FACTORS RELATED TO HEALTH-PROMOTING BEHAVIORS AMONG THAI LABORERS BEFORE GOING TO WORK ABROAD

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A cross-sectional study was conducted among Thai laborers before going to work abroad. Pender's Health Promotion Model was used as a conceptual framework for this study. Purposes of this study were: (1) to explore perceived benefits of action, perceived barriers to action, social support, and health-promoting behaviors; (2) to examine the relationships of personal factors, perceived benefits of action, perceived barriers to action, and social support to health-promoting behaviors; and (3) to examine the incorporated predictability of these variables to health-promoting behaviors. A sample of 238 laborers attending Mahidol University Applied and Technological Service Center, Ramathibodi Hospital was recruited by using systematic random sampling. Data were collected by using a questionnaire developed by the investigator conceptually based on Pender's Health Promotion Model, and were analyzed by using both descriptive and inferential statistics.

The results of bivariate analysis revealed that sex, perceived benefits of action, perceived barriers to action, and social support were significantly related to health-promoting behaviors ($p < .01$). However, in multiple regression analysis, sex, social support, perceived barriers to action, marital status, and income were able to explain about 29 percent of variances in the total health-promoting behaviors, (overall $F_{(5, 232)} = 19.16$, $p < .001$), Therefore, these findings partially support Pender's Health Promotion Model.

The potential benefits of this study are to better understand health-promoting behaviors of laborers before going to work abroad and to suggest health care providers, the Ministry of Public Health as well as the Ministry of Labour and Social Welfare to plan for essential health promoting program to help these laborers maintain good health and form health promoting habits before going to work abroad.

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ดุษณีย์ สุวรรณคง : ปัจจัยที่สัมพันธ์กับพฤติกรรมส่งเสริมสุขภาพของแรงงานไทยก่อนเดินทางไปทำงานต่างประเทศ (FACTORS RELATED TO HEALTH-PROMOTING BEHAVIORS AMONG THAI LABORERS BEFORE GOING TO WORK ABROAD) คณะกรรมการควบคุมวิทยานิพนธ์: วันทนา มณีศรีวงศ์กูล, D.N.Sc, วชิรา กสิโกศล, ศศ.ม., เนตรนภา ขุมทอง, ศค.ม. 112 หน้า.
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การศึกษาครั้งนี้เป็นการวิจัยเชิงสำรวจ โดยใช้รูปแบบจำลองพฤติกรรมส่งเสริมสุขภาพของเพน-เดอร์ มีวัตถุประสงค์เพื่อสำรวจ การรับรู้ประโยชน์ของการปฏิบัติพฤติกรรม การรับรู้อุปสรรคของการปฏิบัติพฤติกรรม แรงสนับสนุนทางสังคม และพฤติกรรมส่งเสริมสุขภาพ รวมถึงเพื่อหาความสัมพันธ์และอำนาจการทำนายระหว่างปัจจัยเหล่านี้กับพฤติกรรมส่งเสริมสุขภาพของแรงงานไทยก่อนเดินทางไปทำงานต่างประเทศ กลุ่มตัวอย่างถูกเลือกโดยการสุ่มอย่างมีระบบจากแรงงานที่มาตรวจร่างกาย ก่อนจะเดินทางไปทำงานต่างประเทศ ณ ศูนย์ตรวจคนงานไปต่างประเทศ โรงพยาบาลรามาธิบดี จำนวน 238 ราย การเก็บรวบรวมข้อมูลทำโดยใช้แบบสอบถามที่ผู้วิจัยสร้างขึ้นเองตามแนวคิดเกี่ยวกับพฤติกรรมส่งเสริมสุขภาพของเพนเดอร์ วิเคราะห์ข้อมูลด้วยสถิติเชิงพรรณาและสถิติวิเคราะห์

ผลการศึกษาพบว่า เพศ การรับรู้ประโยชน์ของการปฏิบัติพฤติกรรม การรับรู้อุปสรรคของการปฏิบัติพฤติกรรมและแรงสนับสนุนทางสังคมมีความสัมพันธ์กับพฤติกรรมส่งเสริมสุขภาพ ($p < .01$) โดยที่ เพศ แรงสนับสนุนทางด้านสังคม การรับรู้อุปสรรคของการปฏิบัติพฤติกรรม สถานภาพสมรส และรายได้สามารถร่วมกันอธิบายพฤติกรรมส่งเสริมสุขภาพได้ประมาณร้อยละ 29 (overall $F_{(5, 232)} = 19.16$, $p < .001$) ผลการวิจัยจึงสนับสนุนรูปแบบจำลองพฤติกรรมส่งเสริมสุขภาพของเพนเดอร์ในระดับหนึ่ง

ผลการศึกษาครั้งนี้จะเป็นประโยชน์ต่อเจ้าหน้าที่ทางด้านสุขภาพ ทั้งในระดับปฏิบัติและระดับนโยบายคือกระทรวงสาธารณสุข ตลอดจนกระทรวงแรงงานและสวัสดิการสังคมในการใช้เป็นข้อมูลพื้นฐานเพื่อเตรียมโปรแกรมการส่งเสริมสุขภาพแก่บุคคลเหล่านี้ และช่วยให้เขาสามารถคงภาวะสุขภาพที่ดีพร้อมทั้งสร้างเสริมให้เกิดสุขนิสัยในการปฏิบัติพฤติกรรมส่งเสริมสุขภาพก่อนจะเดินทางเพื่อไปทำงานต่างประเทศ

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CHAPTER I

INTRODUCTION

Background and Rationale

For national socioeconomic development, Thailand needs quality human resources that are biologically and psychosocially healthy. In accordance with this, the 8th National Economic and Social Development Plan 1997-2001, Thailand (n.d.: 5) has incorporated a holistic approach to health promoting strategies in order to reduce high risk behaviors and promote health, wellness as well as efficient functioning of the Thai population. The labor force is the largest group in the Thai population. The age range in this group is from 15 to 59 years of age (The 8th National Economic and Social Development Plan 1997-2001, Thailand, n.d.: 24-25). It was documented in 1990 by the National Statistical Office, Office of the Prime Minister, Thailand (1990-2000) that there were about 32 million people in this labor group. This number has currently increased to about 33 millions in the year 2000. This labor force is a major source of family income. They are also an essential part of economic development of the community as well as the country (The 8th National Economic and Social Development Plan 1997-2001, Thailand, n.d.: 3-6).

Thai laborers do not work only in Thailand, but many of them also work abroad. The number of overseas Thai laborers was more than 400,000 in 1998. This number has been increasing every year, especially during the present economic crisis (Kuadclai, 1997:

2). According to the Overseas Employment Administration Office, Ministry of Labour and Social welfare, Thailand (1999), overseas laborers returned remittances of about 32,000 to 60,000 million bahts to Thailand annually during 1994-1999. Most of the Thai laborers who work abroad are in unskilled and semiskilled categories such as factory works and general labors. In the skilled category, Thai people work as dressmakers, cooks, carpenters, housekeepers, drivers, engineers, furniture makers, factory workers, and mechanics. The reasons for working overseas are higher salary and more job availability (Department of Employment, Ministry of Labour and Social Welfare, Thailand, 1998: 1-3). More important is the belief that working abroad brings a better quality of life (Suparp, 1990: 24-29). All of these factors have contributed to a decrease in unemployment in Thailand.

According to the Social Security Office, the most frequent health problem among Thai laborers is occupational injury that causes permanent total disability, permanent partial disability, temporary disability, and work absenteeism. This source also documented over 200,000 occupational injuries as well as 13,000 deaths in 1998. Causes of these injuries were attributed to inadequate occupational safety knowledge, carelessness, work stress, and the use of alcohol during work. The use of alcohol after work has also led to brawls, violence, and illnesses (Social Security Office, Thailand, 1998: 95, 102-105).

There are two significant causes of deaths among overseas Thai laborers: Sudden Unexplained Death Syndrome (SUDS) and suicide. The cause of SUDS is unknown as most deaths occur while laborers are asleep. An average of 20 SUDS cases were reported each year from 1984 to 1990. Epidemiological studies and autopsy reports indicate that

SUDS may be caused by anxiety, emotional stress, electrolyte imbalance, hard work, inadequate rest, poor hygiene, poor diet and poor dwelling ventilation. Suicide is also a serious health problem among Thai overseas laborers, an average of 6 cases per year at the same time. Possible causes of suicide are stress from work, changing lifestyle, culture, languages and environment (Division of Epidemiology, Ministry of Public Health, Thailand, 1996: 3, 33-35, 43).

Many of the above problems are reported related to high risk health behaviors or illnesses that can affect socioeconomic development. Unhealthy laborers are not as productive as healthy laborers. A healthy labor force not only has a positive affect on family income, but also on the national economy. Health promotion strategies are critical to maintaining good health, high productivity, and better quality of work.

Developing healthy behaviors requires much time and effort (The 8th National Economic and Social Development Plan 1997-2001, Thailand, n.d.: 21), and is less probable to attain overseas because of differences in culture, languages, and environment. Health promotion needs to be emphasized in Thailand before laborers go overseas.

Many studies have found that health promotion strategies that emphasize perceived benefits of action, and positive social support while minimizing perceived barriers to action can enhance health-promoting behaviors in many populations (Jinwattana, 1998; Lusk and others, 1994: 155; Nirattharadorn, 1996; Pender, 1996: 193; Suthikul, 1997; Sakbunditsakul, 1998; Thongbai, 1997). These studies have been based on Pender's Health Promotion Model. However, there are no studies on health-promoting behaviors among Thai laborers before going to work abroad.

According to Taylor (1991: 58), health promotion is a particular philosophy leading to good health in which nurses should play a major aggressive role. It is important for community health nurses to understand these health-promoting factors to implement effective health promotion programs for laborers before their leaving to work abroad.

Research Framework

Pender's Health Promotion Model is composed of 3 major components: Individual Characteristics and Experiences; Behavior-Specific Cognitions and Affect; and Behavioral Outcome (Pender, 1996: 66-75). In the first component, Individual Characteristics and Experiences, there are prior related behaviors and personal factors. Prior related behavior is the likelihood that past behaviors will directly or indirectly affect engagement in health-promoting behaviors. Personal factors are composed of 3 sectors: biological, psychological and sociocultural and are direct and indirect predictors to health promoting practice.

The second component, Behavior-Specific Cognitions and Affect, consists of 6 sectors namely: perceived benefits of action, perceived barriers to action, perceived self-efficacy, activity-related affect, social support, and situational influences. These are major contributors to motivation for personal health promoting practices and behavior change. Motivation is the greatest factor for personal health-promoting behavior practices and illness avoidance. It is a critical factor in enhancing wellness, maintaining health, and individual fulfillment. These six sectors are important for nurses to consider when motivating clients to engage in health promotion behaviors.

The last component, Behavioral Outcome, is the health-promoting behaviors resulting from a commitment to a planned action. It is the end point of action consisting of 6 sectors: health responsibility, exercise, nutrition, interpersonal relationship, spiritual growth, and stress management.

This study focus on exploring the relationship of personal factors as the Individual Characteristics, selected Behavior-Specific Cognitions and Affect on Behavioral Outcomes. Personal factors included in this study are sex, age, education, income, and marital status because they were significantly related to health-promoting behaviors as reported in many studies (Chunhapran and others, 1995: 29; Harris & Guten, 1979: 26; Sakbunditsakul, 1998: 90; Suthikul, 1997: 138-139; Thongbai, 1997: 139). In this study, three factors of Behavior-Specific Cognitions and Affect were selected to be focused on: perceived benefits of action, perceived barriers to action, and social support. Perceived benefits of action leads to habit formation and is a predisposition to a person's engagement in practicing good behavior. Perceived barriers to action concentrates on finding out what are the barriers to practice health-promoting behaviors that we can understand and why they do not practice that behavior. To attain positive social support means that one can effectively solve problems leading to health-promoting behaviors practice as consistently found in a number of studies (Lusk and others, 1994: 155; Nirattharadorn, 1996: 84; Pender, 1996: 193; Sakbunditsakul, 1998: 87; Setthamalince, 1992). These factors may also relate to health-promoting behaviors among Thai laborers who will go to work abroad.

Thus, the research framework for this study has been modified from Pender' s Health Promotion Model (1996) as shown in Figure 1.

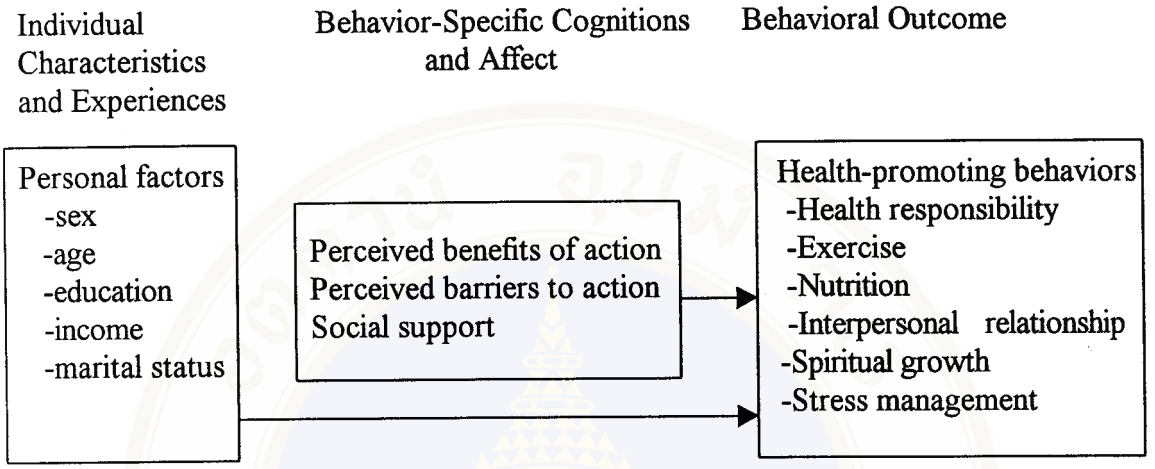

Figure 1 Conceptual Framework of this study

Objectives

1. To explore perceived benefits of action, perceived barriers to action, social support, and health-promoting behaviors among Thai laborers before going to work abroad.

2. To examine the relationship between personal factors (sex, age, education, income, and marital status) and health-promoting behaviors among Thai laborers before going to work abroad.

3. To examine the relationship between perceived benefits of action and health-promoting behaviors among Thai laborers before going to work abroad.

4. To examine the relationship between perceived barriers to action and health-promoting behaviors among Thai laborers before going to work abroad.

5. To examine the relationship between social support and health-promoting behaviors among Thai laborers before going to work abroad.

6. To examine the incorporated predictability among sex, age, education, income, marital status, perceived benefits of action, perceived barriers to action, social support and health-promoting behaviors among Thai laborers before going to work abroad.

Hypotheses

1. Sex, age, education, income, and marital status are related to health-promoting behaviors among Thai laborers before going to work abroad.

2. Perceived benefits of action is related to health-promoting behaviors among Thai laborers before going to work abroad.

3. Perceived barriers to action is related to health-promoting behaviors among Thai laborers before going to work abroad.

4. Social support is related to health-promoting behaviors among Thai laborers before going to work abroad.

5. Sex, age, education, income, marital status, perceived benefits of action, perceived barriers to action, and social support are incorporated predictors of health-promoting behaviors among Thai laborers before going to work abroad.

Definition of Terms

Personal factors for this study are sex, age, education, income, and marital status.

Health-promoting behaviors are defined as certain behaviors maintaining or increasing the level of health. These behaviors are relevant to health responsibilities (sleeping pattern, prevention of occupational injuries, personal hygiene, physical check-up, health information seeking, avoidance of risk behaviors such as smoking, alcohol drinking, and unsafe-sex practices), exercise, nutrition, interpersonal relationship, spiritual growth, and stress management. Operationally, health-promoting behaviors are defined as the composite score on the 15 items health-promoting behaviors scale developed by the investigator. Scores on this scale range from a low of 0 to a high of 30.

Perceived benefits of action is defined as the perception/expectation or a particular behavior on the anticipated benefits of action and positive outcome. The perceived benefits of action in this study relates to health responsibilities (sleeping pattern, prevention of occupational injuries, personal hygiene, physical check-up, health information seeking, avoidance of risk behaviors such as smoking, alcohol drinking, and unsafe-sex practices), exercise, nutrition, interpersonal relationship, spiritual growth, and stress management. Operationally, perceived benefits of action is defined as the composite score on the 15 items perceived benefits of action scale developed by the investigator. Scores on this scale range from a low of 15 to a high of 75.

Perceived barriers to action is defined as the perception/expectation and a particular behavior on the anticipated barriers of action that block health-promoting

behaviors, such as health responsibilities (sleeping pattern, personal hygiene, prevention of occupational injuries, physical check-up, health information seeking, avoidance of risk behaviors such as smoking, alcohol drinking, and unsafe-sex practices), exercise, nutrition, interpersonal relationship, spiritual growth, and stress management. Perceived barriers to action by the subjects are categorized as lack of time, lack of knowledge, economic constraint, inconvenience, exhaustion, and other. These result in burnout and avoidance of practicing health-promoting behaviors. Operationally, perceived barriers to action is defined as the composite score on the 15 items perceived barriers to action scale developed by the investigator. Scores on this scale range from a low of 15 to a high of 75.

Social support is defined as interaction among people which brings about positive health behaviors, maintaining good behaviors and enhancing quality of personal social transaction across individual lifestyle. This interaction happens through 4 channels namely: emotional support, information support, instrumental aid, and affirmation. Operationally, social support is defined as the composite score on the 10 items social support scale developed by the investigator. Scores on this scale range from a low of 10 to a high of 50.

Scope of the Study

This study is a cross-sectional study exploring health-promoting behaviors among Thai laborers who attended the compulsory physical check-up before going to work abroad at the Mahidol University Applied and Technological Service Center, Ramathibodi

Hospital, Thailand from March to April, 2000.

Assumption

Answers to the interview made by the subjects are reliable. Although some laborers were exhausted from long distance travelling from provinces outside Bangkok, they paid enough attention in answering all questions after providing them some resting time.

Expected Research Outcome

The expected research outcome is to better understand health-promoting behaviors among Thai laborers before going to work abroad. The findings from this study are useful for health care providers as well as the Ministry of Public Health, the Ministry of Labour and Social Welfare in planning future health promoting programs and promo-ting healthy practices among Thai laborers before going to work abroad.

CHAPTER II

LITERATURE REVIEW

This was a cross-sectional study conducted to explore factors related to health-promoting behaviors among Thai laborers before going to work abroad. The literature review focused on: (1) the situation of Thai laborers; (2) the health status of Thai laborers; (3) the concept of health-promoting behaviors; (4) Thai laborers' health-promoting behaviors; (5) the studies related to Pender's Health Promotion Model; and (6) the relationships between: perceived benefits of action, perceived barriers to action, social support and health-promoting behaviors. The literature review are as follow:

The Situation of Thai Laborers

The labor population consists of persons with an age range from 15 to 59 years old. They are the labor force that is fundamental to the economic development of Thailand. According to Thai demographic statistic, population structure of Thailand is also changing such as: population proportion below 15 years of age which would be decreased about from 30 in 1990 to 26 in 2000. Importantly, the proportion of the labor population would be increased approximately from 62 to 65 and those above 59 years of age would also be increased over from 7 to 9 at the same time (The 8th National Economic

and Social Development Plan 1997-2001, Thailand, n.d.: 24-25).

In the past, Thailand was agricultural country. However, due to industrialization, the country has changed from a traditional economy to an industrialized economy. Although, Thailand has becoming one of the industrialized countries, most of Thai laborers still have poor education. According to the Overseas Employment Administration Office, Ministry of Labour and Social Welfare, Thailand (1999), it was reported that the majority of Thai laborers finished only Pathomsuksa 4. As a result, most of them can only work as unskilled, semi-skilled, and blue-collar workers. Due to the nature of their work, there are many problems among Thai laborers which effect their physical and mental health, society as well as environment context. These problems include occupational diseases and injuries, unfair wages, unsafe worksite environment and other problems

A number of laborers going to work abroad have been increasing, especially during economic crisis because of more job availability and higher wages. According to the Overseas Employment Administration Office, Ministry of Labour and Social Welfare, Thailand (1999), it was revealed that the trend of Thais who go to work abroad initially started from 1972 to 1973. However, numbers were significant in 1976 because Thailand had faced an economic crisis. One consequence of these is the government had changed the policy to encourage Thai laborers to work aboard. At that time, most of the laborers went to work in Middle Eastern countries because they were large source of employment. At present, most Thai laborers go to work in Asian countries such as Taiwan, Hong-Kong, Singapore, Brunei, and Japan. Secondly, they go to work in Middle Eastern countries such as Israel, Saudi Arabia, and Kuwait, while the rest of them go to work in

the United States. The majority of laborers who go to work abroad coming from the northeastern and the northern Thailand. The rest come from the central and southern Thailand. When Thai laborers go to work abroad, there are 2 ways that they find employment: (1) by themselves, and (2) through contracting agencies (Overseas Employment Administration Office, Ministry of Labour and Social Welfare, Thailand, 1999). There are both positive and negative consequences of overseas work to laborers, their family, community, and also the country. The positive consequences are decreasing unemployment in Thailand as well as strengthening the national economy. The negative consequences resulting from some contracting agencies are cheating and more expensive (expenses airplane tickets, passport and visa processing). These negative consequences may contribute to laborers' physical and mental health deviations, including future overseas work (Krajangyoa, 1982 cited by Saiyasopon, 1988: 2).

The Health Status of Thai Laborers

As Pender (1996: 22) defined that health is "the actualization of inherent and acquired human and potential through goal-directed behavior, competent self-care, and satisfying relationships with others while adjustments are made as needed to maintain structural integrity and harmony with relevant environments", health is the process of enabling and improving personal health to obtain a complete bio-psychosocial wellness, and not only without disease, illness or inability but also go beyond healthy lifestyle to well-being and human actualization.

The majority of the population who are bio-psychosocially healthy and live happily in the society always care and concern about positive behaviors in their pattern of lifestyle (Health Education Division, Ministry of Public Health, Thailand, 1999: 1). Therefore, labor population should have actual motivation and participation in health-promoting behaviors. These behaviors include adequate food consumption, exercise, a satisfying relationship to others, appropriate stress release, adequate sleep, good personal hygiene, prevention of occupational injuries, health awareness by having yearly physical check-up, and seeking health information as well as avoiding risk behaviors such as cigarettes smoking, alcohol dependency, and unsafe sex. As results of these health-promoting behaviors, they would be able to maintain or enhance the level of wellness, self-actualization, and fulfillment of themselves.

According to the changing socioeconomic, environment and technology, population has increased rapidly despite of limited productivity and product distribution (Suksriharm, 1994: 85). These are the key factors leading to high competition among people for one's survival. Thus, the majority of laborers had been migrated to urban area where it is more industrialized, more technologically advanced, and more job opportunities (Suksriharm, 1994: 85). One of the consequences of migration to urban area is a problem of life quality. This problem may due to poorly ventilated housing, poor personal hygiene and dietary, stress, and overload work. These unhealthy situations are contributory of health deviations. Moreover, industrial workers usually gain higher risk of illnesses than others because they might be irritated by biological, physiological, and chemical agents, including environmental hazards if they lack of occupational health knowledge (Sukawan,

1997: 34-38). Silapasuwan and others (1994: 37) revealed that dermatopathia symptom was the most health problem reported among adolescent factory workers. Poonthawee (1994) found that level of noise, number of years exposing to noise, and number of years using ear protection are attributing factors of blood pressure disease among textile factory workers. According to Sutthiponpaisol (1996: 103), the adverse pregnancy outcomes were found among factory workers: the rate of low birth weight was at 11.6 percent, still birth at 0.9 percent, and congenital malformations at 0.5 percent. This study also found significant ($p < .05$) relationship between low birth weight, complication of pregnancy, and weight before delivery and chemical agents in working environments. As laborers fail to have health-promoting behaviors, they are prone to many communicable and non-communicable diseases as well as chronic diseases such as hypertension, heart disease, peptic ulcer, obesity, diabetics mellitus, and other diseases (Suksriharm, 1994: 85; Sukawan, 1997: 34-36).

For Thai laborers working abroad, they may have higher risk effecting their physical and mental health, compared to laborers who work in the home country because of different culture, languages, environment context, law, regulations, limitation of communication, geographic, food, time change, and work transfer. If they can not adjust to above situations, they may get sick which lead to work absenteeism, decrease productivity and finally low paid (Hirunkitti, 1982: 12-13). Working was found to be one of major causes of illness and death among these overseas laborer. Furthermore, they have risk behaviors such as alcohol use leading to brawls, violence and illness. They have less access to health care service system in the country their work (Kuadclai, 1997: 2).

All above, there are many problems of health deviations among Thai domestic and overseas laborers which must receive more attention. The economy of Thailand can not be developed if they are unhealthy. Therefore, health care providers should help them to form health-promoting behaviors and healthy habits before they leave the country.

The Concept of Health-Promoting Behaviors

There are 2 concepts of health-promoting behaviors in nursing perspective namely: (1) health promotion; and (2) health protection (Brubaker, 1983; Pender, 1987; Murray & Zentner, 1989 cited by Yunibhan, 1989: 45). Health-promoting behaviors include encouragement and enhancement of level of lifestyles and human fulfillment. Health-promoting behaviors must be geared not only to each individual, but also to family and the community. Avoiding occupational injuries, smoking, alcohol use, and unsafe sex are examples of health-promoting behaviors which relate preventive of illness and maintenance of the optimal functioning.

Gochman (1982 cited by Yuniphan, 1989: 23) postulated that health-promoting behaviors are personal actions upon personal factors as motivation, value, expectation, perception, knowledge, and other factors.

Palank (1991: 815-832) claimed that health-promoting behaviors are personal activities to maintain or enhance one's self-actualization regarding exercises, adequate nutrition, stress release, and encourage social support system.

Pender (1996: 7) said that health-promoting behavior is motivating by the desire to increase level of well-being and self-actualization.

In short, health-promoting behaviors are personal activities in individual lifestyle to maintain or increase the comprehensive health status and self-actualization. Health-promoting behaviors could be used as guidelines for taking care of one's self. Everyone should carry out positive health behaviors and also avoid risky behaviors in order to maintain or enhance level of well-being and self-actualization.

Laborers' Health-Promoting Behaviors

Thai labor population going to work abroad must adapt to diverse the culture, society, and environmental context that they never get used to. Thus, it is less possible for these laborers to form health-promoting behaviors when they are overseas. As Thailand's health for all strategy (The 8th National Economic and Social Development Plan 1997-2001, Thailand, n.d.: 178) emphasizes encouragement of positive health-promoting behaviors and avoidance of risk behaviors on all population including laborers, these should also be extended to laborers going to work abroad. Aspects of health-promoting behaviors are as follows:

1. Health Responsibilities

Health responsibilities incorporate people's intention to care and concern about their health. Health responsibilities are always carrying out healthy practices and avoid of risky behaviors in their living. They are as follows:

1.1 Adequate Sleep

Sleeping is the best way to rest and relax (Wanavibule, 1998: 22). It reduces physical and mental responsiveness to environment and restore health. Sleep patterns are different accordingly to individual habit, lifestyle, and environments. Good sleep of 6-8 hours can reach sleep effectiveness (Hayter, 1983: 246; Hammer, 1991: 318 quoted in Kosol, 1995: 21). This quality sleep will enhance the growth process, organ renovation and restoration of energy (Putwatana and others, 1997: 5-6). Importantly, it contributes to well-being and quality of life of individual. Abebe & Fantahun (1999: 407-10) demon-strated that sleep disturbance or ineffective sleep was significantly related to rotating shift work, external environment noise and working on spinning department. When the person has inadequate sleep or sleep disturbance, he/she could develop some illnesses with following signs and symptoms: vertigo, dizziness, stroke, and lack of efficient work functioning. Therefore, he/she should have adequate and effective sleep to prevent these health deviations. It was revealed that adequate and effective sleep in a well-ventilated area can enhance self working competency (Vathesatogkit and others, 1996: 172). Laborers, should have adequate and effective sleep because this practice can enhance efficient of individual's work functioning and quality of life.

1.2 Prevention of Occupational Injuries

Occupational injuries may happen at any time during work. The causes of these injuries include emergency accident and exposures to chemical, physical and biological agents. These injuries can lead to temporary disability (<= 3 days), temporary disability (> 3 days), permanent partial disability, permanent total disability, and death

(Social Security Statistics, Thailand, 1998: 95-107; Sukawan, 1997: 34-38). Occupational injuries are related to lack of efficient mechanism, and lack of occupational safety knowledge and awareness. Silapasuwan and others (1994: 55) reported that about 75% of adolescent factory workers had never used safety equipment to prevent occupational injuries during work. Puttanurak (1996) also showed that factors relating to accident risk behaviors were accident preventive knowledge, perception of accident preventive measures, and accident preventive attitude.

According to the Social Security Statistics, Thailand (1998: 102-103), the most important causes of occupational injuries are cut wound (22.07%), injury (16.48%), injured by falling objects (15.88%), injured by thrown objects (14.27%), injured by lifting heavy objects (6.21%), fell from a height (3.61%), affected by extreme cold/freezing materials (2.52%), and burns from exposure to hot objects/materials (2.29%), and others (16.67%). Thus, strict occupational safety and accident prevention practices should be carried out by laborers to prevent these injuries. If laborers take prevention of occupational injuries during work seriously, they will be not only healthy but also able to work efficiently.

1.3 Personal Hygiene

Personal hygiene is a part of daily life. Everyone should continuously concern and have good personal hygiene in order to enhance the healthy living (Tanerat, 1986: 1). Laborers who usually work hard both indoor and outdoor are more likely to expose to chemical irritation and polluted working environment. These might negatively affect on laborers' health. Silapasuwan and others (1994: 37) reported that dermatopathia

symptom was the most health problem reported among adolescents factory workers. Thus, in additional to prevention of occupational injuries, they should take good care of themselves by having good personal hygiene such as brushing teeth at least twice a day, taking a bath at least once a day, washing hands after contaminated with body fluids or chemical agent and after using toilet facilities, keeping good dwelling/housing ventilation, and wearing cleaning. These proper hygienic practices can prevent health deviations and also develop good personality (Health Education Division, Ministry of Public Health, Thailand, 1999: 5-7).

1.4 Yearly Physical Check-Up

Yearly physical check-up is a part of primary prevention which usually reserved for wellness. It is a positive behavior to monitor and maintain health. Having a yearly physical check-up is also a factor enabling people to increase monitor over their health (Health Education Division, Ministry of Public Health, Thailand, 1999: 76). The potential benefit of physical check-up is early detection of health deviations which lead to prompt treatment and restoration. It is recommended by Health Education Division, Ministry of Public Health, Thailand (1999: 76) that having a physical check-up at least once a year is good for monitoring individual health status. In addition to a physical check-up preceding, meanwhile, and afterward employment; laborers should have yearly physical check-up regularly.

1.5 Health Information Seeking

Lertsakviman's (1998: 3) postulated that information can be seeked through several media such as television, newspapers, booklet, leaflet, and fliers. The

effectiveness of health information seeking depends upon individual's characteristics, effectiveness of communication, and accessibility of health information. Laborers should be able to seek health information through several channels as above. The formation of information seeking habit should be adapted into lifestyle because it is the way of carrying out health awareness (Thongtai and others, 1994: 14-38). Additionally, Thongtai and others (1994: 55) found that watching television was the most approach of change and avoidance of HIV/AIDS related risky behaviors. Bangthamai (1992: 67, 71) revealed that the level of perceiving of information from various sources and knowledge on AIDS were significantly related to AIDS prevent behaviors among male factory workers. Importantly, the level of perceiving of information from various sources can predictive AIDS prevention behaviors of this group. Tansakul (1994: 71, 75, 87-90) success to demonstrate that factory workers who had received AIDS information and advice from peers, they had significantly gained more knowledge and AIDS preventive behavior than prior to experiment. Moreover, it also found that the proportion of workers of the experimental group compared to the comparison group was better in using condoms with extra-marital partners. Meungman (1990: 4) also showed that 91 % of Thai labor group agree that regularly receiving AIDS information can prevent HIV transmission.

1.6 Cigarette Smoking Avoidance

According to the Health Education Division, Ministry of Public Health, Thailand, (1999: 46), smoking is harmful to health because it leads to the coronary thrombosis, miocardial ınfarction, heart failure, and death. Cigarette smoking dependency is also one of the serious global health problems. A person who always smokes is more

likely to develop congestive heart disease and chronic obstructive pulmonary disease more than person who never smokes. The risk increase especially when smokes more than 10-20 cigarettes a day. Nicotine, tars substances, carbon monoxide, and oxidant gases decrease heart, lung efficient functioning, and adversely effect the cardiovascular system. These substances can also cause cancer in organs such as lung and trachea. Cigarettes smoking has affected blood stream by increasing the level of Low Density Lipoproteins and decreasing the level of Hight Density Lipoproteins (Vathesatogkit and others, 1996: 7). Yamsakun (1999: 65) reported that patients with coronary artery disease due to smoking had proper quality of life than patients with coronary artery disease who do not smoke. In accordance with the epidemiological study in United stated of America, people had died from smoking over 400, 000 cases per year. In addition, there were 3 million deaths due to smoking per year worldwide (MOH-CHAO-BAN, 1996: 7). As found by Honjo and others (1992: 806-11), cigarette smoking had greatly significant association with adenomatous polyps. As smoking cigarette is dangerous to health, it should be avoided in order to promote health.

1.7 Alcohol Consumption Avoidance

The Department of Medicine, Ministry of Public Health, Thailand (1999: 27-29) defined alcohol drinking as intoxicants which contained at least 60 percent of ethyl alcohol or ethanol. The number of alcohol drinkers is currently increasing, people usually used alcohol in order to release stress (Havanonda, 1999). Drinking alcohol tends to relate to social-economic crisis problems. Although, there are many papers claiming that drinking alcohol can reduce risk of developing congestive heart disease, it is only a short

period effect. In long term, it can not prevent heart disease (Bunsinsuk, 1996: 33). On the other hand, people who always drink alcohol heavily will immediately get addicted and develop immediate as well as long-term intoxication effects. The immediate effects are such as accidents and injuries (50 percent of the street accident, 40 percent of the textile factory accident, 38 percent of drowned cases, 53-64 percent of burnt and 17-35 percent of fell down evidence), violence, marital disharmony, child abuse, and dyspnea (Health Education Division, Ministry of Public Health, Thailand, 1999: 48; Department of Medicine, Ministry of Public Health, Thailand, 1999: 5; Haines & Wiseman, 1992: 39-43; Punkanon, 1995: 21-24). The long-term affects are such as congestive heart disease, hypertension, hepatic damage, demantia, brain and neuropsychological dysfunction, and pregnancy complications (Department of Medicine, Ministry of Public Health, Thailand, 1999: 5; Haines & Wiseman, 1992: 39-43; Punkanon, 1995: 21-24). Delin & Lee (1992: 117-126) also found that excess alcohol drinking negatively had immediate and long-term effects on brain and neuropsychological functioning. Thus, drinking alcohol should be avoided to prevent injuries/accidents and other health deviations

1.8 Unsafe Sex Avoidance

Safe sex is essential behavior that people should concern because there is neither a prophylactic vaccine for the best weapon against nor a cure for HIV/AIDS (Osmond & Padian, 1994: 10). This becomes one of the serious national public health problems. As laborers are in sexually active age, they are at risk for HIV/AIDS and sexually transmitted diseases (STDs). 60% of Thai labor group did not use condoms when having sexual intercourse with extra-marital partners (Meungman, 1990: 4) and about

93.7 percent of AIDS cases in Thailand are in labor age (Division of AIDS, Ministry of Public Health, Thailand, 1999). Thus, safe sex is also an essential behavior that laborers should carry out strictly. Major reasons of not using condom were perception of not necessary, do not get used to, unhappy, and inadequate knowledge of condom use. Palacio (1994: 1) postulated that someone may not ask about safer sex because they actually do not perceive themselves to be risk. Moreover, they feel that they have already practiced safer sex, while they do not. As a result, they are still at risk for HIV/AIDS and STDs. If they are lack of knowledge and positive attitude about HIV/AIDS prevention and safe sexual behavior, they might take a risk of contacting HIV/AIDS and other STDs (Jiraroegwatana and colleagues, 1990: 131). Wungsusuk (1998: 105) revealed that approximately 76% of construction workers had highly desirable behaviors on AIDS prevention by perceived severity, perceived benefits and barriers, like skilled in AIDS prevention, and AIDS information obtainment. Bangthamai (1992: 67, 71) also found that level of perceiving of information from various sources, level of perception of AIDS risk factors, knowledge on AIDS, level of perception of benefit of advice, and level of perception of severity of AIDS were significantly related to AIDS preventive behaviors among males factory workers.

2. Exercise

Exercise is referred to any body movement produced by skeletal muscles that results in caloric expenditure (Caspersen, et al., 1986 cited in Pender, 1996: 185). Habitual exercise is the most recommended. Exercise for 20-30 minutes or work hard

until sweating 3 times per week has proposed effects that is good for health. Regular exercise can promote better health and also reduce risks of developing diseases, disabilities, and premature deaths (Health Education Division, Ministry of Public Health, Thailand, 1999: 78). Exercise has potential benefits to many organs and system responses. People require well incorporated of all body systems in order to have physical balance, high working competency. For labor population regularly exercise can increase their work efficient functioning, reduce stress response, and relax. Thus, exercise are beneficial to health. In addition, there is a study support that exercises are beneficial to health. Walsh (1985: 353 - 355) showed that person who always keeps jogging have more health-promoting behaviors than non-runners. Chayakul (1995: 95) also revealed that knowledge about exercise and social support from family members were significantly related to certain exercise behaviors.

3. Nutrition

Consuming proper food is important to health. Proper food intake plays a major role in preventing diseases, energetic living, and staying healthy (Pender, 1996: 209). Labor population should understand about the essential of adequate food consumption and improve dieting habit. Dietary guidelines for Thais recommended by the Nutrition Division, Ministry of Public Health, Thailand are as following: (1) eat a variety of foods and maintain or control proper weight; (2) choose a diet with rice or starch sometimes; (3) choose a diet with plenty of grain products, vegetables and fruits; (4) choose a diet with fish, lean meat, egg and legumes; (5) drink milk at suitable age; (6) choose a diet low in

fat, saturated fat and choresterol; (7) avoid to eat a diet with more sugars, salt and sodium; (8) choose a diet without food hazard; and (9) reduce or avoid to drink alcoholic beverages (Nutrition Division, Ministry of Public Health, Thailand, 1999: 7). If one's consumption is safe and proper, it means to enhance health and prevent diseases. If people do not have adequate knowledge on food consumption, they may be malnourished.

Gangsadarn and Roegrongvasrnsakul (1991) found that consumption of dietary fiber foods (fruits and vegetables) among Thai people was low. This finding signified that consumption of natural antitoxicants: vitamin C and betacarotene was also low. Neamsuwan and Krengrang (1988 cited by Prompunjai, 1997: 52) also revealed that textile mill workers consumed inappropriate nutrition (35 percent never eats fruits and 4 percent skips breakfast).

4. Interpersonal Relationship

Interpersonal relationship is the personal skill to communicate with others. It is the main purpose relating to others and it is a basic need of performance in lifestyle affecting healthy society. The relationship includes love and caring, empathy, sympathy, autonomy and mutuality, acceptance, trust, and counseling together (Tongurai, 1986: 94-99). LaFollette (1996: 3) suggests that relationships are the best conceptualized as lying along a continuum with personal relationship at one end and impersonal ones at the other. The highest values; it helps us achieve specific ends or goals lead to positive feeling as according to increase health actions and happiness (LaFollette, 1996: 82-83). Similarly, Tuicharoen's (1997: 100) found that adolescents who had better relationship with father

also had good adaptation role in living. Isarangura Na Ayudhaya (1995: 122) revealed that marital relation was significantly related to adaptation among female climacteric period. Rojjanapraphaphun (1998: 99) also found that family relation and acceptance by peers had positive significant correlation to self-esteem among early adolescents. For Thai laborers who will go to work abroad, interpersonal relationship can bring about support which can reduce stress response and enhance self-actualization as well as level of wellness when they work abroad.

5. Spiritual Growth

Spiritual growth is a personal ability to develop spiritual growth nature by learning process, included the efficiency discovering one's purpose, adaptive for how to experience and valuable living by love, joy, peace, fulfillment and how do you help yourself or other persons to achieve the fullest potential. These lead to the individual healthy spiritual growth (Pender, 1996: 129-132). Sowell and others (2000:78-79) reported that spiritual activities were significantly related to health status among women with HIV symptom. Thai laborers who will go to work abroad, they should adapt to diverse environment, culture, languages, lifestyle changes and other contexts in their lives. If they do not have healthy spiritual growth, they could develop more stress, confuse, anxiety, weakness, role dysfunction or illnesses when they live abroad. Additionally, they must develop the nature of their spiritual growth such as belief in religions. This spiritual growth is a part of behavioral outcomes which enhance self-actualization and fulfillment of individual.

6. Stress Management

According to Selye (cited by Pender, 1996: 233-234), stress is the nonspecific response of the body to any demand made on it. Lazarus and Folkman (1984: 19) also defined that "psychological stress is a particular relationship between person and environment that appraised by individual resource and hazard to well-being". It is specific to physical or behavior changes as pupils dilatation, increased respiration rate, increased heart rate, raising tension hairs, and other physical or behavior changes. Stress will attach to and negatively effects on life satisfaction, the development of psychology disorder and related to illness. Silapasuwan and others (1994: 53) found that stress was predictive of incident of occupational injuries during work. In addition, the bereavement stress, appraisal, coping strategies, presence of psychological, social, and material resources are associated with stress management. Degree of threat and negative functional on health has reduced (Gass & Chang, 1989: 3). Thus, stress management is essential for Thai laborers to reduce their stress when working abroad. When they have distress, relaxation techniques, watching television, listening to the radio, planting, and sleeping can buffer it (Srisangharm, 1998: 6-10). Similarly, the finding by Netraphukkana (1993: 95) found that most of rubber industrial workers had high-normal stress. Problem-focused strategy was more frequently than emotional-focused strategy for their coping skill. Importantly, coping strategies and working factors had significant relationship to stress. Walcott & Quigg (1994: 528-33) revealed that worksite stress affecting to physiological and mental illnesses and coping strategies was assisted by participating in stress management program. Elkin & Elkin (1990: 571-574) found that relaxation is also a part of stress management.

The Studies Related to Pender's Health Promotion Model

Lusk and others (1994: 151-157) studied the use of hearing protection among 645 construction workers. This study focused on personal factors, Behavior-Specific Cognitions and Affect, and situation influences. It was found that perceived self-efficacy, perceived benefits of action, perceived barriers to action influenced to the use of hearing protection.

Lusk and others (1995: 20-24) conducted a study about health-promoting lifestyle among blue-collar, skilled trade and white-collar workers. Comparison of 6 dimensions of health promotion behaviors between White and African American workers was made: self-actualization, health responsibility, exercise, nutrition, interpersonal support and stress management. Personal factors were age, sex, education and marital status. The sample composed of 638 blue-collar, skilled trade and white-collar workers in Middle East of African American. It was found that only exercise score was significantly different, the younger had higher self-actualization and interpersonal support than older, female had higher health promotion behaviors, health responsibility, exercise and interpersonal support than male. High education was a predictor of good health promotion behavior.

Duffy and others (1996: 18-24) studied factors related to health promotion activities among 397 employed Mexican American women. Purposes of this study were to describe the health-promoting behaviors and to compare them to other published reports that used the Health Promoting Lifestyle Profile (HPLP). The results were found that all of minority groups had the highest total HPLP scores, but had lower scores than

all predominantly white groups. Age, education, self-efficacy, health locus of control (internal and powerful others), and current health status had significant correlations to all HPLP sub-scales.

Nirattharadorn (1996) studied perceived benefits, perceived barriers to health-promoting behaviors and health-promoting behaviors among 240 pregnant adolescents with age between 13-19 at antenatal care clinic, Siriaj hospital, Rajvithi Hospital and Vajira Hospital. The results were revealed that perceived benefits of health-promoting behaviors practice had significant positive relationship to health-promoting behaviors. In addition, perceived barriers to health-promoting behaviors had significant negative correlation to health-promoting behaviors. Perceived benefits-barriers to health-promoting behaviors and income were incorporated predictors health-promoting behaviors.

Lusk and others (1997: 183-194) tested a causal model of 359 health-promoting behaviors among construction worker. The findings showed that perceived benefits of using hearing protecting device, hardiness, and self-efficacy to use it were significant predictors of health-promoting behaviors. Behavior-Specific Cognitions and Affect was able to predict this behavior among workers.

Suthikul (1997) studied health-promoting behaviors of teachers at primary school in Bangkok metropolitan. The sample composed of 79 male and 281 female teachers recruited by using two-stage random sampling. The findings showed that sex, family income, participating in activities, and projects in schools, valuable and attitude toward health promotion, perceived benefits of action, perceived barriers to action, and self-efficacy were significant incorporated predictors of health promotion behaviors.

Sakbunditsakul (1998) studies social support and health promotion behaviors among 480 female textile factory workers in Saraburi province. It was revealed that they had moderate level of social support which was positively associated with health promotion behaviors (r = 0.4846). Additionally, their health-promoting behaviors were significantly different by age, education level, income marital status, work duration, and over time.

Chanchanakit (1998) studied about health-promoting behaviors and Behavior-Specific Cognitions and Affect namely: perceived benefits of action, perceived barriers to action, perceived self-efficacy, activity-related affect, interpersonal influences and situational influence among the elderly with chronic lung diseases at the lung clinic, Department of Medicine, Chulalongkorn Hospital. Subjects were 120 chronic lung disease patients age over 60. It was found that all of Behavior-Specific Cognitions and Affect variables were significantly related to health-promoting behaviors.

Pettaway & Frank (1999: 14-19) studied health-promoting behaviors of 198 urban African American women who were households. The results of this study were found that rellglosity and education had significant positive correlation to health-promoting behaviors. In addition to this, age and marital status also influenced specific health-promoting behaviors.

Wanek and others (1999: 346-352) conducted a cross-section study to examine attitudes and health status as determinants of participation in individually oriented health promotion. Purpose of the to identify individual health promotion practice. The sample composed of 974 employees in German metal company. It was found that apart from

higher participants were woman and white-collar employees than man and blue-collar, they reported on average as less favourable subjective health status, more complaints and diseases, better health related behavior and a more intensive utilization of curative and preventive medical service than nonparticipants. Among the lifestyle of men was stronger positive correlation with participants than women.

Personal Factors and Health-Promoting Behaviors

There are two categories of personal factors: biological and sociocultural factors. Personal biological factors include variables such as sex, age and marital status; personal sociocultural factors include variables such as income and education. These factors have influences on health-promoting behaviors as follows:

Sex is the individual characteristic which specific to personal differences. Pender (1987: 48) claimed that sex is one of the personal factors which is the best predictor or prevent health behaviors. Pender (1996: 68) also postulated that sex is personal biological factors relevant to personal's behavioral outcome. There are reports expressing that sex could affect health-promoting behaviors. According to Prompunjai (1997: 98-99), it was revealed that age was significantly related to health-promotion behaviors among factory workers. Suthikul (1997: 139) success to demonstrate significant relationships between sex and health-promotion behaviors among Pathomsuksa teachers. Harris & Guten (1979: 26) found that sex had been a predictor of adult's health promotion behaviors; female had higher on health promotion practices than male. Lusk and others (1995: 23) showed that women significantly had better in health responsibility, compare to men.

Age is a factor contributing to health-promoting behaviors and an indicator of seniority status also discriminating which they should pay attention to practice for maintain or enhance their health. Most of people who is still young and healthy are not careful and concerned for their health (Lowenstein and Rinehart, 1982: 254 cited by Pantaevan, 1990: 7). In addition, Thongbai (1997: 139) found that age effected to health-promoting behaviors among workers. Pender and colleagues (1990: 326) found that age was predictive health-promoting lifestyle pattern. Lusk and others (1995: 22) showed that younger workers significantly had better health-promoting behaviors than the older workers. Mulhenkamp & Broerman (1988: 643 cited by Sakbunditsakul, 1998: 4) revealed that age indirectly affected to health-promotion behaviors in lifestyle pattern. Duffy and others (1996: 18) showed that age was significantly related to all HPLP sub-scales among employed Mexican American women. Chunhapran and others (1995: 29) showed that younger female constructors were healthier than the older.

Education is the factor affecting personal health-promoting behaviors because it is the based factor which enhances health. In addition, person who had higher education and better pursuance of health information, normally gain better health-promoting behavior practices than those with poor education and poor pursuance (Suwan, 1983: 182). Similarly, Chunhapran and others (1995: 29) found that constructors who had finished Pathomsuksa 6 had better health than constructors who had finished Pathomsuksa 4 and had no education. Harris & Guten (1979: 26) found that education determined health-promoting behaviors. Education had positive correlation to health prevention activities. Lusk and others (1995: 22) showed that education was positively related to

health-promoting behaviors practice. Weitzel (1989 cited by Lusk and others, 1995: 22) found that high education level will be high related to health-promoting lifestyle pattern. Rossow and others (1996: 18-24) showed that education was contributions to all health-promotion lifestyle profile among woman workers in Maxican American. Duffy and others (1996: 18) showed that education was significant correlated to all HPLP sub-scales among employed Mexican American women. Ross & Willigen (1997: 275) also showed that education influenced quality of life and affected well-being.

Income is an indicating factor of economic status. It is the basic need for living. Pender (1982 cited by Nitattharadorn, 1996: 44) indicated person who earns high income is more pursuance to the utilization factors for themselves. Additionally, Prompunjai (1997: 100-101) revealed that income had significant relationship to health-promoting behaviors among factory workers. Sakbunditsakul (1998: 90) revealed that female textile factory workers who had high income also had a better health-promoting behaviors than the workers with lower income. Moreover, Harris & Guten (1979: 28) showed that the high income had better health prevention activities. However, Chunhapran and others (1995: 29) showed that constructors who had high or low income did not significantly have different health-promoting behaviors.

Marital status is the indicating factor of relationship in family and the basic factor in society. It is also a kind of social support. Bradburn and others (1969 cited by Stack and others, 1998: 527-536) said that the marriage was associated with high level of one's healthy and found that marriage increased happiness among both men and women. Sakbunditsakul (1998: 91) showed that different marital status significantly influence

health-promoting behaviors. However, Chunhapran and others (1995: 29) revealed that single was better in health than marriage. Lusk and others (1995: 22) showed that marriage and unmarriage had no significant differences in health-promoting lifestyle pattern.

In conclusion, these factors personal factors are the key personal factors in forming health-promoting behaviors. Importantly, these personal factors are significantly related to and useful in explaining health-promoting behaviors.

Perceived Benefits of Action and Health-Promoting Behaviors

Perceived benefits of action is one's motivation, directly influence behavior, and perception which influences health, such as always participate in health-promoting activity as well as concern of maintaining or enhancing level of well-being (Pender, 1987: 65). In addition, the guideline for one's plan for health-promoting practice often hinges to direct expected outcome occur to motivate or reinforce behavior action. One's beliefs in beneficial and positive outcome occurrence leads engagement to health-promoting behaviors practice (Pender, 1996: 68-69). Supornsilphachai (1997: 175) also suggested that belief in advantage of actions was an important factor for people to maintain and enhance individual's good health-promoting behaviors in living and self-actualization. For laborers, they should pay attention to health-promoting behaviors practice in lifestyle pattern. Actions related to health-promoting behaviors should include adequate sleep, good personal hygiene, prevent of occupation injuries, yearly physical check-up, and health information perception, avoidance of risk behaviors such as alcohol use, cigarettes

smoking, and unsafe sex practices as well as having 5 food groups consumption, physical activity 3 times per week or work hard until sweat, interpersonal relationship, appropriate spiritual growth, and appropriate stress management. In accordance with Lusk and others (1994: 155), they were found that perceived benefits of action was related to the use of hearing protection among workers. Purintarapiban (1989: 95-96) revealed that perceived benefits of cervical cancer examine was related to cervical cancer clinic attendance. Nirattharadorn (1996: 84) revealed that perceived benefits of health-promoting behaviors practice had significantly positive relationship to health-promoting behaviors among pregnant adolescents woman. Godin & Shephard (1990 quoted in Pender, 1996: 193) also found that perceived benefits of exercise was significantly related to health-promoting behaviors among laborers, elderly in community, patients with heart disease in rehabilitation stage, and cancer patients. Suthikul (1997: 138-139) revealed that perceived benefits of health-promoting behaviors had significant relationship to health-promoting behaviors among Pathomsuksa teachers.

Additionally, perceived benefits of performance of the behaviors encouraged the positive health behavior activities. This is in accordant with Pender's (1996: 68-69) postulated that perceived benefits of health-promoting behaviors is a determinant of engaging in health-promoting behaviors. On the other hand, persons sometimes had barriers to action which lead to hardiness in practicing health-promoting behaviors.

Perceived Barriers to Action and Health-Promoting Behaviors

Person who has perceived barriers to health-promoting behaviors sometimes burnout or fail to have health-promoting behaviors. Pender (1996: 154) said that barriers affecting personal health can arise from clients, environment and other significances. Internal barriers/inside-client barriers may be the lack of motivation, fatigue or disbelief in positive health practice. In addition, the barriers may be real or cognitive thinking such as perceived the unavailability, inconvenience, expense and difficulty. Barriers usually arouse of avoidance positive health practices. On one hand, when one had few activities and many barriers, the activity would not be carry out. On the other hand, when one had many activities and few barriers, activity would be practices (Pender, 1996: 69). In accordance with Lusk and others (1994: 155), it was revealed that perceived barriers of using hearing protection lead to the decrease of using a hearing protecting device among workers. Purintarapiban (1989: 95-96) showed that perceived barriers of cervical cancer examine was significantly relation to the attendance of cervical cancer examination service. Nirattharadorn (1996: 72) revealed that perceived barriers of attending at antenatal care clinic had significant converse relationship to health-promoting behaviors. Moreover, similar to the study of Suthikul (1997: 150), it was showed that perceived barriers of action had significant relationship to health-promoting behaviors.

In conclusion, if person had high perceived barriers of positive health practice, it affected engagement in particular behaviors. According to Pender (1996: 69), it was claimed that perceived barriers is parallel to perceived benefits of action exerts a direct influence on predisposition to engage in health-promoting behaviors. In addition to

perceived benefits and perceived barriers to action, social support is another important factor which may reduce barriers to activities and positively effect personal health.

Social Support and Health-Promoting Behaviors

Social support is the psychological factor comprehensively affecting human lifestyle pattern. It involves interpersonal interaction and communication. Strong social support system is more positive augment feelings of persons to cope in life events than no social support (Thoits, 1982: 145-147). There are 4 components of social support namely: emotional support, informational support, instrumental aids, and affirmation coming from many sources. Examples of these sources are father, mother, brother, sister, relatives, friends, husband-wife, and other significant person (s) including health care providers Pender (1996: 259). According to Kaplan and others (1977 cited by Thoits, 1982: 147), social support is the basic social desirable degree which interpersonal interaction/communication needs for affective, approval, belonging and security. Social support can also influence person positive health actions and enhance their wellness (Kompayak, 1988: 96-97).

Pender (1996: 259) claimed that social support can encourage health-promoting behaviors and high level wellness, reducing stress events, providing feedback of activity expectation and social relative desirable affect and buffering the negative emotional response life events.

Thus, as one of personal basic needs for affective, approval, belonging and security from family members, co-working, relatives, neighbors, health care providers, and

others. Social support is interaction with others in the society systems. Wellness is the desirable consequence of social support. These in agree with the studied of Prompunjai (1997: 105), Sakbunditsakul (1998: 87), and Thongbai (1997: 143) which showed that social support was significantly related to and able to explain health-promoting behaviors among textile factory workers. Similarly, Oumpram (1998: 88-90) revealed that social support was associated with and able to predict health-promoting behaviors among menopausal woman.

In summary, laborer is the largest group of Thai population. They are playing a key role in socioeconomic development of Thailand. They do not only work in Thailand, but a number of them go to work abroad where there are many differences in culture, languages, environments affecting their lives. Due to these differences, they might sometimes develop emotional stress, anxiety and health deviations. Thus, they should encompass support provided by professional or nonprofessional resource for beneficial to one's motive and desire to practice health-promoting behaviors in their lifestyle. In order to maintain and enhance their level of wellness, self-actualization and fulfillment of the individual. More importantly, in accordance with the reviews which found that age, sex, education, income, marital status, perceived benefits of action, perceived barriers to action, and social support were significantly related and explain health-promoting behaviors, this study hypothesized that these key factors were significantly related to and able to incorporately predict health-promoting behaviors of laborers who will to work abroad.

CHAPTER III

METERIALS AND METHODS

This was a cross-sectional study conducted to explore Thai laborers' health-promoting behaviors before going to work abroad. Purposes of this study were to: (1) explore perceived benefits of action, perceived barriers to action, social support, and health-promoting behaviors; (2) examine the relationship between personal factors (sex, age, education, income, and marital status) and health-promoting behaviors; (3) examine the relationship between perceived benefits of action and health-promoting behaviors; (4) examine the relationship between perceived barriers to action and health-promoting behaviors; (5) examine the relationship between social support and health-promoting behaviors; and (6) examine the incorporated predictability of these factors to health-promoting behaviors. Materials and methods used in this study were as follows:

Subjects

Laborers who came for physical check-up at the Mahidol University Applied and Technological Service Center of Ramathibodi Hospital, Bangkok, Thailand, from March to April, 2000 were selected. By using the systematic random sampling technique, 20 out of 100 first arrival laborers were invited to participate in this study if they met the following criteria: (1) age between 15 and 59; and (2) able to communicate. Although 20 laborers were approached each day, there were only about 8 to 14 of them able to

participate. The rest of them were either unable to be located or disagreed to participate. There were 64 laborers who disagreed to participate: 6 women and 58 men. Throughout this period of time, 238 subjects were voluntarily recruited into this study making response rate of 78.8%.

Setting

This study was conducted at the Mahidol University Applied and Technological Service Center, Ramathibodi Hospital. This center is responsible for labor physical check-up accordingly to Ministry of Public Health requires. A specific purpose of the center is to provide physical check-up to laborers who plan to work abroad (worldwide). There are 9 office staffs and 2 physicians attending the center. Its office hours are from 5.30 a.m. to 3.00 p.m. Monday through Friday. Although there were approximately 100 to 500 laborers attending the center each day, only 100 numbering tickets were distributed to those firstly arrived. The check-up procedures include physical examination by a physician, weighing, vital signs taking, chest x-ray, blood chemistry, urine examination, and feces examination. However, blood chemistry taken was varied accordingly to policy of the country where they are going to work. The results of this check up are available after 3 working day.

Measurement

Data were collected through structured interview by the investigator. The first part of the questionnaire is composed of simple personal questions about background characteristics (see Appendix A) followed by instruments measuring perceived benefits of action, perceived barriers to action, social support, and health-promoting behaviors. These instruments were developed by the investigator conceptually based on Pender's Health Promotion Model, related literature review and informal conversation with groups of laborers attending the Mahidol University Applied and Technological Service Center at Ramathibodi Hospital. These preliminary instruments were firstly piloted among 10 laborers at this center and revealed semantic problems. They were revised in order to increase understandability to these laborers. Subsequently, content of the firstly-revised instruments were validated by 6 experts who are competent in health promotion, nursing theory, community medicine, public health, occupational health, humanities and social science. Their comments were: (1) wordings used to describe barriers in items measuring perceived barriers to action were too complicated and similar; and (2) using a five-point Likert scale may be confusing and too difficult for laborers to understand especially for those who were poorly educated. In response to these comments, the investigator revised the instrument accordingly to the experts and did the second pilot study among 20 laborers at the same center. This pilot study found that wordings in the secondly-revised instruments and a five-point Likert scale are understandable and appropriate to this group. In this pilot study, the investigator used a two-step interview. First, asking whether the subject agree, disagree or not sure about the question. If agree/disagree, he/she was asked

whether he/she very much or not much agree/disagree. Consequently, the final instruments were also pre-tested among 30 laborers at the center for their internal consistency. Prior to data analysis, scores on negatively-worded items of each instruments were reversed.

Perceived Benefits of Action

The instrument measuring perceived benefits of action was developed by the investigator conceptually regarding to Pender's Health Promotion Model (1996) and modified from six existing instruments. These instruments were used to measure perceived benefits of action among pregnant teenagers (Nirattharadorn, 1996), elementary school teachers (Suthikul, 1997), laborers (Prompunjai, 1997; Thongbai, 1997), and menopuasal women (Jinwattana, 1998; Oumpram, 1998). Although there were two existing instruments used among the laborers, these instruments were used only among factory workers. Therefore, the investigator modified these instruments in order to make the instrument used in this study more appropriate to the subjects. A five-point Likert scale: 5 (very agree), 4 (agree), 3 (not sure), 2 (disagree), and 1 (very disagree) was used in this instrument because it was understandable among laborers in the previous pilot studies. Prior to the calculation of the final internal consistency coefficient, this questionnaire consisted of 18 items: 3 negatively and 15 positively-worded items. This instrument gave a Cronbach alpha of 0.52. In order to increase internal consistency of this instrument, three items were eliminated. Consequently, the final instrument consisting of 15 items (2 negatively and 13 positively-worded items) yields a Cronbach alpha of 0.65. Descriptions of this scale were as appeared in Appendix B

The Interpretation of the Total Scores of Perceived Benefits of Action

> 80 percent, > 60 scores = well perceived benefits of action

60-80 percent, 45-60 scores = moderately perceived benefits of action

< 60 percent, < 45 scores = poorly perceived benefits of action

Perceived Barriers to Action

The instrument measuring perceived barriers of action was developed by the investigator conceptually regarding to Pender's Health Promotion Model (1996) and modified from two existing instruments. These instruments were used to measure perceived barriers of action among elementary school teachers (Suthikul, 1997), and menopausal women (Nirattharadorn, 1996). The investigator modified these existing instruments in order to make the instrument used in this study more appropriate to the subjects because they were used to measure perceived barriers of action among groups other than laborers, and consisted of many items not applicable to be used in this study. A five-point Likert scale: 5 (very agree), 4 (agree), 3 (not sure), 2 (disagree), and 1 (very disagree) was used in this instrument since it was understandable among laborers in the previous pilot studies. Prior to the calculation of the final internal consistency coefficient, this questionnaire consisted of 18 negatively worded items. This instrument gave a Cronbach alpha of 0.79. To make this instrument in accordance with the perceived benefits of action instrument, three items were eliminated. Consequently, the final instrument consisting of 15 items yields a Cronbach alpha of 0.81. Descriptions of this scale were as presented in Appendix C

The Interpretation of the Total Scores of Perceived Barriers of Action

> 80 percent,	> 60 scores	=	severely perceived barriers of action
60-80 percent,	45-60 scores	=	moderately perceived barriers of action
< 60 percent,	< 45 scores	=	slightly perceived barriers of action

Social Support

The instrument measuring social support was developed by the investigator conceptually regarding to Pender's Health Promotion Model (1996) and modified from an instrument used among migrant workers in textile industry (Sittiruttanasunton, 1993). Although many existing social support instruments used among menopausal women (Jinwattana, 1998; Oumpram, 1998), pregnant teenagers (Nirattharadorn, 1996), factory workers (Thongbai, 1997), and female workers in textile industry (Sakbunditsakul, 1998; Sittiruttanasunton, 1993), they consisted of many items not applicable to be used among subjects in this study. The only instrument which has the most applicable items to be used with subjects in this study was developed by Sittiruttanasunton (1993) to measure social support among migrant workers in textile industry. However, this instrument was developed conceptually based on Kaplan's social support concept and consisted of many items not applicable to social support defined by Pender (1996). Therefore, in order to make the instrument more appropriate to this study, items contained in this instrument were modified. A five-point Likert scale: 5 (very agree), 4 (agree), 3 (not sure), 2 (disagree), and 1 (very disagree) was used in this instrument since it was understandable among laborers in the previous pilot studies. Prior to the calculation of the final internal

consistency coefficient, this questionnaire consisted of 20 items: 6 negatively and 14 positively-worded. This instrument gave a Cronbach alpha of 0.30. In order to increase internal consistency of this instrument, ten items were eliminated. Consequently, the final instrument consisting of 10 items yields a Cronbach alpha of 0.69. Descriptions of this scale were as appeared in Appendix D

The Interpretation of the Total Scores of Social Support

> 80 percent,	> 40 scores	=	good social support
60-80 percent,	30- 40 scores	=	moderate social support
< 60 percent,	< 30 scores	=	poor social support

Health-Promoting Behaviors

The instrument measuring health-promoting behaviors was developed by the investigator conceptually regarding to Pender's Health Promotion Model (1996) and modified from six existing instruments. These were used to measure health-promoting behaviors among pregnant teenagers (Nirattharadorn, 1996), elementary school teachers (Sutthikul, 1997), menopausal women (Jinwattana, 1998; Oumpram, 1998), and laborers (Prompunjai, 1997; Thongbai, 1997). Although there were two instruments used among the laborers, these instruments were used only among factory workers. Therefore, the investigator modified these existing instruments in order to make the instrument used in this study more appropriate to the subjects. Although a five-point Likert scale: 5 (always practice), 4 (often practice), 3 (practice for sometimes), 2 (practice once a while), and 1 (never practice) was usually used in the above instruments, this scale's format is not

equally applicable for every items in this instrument. As a result of this, a 3-point Likert scale: (2) extremely positive health behaviors, (1) somewhat positive/negative health behaviors, and (0) extremely negative health behaviors was used and it was found to be understandable among laborers in the pilot study. Consequently, the final instrument consisting of 15 items (2 negatively and 13 positively-worded) yields a Cronbach alpha of 0.54. Descriptions of each individual item of this scale varied as appeared in Appendix E

The Interpretation of the Total Scores of Health-Promoting Behaviors

> 80 percent,	> 24 scores	=	good health-promoting behaviors
60-80 percent,	18-24 scores	=	fair health-promoting behaviors
< 60 percent,	< 18 scores	=	poor health-promoting behaviors

Data Collection

Procedure of Data Collection

After obtaining permission from Faculty of Graduate Studies, Mahidol University and Mahidol University Applied and Technological Service Center, Ramathibodi Hospital, a schedule of data collection at the center was established: Monday through Friday from 5.30 a.m. to 12.00 a.m. Data were collected during a writing period. About 20 laborers were systematically and randomly selected each day. The investigator was introduced to these laborers by a head staff at the center. Subjects were informed by the investigator that study is to explore their personal factors, and assess their perceived benefits of action, perceived barriers to action, social support, and health-promoting behaviors. Confidentiality will be addressed, data were collected anonymously. Verbal informed

consent was individually given to all subjects prior to data collection. In addition to being given descriptive of the study, subjects were assured that their participation or non participation would not have effects on their health check-up. Total time spent in giving instruction, interviewing and filling out the questionnaire was about 20 minutes. All subjects were thanked for their participation in the study at the end of the interview.

Data Analysis

All data were analyzed by using SPSS for window program.

1. Descriptive statistics: personal factors, perceived benefits of action, perceived barriers to action, social support, and health-promoting behaviors were described by using descriptive statistics: frequency distribution and appropriate statistics for central tendency and variability.

2. Inferential statistics:

2.1 Pearson's product moment correlation coefficient were performed to examine relationships between each of the independent variables (personal factors, perceived benefits of action, perceived barriers to action, and social support) and health-promoting behaviors.

2.2 Multiple regression were performed to incorporatedly predict health-promoting behaviors by using personal factors, perceived benefits of action, perceived barriers to action, and social support. However, prior to regression analysis, Pearson's product moment correlation coefficients were undertaken to detect correlation among pairs of predictors of health-promoting behaviors.

CHAPTER IV

RESULTS

This cross-sectional study was conducted to explore factors related to health-promoting behaviors among Thai laborers before going to work abroad at the Mahidol University Applied and Technological Service Center, Ramathibodi Hospital. Of 238 laborers attending this center were recruited to this study using systematic random sampling. Objectives of this study: (1) to explore perceived benefits of action, perceived barriers to action, social support, and health-promoting behaviors; (2) to examine the relationship between personal factors (sex, age, education, income, and marital status) and health-promoting behaviors; (3) to examine the relationship between perceived benefits of action and health-promoting behaviors; (4) to examine the relationship between perceived barriers to action and health-promoting behaviors; (5) to examine the relationship between social support and health-promoting behaviors; and (6) to examine the incorporated predictability of these factors and health-promoting behaviors. Data were analyzed by using both descriptive and inferential statistics. Results of this study presented in this chapter are as follows:

Subjects' Personal Factors and Other Background Characteristics

The majority of subjects included in this study were male (70.6%). About 58.0% of them were married. Their age ranged from 19 to 50 with a mean of 30 years old (SD = 6.5). Years of education ranged from 2 to 16 years with a mean of 8 years (SD = 3.2). More than half of them had 6 years of education or less (52.9%), while

about one fourth reported 12 years of education or higher (25.7%). Their family income ranged from 400 to 30,000 bahts per month with a mean of 5,136.34 bahts (SD = 4,275.21).

About two-third of the subjects came from the northeast (66.4%), while 31.9% from north and the rest from east and central. They currently worked as agriculturists (35.7%), general labors (30.7%), small business owners (10.5%), factory workers (9.2%), and constructors (6.3%), while the rest were presently unemployed (7.6%). Not all of subjects had future work expectation when going abroad (89.1%). Their future work expectation were industrial employment (62.6%), house keepers (13.0%), constructors (8.4%), general labors (3.4%), agriculturists (1.3%) and restaurant owner (0.4%). Taiwan was the most popular country reported as future work destination among these subjects (91.6%). The rest were Hong-Kong (5.5%), Japan (0.8%), Israel (0.4%), Germany (0.4%), United States of Arab Emirate (0.4%), Kuwait (0.4%) and Libia (0.4%). Some subjects reported that they will go to work abroad with their friends (59.2%) and relatives (25.2%). Only about one-third had friends (35.3%) and relatives (37.4%) currently work in the country where they are going to. Not all of the subjects were able to speak English (48.7%) and local languages (24.4%), as shown in Table 1.

Table 1 Personal factors and other background characteristics data (n = 238)

Data	No.	%	Mean	SD	Range
Sex					
Male	168	70.6			
Female	70	29.4			
Marital status					
Couple	138	58.0			
Single and others	100	42.0			
Age (years)			30.0	6.5	19-50
Education (years)			8.0	3.2	2-16
≤ 6	126	52.9			
7 - 11	51	21.4			
≥ 12	61	25.7			
Income (baht per month)			5,136.34	4,275.21	400-30,000
Province of origin					
Northeast	158	66.4			
North	76	31.9			
Central	2	0.8			
East	2	0.8			
Current work					
Agriculturists	85	35.7			
General labors	73	30.7			
Small business owners	25	10.5			
Factory members	22	9.2			
Constructors	15	6.3			
Unemployed	18	7.6			
Future work expectation					
Industrial-employment	149	62.6			
House keepers	31	13.0			
Unknown	26	10.9			
Constructors	20	8.4			

Table 1 Personal factors and other background characteristics data (n = 238)

(continued)

Data	No.	%	Mean	SD	Range
Future work Expectation (cont.)					
General labors	8	3.4			
Agriculturists	3	1.3			
Restaurant owner	1	0.4			
Country of destination					
Taiwan	218	91.6			
Hong Kong	13	5.5			
Japan	2	0.8			
Israel	1	0.4			
Germany	1	0.4			
United States of Arab Emirate	1	0.4			
Kuwait	1	0.4			
Libia	1	0.4			
Accompanied by friend (s)					
Yes	141	59.2			
No	97	40.8			
If yes, relationship with friend (s)					
No	99	41.6			
Same town	114	47.9			
Co-worker	5	2.1			
Other town	20	8.4			
Having a friend (s) working/living in that country					
Yes	84	35.3			
No	154	64.7			

Table 1 Personal factors and other background characteristics data (n = 238)

(continued)

Data	No.	%	Mean	S.D	Range
If yes, relationship with friend (s)					
No	156	65.5			
Same rural	72	30.3			
Co-worker	6	2.5			
Other town	4	1.7			
Accompanied by relative (s)					
Yes	60	25.2			
No	178	74.8			
If yes, relationship with relative (s)					
No	178	74.8			
Close	36	15.1			
Family member	14	5.9			
Far	10	4.2			
Having a relative (s) working/living in that country					
Yes	89	37.4			
No	149	62.6			
If yes, relationship with relative (s)					
No	149	62.6			
Close	53	22.3			
Family member	33	13.9			
Far	3	1.3			

Table 1 Personal factors and other background characteristics data (n = 238)

(continued)

Data	No.	%	Mean	SD	Range
Ability to speak English					
No	122	51.3			
A little	97	40.8			
Fair	18	7.6			
Good	1	0.4			
Ability to speak local languages					
No	180	75.6			
A little	49	20.6			
Fair	6	2.5			
Good	2	0.8			
Very good	1	0.4			

Mean, Standard Deviation, and Range of Perceived Benefits of Action, Perceived Barriers to Action, Social Support, and Health-Promoting Behaviors

As shown in Table 2, the mean scores of perceived benefits of action, perceived barriers to action, social support, and health-promoting behaviors were 70.6 (SD = 3.6), 46.4 (SD = 14.5), 45.4 (SD = 4.5), and 19.6 (SD = 2.8), respectively.

Table 2 Mean, standard deviation, and range of perceived benefits of action, perceived barriers to action, social support, and health-promoting behaviors

Variables	Mean	SD	Range
Perceived benefits of action	70.6	3.6	58-75
Perceived barriers to action	46.4	14.5	15-75
Social support	45.4	4.5	30-50
Health-promoting behaviors	19.6	2.8	11-29

Perceived Benefits of Action, Perceived Barriers to Action, Social Support, and Health-Promoting Behaviors among Thai Laborers Before Going to Work Abroad: the results are as followings:

Perceived Benefits of Action

The scores of perceived benefits of action reported by the subjects ranged from 58 to 75 with a mean score of 70.6 (SD = 3.6) as showed in table 2. There were approximately 98.7% of the subjects well perceived benefits of action (scored higher than 60). The majority of the subjects strongly agreed that cleaning houses helps to prevent diseases and promote health (97.5%), daily consumption of 5 food groups brings about good health (96.2%), using condom regularly during sexual intercourse can prevent HIV/AIDS and other sexually transmitted diseases (95.0%), having yearly physical check-up helps to promote early detection of health deviations and increase health awareness (94.5%), strict-safety first practices during work can prevent or

reduce occupational injuries (92.0%), relaxation by meditation, praying, merit making brings about good spiritual and happiness (91.2%), exercise by playing sports/working leads to good health (90.8%) and regularly receiving health information contributes to proper self care practices and health awareness (90.3%). Although 74.6 % of the subjects disagreed (67.2% very disagreed and 7.4% disagreed) that alcohol use helps to reduce stress or feel better, almost one-fourth agreed (3.4% very agreed and 18.5% agreed). About 84.8% disagreed that smoking cigarettes helps to reduce stress or feel better. However, 12.2% agreed. Other findings about perceived benefits of action are presented in Table 3.

Table 3 Percentage of subjects on items of perceived benefits of action (n = 238)

Items	Very agree	Agree	Not sure	Disagree	Very disagree
1.Daily consumption of 5 food groups brings about good health.	96.2	2.9	0.8	0.0	0.0
2.Having medium/uncooked food brings about parasitic infections.	84.9	3.4	1.3	0.8	9.7
3.Exercise by sporting/work leads to good health.	90.8	7.1	1.7	0.4	0.4
4.Cigarette smoking helps to reduce stress or feel better.	2.5	9.7	2.9	6.3	78.5
5.Using alcohol helps to reduce stress or feel better.	3.4	18.5	3.4	7.4	67.2
6.Cleaning house helps to prevent diseases and promote health.	97.5	0.4	2.1	0.0	0.0
7.Sleep at least 6 hours/night can refresh and give energetic feeling.	70.6	19.3	3.8	1.3	5.0

Table 3 Percentage of subjects on items of perceived benefits of action (n = 238)

(continued)

Items	Very agree	Agree	Not sure	Disagree	Very disagree
8.Strict safety first practices during work can prevent or reduce occupational injuries.	92.0	3.4	3.8	0.0	0.8
9.Exceed working 8 hours/day leads to exhaustion and increase chance of occupation injuries.	50.0	28.6	7.6	6.7	7.1
10.Watching a television/listening to a radio helps to reduce stress.	86.6	10.5	0.8	0.4	1.7
11.Talking with friends helps to reduce stress.	84.9	9.7	3.8	0.4	1.3
12.Relaxation by meditating, praying, and merit making brings about good spirit and happiness.	91.2	7.6	0.4	0.8	0.0
13.Having yearly physical check-up helps to promote early detection of health deviations and increases health awareness.	94.5	3.8	1.3	0.0	0.4
14.Regularly receiving health information contributes to proper self-care practice and health awareness.	90.3	7.1	2.1	0.0	0.4
15.Using condom regularly during sexual intercourse with extramarital partners prevent HIV/AIDS and other sexually transmitted diseases.	95.0	2.1	2.5	0.4	0.0

Perceived Barriers to Action

The scores of perceived barriers to action reported by the subjects ranged from 15 to 75 with a mean score 46.4 (SD = 14.5) as showed in table 2. As seen that

this mean score is about 62% of the total scores, the subjects in this study had moderate level of perceived barriers to action. Although almost a half of the subjects (44.1%) slightly perceived barriers to action (scored less than 45), 37.8% perceived moderately (scored between 45 and 60) and 18.1% perceived severely (scored higher than 60). The majority of subjects reported that it was very hard for them to avoid exceed work (> 8 hours per days) because they wanted to earn more salary (63.0 %), to consume 5 food groups because of lack of knowledge, inconvenience, or economic constraint (57.6%), to exercise by sporting or working (until sweating) because of exhaustion or lack of time (43.7%), to reduce stress by watching television or listening to the radio because of lack of time (41.6%) and to relax by meditating, praying or merit making because of lack of time (41.2%). Less than half of subjects disagreed that it was hard to avoid cigarette smoking (44.5% very disagreed and 5% disagreed) and alcohol drinking (31.5% very disagreed and 5.9% disagreed) because of lack of self control and needs to socialize. Although 67.6% of the subjects strongly disagreed that it was hard to use a condom (s) regularly during sexual intercourse with extra-marital partners, 23.9% agreed (18.9% very agreed and 5% agreed). Many of them strongly disagreed with barriers to have yearly physical check-up (56.7%), practice safety first strictly during work (47.9%), and to reduce stress by talking with friends (46.6%). These results are shown in Table 4.

Table 4 Percentage of subjects on items of perceived barriers to action (n = 238)

Items	Very agree	Agree	Not sure	Disagree	Very disagree
1.It is hard to consume 5 food groups every day because of lack of knowledge, inconvenience, or economic constraint.	57.6	21.8	8.8	3.4	8.4
2.It is hard to avoid having medium/uncooked food because of getting used to.	25.2	21.4	6.7	6.7	39.9
3.It is hard to exercise by sporting or working (until sweating) because of exhaustion or lack of time.	43.7	21.0	4.6	8.0	22.7
4.It is hard to avoid cigarette smoking because of lack of self control/feeling withdraw/ needs to socialize.	27.3	18.1	5.0	5.0	44.5
5.It is hard to avoid alcohol drinking because of lack of self control/needs to socialize.	26.1	30.7	5.9	5.9	31.5
6.It is hard to keep a house clean because of lack of times/ ignorance.	31.1	21.4	2.5	6.7	38.2
7.It is hard to get enough sleep at least 6 hours/night because of lack of time.	30.3	25.2	2.9	8.0	33.6
8.It is hard to practice safety-first strictly during work because it was sophisticated/ignorance.	25.2	16.8	4.6	5.5	47.9
9.It is hard to avoid exceed work (>8 hours/day) because of needs to earn more salary.	63.0	12.6	4.6	6.3	13.4

Table 4 Percentage of subjects on items of perceived barriers to action (n = 238) (continued)

Items	Very agree	Agree	Not sure	Disagree	Very disagree
10.It is hard to watch a television/listening to a radio to reduce stress because of lack of time.	41.6	19.3	6.7	12.6	19.7
11.It is hard to talk with friends to reduce stress because of having few friends/needs privacy.	21.8	17.2	4.2	10.1	46.6
12.It is hard to relax by meditating, praying or merit making because of lack of time.	41.2	18.1	4.6	10.1	26.1
13.It is hard to have yearly physical check-up because of self perception of healthy.	20.2	13.0	2.9	7.1	56.7
14.It hard to receive health information regularly because of lack of time.	37.0	18.9	4.9	8.4	31.1
15. It is hard to use a condom (s) regularly during sexual intercourse with extramarital partners because of feeling unused to.	18.9	5.0	6.3	2.1	67.6

Social Support

The scores of social support reported by the subjects ranged from 30 to 50 with a mean score 45.4 (SD = 4.5) as presented in table 2. About 84% of the subjects in this study had good social support (scored better than 60). The majority of subjects

strongly agreed that they have someone in the family providing mental support to their work and living (97.5%), they always have a significant person (s) who love and care for them (85.7%), there were persons taking care of their family members when they were out of town to work (82.8%), they were affirmed by people around them (78.2%), health care providers always help them when they need some advice related to their health (74.8%), they received good services at the health stations (73.5%), and they felt significantly belonged to their colleagues (72.3%). About 74.4% agreed that when they were sick, they were always released job assignment by their friends and boss. However, 20.6% of them were not sure about this. Most of them agreed that when they were in needs of instrumental support, they were assisted (56.3% very agreed and 22.3% agreed), and when they were in need of money, they were supported by someone (52.9%) as presented in Table 5.

Table 5 Percentage of subjects on items of social support (n = 238)

Items	Very agree	Agree	Not sure	Disagree	Very disagree
1. You have someone in the family providing mental support toward your work and living.	97.5	1.7	0.0	0.0	0.8
2. You always have a significant person (s) who love and care for you.	85.7	7.6	4.6	0.0	2.1
3. When you go to health station, you received good services.	73.5	20.6	4.6	0.4	0.8
4. You felt significantly belonged to your colleagues/friends.	72.3	6.7	19.7	0.8	0.4
5. You were affirmed by people around you.	78.2	7.1	13.4	0.4	0.8

Table 5 Percentage of subjects on items of social support (n = 238)

(continued)

Items	Very agree	Agree	Not sure	Disagree	Very disagree
6.When you need some advice related to your health, health care providers always help you.	74.8	12.6	10.9	0.8	0.8
7.When you in needs of money, you were supported by someone.	52.9	26.9	11.3	5.0	3.8
8.You have persons taking care of your family members when you were out of town to work.	82.8	9.7	4.2	1.3	2.1
9.When you were in need of instrumental support, you were assisted.	56.3	22.3	10.5	6.3	4.6
10.When you were sick, you were always released job assignment by your friends and boss.	58.0	16.4	20.6	3.8	1.3

Health-Promoting Behaviors

The health-promoting behaviors scores reported by the subjects ranged from 11 to 29 with a mean score 19.6 (SD = 2.8) as shown in table 2. About 75.2% of the subjects in this study reported fair health-promoting behaviors (scored between 18 and 24), while only 3.8% reported good health-promoting behaviors (scored better than 24). The majority of the subjects reported always practiced protective health promoting behavior regarding condom use during sexual intercourse with extramarital partners (93.7%), strictly practiced safety first practices during work (80.3%), exercised by sporting or work until sweating at least 3 times a week (79.8%), and clean house (64.7%). About 58.8 % of them always slept at least 6 hours a night. While

one-third the subjects were always able to find some ways to reduce stress (33.2%), the rest were sometimes (51.3%) and rarely able to (15.5%). Although 55% just sometimes, while approached their friends when they were under stress 36.6% once a while and only 8.4% always approached their friends. Very few of the subjects (2.9%) were always able to relax (by meditating, praying or merit making), but 42% did sometimes and 55% did once a while. Only 10.5% were always able to avoid exceed work whereas 83.2% were sometimes and 6.3% not able to avoid exceed work. Not all had yearly physical check up (41.6% always and 42% sometimes). Not surprisingly, about 16.4% had never had yearly physical check up. However, almost all received health information (31.9% always and 66.8% sometimes).

Although, more than half never smoked (57.6 %), about 30.3% smoked less than 10 cigarette a day and 12.2% smoked more than 10 cigarette a day. About 48.3% drank alcohol less than 60 milliliters a day and 11.8 % drank more than 60 milliliters a day while only 39.9% never drank. The majority of the subjects had 5 food groups a day just some-times (78.2%) whereas only few always had (7.6%). Although about 68.9% had medium or uncooked food for sometimes, 5.5% often had, and about one-fourth never had (25.6%). These findings were presented in Table 6.

Table 6 Percentage of subjects on items of health-promoting behaviors (n = 238)

Items	Scales	No.	%
1.Having 5 food groups.....	Every day	18	7.6
	Sometimes	186	78.2
	Never	34	14.3
2.Having medium/uncooked food.....	Never	61	25.6
	Sometimes	164	68.9
	Often	13	5.5
3.Exercise by sporting/working..	At least 3 times/ week regularly	190	79.8
	Sometimes	47	19.7
	Never	1	0.4
4.Smoking cigarettes.....	Never	137	57.6
	Less than 10 cigarettes/day	72	30.3
	More than 10 cigarettes/day	29	12.2
5.Alcohol consumption.....	Never	95	39.9
	Drink less than 60 milliliters/day	115	48.3
	Drink more than 60 milliliters/day	28	11.8
6.Cleaning house.....	Every day	154	64.7
	Sometimes	83	34.9
	Never	1	0.4
7.Sleeping at least 6 hours a night	Every day	140	58.8
	Sometimes	98	41.2
	Never	0	0.0
8.Safety first practices...	Always	191	80.3
	Sometimes	47	19.7
	Never	0	0.0
9.Working more than 8 hours/ day.....	Always	15	6.3
	Sometimes	198	83.2
	Never	25	10.5

Table 6 Percentage of subjects on items of health-promoting behaviors (n = 238) (continued)

Items	Scales	No.	%
10.Managing stress	Always	79	33.2
	Sometimes	122	51.3
	Once a while	37	15.5
11.Managing stress by talking with a friend (s).....	Always	20	8.4
	Sometimes	131	55.0
	Once a while	87	36.6
12.Relaxing by meditating, praying or merit making ...	Always	7	2.9
	Sometimes	100	42.0
	Once a while	131	55.0
13.Having yearly physical check-up....	Every year	99	41.6
	Sometimes	100	42.0
	Never	39	16.4
14.Receiving health information	Always	76	31.9
	Sometimes	159	66.8
	Never	3	1.3
15.Using condom.....	Always	223	93.7
	Sometimes	15	6.3
	Never	0	0.0

The Relationship between Personal Factors, Perceived Benefits of Action, Perceived Barriers to Action, Social Support and Health-Promoting Behaviors

In response to the second, third, fourth and fifth objectives of this study, " to study the relationships of each pair with one of these variables: 1) personal factors (sex, age, education, income, and marital status), 2) perceived benefits of action, 3) perceived barriers to action; and 4) social support to health-promoting behaviors ", it

was revealed that sex, perceived benefits of action and social support individually have significant positive relationship with health-promoting behaviors ($p < .01$). However, perceived barriers to action has significant negative relationship to health-promoting behaviors ($p < .01$). Relationship of age, education, income and marital status to health-promoting behaviors were not significant as demonstrated in Table 7.

Table 7 Pearson's product moment correlations coefficient of personal factors, perceived benefits of action, perceived barriers to action, and social support to health-promoting behaviors

Variables	r
Sex	.361**
Age	.016
Education	.004
Income	-.086
Marital status	.115
Perceived benefits of action	.178**
Perceived barriers to action	-.294**
Social support	.283**

P** < .01 Note : sex 0 = male, 1 = female marital status 0 = single and others, 1 = couple

Factors Predicting Health-Promoting Behaviors

In response to the last objectives, " to study the incorporated predictability of sex, age, education, income, marital status, perceived benefits of action, perceived barriers to action, social support on health-promoting behaviors ", correlations among all independent variables were tested prior to multiple regression analysis. It was found

in Table 8 that these correlations were mild to moderate (ranged from -.411 to .473). Therefore, all of these variables were included in multiple regression analysis using stepwise method.

Table 8 Correlation among independent variables

Variables	1	2	3	4	5	6	7	8
1 Sex	1.000							
2 Age	-.229**	1.000						
3 Education	.127	-.411**	1.000					
4 Income	.039	-.069	.311**	1.000				
5 Marital status	.086	.473**	-.391**	-.117	1.000			
6 Perceived benefits of action	.244**	.046	.016	.025	.091	1.000		
7 Perceived barriers to action	-.224**	.188**	-.284**	.133**	-.166*	-.019	1.000	
8 Social support	-.041	.132*	-.232**	.171**	-.046	.252**	-.012	1.000

*P<.05, **p< 0.01, Note : sex 0 = male, 1 = female marital status 0 = single and others, 1 = couple

From stepwise multiple regression analysis, only 5 variables were able to predict health-promoting behaviors: sex, social support, perceived barriers to action, marital status and income. Sex, the first variable entered the model explained 13.1 percent of variance in the total health-promoting behaviors (p <. 001). Social support, the second variable entered the model additionally explained 8.9 percent of variance in the total health-promoting behavior (p < .001). Perceived barriers to action, the third variable entered the model increasingly explained 4.5 percent of variance in the total health-promoting behaviors (p < .001). Next, marital status was the fourth variable entered the model. This variable helped to explain additional 1.6 percent of variance in

the total health-promoting behaviors ($p < .05$). The last variable entered the model was income which additionally explained 1.3 percent of variance in the total health-promoting behaviors ($p < .05$). The final model could explain 29.2 percent of variance in the total health-promoting behaviors ($F_{(5, 232)} = 19.16$, $p < .001$), as presented in Table 9.

Table 9 Factors predicting health-promoting behaviors

Variables	R square	R square change	B	t	p
Sex	.131	.131	2.01	5.82	.000
Social support	.219	.089	.16	4.76	.000
Perceived barriers to action	.264	.045	.05	-4.34	.000
Marital status	.280	.016	.67	2.7	.05
Income	.292	.013	.00007	-2.03	.05
Constant 13.74, overall $F_{(5, 232)} = 19.16$, $p < .001$					

Note: sex 0 = male, 1 = female marital status 0 = single and others, 1 = couple

In order to test autocorrelations, Durbin-Watson test was performed. This regression model revealed Durbin-Watson test statistics of 2.02 which indicated none autocorrelations. To test multicollinearity among dependent variables, collinearity statistics was calculated. It was shown that tolerance values of sex, social support, perceived barriers to action, marital status, and income were .95, .97, .91, .94, and .96 respectively. When tolerance values closed to one, multicollinearity was not a problem in this multiple regression analysis although some dependent variables had mild to moderate correlations as shown in Table 8.

CHAPTER V

DISCUSSION

This cross-sectional study was conducted to explore factors related to health-promoting behaviors among Thai laborers before going to work abroad who attended the Mahidol University Applied and Technological Service Center, Ramathibodi Hospital. There were 5 hypotheses: (1) personal factors (sex, age, education, income, and marital status) are related to health-promoting behaviors; (2) perceived benefits of action is related to health-promoting behaviors; (3) perceived barriers to action is related to health-promoting behaviors; (4) social support is related to health-promoting behaviors; and (5) these factors are incorporated predictors of health-promoting behaviors among this group. These hypotheses were tested. Descriptive and inferential statistics were used to analyze the data. In bivariate analysis, it was demonstrated that sex, perceived benefits of action, perceived barriers to action, and social support were significantly related to health-promoting behaviors. Additionally, in regression analysis, sex, social support, perceived barriers to action, marital status, and income are incorporated predictors of health-promoting behaviors among this group. This chapter presents discussion of background information and the results in responding to each hypothesis.

Background Information

Three hundred and two laborers attending the Mahidol University Applied and Technological Service Center at the Ramathibodi Hospital were invited to participate in this study. However, only 238 agreed to participate. This makes response rate of 78.8%. Since the investigator was not able to ask these non respondents for some background information, it was not known whether or not they were different from the subjects included in this study, or more likely to have poor health-promoting behaviors. In this study, the subjects were between 19 and 50 years old, with an average age of 30 years. About 58.0% of these subjects were married. The majority was male (70.6%), had less than 12 years of education (74.4%), and came from the northeastern region (66.4%). Taiwan was the most-frequently reported country of destination (91.6%) while the most-frequently reported future work expectation was industrial work (62.6%). These findings were in accordance with the information documented by the Overseas Employment Administration Office, Ministry of Labors Force and Social Welfare, Thailand (1999) that most of Thai overseas laborers had 4 years of education (80.5%), came from northeastern region (60%), and work in Taiwan (64%). However, it was also documented that most of them work as labour (40%).

Some subjects reported that they will go to work abroad with their friends (59.2%) and relatives (25.2%). About one-third have friends (35.3%) and relatives (37.4%) currently work in the country of destination. Less than half of the subjects were able to speak English (48.7%) and only about one-fourth were able to speak local languages (24.4%), but not fluently. Findings about friends and relatives provides

additional information regarding their future sources of social support, and findings about ability to speak English and/or local languages provides additional information regarding their future life and health care access. If they are able to communicate well in the language used in the country where they work, they will be better and sooner able to adapt to their new job, friends and colleagues including new environment, and better able to seek health care services when needed. These additional findings will be useful when preparing laborers who plan to work abroad before they leave Thailand.

Hypothesis I

Personal factors (sex, age, education, income, and marital status) are related to health-promoting behaviors among Thai laborers before going to work abroad. This finding revealed that sex was the only one of personal factors having significant relationship to health-promoting behaviors. Moreover, it was revealed that female laborers had better health-promoting behaviors compared to male. Although Pender (1996: 68) postulated that many personal factors can explain or predict outcome behaviors, this finding partially supported Pender's Health Promotion Model (Pender, 1996). Similarly, Pender (1987: 48) claimed that sex was the best predictive demographic factor of preventive health behaviors, and women more frequently exhibited a predisposition to engage in health behaviors than men. This may be because of the following reasons. Compared to men, women have paid more attention on preventive health matters (Duffy, 1988: 358; Verbrugge, 1985: 156; Woods and others, 1993: 391). Moreover, women more often paid attention on, shared information about, or recalled about health deviations

and illnesses (Verbrugge, 1989: 283). While men more often had risky behaviors than women (Supornsilphachai, 1997: 171). In addition, as a leader of the family, men play an impor-tant role in overload work because they usually need more salary in order to support their families. As suggested by Supornsilphachai (1997: 175) that health deviation was also directly related to occupations, overload work could cause many health disadvantages such as lack of time for self-care, stress as well as inadequate rest.

In accordance with Prompunjai (1997: 98-99), sex had significant relationship to health-promoting behaviors among factory workers. Female workers had better health-promoting behaviors compared to male. Similarly, Harris & Guten (1979: 26) showed that there was significant difference of health-promoting practices between male and female adults: female had higher scores on health-promoting behaviors than male. Pender and others (1990: 329) found in their study that female workers had healthier lifestyle. Lusk and others (1995: 23) also found that white-collar, blue-collar and skilled trade women had higher health responsibility and better health-promoting behaviors than men. Furthermore, sex was significantly related to health-promoting behaviors among school teachers, (Anusornpanich, 1999: 98; Suthikul, 1997: 139). Although Inkoom (1998: 73) failed to demonstrate significant relationship between sex and health-promoting behaviors among elderly with coronary artery disease, many studies as mentioned above and this study supported Pender's Health Promotion Model that sex was significantly related to health-promoting behaviors. Therefore, sex may be a root cause of health-promoting behaviors and brought about human actualization as suggested by Pender (1996).

In this study, age was not significantly related to health-promoting behaviors. This result suggested that health-promoting behaviors did not depend upon age. Similarly, studies among factory workers (Prompunjai, 1997: 133), Pathomsuksa teachers (Suthikul, 1997: 138), and elderly with coronary artery disease (Inkoom, 1998: 74) also failed to demonstrate significant relationship between age and health-promoting behaviors. In this study, there were two possible reasons for the finding of this insignificant relationship. The first reason might be small variation within health-promoting behaviors. For example, some subjects may report good health-promoting behaviors, except cigarettes smoking and/or alcohol drinking. Thus, these bad health-promoting behaviors may be camouflaged by a summated score of health-promoting behaviors. The second reason may be small variation of age. Although subjects are between 19 and 50 years old, about 80% of them were between 21 and 35 (mean = 30, SD = 6.5). While 80% of the subjects are in young adult age and variation of overall health-promoting behavior scores is not large (SD = 2.8), these reasons may lead to insignificant relationship of age and health-promoting behaviors. Consequently, the finding of this study that relationship between age and health-promoting behaviors was not significant similarly to studies among factory workers (Prompunjai, 1997:133), Pathomsuksa teachers (Suthikul, 1997: 138), and elderly with coronary artery disease (Inkoom, 1998: 74) although a significant relationship between these variables was reported among employees (Duffy and others, 1996: 23; Pender and others, 1990: 328-329), pregnant women (Boonsom, 1997: 52), and female constructors (Chunhapran and others, 1995: 29).

A relationship between education and health-promoting behaviors in this study was not significant. This result suggested that health-promoting behaviors did not depend upon education. Similarly, findings among factory workers (Klomklorm, 1995: 105; Prompunjai, 1997: 135), employees (Pender and others, 1990: 329), Pathomsuksa teachers (Suthikul, 1997: 153), and primary school teachers (Anusornpanich, 1999: 99) also showed that education was not significantly related to health-promoting behaviors. In contrast, Duffy (1988: 360) revealed that education was engaging in all six Health-Promoting Lifestyle Profiles among midlife women. Other studies also found that education was related to the performance of health-promoting behaviors among employed Mexican American women (Duffy and others, 1996: 23), elderly with coronary artery disease (Inkoom, 1998: 74), and American household members (Ross & Wu Ling, 1996: 112).

Although education is one of the factors indicating on individual's well-being (Ross & Willigen, 1997: 291), the majority of subjects in this study were poorly educated: 74.4% of them had less than12 years of education. While about three-fourth had similar educational background and variation of overall health-promoting behavior scores of the subjects is not large (SD = 3.2), these reasons may lead to insignificant relationship of education and health-promoting behaviors. Furthermore, education may not be only factor related to individual's health-promoting behaviors.

Consequently, the finding that relationship between education and health-promoting behaviors was not significant was similar to studies among factory workers (Klomklorm, 1995: 105; Prompunjai, 1997: 133); Pathomsuksa teachers (Suthikul, 1997:

138), primary school teachers (Anusornpanich, 1999: 99), and employees (Pender and others, 1990: 329) although a significant relationship between these variables was reported among studies by Duffy (1988: 360), Duffy and others (1996: 23), Ross & Wu Ling (1996: 112), and Inkoom (1998: 74).

Monthly income also was not significantly related to health-promoting behaviors. This result suggested that health-promoting behaviors did not depend upon income. It was confirmed by Chunhapran and others (1995: 29) that there was no significant difference in health status between female workers who had high and low salary. Pender and others (1990: 329) also found that income was not related to maintenance of the fitness program among employees. Boonsom (1997: 53) reported that income was not significantly related to health-promoting behaviors among pregnant woman. On the other hand, Duffy (1988: 360) revealed that income was engaging in all six Health-Promoting Lifestyle Profiles among midlife women. Prompunjai (1997: 138) showed that income was significantly related to health-promoting behaviors among factory workers. Nirattharadorn (1996: 73) also showed that pregnant adolescents woman who had more income had better health-promoting behaviors than those with lower income.

Consequently, the finding that relationship between income and health-promoting behaviors was not significant was similar to studies by Pender and others (1990: 329), Chunhapran and others (1995: 29), and Boonsom (1997: 53) although a significant relationship between these variables was reported among studies by Duffy (1988: 360), Nirattharadorn (1996: 73), and Prompunjai (1997: 138).

The last personal factor, marital status, was not significantly related to health-promoting behaviors. This finding might be explained that health-promoting behaviors did not depend upon marital status. Similarly, this finding was in accordance with studies among factory workers (Klomklorm, 1995: 105; Prompunjai, 1997: 135), and employees (Pender and others, 1990: 329). Lusk and others (1995: 22) also showed that white-collar, blue-collar and skilled trade women with different marital status had no significant different health promoting lifestyle.

Additionally, marital status may not be only factor which influenced on one's health-promoting behaviors. The finding that relationship between marital status and health-promoting behaviors was not significant was similar to studies among factory workers (Klomklorm, 1995: 105; Prompunjai, 1997: 135), and employees (Pender and others, 1990: 329; Lusk and others, 1995: 22) although a significant relationship between this variable was reported among textile industrial workers (Sakbunditsakul, 1998: 91).

Hypothesis II

Perceived benefits of action is related to health-promoting behaviors among Thai laborers before going to work abroad. In response to this hypothesis, this study found that relationship between perceived benefits of action and health-promoting behaviors was significant. It was similar to the finding by Lusk and others (1994: 155) that the use of hearing protection device by workers was increased by perceived high values of this protection among workers. Codin & Shephard (1990 cited by Pender, 1996: 193) also showed that perceived benefits of physical activity was the factor encouraging exercise

among adult worker. Nirattharadorn (1996: 84) revealed that perceived benefits of action was significantly related to health-promoting behaviors among adolescent pregnancy. In addition, Suthikul (1997: 138-139) showed that perceived benefits of action had significant positive relationship to health-promoting behaviors among Pathomsuksa teachers. Additionally, the finding of this study was in accordant with and supportable to Pender's Health Promotion Model (1996: 68) which postulated that person who had been perceived in benefits of action also continued to have positive health behaviors in their living. Supornsilphachai (1997: 175) also suggested that belief in advantage of actions was an important factor to maintain and enhance individual's good health-promoting behaviors in living and self-actualization. In conclusion, the finding of this study was consistent with Pender's (1996: 69) which suggested that perceived benefits of action was a determinant of the likelihood of engaging in health-promoting behaviors. Moreover, all existing study reported a significant relationship between perceived benefits of action and health-promoting behaviors.

Hypothesis III

Perceived barriers to action is related to health-promoting behaviors among Thai laborers before going to work abroad. In response to this hypothesis, the result of this study showed that perceived barriers to action has negatively significant relationship to health-promoting behaviors. This result confirmed Lusk and others' (1994: 155) finding that workers with less perceived barriers to action more frequently used hearing protection device. Codin & Shephard (1990 cited by Pender, 1996: 193) found that adults perceiving

fewer barriers to exercise more frequently had physical activity. Suthikul (1997: 150) showed that perceived barriers to action had significant converse relationship to health-promoting behaviors among Pathomsuksa teachers. Nirattharadorn (1996: 72) also revealed that perceived barriers of attending antenatal clinic was negatively related to health-promoting behaviors among adolescent pregnancy. These findings were consistent with Pender's Health Promotion Model (1996: 69) suggesting that perceived barriers to action is parallel to perceived benefits of action, exerts a direct influence on predisposition to engage in health-promoting behaviors. The barriers to action contribute to the health-promoting behaviors may be imaginary or real. It affects intention to perform a particular behavior and maintain health-promoting behaviors. When having many barriers and little intention to perform activities, behavior is unlikely to occur. In addition, barriers such as unavailability, inconvenience, expense, difficulties, or time consuming, nature of a particular action can lead to decrease in a particular health behavior (Pender, 1996: 69). Barriers associated with the finding of this study were such as lack of time, unfamiliarity, inconvenience, difficulty, lack of self-control, ignorance, and others. If people concern with their health, they will have an exaggerated sense of their ability to control their health and minimize barriers to action. This can help them form healthy habits which bring about well-being. Furthermore, all significant findings congruently indicate negative relationship between perceived barriers to action and health-promoting behaviors.

Hypothesis IV

Social support is related to health-promoting behaviors among Thai laborers before going to work abroad. In response to this hypothesis, the result showed that social support was significantly related to health-promoting behaviors. This result was similar to findings among industrial workers (Prompunjai, 1997: 104; Thongbai, 1997: 143; Sakbunditsakul, 1998: 87), vocation college students (Roongruangsilp, 1997: 170), primary school teachers (Anusornpanich, 1999: 115), and teenage postpartum women (Sumranjit, 1997: 65). Berkman & Syme (1979: 186) demonstrated that social and community network was associated with better health and lower mortality rate of adults. Muhlenkamp & Sayles (1986: 335-337) revealed that adults with high social support could maintain positive health activities. These results were consistent with Pender's Health Promotion Model (1996: 256) which suggested that every body need social support as a basic human need. In addition to interaction with significant person (s), social support is an interaction between providers and recipients so brings about positive health behaviors, maintaining good behaviors and enhancing the quality of personal social transaction across individual lifestyle (Pender, 1996: 255-269). Not only fulfilling interpersonal interaction, social support is also a particular factor to exert buffering worsen situations (Loscocco & Spitze, 1990: 321-322). Without social support, it is difficult to put health promotion into action. Therefore, nurses should consider social context of the clients when giving them health-protective and health-promotive care (Pender, 1996: 272).

Hypothesis V

Personal factor (sex, age, educational, income, and marital status), perceived benefits of action, perceived barriers to action, and social support are incorporated predictors of health-promoting behaviors among Thai laborers before going to work abroad. In response to the final hypothesis, the result revealed that 5 of 8 variables were incorporated predictors of health-promoting behaviors: sex, social support, perceived barriers to action, marital status, and income, respectively. Among these, sex was the most dominant predictor firstly entered the model, following by social support, perceived barriers to action, marital status, and income. This model explained approximately 29 percent of variances in the total health-promoting behaviors and suggested that enhancing social support and minimizing barriers to action perceived by the laborers is essentially needed in order to form good health-promoting behaviors. The findings also suggested that providing health education regarding benefits of health-promoting behaviors is not adequate for laborers to carry out health-promoting behaviors.

Although marital status and income did not show significant relationship with health-promoting behaviors in the bivariate correlation analysis, they were included as the second last and the last predictors of this regression model respectively. For perceived benefits of action, it had significant relationship with health-promoting behaviors in the bivariate correlation analysis, but it was not included as a significant predictor of health-promoting behaviors. These may be because of error variances which can not be reduced by controlling for variation in the dependent measure that comes from separated measurable variables as influence health-promoting behaviors. Not all of these

hypothesized variables can explain health-promoting behaviors among this group and they also may be limitations in explaining health-promoting behaviors. Some of health-promoting behaviors can not be directly explained by these hypothesized variables. Moreover these may be either uncontrolled or still unnamed independent variables of health-promoting behaviors which account for the remaining variances. As suggested by Williams, 1990; House, et al., 1994; Anderson &Armstead, 1995; Williams & Collins (1995 cited by Robert, 1998: 19), not only socioeconomic status of individual, but also socioeconomic status of family and community can directly impact physical, social and service environments of individuals which may consequently impact health.

Suthikul (1997: 140, 153, 158) revealed similarly findings to this study that sex, income, perceived barriers to action, and marital status were predictors of health-promoting behaviors among Pathomsuksa teachers. Thongbai (1997: 151) revealed that social support from family members and health personnel is one of the predictor of health-promoting behaviors among female workers in textile industry. While, Harris & Guten (1979: 26) success to demonstrate that sex and age were predictors of health-protective behaviors of adults. Johnson and other's (1993: 137) revealed that age, income, and education could simultaneously explain health-promoting behaviors among workers. Nirattharadorn (1996: 72) found that health-promoting behaviors among pregnant adolescent was predictable by perceived barriers to action, and income. Although education was a significant predictor of intention of 6 dimensions of health-promoting behaviors in midlife women (Duffy, 1998: 360), and health-promoting behaviors among workers (Lusk and others, 1995: 20-25), it was not significant predictor of health-

behaviors in this study. Additionally, Pender and others (1990: 329) reported that income, marital status, and education were not significant predictors of the fitness program activities but age was in magnitude and contribute to the explanation of the fitness program among employees.

Therefore, these results and the findings from this study partially support Pender's Health Promotion Model (1996) that personal factors, Behaviors-Specific Cognitions and Affect (perceived benefits of action, perceived barriers to action, and social support) are initial and key factors contributing to explain health-promoting behaviors.

Limitation of the Study

1. The subjects were laborers going to work abroad recruited from only one institute out of many institutes authorized by Ministry of Labour and Social Welfare for physical check-up of laborers before going to work abroad. Therefore, finding from this study may not be able to generalize to all laborers who are going to work abroad.

2. On each day of data collection, twenty laborers were systematically selected from 100 firstly-arrival laborers. Thus, these laborers may not represent all laborers attending Mahidol University Applied and Technological Service Center.

CHAPTER VI

CONCLUSION

This cross-sectional study was conducted to explore factors related to health-promoting behaviors among Thai laborers before going to work abroad. This study aimed to (1) explore perceived benefits of action, perceived barriers to action, social support, and health-promoting behaviors; (2) examine the relationship between personal factors (sex, age, education, income, and marital status) and health-promoting behaviors; (3) examine the relationship between perceived benefits of action and health-promoting behaviors; (4) examine the relationship between perceived barriers to action and health-promoting behaviors; (5) examine the relationship between social support and health-promoting behaviors; and (6) examine the incorporated predictability of sex, age, education, income, marital status, perceived benefits of action, perceived barriers to action, and social support to health-promoting behaviors among this group. The subjects were 238 laborers who attended Mahidol University Applied and Technological Service Center, Ramathibodi Hospital, Bangkok, Thailand, from March to April, 2000. They were recruited by using systematic random sampling. The instruments were developed by the investigator conceptually based on Pender' Health Promotion Model (1996). The instruments used in this study include: (1) perceived benefits of action; (2) perceived barriers to action; (3) social support; and (4) health-promoting behaviors. SPSS/ FW was used to analyze data. Results of this study are as follows:

1.The majority of subjects in this study was male (70.6%), and married (58.0%). Their age ranged from 19 to 50 years with a mean age of 30 years old. Most of them finished ≤ 6 years of education (52.9%). Their average monthly income was 5,136.34 bahts. About two-third of the subjects came from the northeast Thailand (66.4%). Their current work is agriculturists. Industrial employment is the most-frequently reported future work expectation (62.6%). In addition, Taiwan was the most popular country reported as future work destination. Some of the subjects reported that they will go to work abroad with their friends/relatives (59.2%/25.2%), while most of them have no friend/relative living in that destination country (64.7%/74.8%). Less than haft of the subjects were able to speak English and local languages (48.7% and 24.4%). Total score of perceived benefits of action ranged from 58-75, with a mean of 70.6 (SD = 3.6), total score of perceived barriers to action ranged from 15-75, with a mean of 46.4 (SD = 14.5), total score of social support ranged from 30-50, with a mean of 45.4 (SD = 4.5), and total score of health-promoting behaviors ranged from 11-29, with a mean of 19.6 (SD = 2.8).

2. Sex, perceived benefits of action, perceived barriers to action, and social support individually demonstrated relationships to health-promoting behaviors among this group ($p < .01$).

3. Sex, social support, perceived barriers to action, marital status, and income were able to explain 29.2 percent of variances of health-promoting behaviors (overall $F_{(5, 232)} = 19.16$, $p < .001$).

Recommendation for Nursing Action

According to the findings of this study, sex, perceived benefits of action, perceived barriers to action, and social support were significantly related to health-promoting behaviors in correlation analysis. However, there were 5 variables namely: sex, social support, perceived barriers to action, marital status, and income were able to predict health-promoting behaviors in the final multiple regression model. These results partially support Pender's Health Promotion Model (1996). The recommendations are as follows:

To some extent, the results of this study can be useful for health care providers to incorporate Pender's Health Promotion Model into practices. Health promotion is attractive interest of multidisciplinary teams because it was believed that this strategy can lead to individual's optimum health. In addition, health-promotion is a part of primary health care achieving cost saving, and the key concept of promoting health and wellness. Furthermore, the results of this study are also beneficial for health care providers to use as a guideline for implementing intervention or providing health education for laborers in order to improve knowledge and skills of maintaining positive health behavior practices and avoiding risk behaviors in their lifestyle. As results, giving these interventions is useful in preventing illnesses and occupation injuries of laborers.

Additionally, the results of this study revealed needs of collaboration between health care providers and other sectors involving labor's issues in order to make more appropriate health promoting policy and plan for health promoting interventions. These interventions should include both health promotion programs in workplace and health

promotion programs for laborers planing to work abroad. These interventions should emphasize on reducing laborers' perceived barriers to action, enhancing health-related information seeking habits, avoiding alcohol drinking, cigarettes smoking, and unsafe sex. Promoting health of individuals including laborers should be aggressive role which community nurses should concern.

Recommendations for Future Study

1. Surveys of health-promoting behaviors among laborers who will go to work abroad should be conducted at various institutes authorized by Ministry of Public Health in order to better represent this population in Thailand.

2. Studies incorporating other concepts of Pender's Health Promotion Model which effect to health-promoting behaviors among laborers. Activity related-affect, perceived self-efficacy, and other factors should also be carried out.

3. Studies using qualitative measurement should be conducted among this group because these studies may find true root factors which closely related to health-promoting of laborers.

4. Instruments used in this study should be improved: perceived benefits of action, social support, and health-promoting behaviors. Development and testing psychometric properties of these instruments should be performed after qualitative studies in order to include more items better understood among laborers.

5. To better understand health-promoting behaviors, six dimensions of health-promoting behaviors (nutrition, exercise, interpersonal relationship, spiritual growth,

stress management, and health responsibility) should be explored individually in addition to the total score. For example, some risk behaviors such as inappropriate dietary may be camonflaged by a high total score of health-promoting behaviors. Factors related to these behaviors may be discovered if health-promoting behaviors are analyzed separately.

6. Replication of this study a longitudinal design should be conducted in order to monitor health-promoting behaviors of laborers when they are working abroad and when they return to Thailand.

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APPENDIX

APPENDIX A

Personal Factors Data Form

Part 1: Personal factors data and other characteristics

Direction: Put a mark (/) into the frank or the box (☐) infront the relevant answer in each item by the investigator

1. Sex ☐ Male ☐ Female
2. Age..... years
3. Educational level ..... years
4. Province of origin.....
5. Marital status.....
6. Current work.....
7. Income.....
8. Future work expectation .....
9. Country destination.....
10. Accompanied by friends.....
11. If yes, relationship with friends.....
12. Friend working/living in that country.....
13. If yes, relationship with friends.....
14. Accompaied by relatives.....
15. If yes, relationship with relatives.....

16.Relatives working/living in that country.....

17.If yes, relationship with relatives.....

18.Ability to speak English.....

19.Ability to speak local language.....

APPENDIX B

Perceived Benefits of Action Questionnaire Form

Directions: The objective of this instrument measuring conducted to explore perceived benefits of action among Thai laborers before going to work abroad. The relevant answers will put the symbol (/) into the frank by the investigator are as follows:

Very agree	-	The subject strongly agrees that this action is beneficial to their health.
Agree	-	The subject agrees that this action is beneficial to their health.
Not sure	-	The subject is not sure that this action is beneficial to their health.
Disagree	-	The subject disagrees that this action is beneficial to their health.
Very disagree	-	The subject strongly disagrees that this action is beneficial to their health.

Perceived Benefits of Action

Items	Very agree	Agree	Not sure	Disagree	Very disagree
1.Daily consumption of 5 food groups brings about good health.					
2.Eating medium/uncooked food bring about worm ailment.					
3.Exercise by sporting/work lead to good health.					
.....					
.....					
.....					
.....					
.....					
.....					
15. Using condom regularly during sexual intercourse with extra marital partners can prevent HIV/AIDS and other sexually transmitted diseases.					

APPENDIX C

Perceived Barriers to Action Questionnaire Form

Direction: the objective of this questionnaires measuring conducted to explore perceived barriers to action among Thai laborers before going to work abroad. The relevant answers will put the symbol (/) on each items by the investigator are as follows:

Very agree	-	The subject strongly agrees that this action is/may be hard to perform.
Agree	-	The subject agrees that this action is hard to perform.
Not sure	-	The subject is not sure that this action is hard to perform.
Disagree	-	The subject disagrees that this action is hard to perform.
Very disagree	-	The subject strongly disagrees that this action is hard to perform.

Perceived Barriers to Action

Items	Very agree	Agree	Not sure	Disagree	Very disagree
1.It is hard to consume 5 food groups every day because of lack of knowledge, inconvenience, or economic constrain.					
2. It is hard to avoid eating medium/ uncooked food because of getting used to.					
3. It is hard to exercise by sporting or working (until sweating) because of exhaustion or lack of time.					
.....					
.....					
.....					
.....					
.....					
.....					
15. It is hard to use a condom (s) regularly during sexual intercourse with extra marital partners because of unused to.					

APPENDIX D

Social Support Questionnaire Form

Direction: the objective of this instrument measuring was to explore social support among Thai laborers before going to work abroad. The relevant answer was put mark (/) on each items by the investigator.

Very agree	-	The subject strongly agrees that this statement has occurred/may be occurred to them
Agree	-	The subject agrees that this statement has occurred/may be occurred to them
Not sure	-	The subject is not sure that this statement has occurred/may be occurred to them
Disagree	-	The subject disagrees that this statement has occurred/may be occurred to them
Very disagree	-	The subject strongly disagrees that this statement has occurred/may be occurred to them

Social Support

Items	Very agree	Agree	Not sure	Disagree	Very disagree
1.You have someone in the family giving mental support to your work and living.					
2.You always have significant person who love and care.					
3.When you go to health station you received good services.					
.....					
.....					
.....					
.....					
.....					
.....					
10. When you were sick, you were always released job assignment by your friends and boss.					

APPENDIX E

Health-Promoting Behaviors Questionnaire Form

Directions: the objective of this instrument measuring was conducted to explore Thai laborers' s health-promoting behaviors. The relevant answer was put mark (/) on each items by the investigator.

1. How often you consume 5 food groups.
   A. Always
   B. Sometimes
   C. Never
2. How often you having medium/uncooked food.
   A. Never
   B. Sometimes
   C. Often
3. How often you had exercise by sporting/work (until sweating).
   A. at less 3 times per week (every week)
   B. Sometimes
   C. Never

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15. How often you were using condom during sexual intercourse with extra marital partners.
    A. Every times
    B. Sometimes
    C. Never

APPENDIX F

List of Expert for Questionnaires Validity

Seemliness of the conceptual definition and method of measurement, the content validity of the questionnaires were determined by 6 consulting experts included:

1. Professor Dr. Somchit Hanucharurnkul
   Department of Nursing, Faculty of Medicine, Ramathibodi Hospital,
   Mahidol University.
2. Associate Professor Surakiat Archananuparp
   Community Medicine Center, Faculty of Medicine, Ramathibodi Hospital,
   Mahidol University.
3. Associate Professor Dr. Rutja Phuphaibul
   Department of Nursing, Faculty of Medicine, Ramathibodi Hospital,
   Mahidol University.
4. Assistant Professor Dr. Suphot Dendoung
   Faculty of Social Science and Humanities,
   Mahidol University.
5. Associate Professor Suntharee Panutut
   Department of Nursing, Faculty of Medicine, Ramathibodi Hospital,
   Mahidol University.
6. Associated Professor Dr. Jariyawat Kompayak
   Faculty of Nursing, Huachicuu Chalermprakiet University.

BIOGRAPHY

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INSTITUTIONS ATTENDED	Yala Nursing and Midwifery College, 1990-1992: Diploma in Nursing and Midwifery Sukhothai Thammathirat University, 1993-1997: Bachelor of Nursing Mahidol University, 1998-2000: Master of Nursing Science (Community Health Nursing)
RESEARCH GRANT	The Thesis Grant, Faculty of Graduate Studies, Mahidol University
POSITION & OFFICE	1997-Present, Kronghoikhong Hospital, Songkhla province, Thailand Position: Register Nurse