of Nutrition, Mahidol University (INMU). In these Institutes, female staff is accounted to 59.5% whereas male is 40.5%. In AIHD, the proportion between female and male is similar (female = 50.6%; male=49.4%). Whereas in INMU staff are more likely to be higher number of female than those of male (female = 64.3%; male=35.7%).

The age of respondent range from 20 to 67 years old with Mean (SD) of AIHD staff = 41.3 (8.6) years; Mean of INMU staff = 37.6 (8.8) years; n = 157.

As for educational background, 36% of the respondents were lower than bachelor, 65% were bachelor, 38% have master degree and 8% are doctoral degree. With regard to the professional role, 26% of respondents had academic activities and 74% were performing supportive role. When inquired about the employment status, 66% were found permanent and 34% were working on contract.

As for the duration of working hours, 58% working more than 7 hours per day and 42% working less than 7 hours a day. 63% would sometimes work beyond official hours while 26% would always do so whereas 10 % had never done so. While 59% would sometimes working during weekends as compared to 31% of respondents would often/always do that and 10% reported that they never work during weekends.

When the number and percentage of the staff was analyzed of reference to the nature of assignment in workplace, it was found that 58% of respondents were dealing with routine documents. In AIHD, it was accounted for 67% and in INMU was 83%; this is difference because INMU is Institute focusing on research work more than

AIHD, 21% respondents were work in laboratory and all of them are staff of INMU, 21% have nature of work as field work, 30% labor job, 22% administrative job and 22% skill job. The biggest group belongs to the document dealing staff.

**Table 1 Characteristics of respondents**

| Characteristics | AIHD | INMU | Total |
|---|---|---|---|
| **Gender; n(%)** | **n=85** | **n=157** | **n=242** |
| Male | 42(49) | 56(36) | 98(41) |
| Female | 43(51) | 101(64) | 144(59) |
| **Age; (years)** | **n= 84** | **n=157** | **n=242** |
| Min-max | 23-67 | 20-60 | 20-67 |
| Mean | 41 | 38 | 40 |

**Table 1 Characteristics of respondents (cont.)**

| Characteristics | AIHD n (%) | INMU n (%) | Total n (%) |
|---|---|---|---|
| **Marital status** | **n= 85** | **n=156** | **n=242** |
| Single | 24(28) | 71(46) | 95(39) |
| Married | 60(71) | 75(48) | 135(56) |
| Separated/divorced | 1(1) | 8(5) | 9(4) |
| Widow/widower | 0(0) | 2(1) | 2(1) |
| **Education attainment** | **n= 84** | **n=155** | **n=242** |
| Less than bachelor degree | 28(33) | 59(38) | 87(36) |
| Bachelor degree | 36(43) | 59(38) | 95(40) |
| Master degree | 13(16) | 25(16) | 38(16) |
| Doctoral degree | 7(8) | 12(8) | 19(8) |
| **Professional role** | **n= 85** | **n=153** | **n=242** |
| Academic role | 18(21) | 44(29) | 62(26) |
| Supportive role | 67(79) | 109(71) | 176(74) |
| **Employment status** | **n= 85** | **n=157** | **n=242** |
| Permanent | 56(66) | 101(66) | 157(66) |
| By contract | 29(34) | 52(34) | 81(34) |
| **Duration of duty** | **n= 85** | **n=153** | **n=242** |
| Less than or 7 hours/day | 53(63) | 86(55) | 139(58) |
| More than 7 hours/day | 31(37) | 70(45) | 101(42) |

**Table1 Characteristic of respondents (cont.)**

| Characteristics | AIHD n (%) | INMU n (%) | Total n (%) |
|---|---|---|---|
| **Work beyond official hours** | **n= 85** | **n=157** | **n=242** |
| Never | 4(5) | 21(13) | 25(10) |
| Sometimes | 59(69) | 94(60) | 153(63) |
| Always | 22(26) | 42(27) | 64(27) |
| **Working during weekend** | **n= 85** | **n=157** | **n=242** |
| Never | 3(4) | 22(14) | 25(10) |
| Sometimes | 54(63) | 88(56) | 142(59) |
| Often/always | 28(33) | 47(30) | 75(31) |
| **Nature of assignment** | **n= 85** | **n=157** | **n=242** |
| Documentary basis | 57(67) | 83(83) | 140(58) |
| Laboratory | 0(0) | 51(100) | 51(21) |
| Field work | 21(25) | 29(18) | 50(21) |
| Labor basis job | 31(36) | 41(26) | 72(30) |
| Administrative job | 20(23) | 32(20) | 52(22) |
| Skill job | 18(21) | 34(22) | 52(22) |

## 4.2 Knowledge and perception on health promotion

### 4.2.1 Knowledge on health promotion

Regarding knowledge of respondents to health promotion in workplace, the knowledge score of the respondents was summed up and categorized into 3 groups of high, moderate and low knowledge. The high level of knowledge was accounted for respondents who got score higher than Mean score plus SD, the average level of knowledge was accounted for staff who got the score between Mean minus SD and Mean plus SD. The last group low knowledge was for staff who got score lower than Mean score minus SD. It was found that more than half of the respondents (62%) had average knowledge (58% in AIHD and 64% in INMU); the number of high knowledge is 15% in AIHD and in INMU is 21%.

**Table 2 Number and percentage of respondents classified by knowledge about health promotion**

| Score of knowledge | AIHD n (%) | INMU n (%) | Total n (%) |
|---|---|---|---|
| **Knowledge on health promotion** | **n= 85** | **n=157** | **n=242** |
| Good knowledge (>18.69) | 13(15) | 33(21) | 46(19) |
| Average knowledge (10.25- 18.69) | 49(58) | 101(64) | 186(77) |
| Low knowledge (< 10.25) | 23(27) | 23(15) | 46(19) |
| Mean= 14.47; S.D= 4.22; Minimum = 3; maximum = 25 p value= 0.055 | | | |

### 4.2.2 Perception on health promotion

In term of perception on health promotion, similar to knowledge on health promotion, it was divided into 3 levels by Mean and SD. The respondents would be accounted for good perception if they had the score more than Mean plus SD, they were average perception if the score between Mean plus SD and Mean minus SD. The last group was low perception with the score lower than Mean minus SD. It was found

that, majority of staff in AIHD and INMU had average perception (73%), the percentage of high level score of perception was 14% in AIHD and 15% in INMU, percentage of low level score of perception were 18% and 10% for AIHD and INMU respectively.

**Table 3 Number and percentage of respondents classified by perception on health promotion**

| Score of perception | AIHD n (%) | INMU n (%) | Total n (%) |
|---|---|---|---|
| **Perception about health promotion** | **n= 85** | **n=157** | **n=242** |
| Good perception (> 24.03) | 12(14) | 24(15) | 36(15) |
| Average perception (16.87- 24.03) | 58(68) | 118(75) | 176(73) |
| Low perception (< 16.87) | 15(18) | 15(10) | 30(12) |
| Mean= 20.45; S.D=3.58, Minimum= 12 Maximum = 30, p value = 0.189 | | | |

### 4.3 Health status of respondents

When asked about the existing of health problem in the last one month, it was showed that the most frequency of illness showing in respondents in 2 institutes almost focus on back pain, leg's muscle pain, arm's muscle pain, eyes pain and runny nose .The highest percentage of illness observed from staff were back pain (74%), eyes pain (69%), leg's muscle pain (66%), arm's muscle pain (64%), runny nose (60%). In term of visiting doctor for medication, 45 % of staff were regularly visiting doctor, and the highest percentage of staff visiting doctor for influenza (32%), hypertension were 22%, gastritis were 13%, oral health problem were 6%, rheumatoid arthritis were 7%.

The result revealed that for the group of chronic disease such as: hypertension, diabetes mellitus, heart disease, gout/ rheumatoid arthritis, gastritis, cysts (breast,

uterus, etc), allergy, 33% staff in AIHD and 26% in INMU were considered as having chronic disease.

**Table 4 History of health problems**

| Characteristics | AIHD n (%) | INMU n (%) | Total n (%) |
|---|---|---|---|
| **Existence of illness in last one month** | **n=85** | **n=157** | **n=242** |
| Back pain | 62(73) | 116(74) | 178(74) |
| Leg's muscle pain | 60(71) | 99(63) | 159(66) |
| Arm's muscle pain | 60(71) | 96(61) | 156(65) |
| Eyes pain | 60(71) | 107(68) | 167(69) |
| Runny nose | 55(65) | 92(59) | 147(61) |
| **Visiting doctor** | 40(47) | 69(44) | 109(45) |
| **Reasons for visiting doctor** | **n= 40** | **n=69** | **n=109** |
| Hypertension | 10(25) | 14(20) | 24(22) |
| Gastritis | 5(13) | 9(13) | 14(13) |
| Influenza | 11(28) | 24(35) | 35(32) |
| Rheumatoid arthritis | 4(10) | 4(6) | 8(7) |
| Gout/ rheumatoid arthritis | 4(10) | 4(6) | 8(7) |
| Oral health problem | 2(5) | 4(6) | 6(6) |
| Allergy | 3(7) | 2(3) | 5(5) |
| Cysts (breast, uterus, etc) | 2(5) | 3(4) | 5(5) |
| Diabetes Mellitus | 3(7.5) | 1(1) | 4(4) |
| Heart disease | 2(5) | 1(1) | 3(3) |
| **Having chronic disease** | 28(33) | 41(26) | 69(28) |

### 4.4 Availability, accessibility and health promotion policy in workplace

When inquired about the availability of room for eating and coffee break, out of 242 respondents, 80% replied as yes, 90% and 89% respondents respectively confirmed about availability of reading room and chatting room.

As regard the physical facilities, 75% respondents confirmed having place for aerobic exercise, 19% in AIHD and 84% in INMU confirmed the availability of equipment for physical fitness; 47% and 62% respectively in AIHD and INMU informed having facilities of indoor games and 54% respondents answered having space for outdoor games. Majority of staff (80%) informed the encouragement of their colleagues for physical exercise.

In connection to everyday comfort, 85% of respondents declared that working place were comfortable, 95% confirmed having clean toilets, 80% confirmed having co-operation of colleagues for working environment. To keep environment healthy, 78% informed that they had regulation of non-smoking in their building, 65% confirmed of having first aids availability in emergency, 92% informed about having electric safety control and 91% said that risky instrument and machine were placed at appropriate place, 53% confirmed that they undergo fire prevention exercise and 88% informed about the availability of UPS and electrical stabilizer.

In term of having health insurance card, majority (84%) of staff had health insurance card and in that 57% are subsidized by the office.

**Table 5 The profile of studied workplace**

| Characteristics | AIHD n (%) | INMU n (%) | Total n (%) |
|---|---|---|---|
| | **n= 85** | **n= 157** | **n= 242** |
| Room/corner for breakfast/ lunch, refreshment/ coffee break | 58(72) | 130(85) | 188(80) |
| Room/corner for reading newspaper, magazine, cartoon booklet | 80(91) | 139(89) | 219(90) |
| Room/ corner to chat with friend/ colleagues | 78(92) | 134(87) | 212(89) |
| Room for aerobic exercise | 62(77.5) | 109(74.1) | 171(75) |
| Equipment for physical fitness | 15(18.8) | 125(84) | 140(61) |
| Room/ corner for indoor games | 38(47) | 89(62) | 127(56) |
| Corner/space for outdoor games | 36(45.6) | 85(58) | 121(54) |
| Encouragement of colleagues to join physical exercise | 66(83) | 125(79) | 191(80) |
| Instrument/machine is placed in appropriate room/ position | 63(89) | 114(92) | 117(91) |
| UPS, electricity stability supply is provided for computer setting | 75(95) | 121(85) | 196(88) |
| Specific corner/ space for smoking | 30(43) | 50(45) | 80(40) |
| Be provided comfortable space for working | 79(93) | 121(80) | 200(85) |
| Toilets are always clean without smell | 80(49) | 148(95) | 228(95) |
| Colleagues give me good care to workplace environment | 66(83) | 112(78) | 178(80) |

**Table 5 The profile of studied workplace (cont.)**

| Characteristics | AIHD n (%) | INMU n (%) | Total n (%) |
|---|---|---|---|
| | **n= 85** | **n= 157** | **n= 242** |
| Regular of non-smoking in the building is announced | 62(82) | 102(76) | 164(78) |
| Guidance of first aids of injury, chemical and fire burns is informed for all involved staff | 63(79) | 71(56) | 134(65) |
| Electrical safety control is available for the whole building | 74(92) | 109(92) | 183(92) |
| Fire prevention exercise has been taken every year | 41(58) | 62(50) | 103(53) |
| Having health insurance coverage | 68(80) | 135(86) | 203(84) |

### 4.5 Psycho-social support of respondents

Regarding the psycho-social support in term of media advocacy and peer support and network, majority of respondents (74%) answered they could get health information through colleagues in office, 39% answer from health personnel. In case of mass media, most of them had accessed to information through newspaper (73%), magazine (55%) and television (54%).

**Table 6 Source of health information among respondents**

| Source of health information | AIHD n (%) | INMU n (%) | Total n (%) |
|---|---|---|---|
| | n= 85 | n=157 | n=242 |
| Newspaper | 61(72) | 115(73) | 176(73) |
| Television | 51(60) | 79(50) | 130(54) |
| Magazine | 42(50) | 91(58) | 133(55) |
| Colleagues in office | 65(76) | 113(72) | 178(74) |
| Health personnel | 43(51) | 52(33) | 95(39) |
| Family member | 35(41) | 62(39) | 97(40) |

### 4.6 Health promotion practice among respondents

#### 4.6.1 Patterns of food consumption among respondents

**Food preference**

Answering to food preference, nearly half of respondent answered acceptable for the taste of spicy (44%), 40% answered they like and 16 % replied as dislike. Most staff liked the taste of sour (41%) whereas 40 % answered acceptable, 19 % disliked. For the taste of sweet, 42% replied as acceptable, the percentage of answer don't like and like were the same (29%). When asked about salty taste, 44% answered as acceptable, 37% didn't like, 19% liked. Majority of them didn't like bitter and 40% answered as acceptable. For the plain taste and mix taste, around half of respondents answered acceptable (51% and 45% respectively). Oily was considered by majority as disliked (50%), 76 % answered didn't like half cook and nearly half of them (49%) confirmed acceptable for overcook.

**Table 7 Food preference of respondents**

| Characteristics | AIHD n (%) | INMU n (%) | Total n (%) |
|---|---|---|---|
| | n=85 | n=157 | n=242 |
| **Spicy** | | | |
| Don't like | 13(15) | 25(16) | 38(16) |
| Acceptable | 37(44) | 69(44) | 106(44) |
| Like | 35(41) | 63(40) | 98(40) |
| **Sour** | | | |
| Don't like | 15(18) | 32(20) | 47(19) |
| Acceptable | 36(42) | 61(39) | 97(40) |
| Like | 34(40) | 64(41) | 98(41) |
| **Sweet** | | | |
| Don't like | 21(25) | 50(32) | 71(29) |
| Acceptable | 43(51) | 59(38) | 102(42) |
| Like | 21(25) | 48(31) | 69(29) |
| **Salty** | | | |
| Don't like | 29(34) | 60(38) | 89(37) |
| Acceptable | 43(51) | 63(40) | 106(44) |
| Like | 13(15) | 34(22) | 47(19) |
| **Bitter** | | | |
| Don't like | 43(50) | 85(54) | 128(53) |
| Acceptable | 36(42) | 61(39) | 97(40) |
| Like | 6(7) | 11(7) | 17(7) |
| **Plain** | | | |
| Don't like | 29(34) | 46(29) | 75(31) |
| Acceptable | 40(47) | 83(53) | 123(51) |
| Like | 16(19) | 28(18) | 44(18) |
| **Mix taste** | | | |
| Don't like | 14(17) | 16(10) | 30(13) |
| Acceptable | 35(41) | 72(47) | 107(45) |
| Like | 36(42) | 67(43) | 103(43) |
| **Oily** | | | |
| Don't like | 45(53) | 75(48) | 120(50) |
| Acceptable | 36(42) | 61(39) | 97(40) |
| Like | 4(5) | 20(13) | 24(10) |
| **Half cook** | | | |
| Don't like | 70(82) | 115(73) | 185(76) |
| Acceptable | 13(15) | 28(18) | 41(17) |
| Like | 2(2) | 14(9) | 16(7) |
| **Overcook** | | | |
| Don't like | 32(38) | 66(42) | 98(41) |
| Acceptable | 44(52) | 74(47) | 118(49) |
| Like | 9(11) | 17(11) | 26(11) |

**Meal discipline and eating place of respondents**

It was observed that half of staff (49%) practice eating food in provided room/corner, 25 % never use corner/room for eating and 27 % always used. Majority of them (72%) always putting garbage/ food waste in bin with cover, 21% sometimes and only 7% had never done so.

**Table 8 Meal discipline of respondents**

| Characteristics | AIHD n (%) | INMU n ( %) | Total n (%) |
|---|---|---|---|
| **Eat food in specified/ provided room/corner** | **n= 85** | **n= 157** | **n= 242** |
| Never | 22(26) | 37(24) | 59(25) |
| Sometimes | 45(53) | 72(46) | 117(49) |
| Always | 18(21) | 46(30) | 64(27) |
| **Putting garbage /food waste in bin with cover** | **n= 85** | **n= 157** | **n= 242** |
| Never | 9(101) | 8(5) | 17(7) |
| Sometimes | 20(23.5) | 31(20) | 51(21) |
| Always | 56(66) | 118(75) | 174(72) |

Regarding eating place for normally day life, most staff eat at home for weekday breakfast (41%), 21% did not eat, 18 % eat in food shop and 19% bring home prepared food or buy food from outside and eat in office. For weekday lunch, most of them answered they eat in University cafeteria (64%), 30% buy food outside and eat in office.

The place for weekday dinner is mostly at home (81%). In weekend, 19 % of staff don't eat for breakfast, majority eat at home (78%), 6% eat outside. For weekend lunch, most of them (78%) eat at home. Home is also the place for majority staff eating weekend dinner (84%).

**Table 9 Normally place for eating during weekday and weekend of respondents**

| Characteristics | AIHD n(%) | INMU n ( %) | Total n(%) |
|---|---|---|---|
| **During weekday** | | | |
| **For Breakfast** | **n= 85** | **n=157** | **n=242** |
| Not eat | 20(23) | 32(20) | 52(21) |
| Eat at home | 37(43) | 62(39) | 99(41) |
| Eat outside | 16(19) | 28(18) | 44(18) |
| Eat in office | 12(14) | 35(22) | 47(19) |
| **For lunch** | **n= 85** | **n=157** | **n=242** |
| Eat in university cafeteria | 61(72) | 93(59) | 154(64) |
| Eat outside office | 4(5) | 12(8) | 16(7) |
| Eat in office | 20(23) | 52(33) | 72(30) |
| **For dinner** | **n= 85** | **n=157** | **n=242** |
| Eat at home | 68(80) | 128(81) | 196(81) |
| Eat outside | 15(18) | 27(17) | 42(17) |
| **During weekend** | | | |
| **Breakfast** | **n= 85** | **n=157** | **n=242** |
| Not eat | 14(16) | 31(20) | 45(19) |
| Eat at home | 63(74) | 119(76) | 182(75) |
| Eat outside | 8(9) | 7(4) | 15(6) |
| **Lunch** | **n= 85** | **n=157** | **n=242** |
| Eat at home | 65(76) | 125(80) | 190(78) |
| Eat outside | 19(22) | 30(19) | 49(20) |
| **Dinner** | **n= 85** | **n=157** | **n=242** |
| Eat at home | 69(81) | 135(86) | 204(84) |
| Eat outside | 14(16) | 22(14) | 36(15) |

**Food behavior of respondents**

The questionnaire covered two difference grouping food: as food for main dishes and snacks and beverages. “Main dishes” was divided in to 4 subgroups, those are: general main pattern, caloric rich food, Thai fast food and western food. There were also 4 subgroups for “snacks and beverages” such as: low sugar, high sugar, caloric rich snacks and fruit. We counted the frequency of food consumption as the tool to measure food consumption level. The staff who consumes food with more frequency will be given higher score. In this part, the score of food consumption was divided in to 2 levels as low score and high score base on Mean score of each item. The respondent who got score lower or equal Mean will be considered as low score, hence consuming less food (low consumption). And for people who got higher than Mean score will be categorized as high score hence consuming more food (high consumption).

It was found that, for general meal pattern, in AIHD and INMU, more than half of respondents in both institutes had high consumption at 63.5% and 55% respectively.

For caloric rich food, 71% in AIHD, had high consumption whereas only 48% in INMU had high consumption. This difference is significant at Chi-square = 11.021, p value= 0.001.

With regard Thai fast food, more than half of respondents in each institute had low consumption (55% and 64%).

For Western food, majority of staff in both Institutes had low consumption (78% and 76% in AIHD and INMU respectively).

In case of low sugar snacks, it was found that 54% and 45% respectively in AIHD and INMU got high consumption and there was no difference between the 2 institutes.

For the group of high sugar snacks and caloric rich snacks, slightly more than half of staff in each institutes had low consumption.

Concerning food and its products, the result showed that majority of respondents got high consumption in both institutes. (76.5% in AIHD and 78% in INMU).

Regarding taking supplement, 26% of staff answered as yes. Within this group, the most respondents took vitamin tablets (48%); calcium tablet and green tea were the same percent of 34%, taking traditional herb was 19%.

**Table 10 Patterns of food consumption among respondents**

| Characteristics | AIHD n(%) | INMU n(%) | $\chi^2$ | p value |
|---|---|---|---|---|
| | n= 85 | n= 157 | | |
| **General meal patterns** | | | | |
| Low consumption | 31(36.5) | 70(45) | 1.494 | 0.222 |
| High consumption | 54(63.5) | 87(55) | | |
| **Caloric rich foods** | | | | |
| Low consumption | 25(29) | 81(52) | 11.021 | 0.001 |
| High consumption | 60(71) | 76(48) | | |
| **Thai fast foods** | | | | |
| Low consumption | 47(55) | 100(64) | 1.632 | 0.201 |
| High consumption | 38(45) | 57(36) | | |
| **Western foods** | | | | |
| Low consumption | 66(78) | 120(76) | 0.046 | 0.831 |
| High consumption | 19(22) | 37(24) | | |
| **Low sugar snacks** | | | | |
| Low consumption | 39(46) | 87(55) | 2.007 | 0.157 |
| High consumption | 46(54) | 70(45) | | |
| **High sugar snacks** | | | | |
| Low consumption | 46(54) | 87(55) | 0.037 | 0.847 |
| High consumption | 39(46) | 70(45) | | |
| **Caloric rich snacks** | | | | |
| Low consumption | 47(55) | 90(57) | 0.093 | 0.761 |
| High consumption | 38(45) | 67(43) | | |
| **Fruit and its products** | | | | |
| Low consumption | 20(23.5) | 35(22) | 0.048 | 0.827 |
| High consumption | 65(76.5) | 122(78) | | |

**Table 10 Food consumption patterns of respondents (cont.)**

| Characteristics | AIHD n(%) | INMU n(%) | Total n(%) |
|---|---|---|---|
| | **n=85** | **n= 157** | **n= 242** |
| **Taking supplement** | 19(34) | 35(32) | 64(26) |
| **Kind of supplement** | **n=29** | **n= 35** | **n=64** |
| Vitamin tablets | 13(45) | 18(51) | 31(48) |
| Calcium tablets | 9(31) | 13(37) | 22(34) |
| Green tea | 13(45) | 9(26) | 22(34) |
| Traditional herbs | 4(14) | 8(23) | 12(19) |

### 4.6.2 Physical exercise

In term of promotion of health of respondents by doing physical exercise, it was categorized as aerobic, swimming, outdoor exercise and indoor exercise. In term of doing aerobic exercise, 48% in AIHD sometimes practiced whereas it was 30% in INMU. This difference is significant at Chi- square= 11.497, p value= 0.003. Concerning swimming exercise, 43% in AIHD sometimes did and in INMU was 23%. However, there was no difference between 2 institutes. Regarding outdoor exercise, 50% in INMU did not practice but only 27% in AIHD did not do. This difference ia significant at Chi-square =11.699, p value= 0.003. For the activities of indoor exercise, 29% in AIHD and 19% in INMU sometimes did.

**Table 11 Performing physical exercise of respondents**

| Characteristics | AIHD n (%) | INMU n (%) | $\chi^2$ | p value |
|---|---|---|---|---|
| **Aerobic exercise** | **n= 85** | **n=157** | | |
| Not do | 43(51) | 96(61) | 11.497 | 0.003 |
| Sometimes | 41(48) | 47(30) | | |
| always | 1(1) | 14(9) | | |
| **Swimming** | **n= 85** | **n=157** | | |
| Not do | 48(56) | 117(74) | 1.664 | 0.197 |
| Sometimes | 36(43) | 36(23) | | |
| always | 1(1) | 4(3) | | |
| **Outdoor exercise** | **n= 85** | **n=157** | | |
| Not do | 23(27) | 78(50) | 11.699 | 0.003 |
| Sometimes | 49(58) | 64(40) | | |
| always | 13(15) | 15(10) | | |
| **Indoor exercise** | **n= 85** | **n=157** | | |
| Not do | 59(70) | 124(79) | 0.622 | 0.430 |
| Sometimes | 25(29) | 30(19) | | |
| always | 1(1) | 3(2) | | |

### 4.6.3 Cigarette smoking and alcohol drinking

Regarding smoking cigarette and drinking alcohol, in both institutes, majority of staff (92%) answered no. This may be due to the successful of the big campaign to control smoking cigarette and alcohol drinking all over many places.

**Table 12 Number and percentage of respondents for smoking cigarette and drinking alcohol**

| Characteristics | AIHD n (%) | INMU n (%) | $\chi^2$ | p value |
|---|---|---|---|---|
| | **n= 85** | **n=157** | | |
| **Smoking cigarette** | | | | |
| No | 65(87) | 132(94) | 3.563 | 0.073 |
| Yes | 10(13) | 8(6) | | |
| **Alcohol drinking** | | | | |
| No | 65(87) | 130(95) | 4.507 | 0.062 |
| Yes | 10(13) | 7(5) | | |

### 4.6.4 Stress and coping mechanism

Regarding stress and coping mechanism, majority of staff in both institutes answered that sometimes they had stress ( 81% in AIHD and 71% in INMU).8% staff in AIHD answered they often had stress and in INMU were 16 %. There were no difference between 2 institutes at Chi-square= 6.793, p value= 0.079. Those people who had stress, majority of the stress (93%) were caused by factors related to workplace. 70 % got stress due to over work/ workload, 57% due to conflict with colleagues, 45% due to conflict with boss, 37 % answered not satisfy with salary and 32% answered due to travel from home to office takes long hours.

In term of stress coping strategies, there were many ways to be showed by the staff, in that the most frequency of coping were talking to friend (face to face) with the highest percent to answer (87%), watch favorite programs or show from TV/ DVD/ CD were accounted for 84%, go shopping were the answer of 67% respondents, make a trip to countryside were 64%, read a book/ cartoon 59%, watch film in the theatre 54%, eat favorite foods/ snacks were answer for 52% respondents, go for jogging were 48%, read Dharma/religious book were accounted for 48% and access/ search internet by 44% of staff.

**Table 13 Stress and coping mechanism of respondents**

| Characteristics | AIHD n (%) | INMU n (%) | $\chi^2$ | p-value |
|---|---|---|---|---|
| **Frequency having stress** | **n=85** | **n=157** | | |
| Never | 8(9) | 11(7) | 6.793 | 0.079 |
| Sometimes | 69(81) | 111(71) | | |
| Often | 7(8) | 26(16) | | |
| Always | 1(2) | 9(6) | | |

**Table 13 Stress and coping mechanism of respondents (cont.)**

| Characteristics | AIHD n (%) | INMU n (%) | Total n (%) |
|---|---|---|---|
| **Stress caused by factors related to workplace** | 71(92) | 136(93) | 207(93) |
| **Cause of stress** | **n=77** | **n=146** | **n=223** |
| Conflict with colleagues | 45(58) | 83(57) | 128(57) |
| Conflict with supervisor/ boss | 32(42) | 69(47) | 102(45) |
| Not satisfy with salary | 26(34) | 57(39) | 83(37) |
| Lots of work/ work load | 52(67) | 105(72) | 157(70) |
| Travel from home to office takes long hours | 25(32) | 46(31) | 71(32) |
| **Stress coping strategies (top ten)** | | | |
| Talk to friend( face to face) | 67(87) | 128(88) | 195(87) |
| Watch favorite programs or show from TV/ DVD/ CD | 65(84) | 123(84) | 188(84) |
| Go shopping | 59(77) | 91(62) | 150(67) |
| Make a trip to countryside | 53(69) | 90(62) | 143(64) |
| Read a book/ cartoon | 49(64) | 83(57) | 132(59) |
| Watch film in the theatre | 49(63) | 71(49) | 120(54) |
| Eat favorite foods/ snacks | 46(60) | 70(48) | 116(52) |
| Go jogging | 46(60) | 61(42) | 107(48) |
| Read Dharma/religious book | 39(51) | 71(49) | 110(49) |
| Access/ search internet | 34(44) | 65(45) | 99(44) |

### 4.6.5 Practice ergonomics

Regarding practice ergonomics of respondents, it was found that more than half of them always practiced working in comfortable manner, 5% answered never done so. For people who had the work involve with computer, slightly more than half of them practice sitting in comfortable using computer, 38% sometimes did and 6% never done. Concerning people who had part of work under strong sun, 46% of them did not wear sun glasses, 33% sometimes wore and 21% always wore.

**Table 14 Practice of ergonomics of respondents**

| Characteristics | AIHD n (%) | INMU n (%) | $\chi^2$ | p value |
|---|---|---|---|---|
| **Work in comfortable manner** | **n=85** | **n=157** | | |
| Not do | 6(7) | 6(4) | 3.721 | 0.156 |
| Sometimes | 27(32) | 68(43) | | |
| Always | 52(61) | 83(53) | | |
| **Sit in comfortable using computer** | | | | |
| Not do | 2(4) | 9(7) | 1.583 | 0.453 |
| Sometimes | 17(31) | 52(41) | | |
| Always | 36(65) | 66(52) | | |
| **Wear sunglasses under strong sun** | | | | |
| Not do | 28(38) | 72(50) | 3.665 | 0.160 |
| Sometime | 30(40) | 43(30) | | |
| always | 16(22) | 30(20) | | |

### 4.6.6 Physical health check up of respondents

Regarding participating in physical check up, majority of respondents (84% and 76% in AIHD and INMU respectively) took part in annual check up and there is no significant difference between the 2 institutes at Chi-square = 0.670, p value> 0.05. For people who took part in medical check up, 78% used medical mobile team, 26 % went to government hospital and 6 % used private hospital for check up. For those who never had check up, the reason “I am healthy” was (48%), another 48% said that they didn’t like hospital and 4 % answered that they think it was costly.

**Table 14 Participating physical check up of respondents**

| Characteristics | AIHD n (%) | INMU n (%) | $\chi^2$ | p value |
|---|---|---|---|---|
| **Participate in physical health check up** | **n=85** | **n=157** | | |
| Never | 8(9) | 21(13) | 1.670 | 0.434 |
| Sometimes | 6(7) | 16(10) | | |
| Often/ always | 71(84) | 120(76) | | |

**Table 15 Participating physical check up of respondents (cont.)**

| Characteristics | AIHD n (%) | INMU n (%) | Total n (%) |
|---|---|---|---|
| **Reason for not check up** | **n= 8** | **n=19** | **n=27** |
| I am healthy | 5(63) | 8(42) | 13(48) |
| I don’t like hospital | 3(38) | 10(53) | 13(48) |
| I think it is costly | 0(0) | 1(5) | 1(4) |
| **Place for check up** | **n=77** | **n=136** | **n=213** |
| Medical mobile team provided in office | 56(73) | 111(82) | 167(78) |
| Government hospital | 20(26) | 35(26) | 55(26) |
| Private hospital | 5(7) | 8(6) | 13(6) |

### 4.7 Health promotion practice and its associated factors

The practice of staff in the workplace to promote their health in this study consist of physical exercise, food consumption, cigarette smoking, alcohol drinking, stress management, ergonomics and participation in medical check up. This study focus on 2 main activities of health promotion practice those were physical exercise and food consumption in order to determined the association between health promotion practice and related factors.

#### 4.7.1 Physical exercise and its associated factors

Table 16 showed performing physical exercise and its associated factors such as: age, gender, education level, professional position, employment status, working hours, availability, accessibility, knowledge and perception on health promotion. In this part, physical exercise was measured by combining the activities of aerobic, swimming, outdoor exercise which are the kind of movement exercise. The respondents were considered as never if 3 kinds of activities were never done, they were accounted as always if at least 1 activity are always did, the remaining were considered sometimes practice exercise.

Regarding gender and physical exercise, in AIHD, 26% of males always did exercise whereas in females were only 7%, and this is significant difference at p value =0.034. In INMU, the percentage of males and females doing exercise were not difference with nearly half of both genders sometimes did exercise.

In term of physical exercise and education level, in AIHD, there were difference between the three levels of lower than bachelor degree, bachelor degree, and higher than bachelor degree, staff belonged to group of bachelor degree had higher frequency of always practicing exercise compared to other groups, this is significant at p value= 0.023. In INMU, the level more bachelor degree and higher than bachelor degree were found more often to do physical exercise than the level of lower than bachelor degree. This is significant association at p value= 0.016.

When compared practice physical exercise and professional position, it was found that majority of academic as well as supportive staff in AIHD sometimes practiced exercise and it showed similar in INMU, there were no significant association between 2 institutes.

For the employment status of respondents, in AIHD, 70% of staff who work as permanent status sometimes did exercise and it was 66% for by contract staff. However, no association could be established within this group. In INMU, the result showed the same with no significant association.

Concerning working hours in office and practice physical exercise, it showed that majority of staff in both group (working less than 7 hours a day and working over 7 hours a day) and in both institutes sometimes did exercise, there was no significant association in this case.

For staff who noticed the availability of room/place, equipment for exercise, in AIHD, 70% of them sometimes did exercise compared to the staff who did not noticed were 54%. This is significant at p value= 0.043. In INMU, 57% of staff who noticed the availability of facility did exercise at the level of sometimes compared to staff who did not noticed were 36%. However, in INMU, there were significant association between physical exercise and availability.

In term of practice exercise and peer support it was found that, for those people who confirmed the encouragement of colleagues to do exercise, in AIHD, 73% sometimes did compared to people who did not confirm were 54%. In INMU, , 20% of staff who confirmed receiving encouragement always did exercise compared to people who did not confirm were only 6% always did. This is significant association at p value= 0.001.

Concerning knowledge on health promotion in both institutes, it was found that majority of staff sometime did exercise and for staff with high knowledge had more frequency of doing exercise at the level of sometimes.

In connection with perception and physical exercise, the result showed that; people with high perception showed better the physical activities compared to other levels of perception. This could be seen in both institutes but no significant association was established.

In case of having chronic disease, it was found that people with certain kind of chronic disease performed more physical exercise than the group that did not have chronic disease. However, in both institutes, there were no significant association between chronic disease and physical exercise.

**Table 1615 Frequency and percentage of respondents on physical exercise performing in workplace and its associated factors**

| Characteristics | Physical exercise; n (%) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | AIHD | | | | | INMU | | | | |
| | Never | Sometimes | Always | $\chi^2$ | P value | Never | Sometimes | Always | $\chi^2$ | P value |
| **Gender** | | | | | | | | | | |
| Male | 4(10) | 27(64) | 11(26) | 6.760 | 0.034 | 19(34) | 26(46) | 11(20) | 0.505 | 0.777 |
| Female | 9(21) | 31(72) | 3(7) | | | 33(33) | 52(51) | 16(16) | | |
| **Education level** | | | | | | | | | | |
| Lower than bachelor degree | 3(11) | 20(71) | 5(18) | 7.557 | 0.023 | 28(47) | 27(46) | 4(7) | 12.20 | 0.016 |
| Bachelor degree | 6(17) | 23(64) | 7(19) | | | 15(25) | 29(49) | 15(25) | | |
| Higher than bachelor degree | 4(20) | 14(70) | 2(10) | | | 9(24) | 20(54) | 8(22) | | |
| **Professional position** | | | | | | | | | | |
| Academic staff | 4(22) | 14(78) | 0(0) | 0.638 | 0.524 | 10(23) | 23(52) | 11(25) | 3.848 | 0.146 |
| Supportive staff | 9(13) | 44(66) | 14(21) | | | 40(37) | 53(48) | 16(15) | | |
| **Employment status** | | | | | | | | | | |
| Permanent | 6(11) | 39(70) | 11(19) | 0.617 | 0.539 | 39(39) | 46(45) | 16(16) | 3.767 | 0.152 |
| By contract | 7(24) | 19(66) | 3(10) | | | 12(23) | 29(56) | 11(21) | | |
| **Workload** | | | | | | | | | | |
| Working <= 7 hours/day | 8(15) | 37(70) | 8(15) | 0.291 | 0.865 | 27(31) | 44(51) | 15(17) | 0.344 | 0.842 |
| Working > 7 hours/day | 4(13) | 21(68) | 6(19) | | | 25(36) | 33(47) | 12(17) | | |

**Table 16 Frequency and percentage of respondents on physical exercise performing in workplace and its associated factors (cont.)**

| Characteristics | Physical exercise; n (%) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | AIHD | | | | | INMU | | | | |
| | Never | Sometimes | Always | $\chi^2$ | P value | Never | Sometimes | Always | $\chi^2$ | P value |
| **Availability** | | | | | | | | | | |
| **Room/place for exercise** | | | | | | | | | | |
| No | 5(38) | 7(54) | 1(8) | 6.309 | 0.043 | 12(55) | 8(36) | 2(9) | 5.586 | 0.061 |
| Yes | 8(11) | 49(70) | | | | 39(29) | 69(52) | 25(19) | | |
| **Peer-support** | | | | | | | | | | |
| Encouragement of colleagues to join in physical exercise | | | | | | | | | | |
| No | 4(31) | 7(54) | 2(15) | 3.780 | 0.000 | 19(59) | 11(34) | 2(6) | 13.06 | 0.001 |
| Yes | 7(11) | 48(73) | 11(17) | | | 33(26) | 67(54) | 25(20) | | |
| **Knowledge** | | | | | | | | | | |
| Low | 6926) | 14(61) | 3(13) | 0.199 | 0.656 | 8(35) | 12(52) | 3(13) | 4.389 | 0.356 |
| Average | 6(12) | 33(67) | 10(20) | | | 37(37) | 49(48) | 15(15) | | |
| High | 1(7) | 11(85) | 1(7) | | | 7(21) | 17(51) | 9(27) | | |
| **Perception** | | | | | | | | | | |
| Low | 3(20) | 11(73) | 1(7) | 0.569 | 0.451 | 8(53) | 6(40) | 1(7) | 8.25 | 0.08 |
| Average | 8(14) | 39(67) | 11(19) | | | 39(33) | 61(52) | 18(15) | | |
| High | 2(17) | 8(67) | 2(17) | | | 5(21) | 11(46) | 8(33) | | |
| **Chronic disease** | | | | | | | | | | |
| No | 10(17) | 38(67) | 9(16) | 1.704 | 0.088 | 41(35) | 58(50) | 17(15) | 2.343 | 0.310 |
| yes | 3(11) | 20(71) | 5(18) | | | 11(27) | 20(49) | 10(24) | | |

### 4.7.2 Food consumption and its associated factors

**Caloric rich food consumption**

In connection with caloric rich food consumption, the association of gender in 2 institutes were computed and it was observed that in case AIHD, females had higher proportion of high consumption while in case of INMU, the females had higher proportion of lower consumption which is opposite with AIHD. However, p value is < 0.05 in both cases.

The association between consumption of caloric rich food and professional position in AIHD showed that more supportive staff had high consumption than academic staff, but in INMU, more academic staff had high consumption than supportive staff, but no significant association was found.

It also showed that more people in group of working over 7 hours a day had high consumption than other group in each institute and there were no significant association between consumption of caloric rich food and workload.

When compare 2 groups of having and not having chronic disease with caloric rich food consumption, the result showed that more people with chronic disease in AIHD had high consumption of caloric rich food than others, but in INMU, the group of not having chronic disease had higher consumption for this kind of food.

**Table 1716 Frequency and percentage of respondents on score of caloric rich foods and its associated factors**

| Characteristics | Consumption score of caloric rich foods | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | AIHD | | | | INMU | | | |
| | Low consumption | High consumption | $\chi^2$ | p value | Low consumption | High consumption | $\chi^2$ | p value |
| **Gender** | | | | | | | | |
| Male | 13(31) | 29(69) | 0.095 | 0.758 | 26(46) | 30(54) | 0.929 | 0.335 |
| Female | 12(28) | 31(72) | | | 55(55) | 46(45) | | |
| **Professional position** | | | | | | | | |
| Academic staff | 6(33) | 12(67) | 0.169 | 0.681 | 21(48) | 23(52) | 0.377 | 0.539 |
| Supportive staff | 19(28) | 48(71) | | | 58(53) | 51(47) | | |
| **Workload** | | | | | | | | |
| Working <=7 hours/day | 18(34) | 35(66) | 1.212 | 0.271 | 46(54) | 40(46) | 0.188 | 0.664 |
| Working > 7 hours/day | 7(23) | 24(77) | | | 35(50) | 35(50) | | |
| **Chronic disease** | | | | | | | | |
| No | 19(33) | 38(67) | 1.282 | 0.258 | 55(47) | 61(53) | 3.105 | 0.078 |
| Yes | 6(21) | 22(78) | | | 26(63) | 15(37) | | |

**Thai fast foods**

In case of gender and Thai fast food consumption, it was revealed that in both institutes, males were seen more consumption than females. There are significant association in both institutes with p value=0.007 and 0.021 respectively.

When compared professional position and Thai fast food, in AIHD more supportive staff had high consumption than academic staff but the there was no significant association in this case. In INMU, also supportive staff had higher consumption than academic staff and there is significant association between Thai fast food consumption professional positions.

Concerning association between Thai fast food and chronic disease, the result showed that more people in the group of having chronic disease had high consumption for this kind of food in both institutes but no significant association to be established.

**Table 18 Frequency and percentage of respondents on score of Thai fast foods and its associated factors**

| Characteristics | Score of Thai fast food | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | AIHD | | | | INMU | | | |
| | Low consumption | High consumption | $\chi^2$ | p value | Low consumption | High consumption | $\chi^2$ | p value |
| **Gender** | | | | | | | | |
| Male | 17(40.5) | 25(59.5) | 7.343 | 0.007 | 29(52) | 27(48) | 5.338 | 0.021 |
| Female | 30(70) | 13(30) | | | 71(70) | 30(30) | | |
| **Professional position** | | | | | | | | |
| Academic staff | 12(67) | 6(33) | 1.195 | 0.274 | 34(77) | 10(23) | 5.123 | 0.024 |
| Supportive staff | 35(52) | 32(48) | | | 63(58) | 46(42) | | |
| **Work load** | | | | | | | | |
| Working <= 7 hours/day | 29(55) | 24(45) | 0.000 | 0.991 | 53(62) | 33(38) | 0.510 | 0.475 |
| Working over 7hours/day | 17(55) | 14(45) | | | 47(67) | 23(33) | | |
| **Chronic disease** | | | | | | | | |
| No | 34(60) | 23(40) | 1.328 | 0.249 | 78(67) | 38(32) | 2.417 | 0.120 |
| Yes | 13 (46) | 15(54) | | | 22(54) | 19(46) | | |

**Western fast foods**

When compared Western food consumption and genders, the result showed that males and females in both institutes had low consumption for this kind of food and there is no significant association between genders and Western food consumption.

The association between consumption of Western food and professional position showed the same in both institutes with majority of staff had low consumption in academic group as well as supportive group.

Regarding Western food consumption and other factors such as workload and chronic disease, there were no association established with majority of staff had low consumption.

**Table 19 17 Frequency and percentage of respondents on score of Western food and its associated factors**

| Characteristics | Consumption score of Western food | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | AIHD | | | | INMU | | | |
| | Low consumption | High consumption | $\chi^2$ | p value | Low consumption | High consumption | $\chi^2$ | p value |
| **Gender** | | | | | | | | |
| Male | 33(79) | 9(21) | 0.041 | 0.840 | 43(77) | 13(23) | 0.006 | 0.938 |
| Female | 33(77) | 10(23) | | | 77(76) | 24(24) | | |
| **Professional position** | | | | | | | | |
| Academic staff | 15(83) | 3(17) | 0.425 | 0.751 | 35(79) | 9(21) | 0.325 | 0.569 |
| Supportive staff | 51(76) | 16(24) | | | 82(75) | 27(25) | | |
| **Work load** | | | | | | | | |
| Working <= 7 hours/day | 39(74) | 14(26) | 1.182 | 0.277 | 69(80) | 17(20) | 1.183 | 0.277 |
| Working over 7hours/day | 26(84) | 5(16) | | | 51(73) | 19(27) | | |
| **Chronic disease** | | | | | | | | |
| No | 48(84) | 9(16) | 4.295 | 0.038 | 87(75) | 29(25) | 0.506 | 0.477 |
| Yes | 18(64) | 10(36) | | | 33(80) | 8(20) | | |

**Low sugar snack and beverages**

In term of low sugar snacks and beverages and gender, it was showed that in INMU, slightly more than half of staff of both gender had low consumption, but in AIHD 57% males had low consumption compared to females with low consumption were only 35%. However, there was no significant association established in this case.

It was found that, 39% of academic staff compared to 48% of supportive staff in AIHD had low consumption of low sugar snacks, but in INMU, more than half of staff in each professional group had the same low consumption but the association between professional position and low sugar snacks consumption did not showed any significant.

For people who had certain kind of chronic disease in both institutes, slightly more than half of them had low consumption for low sugar snacks.

**Table 2018 Frequency and percentage of respondents on score of low sugar snacks and its associated factors**

| Characteristics | Consumption score of low sugar snacks | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | AIHD | | | | INMU | | | |
| | Low consumption | High consumption | $\chi^2$ | p value | Low consumption | High consumption | $\chi^2$ | p value |
| **Gender** | | | | | | | | |
| Male | 24(57) | 18(43) | 4.240 | 0.051 | 33(59) | 23(41) | 0.435 | 0.509 |
| Female | 15(35) | 28(65) | | | 54(54) | 47(46) | | |
| **Professional position** | | | | | | | | |
| Academic staff | 7(39) | 11(61) | 0.450 | 0.502 | 27(61) | 17(39) | 1.042 | 0.307 |
| Supportive staff | 32(48) | 35(52) | | | 57(52) | 52(48) | | |
| **Work load** | | | | | | | | |
| Working <= 7 hours/day | 28(53) | 25(47) | 3.341 | 0.068 | 50(58) | 36(42) | 0.437 | 0.509 |
| Working over 7hours/day | 10(32) | 21(68) | | | 37(53) | 33(47) | | |
| **Chronic disease** | | | | | | | | |
| No | 29(51) | 28(49) | 1.739 | 0.187 | 64(55) | 52(45) | 0.010 | 0.918 |
| Yes | 10(36) | 18(64) | | | 23(56) | 18(44) | | |

**High sugar snacks and beverages**

Concerning the association between and high sugar snacks and beverages and gender, in both institutes, around half of staff of both genders had low consumption and there is no significant association between 2 genders and consumption for this kind of snacks.

When compared professional position and sugar snacks consumption, 83% staff in academic group in AIHD had low consumption compared to supportive staff were 46%. This is significant association at p value = 0.007. In INMU, more than half of staff in both professional position had low consumption and there was no significant association between these two groups.

Regarding workload and high sugar snacks consumption in both institutes, slightly more than half of staff in two groups of working less than 7 hours a day and more than 7hours a day had low consumption and there was no association to be established at p value> 0.05.

It was found that more than half of staff in both group of having and not having chronic disease had low consumption for high sugar snacks.

**Table 2119 Frequency and percentage of respondents on score of high sugar snacks and beverages and its associated factors**

| Characteristics | Consumption score of high sugar snacks | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | AIHD | | | | INMU | | | |
| | Low consumption | High consumption | $\chi^2$ | p value | Low consumption | High consumption | $\chi^2$ | p value |
| **Gender** | | | | | | | | |
| Male | 24(57) | 18(43) | 0.306 | 0.580 | 26(46) | 30(54) | 0.845 | 0.092 |
| Female | 22(51) | 21(49) | | | 61(60) | 40(40) | | |
| **Professional position** | | | | | | | | |
| Academic staff | 15(83) | 3(17) | 7.850 | 0.007 | 23(52) | 21(48) | 0.270 | 0.604 |
| Supportive staff | 31(46) | 36(54) | | | 62(57) | 47(43) | | |
| **Work load** | | | | | | | | |
| Working <= 7 hours/day | 28(53) | 25(47) | 0.032 | 0.859 | 50(58) | 36(42) | 0.437 | 0.509 |
| Working over 7hours/day | 17(55) | 14(45) | | | 37(53) | 33(47) | | |
| **Chronic disease** | | | | | | | | |
| No | 32(56) | 25(44) | 0.285 | 0.593 | 65(56) | 51(44) | 0.069 | 0.792 |
| Yes | 14(50) | 14(50) | | | 22(54) | 19(46) | | |

**Caloric rich snacks**

Concerning caloric rich snacks consumption in association with gender, the result in both institutes showed that slightly more than half of staff in both genders had low consumption and there was no significant association between two genders and consumption for this kind of snacks.

It was found that, in AIHD, majority of academic staff (83%) had low consumption of caloric rich snacks compared to only 48% of supportive staff had low consumption. In INMU, the result showed similar with academic staff had higher proportion of low consumption than supportive staff. There was significant association between professional position and caloric rich snacks consumption in both institutes.

When compared the association of caloric rich snacks and workload as well as chronic disease, it was found that slightly more than half of staff in each group and in both institutes had low consumption and no association could be established at p value>0.05.

**Table 22 Frequency and percentage of respondents on score of caloric rich snacks and its associated factors**

| Characteristics | Consumption score of caloric rich snacks | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | AIHD | | | | INMU | | | |
| | Low consumption | High consumption | $\chi^2$ | p value | Low consumption | High consumption | $\chi^2$ | p value |
| **Gender** | | | | | | | | |
| Male | 23(55) | 19(45) | 0.010 | 0.922 | 28(50) | 28(50) | 1.909 | 0.167 |
| Female | 24(56) | 19(44) | | | 62(61) | 39(39) | | |
| **Professional position** | | | | | | | | |
| Academic staff | 15(83) | 3(17) | 7.263 | 0.008 | 33(75) | 11(25) | 7.726 | 0.005 |
| Supportive staff | 32(48) | 35(52) | | | 55(51) | 54(49) | | |
| **Work load** | | | | | | | | |
| Working <= 7 hours/day | 29(55) | 24(45) | 0.089 | 0.766 | 49(57) | 37(43) | 0.000 | 0.983 |
| Working over 7hours/day | 18(58) | 13(42) | | | 40(57) | 30(43) | | |
| **Chronic disease** | | | | | | | | |
| No | 33(58) | 24(42) | 0.473 | 0.491 | 69(59) | 47(41) | 0.846 | 0.358 |
| Yes | 14(50) | 14(50) | | | 21(51) | 20(49) | | |

**Fruit and its product**

Regarding the association between fruit consumption and genders, it was found that in AIHD and INMU, more females than males had high consumption and there was significant association between gender and fruit consumption in both institutes at p value= 0.035 and 0.027 respectively.

Concerning professional position, majority of academic staff as well as supportive staff showed high consumption of fruit in both institutes. There was no significant association in these cases.

When compared workload and consumption of fruit in both institutes, the result showed that majority of staff in both group of working less than 7 hours a day and working more than 7 hours a day had high consumption and no association could be established at p value >0.05.

In connection with chronic disease, more staff in AIHD who had certain chronic disease had high consumption than staff who did not have chronic disease. There is significant association at p value= 0.014. In INMU, the result showed that majority of staff in both group of having not having chronic disease had high consumption for fruit and there was no significant association in this case.

**Table 2320 Frequency and percentage of respondents on score of fruit and its products and its associated factors**

| Characteristics | Consumption score of fruit and its products | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | AIHD | | | | INMU | | | |
| | Low consumption | High consumption | $\chi^2$ | p value | Low consumption | High consumption | $\chi^2$ | p value |
| **Gender** | | | | | | | | |
| Male | 14(33) | 28(67) | 4.435 | 0.035 | 18(32) | 38(68) | 4.875 | 0.027 |
| Female | 6(14) | 37(86) | | | 17(17) | 84(84) | | |
| **Professional position** | | | | | | | | |
| Academic staff | 4(22) | 14(78) | 0.022 | 1.000 | 12(27) | 32(73) | 1.188 | 0.276 |
| Supportive staff | 16(24) | 51(76) | | | 21(19) | 88(81) | | |
| **Work load** | | | | | | | | |
| Working <= 7 hours/day | 13(25) | 40(75) | 0.041 | 0.840 | 17(20) | 69(80) | 0.784 | 0.376 |
| Working over 7hours/day | 7(23) | 24(77) | | | 18(26) | 52(74) | | |
| **Chronic disease** | | | | | | | | |
| No | 18(32) | 39(68) | 6.231 | 0.014 | 22(19) | 94(81) | 2.839 | 0.092 |
| Yes | 2(7) | 26(93) | | | 13(32) | 28(68) | | |

# CHAPTER 5
# DISCUSSION

The AIHD and INMU are part of Mahidol University at Salaya campus. AIHD has 85 staff members, and INMU has 176 staff member. In order to extend health promotion program, it was considered interesting to explore practice of people dealing with health training here.

In the study, the objective was to determine health promotion practice among staff by examining the predisposing factors, enabling factors, and the reinforcing factors for health promotion practice among the respondents.

**Gender**

The relationship between gender and health promotion practice were determined by using Chi-square test showed that there is significant association between genders and health promotion practice in both institutes. For practice of physical exercise, more males were seen always did exercise than females and for consumption of Thai fast food, more males were revealed high consumption than females. It may be due to more awareness of safety and nutrition food in females than males.

This study agree with study on creating healthy workplace in Northern Ireland: evaluation of a lifestyle and physical activities assessment program by Addley, K. that almost two third of participants did not engage in regular moderate physical activities, with females twice as likely not do than males. And it also agree with the study of Sean, F. that more females than males were satisfied that their diets were healthy.

**Education level**

The relationship between education level and health promotion practice showed that people with high education level ( higher than bachelor degree) had better health promotion practice in term of doing exercise compared to other groups.

This study disagree with the study of Pompanchai, P. in factory workers that there were no significant association between education level and health promotion practice because the study of him was on the workers with majority of them had similar education and there was not much difference between them in term of education level.

**Knowledge**

In this study, knowledge was divided into 3 groups of high knowledge, average knowledge and low knowledge. The study revealed that people with high knowledge had better health promotion practice compared to other groups but there were no significant association between three levels of knowledge.

This result agree with the result in the study of Pompanchai, P. that no significant association could be established at p value= 0.069.

**Perception**

Concerning perception on health promotion, perception was divided into 3 groups of high perception, average and low perception. The result found that, respondents in both institutes who had high perception on health promotion showed better health promotion practice but there were no significant association between three levels of perception and health promotion practice.

**Workload**

In this study, people with overwork (more than 7 hours a day) had better health promotion compared to the group of working less than 7 hours a day. It may be due to more awareness of health related issues in the group of overwork. However, there was no significant association to be established in this case.

**Availability**

In this study, it was found that availability of facility and place had significant association with health promotion practice among the staff in both institutes. The staff who noticed the availability of room/place fro doing exercise had more frequency of doing exercise than the staff who did not noticed this availability. And this result

agrees with Pompanchai, P. in his study that availability of facility led to better health promotion practice among respondents.

**Peer support**

Using Chi-square test, significant association was found between peer support and health promotion practice. Peer support plays an important role to encourage respondents to practice health promotion in term of physical exercise. For people who confirmed the encouragement of colleagues to join in physical exercise had more frequency of doing exercise than other group. This result agree with the result in the study of Pompanchai, P. on factory workers that peer support help staff better health promotion practice in workplace.

**Health status**

The association between health status in term of having chronic disease or not having chronic disease showed that in AIHD, the staff who had certain kind of chronic disease had lower consumption of Western food compared to the staff who did not have chronic disease . It may be due to more careful of staff for eating this kind of food, and also in AIHD, the staff who had chronic disease had more frequency of eating fruit compared to staff who did not have chronic disease. These were significant association at p value $< 0.05$.

# CHAPTER 6
# CONCLUSION AND RECOMMENDATION

The AIHD and INMU are part of Mahidol University at Salaya campus. AIHD has 85 staff members, and INMU has 176 staff member. This research analyzed health promotion program in both institutes by mean of self-administered questionnaire which consist of 6 parts covering difference aspects of health promotion as follow

Part 1 Personnel information of respondents
Part 2 Availability of facility and environmental condition in workplace
Part 3 Knowledge, perception on health promotion
Part 4 Food consumption pattern of respondents
Part 5 Health support and promotion activities performed in workplace
Part 6 Health status of respondents

## 6.1 Conclusion

According to study finding, the following factors were found to be significant associated with health promotion practice: gender, professional position in term of academic staff and supportive staff, availability in term of facility and place available in workplace, peer support in term of encouragement receiving from colleagues for doing exercise, health status in term of chronic disease.

It was found that the frequency of doing exercise was seen more in AIHD than in INMU, and males in both institutes had more frequency of doing exercise than females.

For food consumption, the staff in INMU showed healthier trend by eating less frequency of caloric rich food, Thai fast food, high sugar snacks, and tend to eat fruit

with more frequency than AIHD. However, only the kind of caloric rich food shows significant difference between the 2 institutes. And the factors found to be significantly associated with food consumption were: gender, professional position, chronic disease which were revealed that females showed healthier trend than males by lower consumption of Thai fast food and more consumption of low sugar snacks as well as fruit. And supportive staff had more consumption of Western food, high sugar snacks, and caloric rich snacks than academic staff. People with certain chronic disease had more consumption of fruit than the staff without chronic diseases.

## 6.2 Recommendation

It is recommended that management should focus to expand health promotion related facilities to those staff members who do not have presently.

Management may introduce short duration workshop for informing the staff member about the food, its type and utilization to enhance the awareness of balance diet among staff member.

Difference of physical activities need availability of resource and staff member may be encouraged to participate in these activities through some incentive. For example display the name of actively physical exercise performing person on the noticed board and giving them small price for encouragement.

For further study, it is recommended that follow up research may be conducted for regular analysis of health promotion in the institutes.

Other faculties of Mahidol University at Salaya campus can also be included so that general information about health promotion could be assessed in the broader view.

Health promotion research may also be expended to other campus of Mahidol University located in Bangkok. This will be beneficent for composing health promotion situation in difference setting of the same university.

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# APPENDIX

# APPENDIX
# QUESTIONNAIRES

## HEALTH PROMOTIONPRACTICE IN WORKPLACE AMONG STAFF AT TWO HEALTH EDUCATIONAL INSTITUTES, MAHIDOL UNIVERSITY AT SALAYA, THAILAND

Date of registration: January, 2005

Please mark "X" or "√" on answers that are relevant to you.

**Part I: Personal Information and Nature of Responsibility**

1. Age: ..…..years
2. Gender: [ ] 1 Male [ ] 2 Female
3. Marital status: [ ] 1 Single [ ] 2 Married
   [ ] 3 Separated/Divorced [ ] 4 Widow/Widower
4. Educational level: [ ] 1 Less than bachelor degree [ ] 3 Master degree
   [ ] 2 Bachelor degree [ ] 4 Doctoral degree
5. Professional position: [ ] 1 Academic staff [ ] 2 Supportive staff
6. Employment status: [ ] 1 Permanent [ ] 2 By contract
7. In practice, working hours in the office are:
   Morning: Start at …..……. hours Lunch break at: ……. hours
   Afternoon: Start at …..……. hours End at: ……. hours
   Totally, duration of time spent in the office: …… hours/day
8. Do you spend time to work during the weekend?
   [ ] 0 Never [ ] 1 Sometimes [ ] 2 Often [ ] 3 Always
9. What is/are the nature of your work in the office? (more than one answer)
   [ ] 1 Documentary involvement [ ] 2 Laboratory type [ ] 3 Field work
   [ ] 4 Labor basis (cleaner, messenger, gardener, driver, photocopier etc)
   [ ] 5. Administrative types (Admin officers, operator, PR, etc)
   [ ]6. Skill job

10. Is your work involved in the followings?

- Use computer [ ] 0 Never [ ] 1 sometimes [ ] 2 Always
- Chemical reagent/toxic substance [ ] 0 Never [ ] 1 sometimes [ ] 2 Always
- Insecticide, fertilize, etc [ ] 0 Never [ ] 1 sometimes [ ] 2 Always
- Fire, lamp [ ] 0 Never [ ] 1 sometimes [ ] 2 Always
- Sharp instrument/equipment [ ] 0 Never [ ] 1 sometimes [ ] 2 Always
- Engine/Machine [ ] 0 Never [ ] 1 sometimes [ ] 2 Always
- Hot water tube/Water bath [ ] 1 sometimes [ ] 2 Always
- Travelling [ ] 0 Never [ ] 1 sometimes [ ] 2 Always

**Part II: Availability of Facility and Environmental Condition of Workplace**

In your office, are there any of these available?

1. Room/corner for breakfast/lunch, refreshment /coffee break [ ] 0 no [ ] 1 yes [ ] 9 don't know
2. Room/corner to read the newspaper, magazine, cartoon booklet, etc [ ] 0 no [ ] 1 yes [ ] 9 don't know
3. Room/corner to chat with friends/ colleagues [ ] 0 no [ ] 1 yes [ ] 9 don't know
4. Room for aerobic exercise [ ] 0 no [ ] 1 yes [ ] 9 don't know
5. Equipment for physical fitness [ ] 0 no [ ] 1 yes [ ] 9 don't know
6. Room/corner for indoor games (bridge, cards, chess) [ ] 0 no [ ] 1 yes [ ] 9 don't know
7. Corner/space for outdoor games [ ] 0 no [ ] 1 yes [ ] 9 don't know
8. Specific corner/space for smoking [ ] 0 no [ ] 1 yes [ ] 9 don't know

| | |
|---|---|
| 9. You are provided comfortable space for working (in office) | [ ] 0 no [ ] 1 yes [ ] 9 don't know |
| 10. Toilets are always clean and without smell | [ ] 0 no [ ] 1 yes [ ] 9 don't know |
| 11. Colleagues give me good care of atmosphere in terms of awareness of noise making and other not disciplinary things | [ ] 0 no [ ] 1 yes [ ] 9 don't know |
| 12. College encourage me to join in physical exercise and other health related program in workplace | [ ] 0 no [ ] 1 yes [ ] 9 don't know |
| 13. The regulation of 'non-smoking' in the building is announced | [ ] 0 no [ ] 1 yes [ ] 9 don't know |
| 14. Guidance of first aids of injury, chemical & fire burned is informed for all involved staffs | [ ] 0 no [ ] 1 yes [ ] 9 don't know [ ] 8 not involve |
| 15. Electrical safety control is available for the whole building | [ ] 0 no [ ] 1 yes [ ] 9 don't know [ ] 8 not involve |
| 16. Instrument/machine is placed in appropriate room/position | [ ] 0 no [ ] 1 yes [ ] 9 don't know [ ] 8 not involve |
| 17. Fire prevention exercise has been undertaken every year | [ ] 0 no [ ] 1 yes [ ] 9 don't know |
| 18. UPS; electricity stability supply for your computer set | [ ] 0 no [ ] 1 yes [ ] 9 don't know [ ] 8 not involve |

**Part III: Health Related Performance in Workplace**

1. How often do you work beyond 17.00 hours?

[ ] 0 Never [ ] 1 sometimes [ ] 2 Always [ ] Other, please specify ..

2. Do you eat foods or refreshment in specified/provided room/corner

[ ] 0 Never [ ] 1 sometimes [ ] 2 Always [ ] Other, please specify...

3. Do you put garbage/food waste in bin with cover?

[ ] 0 Never [ ] 1 sometimes [ ] 2 Always [ Other, please specify ….

4. Do you perform physical exercise as follows

- Aerobic [ ] 0 no [ ] 1 sometimes [ ] 2 Always
- Swimming [ ] 0 no [ ] 1 sometimes [ ] 2 Always
- Jogging/Badminton/Soccer/Baton [ ] 0 no [ ] 1 sometimes [ ] 2 Always
- Play card/Bridge/Chess [ ] 0 no [ ] 1 sometimes [ ] 2 Always

5. How often do you smoke in the office?

[ ] 0 Never [ ] 1 sometimes [ ] 2 Always [ ] 8 I am not a smoker

6. How often do you drink beer or alcohol in the office?

[ ] 0 Never [ ] 1 sometimes [ ] 2 Always [ ] 8 I am not a drinker

7. When doing my work, I keep my body in comfortable position [ ] 0 no [ ] 1 sometimes [ ] 2 Always

8. When using computer, I sit in comfortable position [ ] 0 no [ ] 1 sometimes [ ] 2 Always [ ] 8 not involve

9. I always wear sunglasses while under strong sun (driver, gardener, field worker/ researcher) [ ] 0 no. [ ] 1 sometimes [ ] 2 Always [ ] 8 not involve

**Part IV: Food consumption**

1. What is your **normal practice** about meals?

1.1 During weekdays

Breakfast [ ] 0 Not eat [ ] 1 Eat at home before leaving for work
[ ] 2 Eat in food shop/cafeteria before going to office
[ ] 3 Bring home prepared food to eat in the office
[ ] 4 Buy foods from food shop/cafeteria, and eat in the office
[ ] Other, please specify …….

Lunch [ ] 0 Not eat [ ] 1 Eat in university cafeteria
[ ] 2 Eat outside the university campus
[ ] 3 Bring home prepared food to eat in the office
[ ] 4 Buy foods from food shop/cafeteria, and eat in the office
[ ] Other, please specify ……

Dinner [ ] 0 Not eat [ ] 1 Cooked and eat at home
[ ] 2 Eat take-away food at home
[ ] 3 Eat outside before going back home
[ ] Other, please specify ……

1.2 During weekend

Breakfast [ ] 0 Not eat [ ] 1 Cook and eat at home
[ ] 2 Eat take-away food at home [ ] 3 Eat outside
[ ] Other, please specify ……

Lunch [ ] 0 Not eat [ ] 1 Cook and eat at home
[ ] 2 Eat take-away food at home [ ] 3 Eat outside
[ ] Other, please specify ……

Dinner [ ] 0 Not eat [ ] 1 Cook and eat at home
[ ] 2 Eat take-away food at home [ ] 3 Eat outside
[ ] Other, please specify ……

2. How do you normally prefer the following taste & texture of foods?

| | | | | |
|---|---|---|---|---|
| Spicy/hot | [ ] 0 don't like | [ ] 1 acceptable | [ ] 2 like | [ ] 3 like most |
| Sour | [ ] 0 don't like | [ ] 1 acceptable | [ ] 2 like | [ ] 3 like most |
| Sweet | [ ] 0 don't like | [ ] 1 acceptable | [ ] 2 like | [ ] 3 like most |
| Salty | [ ] 0 don't like | [ ] 1 acceptable | [ ] 2 like | [ ] 3 like most |
| Bitter | [ ] 0 don't like | [ ] 1 acceptable | [ ] 2 like | [ ] 3 like most |
| Plain taste | [ ] 0 don't like | [ ] 1 acceptable | [ ] 2 like | [ ] 3 like most |
| Mixed hot, sour,salty | [ ] 0 don't like | [ ] 1 acceptable | [ ] 2 like | [ ] 3 like most |
| Greasy /oily | [ ] 0 don't like | [ ] 1 acceptable | [ ] 2 like | [ ] 3 like most |
| Half cooked | [ ] 0 don't like | [ ] 1 acceptable | [ ] 2 like | [ ] 3 like most |
| Overcooked | [ ] 0 don't like | [ ] 1 acceptable | [ ] 2 like | [ ] 3 like most |

3. How often do you eat the following food items? Please [√ ]

| Food items | Never | Seldom < 1 /week | Sometimes 1-2/week | Often 3-4/week | Always 5-7/week |
|---|---|---|---|---|---|
| **3.1 Main dishes** | | | | | |
| Fried rice | ___ | ___ | ___ | ___ | ___ |
| Fried noodle | ___ | ___ | ___ | ___ | ___ |
| Khao man Kai | ___ | ___ | ___ | ___ | ___ |
| Khao kah moo | ___ | ___ | ___ | ___ | ___ |
| Khao Na pedd | ___ | ___ | ___ | ___ | ___ |
| Noodle soup | ___ | ___ | ___ | ___ | ___ |
| Suateed meat based food | ___ | ___ | ___ | ___ | ___ |
| Suateed vegetable based | ___ | ___ | ___ | ___ | ___ |
| Fried meats/fish | ___ | ___ | ___ | ___ | ___ |
| BBQ chicken/meat/fish | ___ | ___ | ___ | ___ | ___ |
| Bland/plain soup | ___ | ___ | ___ | ___ | ___ |
| Curry **without** coconut milk | ___ | ___ | ___ | ___ | ___ |
| Curry/dish **with** coconut milk | ___ | ___ | ___ | ___ | ___ |
| Tom yam | ___ | ___ | ___ | ___ | ___ |
| Chili paste | ___ | ___ | ___ | ___ | ___ |
| Fresh vegetables | ___ | ___ | ___ | ___ | ___ |
| Bread/toasted | ___ | ___ | ___ | ___ | ___ |
| Sandwich/Burger | ___ | ___ | ___ | ___ | ___ |
| French Fried Chicken | ___ | ___ | ___ | ___ | ___ |
| Pizza | ___ | ___ | ___ | ___ | ___ |
| **3.2 Beverages and Snacks** | | | | | |
| Fresh milk, not favor | ___ | ___ | ___ | ___ | ___ |
| Fresh milk, sweetened | ___ | ___ | ___ | ___ | ___ |

| Food items | Never | Seldom < 1 /week | Sometimes 1-2/week | Often 3-4/week | Always 5-7/week |
|---|---|---|---|---|---|
| Fresh milk, fortified calcium | ___ | ___ | ___ | ___ | ___ |
| Yogurt, plain | ___ | ___ | ___ | ___ | ___ |
| Yogurt, with favor | ___ | ___ | ___ | ___ | ___ |
| Soybean milk, plain | ___ | ___ | ___ | ___ | ___ |
| Soybean milk, sweetened | ___ | ___ | ___ | ___ | ___ |
| Fruit juice (commercial) | ___ | ___ | ___ | ___ | ___ |
| Fruit juice (fresh ) | ___ | ___ | ___ | ___ | ___ |
| Herbal juice | ___ | ___ | ___ | ___ | ___ |
| Soft drink (Coke, Pepsi) | ___ | ___ | ___ | ___ | ___ |
| Ice cream | ___ | ___ | ___ | ___ | ___ |
| Fried/BBQ meat balls | ___ | ___ | ___ | ___ | ___ |
| Fried/BBQ sausage | ___ | ___ | ___ | ___ | ___ |
| Fried soybean curd | ___ | ___ | ___ | ___ | ___ |
| Crunchy snacks (potato chips, corn chips) | ___ | ___ | ___ | ___ | ___ |
| Coated beans (Ko kae, green nuts) | ___ | ___ | ___ | ___ | ___ |
| Frittered banana/sweet potato | ___ | ___ | ___ | ___ | ___ |
| Thai desert **with** coconut milk | ___ | ___ | ___ | ___ | ___ |
| Thai desert **without** coconut milk | ___ | ___ | ___ | ___ | ___ |
| Thong yip/Thong yod, Foithong | ___ | ___ | ___ | ___ | ___ |
| Fresh fruits | ___ | ___ | ___ | ___ | ___ |
| Pickle fruits | ___ | ___ | ___ | ___ | ___ |
| Processed fruits | | | | | |

4. Do you normally take any supplementation?

[ ] 0 no [ ] 1 yes

5. If yes, what kind of supplementation?

[ ] 1 Vitamin tablets [ ] 4 Green tea

[ ] 2 Calcium tablets [ ] Other, please specify……..

[ ] 3 Traditional herbs (e.g., Hed Linjue)

**Part V: Health Status of Respondent**

1. Have you had health insurance member card

[ ] 0 no [ ] 1 yes, subsidizing by the office

[ ] 2 yes, under a Social Security Scheme [ ] 3 yes, under 'Gold Card/30 Baht'

[ ] 4 yes, by our own support [ ] Other, please specify ….

2. Since last one month, do you have any of the following health problems?

| | | | |
|---|---|---|---|
| Unknown headache | [ ] 0 Never | [ ] 1 Sometimes | [ ] 2 Often |
| Unknown stomach ache | [ ] 0 Never | [ ] 1 Sometimes | [ ] 2 Often |
| Tooth ache | [ ] 0 Never | [ ] 1 Sometimes | [ ] 2 Often |
| Runny nose | [ ] 0 Never | [ ] 1 Sometimes | [ ] 2 Often |
| Sinuses | [ ] 0 Never | [ ] 1 Sometimes | [ ] 2 Often |
| Gastritis | [ ] 0 Never | [ ] 1 Sometimes | [ ] 2 Often |
| Diarrhea | [ ] 0 Never | [ ] 1 Sometimes | [ ] 2 Often |
| Constipation | [ ] 0 Never | [ ] 1 Sometimes | [ ] 2 Often |
| Allergy of unknown cause | [ ] 0 Never | [ ] 1 Sometimes | [ ] 2 Often |
| Dizziness | [ ] 0 Never | [ ] 1 Sometimes | [ ] 2 Often |
| Vomiting | [ ] 0 Never | [ ] 1 Sometimes | [ ] 2 Often |
| Sleepless | [ ] 0 Never | [ ] 1 Sometimes | [ ] 2 Often |
| Sweat at night | [ ] 0 Never | [ ] 1 Sometimes | [ ] 2 Often |
| Eyes pain/tiredness | [ ] 0 Never | [ ] 1 Sometimes | [ ] 2 Often |
| Arms' muscle pain | [ ] 0 Never | [ ] 1 Sometimes | [ ] 2 Often |
| Legs' muscle pain | [ ] 0 Never | [ ] 1 Sometimes | [ ] 2 Often |
| Back pain | [ ] 0 Never | [ ] 1 Sometimes | [ ] 2 Often |
| Unknown weakness/fatigue | [ ] 0 Never | [ ] 1 Sometimes | [ ] 2 Often |

3. Do you regularly visit the doctor for medication? [ ] 0 no [ ] 1 yes

4. If yes, what type of treatment /or following up about;

[ ] 1 Hypertension [ ] 6 Thyroid

[ ] 2 Diabetes Mellitus [ ] 7 Gastritis

[ ] 3 Heart diseases [ ] 8 Cysts (breasts, uterus etc)

[ ] 4 Cancer [ ] 9 Venereal diseases

[ ] 5 Gout/Rheumatoid arthritis [ ] 10 Psychological counseling

5. Do you normally have any stress/depress?

[ ] 0 Never [ ] 1 Sometimes [ ] 2 Often [ ] 3 Always

If **Never => go to question 8**

6. If stress/depress exists, it occurs due to the followings?

| | | | |
|---|---|---|---|
| Conflict within the family | [ ] 0 No | [ ] 1 Sometimes | [ ] 2 Often |
| Conflict with lover/spouse | [ ] 0 No | [ ] 1 Sometimes | [ ] 2 Often |
| Conflict with colleagues | [ ] 0 No | [ ] 1 Sometimes | [ ] 2 Often |
| Conflict with supervisor/boss | [ ] 0 No | [ ] 1 Sometimes | [ ] 2 Often |
| Debt | [ ] 0 No | [ ] 1 Sometimes | [ ] 2 Often |
| Not satisfy with salary | [ ] 0 No | [ ] 1 Sometimes | [ ] 2 Often |
| Expense exceeding income | [ ] 0 No | [ ] 1 Sometimes | [ ] 2 Often |
| Lots of work/workload | [ ] 0 No | [ ] 1 Sometimes | [ ] 2 Often |
| Being ill/chronic health problem | [ ] 0 No | [ ] 1 Sometimes | [ ] 2 Often |
| Travel from home - office take times | [ ] 0 No | [ ] 1 Sometimes | [ ] 2 Often |

7. When you have stress/depress, do you overcome/or relieve it by;

| | | | |
|---|---|---|---|
| Eat favorite foods/snacks | [ ] 0 No | [ ] 1 Sometimes | [ ] 2 Often |
| Watch film in a theatre | [ ] 0 No | [ ] 1 Sometimes | [ ] 2 Often |
| Watch favorite programs/ or shows from TV/DVD/CD | [ ] 0 No | [ ] 1 Sometimes | [ ] 2 Often |
| Read a book/cartoon | [ ] 0 No | [ ] 1 Sometimes | [ ] 2 Often |
| Read Dharma/religious book | [ ] 0 No | [ ] 1 Sometimes | [ ] 2 Often |
| Practice meditation | [ ] 0 No | [ ] 1 Sometimes | [ ] 2 Often |
| Isolate myself in private/quiet corner | [ ] 0 No | [ ] 1 Sometimes | [ ] 2 Often |
| Go shopping | [ ] 0 No | [ ] 1 Sometimes | [ ] 2 Often |

7. When you have stress/depress, do you overcome/or relieve it by (cont.):

| | | | |
|---|---|---|---|
| Make a trip to countryside | [ ] 0 No | [ ] 1 Sometimes | [ ] 2 Often |
| Attend aerobic course | [ ] 0 No | [ ] 1 Sometimes | [ ] 2 Often |
| Go jogging | [ ] 0 No | [ ] 1 Sometimes | [ ] 2 Often |
| Go swimming | [ ] 0 No | [ ] 1 Sometimes | [ ] 2 Often |
| Go to spa | [ ] 0 No | [ ] 1 Sometimes | [ ] 2 Often |
| Get traditional Thai massage | [ ] 0 No | [ ] 1 Sometimes | [ ] 2 Often |
| Play sports; specify …….. | [ ] 0 No | [ ] 1 Sometimes | [ ] 2 Often |
| Play computer games | [ ] 0 No | [ ] 1 Sometimes | [ ] 2 Often |
| Access/Search internet | [ ] 0 No | [ ] 1 Sometimes | [ ] 2 Often |
| Chat with friends via internet | [ ] 0 No | [ ] 1 Sometimes | [ ] 2 Often |
| Talk/Chat to friends (face-to-face) | [ ] 0 No | [ ] 1 Sometimes | [ ] 2 Often |
| Smoke cigarette | [ ] 0 No | [ ] 1 Sometimes | [ ] 2 Often |
| Take amphetamine | [ ] 0 No | [ ] 1 Sometimes | [ ] 2 Often |
| Take sleeping pill | [ ] 0 No | [ ] 1 Sometimes | [ ] 2 Often |
| Do nothing | [ ] 0 No | [ ] 1 Sometimes | [ ] 2 Often |

8. How often do you check up your physical health?

[ ] 0 never => **go to Q10**

[ ] 1 once every 2-3 years [ ] 3 Twice a year

[ ] 2 Once a year [ ] 4 Other, please specify ….

9. If physical check up is undertaken, where do you normally go for the check-up?

[ ] 1 Medical mobile team provided in the office (once a year)

[ ] 2 Hospital under the contract of health insurance company

[ ] 3 Hospital under the Social Security Scheme

[ ] 4 Selected government hospital enabling me to reimburse expenses

[ ] 5 Selected private hospital where I satisfy with the services

[ ] 6 Other, please specify ……..

10. If you **never** have physical health checked-up, why?

[ ] 1 I am healthy [ ] 2 I'm afraid it will be costly

[ ] 3 I don't like to enter the hospital [ ] 4 I don't like the service of hospital's staff

[ ] Other, please specify

11. Have you ever gotten accidents/injury/illness incurred while you were on duty due to the followings?

| | | | |
|---|---|---|---|
| Electrical shock | [ ] 0 No | [ ] 1 Yes | [ ] 8 not been involved |
| Chemical/Fire burned | [ ] 0 No | [ ] 1 Yes | [ ] 8 not been involved |
| hurt by sharp equipment | [ ] 0 No | [ ] 1 Yes | [ ] 8 not been involved |
| Car accident | [ ] 0 No | [ ] 1 Yes | |
| Broken legs | [ ] 0 No | [ ] 1 Yes | |
| Broken arms | [ ] 0 No | [ ] 1 Yes | |
| Eyes pain | [ ] 0 No | [ ] 1 Yes | |
| Ears pain | [ ] 0 No | [ ] 1 Yes | |
| Muscle pain/back pain | [ ] 0 No | [ ] 1 Yes | |
| Headache | [ ] 0 No | [ ] 1 Yes | |
| Vomiting | [ ] 0 No | [ ] 1 Yes | |
| Difficult to breath | [ ] 0 No | [ ] 1 Yes | |

**Part VI: Opinions about Health Issues,** Please [ √ ]

| Issues | Strongly agree | Agree | Not sure | Disagree | Strongly disagree |
|---|---|---|---|---|---|
| 1. In workplace, it is necessary to provide the safety guidance | __ | __ | __ | __ | __ |
| 2. It is necessary to have physical check-up at least once a year | __ | __ | __ | __ | __ |
| 3. Medical check up can help early detect illness. | __ | __ | __ | __ | __ |
| 4. Medical check up is not necessary for healthy person | __ | __ | __ | __ | __ |
| 5. Health information delivered via TV, magazine etc are always correct | __ | __ | __ | __ | __ |
| 6. Stress can cause hypertension | __ | __ | __ | __ | __ |

| Issues | Strongly agree | Agree | Not sure | Disagree | Strongly disagree |
|---|---|---|---|---|---|
| 7. I can manage stress/depress by myself | — | — | — | — | — |
| 8. Friends and/or relatives are good counselors for stress/ depress relief | — | — | — | — | — |
| 9. Alcohol drinking can reduce stress | — | — | — | — | — |
| 10. Cigarette smoking can reduce stress | — | — | — | — | — |
| 11. Smoking cigarette can be harmful to people surrounding | — | — | — | — | — |
| 12. Using computer can cause pains to muscle, neck and the back | — | — | — | — | — |
| 13. Driver, gardener, field researcher should wear sunglasses while doing outdoor duty | — | — | — | — | — |
| 14. Everyone can be susceptible with work-related injury and illness if do not follow the guidance | — | — | — | — | — |
| 15. Work-related injury and illness can be severe | — | — | — | — | — |
| 16. To be healthy, I should perform physical exercise at least 15-30 minutes/time, and do it at least 3 days a week | — | — | — | — | — |

| Issues | Strongly agree | Agree | Not sure | Disagree | Strongly disagree |
|---|---|---|---|---|---|
| 17. Doing exercise in workplace create good relationship and being a good model for colleagues | — | — | — | — | — |
| 18. Doing physical exercise in workplace is not necessary because it wastes time. | — | — | — | — | — |
| 19. As I already exhaust from traveling between home-office, also my work is dealing with using labor, walking from floor to floor, etc. So I don't need to do physical exercise anymore | — | — | — | — | — |
| 20. Within a day, I must eat animal meat, fried/sautéed food, vegetables and fruits | — | — | — | — | — |
| 21. Salty food is not good for person who has hypertension | — | — | — | — | — |
| 22. Persons who eat much vegetables and fruits tend to not obese. | — | — | — | — | — |
| 23. Home prepared food is better than take-away foods | — | — | — | — | — |

24. From what kind of media available in workplace that you get information about health related issue?( multiple choice)

[ ] 1 Radio
[ ]2 Television
[ ]3 CD, VCD
[ ]4 Newspaper
[ ]5 Magazine
[ ]6 Brochure
[ ]7 Poster
[ ]8 Other, please specify:….

25. From whom that you get information about health issue? ( multiple choice)

[ ]1Family
[ ]2 Neighbor
[ ]3 Peer group in the office
[ ]4 Peer group outside office
[ ]5 Boss
[ ]6 Health staff in hospital
[ ]7 Other, please specify:….

Thank you very much for your kind cooperation!

# BIOGRAPHY

| | |
|---|---|
| **NAME** | TRAN THI PHUONG |
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