HEALTH-PROMOTING LIFESTYLES OF NURSING STUDENTS IN MAHIDOL UNIVERSITY

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HEALTH-PROMOTING LIFESTYLES OF NURSING STUDENTS IN MAHIDOL UNIVERSITY

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ABSTRACT

Based on Pender's health promotion model, this study aimed to examine the level of health-promoting lifestyles of nursing students in Mahidol University and analyze related factors in 2006.

The research design was a cross-sectional analytic study. The study population was undergraduate nursing students who were studying at the Faculty of Nursing, Mahidol University in 2006.The research instrument was a self-administrated questionnaire. Data were analyzed by using descriptive statistics such as frequency, percentage, means, standard deviations, and median. Moreover, for analytic statistics, the Kruskal-Wallis test, Spearman rank correlation, Chi-square test, and multiple regressions were employed.

The research results showed that more than half (53.58%) of the nursing students had health-promoting lifestyles at a moderate level. The nursing students performed best in interpersonal relations but worst in exercise. There were significant differences among the various age groups and studying years with freshmen reporting worse in health responsibility and stress management. There were significantly positive associations between health-promoting lifestyles and health promotion course taken, perceived health status, and perceived health self-efficacy. Among these factors, perceived health self-efficacy was the strongest predictor able to explain 37.8 percent variance of health-promoting lifestyles.

An exploration of the results leads to several recommendations made to rectify the weaknesses in the nursing students' health-promoting lifestyles .Causes for the low rate of exercise need to be carefully examined. Moreover, identifying sources of stress in first year college students and strengthening their health responsibility warrant further attention. Nursing educators could also motivate the students to perform good health practices and enhance their health self-efficacy. This would lead to better health-promoting lifestyles.

KEY WORDS: HEALTH-PROMOTING LIFESTYLE / NURSING STUDENTS

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HPL : Health-promoting lifestyle
HPLP : Health-promoting lifestyle Profile

CHAPTER 1
INTRODUCTION

1.1 Rationale and justification of the study

It has become increasingly evidence that lifestyle patterns and health risk factors are associated with the current major causes of morbidity and mortality（1-5）. Lifestyles related illness, such as hypertension, strokes, diabetes, heart disease and cancer are mostly chronic and cause tremendous burdens to the individuals, families as well as organizations（6）. Health-promoting activities and a healthy lifestyle should be regarded as a major strategy to facilitate and preserve health.

According to the World Health Organization, health promotion is the process of enabling people to increase control over, and to improve, their health. To reach a state of complete physical, mental and social well-being, an individual or group must be able to identify and to realize aspirations, to satisfy needs, and to change or cope with the environment. Health is, therefore, seen as a resource for everyday life, not the objective of living. Health is a positive concept emphasizing social and personal resources, as well as physical capacities. Therefore, health promotion is not just the responsibility of the health sector, but goes beyond healthy life-styles to well-being.

Health promotion includes encouraging healthy lifestyles, creating supportive environments for health, strengthening community action, reorienting health services, and building healthy public policy. Health promotion must be geared not only to individuals, but also to families and communities in which they live. Healthy public policy must facilitate and support changes in health behavior norms on a national and international scale. (7)

A health-promoting lifestyle has been defined as a “multidimensional pattern of self-initiated actions and perceptions that serve to maintain or enhance the level of

wellness, self-actualization, and fulfillment of the individual."(8) This trend toward health and health promotion is directed increasing individual responsibility for health; however, knowledge of health-promoting lifestyle is essential.

The role of the health sector must move increasingly in a health promotion direction, beyond its responsibility for providing clinical and curative services. Health services need to embrace an expanded mandate which is sensitive and respects cultural needs. This mandate should support the needs of individuals and communities for a healthier life, and open channels between the health sector and broader social, political, economic and physical environmental components.

Among the whole health promotion services, nurses play a particular role, which mainly can be summarized as follows:

Firstly, mainly nurses handle health education. Nurses, because of their recognized expertise and frequent, continuing contact with clients, have the unique opportunity of providing leadership in the promotion of better health among individuals, families, and communities.(9) The transitions of interest to nurses focused on health promotion are lifestyle transitions. Teaching about healthy lifestyle is one of nurse's most effective techniques of fostering health promotion.(10) Though transmitting specifical information, nurses can motivate the inner resource of the person, increase their knowledge to develop the healthy beliefs, encourage help them adopt and maintain health lifestyles. Thus can enable the person and family to achieve optimum wellbeing and prevent future health problems.

Nurses in education, practice, and research settings can participate in the advancement of health promotion not only to the mainstream but also to the forefront of nursing practice. Historically, nurse educators have taught patients how to manage illness; in the future, the focus must be on teaching people how to remain healthy. Nurses must have an evidence-based understanding of the significant effect that can be made through health promotion interventions and communicate this understanding

to the public at large. As more people grow in their awareness of activities that lead to good health and become knowledgeable about their own health status and the health of their families, the overall health of the population will improve.

Secondly, nurses are often expected as role models. Nurses should serve as role models of health-promoting lifestyles and as leaders to activate communities for health promotion (9) .Further evidence suggests that noncompliance of patients in health-promoting behaviors can be costly to health services and may be influenced by the noncompliance of those caring for them. Nurses have the potential to influence clients' behaviors (11). Nurse's role modeling healthy lifestyles encourage clients to do the same. (12, 13)In other words, nurses can not meet the clients' needs unless they pay much attention to their own health-promoting lifestyles. It may be even more important that the nurses themselves have a healthy lifestyle, thus serving as role models for patients. Nurses are selling a product, and that product is health. The best salespersons are those who are genuinely committed to their product and model its benefits. We can hardly imagine that "do as I say, not do as I do" can persuade the clients follow nurses' advice.

In Thailand, lifestyle in community has changed enormously since 1960s as the society progressively moved towards to change agricultural country to industrialization country and modernization of the value.The untoward impact has been revealed in the pattern of living and behavior.In the past, infectious disease were the leading causes of illness in the Thai population.Nowadays, the leading causes of illness are lifestyle related diseases (6) and harmful behavior may lead to premature disease.

The increasing cost of health care, coupled with the realization that illness care is not effective, has prompted health care professionals, particularly nurses, to advocate for and promote the concept of health promotion. (14).In Thailand, nurses comprise the largest group of health professionals .In 2000, there are 105,924 professional nurses (The Nurse Council, 2000) (Report on Health Resources, Bureau of Health Policy and Plan, MOPH). The proportion of professional nurse to

population is 1:870.These proportion showed the responsibility of nurses, which are important to population's health.

Faculty of Nursing, Mahidol University is a nationally and internationally recognized excellent institution with the major responsibilities in production of graduates in nursing. According to the philosophy of Faculty of Nursing, they believe that the nursing profession has a vital role in providing essential health services to Thai society. Clients of nursing include individuals, families and communities. Nursing aims at assisting clients to maintain optimum health through effective interaction between themselves and their environment. Nursing knowledge is built upon knowledge bases from nursing practice and related science and arts. Nurses utilize this in assisting clients to resume their optimal health through health promotion, prevention of illness, care, and rehabilitation. The nursing students are also expected to develop those competencies as well as creative thinking, leadership, and a positive attitude towards the profession.

Today's nursing students will become health care providers. It seems likely that these nursing students' beliefs, and attitudes or perhaps their behaviors may affect the clinical services, which they will offer to their clients. Facing the increasing needs of the clients, whether these nursing students can develop the health-promoting lifestyles from their studying time and thus function within wellness role models expectation of the client is the main concern of this study. However, there is a paucity of research studies investigating the health-promoting lifestyles of nursing students.

Therefore, this study was undertaken to determine the health-promoting lifestyles of nursing students in Mahidol University, Thailand. Findings from this study would help us to identify the health-promoting lifestyles of our nursing students, and better prepare us to critically evaluate the weak point of the nursing education programs.

1.2 Research Questions

1.2.1 What are the Health-Promoting Lifestyles of Nursing Students in Mahidol University?

1.2.2 Are there any differences in health-promoting lifestyles of Nursing Students in Mahidol University who belong to different age groups, gender, income, living arrangement, studying years ?

1.2.3 Is there any relationship between health-promoting lifestyles and health promotion course taken, biological characteristic , perceived health self-efficacy, and perceived health status ?

1.3 Research Objectives

1.3.1 General objective

To assess Health-Promoting Lifestyles of Nursing Students in Mahidol University.

1.3.2 Specific objectives

1.3.2.1 To examine the level of Health-Promoting Lifestyles of Nursing Students in Mahidol University.

1.3.2.2 To compare the health-promoting lifestyles among nursing students according to their demographic characteristics;

1.3.2.3 To identify the relationship between health promotion course taken and health-promoting lifestyles of Nursing Students in Mahidol University;

1.3.2.4 To identify the relationship between biological characteristic and health-promoting lifestyles of Nursing Students in Mahidol University;

1.3.2.5 To identify the relationship between perceived health self-efficacy factor and health-promoting lifestyles of Nursing Students in Mahidol University.

1.3.2.6 To identify the relationship between perceived health status factor and health-promoting lifestyles of Nursing Students in Mahidol University.

1.3.2.7 To find the appropriately predictive variables for health-promoting lifestyles.

1.4 Conceptual Framework of Study

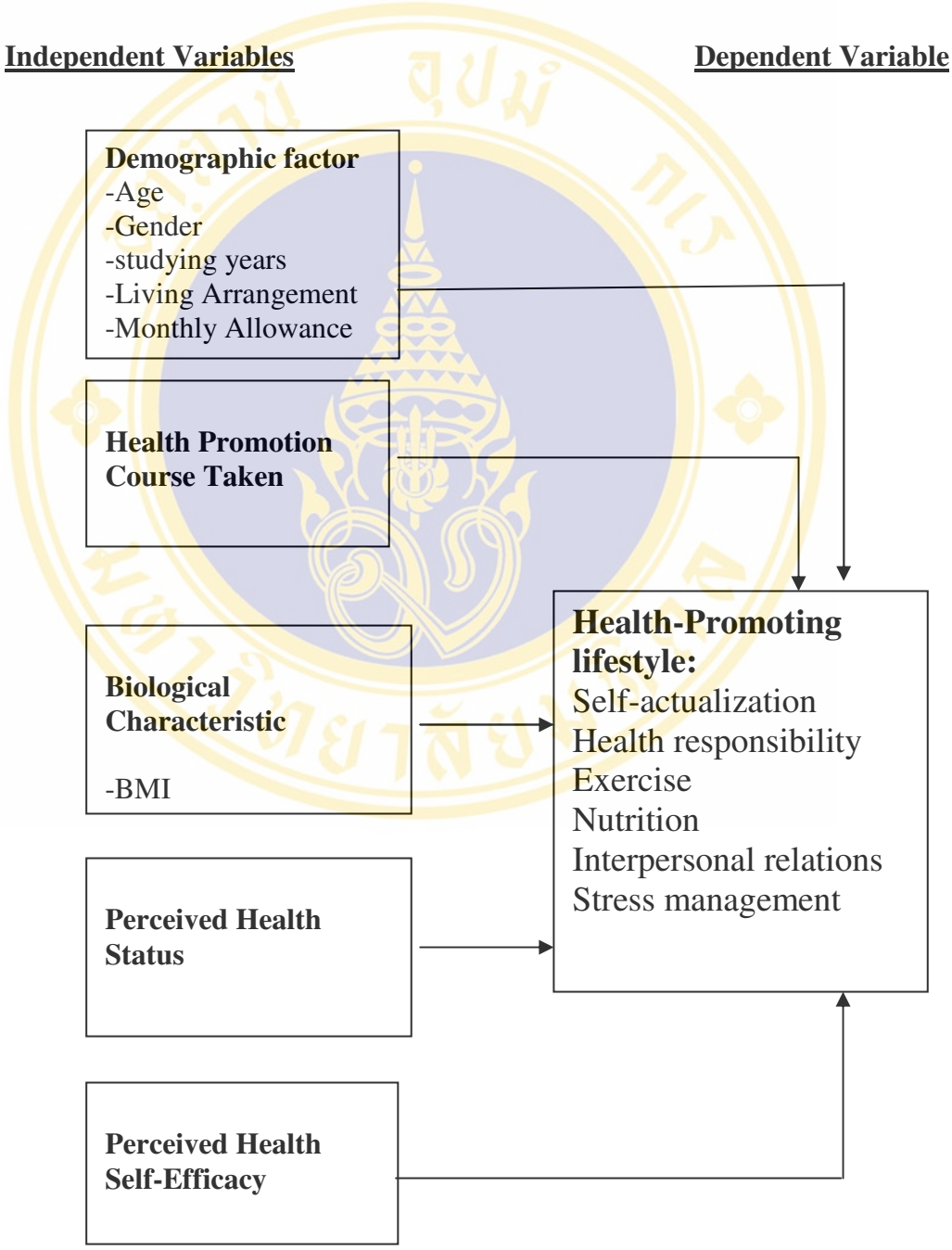


Figure 1: Conceptual Framework

In this research, Health-promoting lifestyle was dependent variable which includes six dimensions :self-actualization, health responsibility, exercise, nutrition, interpersonal relations, and stress management.

Independent Variables included nine aspects: age, gender, income, studying years, health promotion course taken, living arrangement, biological characteristics, self-reported health status and self-reported self-efficacy.

1.5 Research Hypotheses

1.5.1 There is a difference in health-promoting lifestyles of nursing students according to their demographic characteristics;

1.5.2 There is an association between health-promoting lifestyles of nursing students and their health promotion course taken;

1.5.3 There is an association between health-promoting lifestyles of nursing students and their biological characteristic;

1.5.4 Perceived health self-efficacy of nursing students is associated with their health-promoting lifestyles.

1.5.5 Perceived health status of nursing students is associated with their health-promoting lifestyles.

1.5.6 Perceived health self-efficacy is the strongest variable among all the variables that can predict the health-promoting lifestyle .

1.6 Operational Definitions

1.6.1 Nursing students refer to undergraduate nursing students who were currently enrolled in Mahidol University in 2005.

1.6.2 Health-promoting lifestyle refers to a multidimensional pattern of self-initiated actions and perceptions that serve to maintain or enhance the level of health.

In this research, Health-promoting lifestyle includes six aspects: Self-actualization, Health Responsibility, Exercise, Nutrition, Interpersonal Relations, and Stress Management.

Self-Actualization refers to a desire to achieve the full capacity of one's ability and the self-satisfaction that accompanies this and fulfillment includes such feelings as happiness and enthusiasm.

Health Responsibility means initiating people's intention to care and concern about their health.

Exercise is defined as activities which help increase the capability and fitness of body such as: jogging, running, playing table tennis and badminton etc.

Nutrition behavior means behavior in selecting healthy foods such as: high fiber food consumption, eating less than 3-4 eggs per week, staying away from eating carbohydrate food, high sugar content food, and high fat food consumption.

Interpersonal Relations refers to the personal skill to communicate with others and maintain relationships involving a sense of intimacy and closeness such as a family, coworker and friends.

Stress Management means a way in which persons selecting activities to relax. For example, it may include finding the causes of stress, acting to control stress; consulting someone for advice, having a hobby, playing a musical instrument and so on.

Health-promoting lifestyle was measured by using HPLP (health-promoting lifestyle profile)

1.6.3 Age: is a real age of nursing students, equal to the investigated date-birthday date;

1.6.4 Gender: refers primary sex characteristic of nursing students;

1.6.5 Monthly allowance: means a monthly allowance of nursing students received from their parents per month;

1.6.6 Studying years: refers to the grade of the nursing students studied in Mahidol University: first-year; second year, third year; forth year;

1.6.7 Health promotion course taken: refers to the credits of heath promotion course being taken by nursing students.

1.6.8 Living arrangement: means whom the nursing students live with most of the time during the studying period (With the family, dormitory, rent the house by oneself ;).

1.6.9 Biological characteristic: the basic biological characteristics (height, weight) of nursing students. In this study, BMI was used to represent the biological characteristic of the nursing students. This is calculated from the formula:

$$BMI = \text{Weight (Kilograms)} / \text{Height (Meters)}^2$$

The standard evaluation of BMI is as bellow:

Thin=BMI is less than 18.5

Normal=BMI is between 18.5-22.9

Overweight=BMI is over 23

(**The data was collected by using self-designed questionnaire**)

1.6.10 Perceived health status: refers to the self-evaluation of the overall health status of nursing students.

(The data was collected by using perceived health status questionnaire)

1.6.11 Perceived health self-efficacy: It is a specific concept that refers to individuals' convictions that they can successfully execute the required behavior necessary to produce a desired outcome. In this research, it also means the self-reported abilities of nursing students to perform health practices.

(The data was collected by using perceived health self-efficacy questionnaire)

1.7 Scope, Expect Outcome and limitations of the study

1.7.1 Scope of Research

1.7.1.1 This research applied Pender's health promotion model as a theoretical framework and studied only in the nursing students in Mahidol University, Thailand.

1.7.1.2 This study conducted from December 2005 to February 2006.

1.7.2 Expected Outcome:

1.7.2.1 Raise the concern of understanding health-promoting lifestyles of nursing students, to some extent, attitudes or perhaps their behaviors may affect the clinical services, which they will offer to their clients.

1.7.2.2 Better prepare nursing educators to critically evaluate the nursing education programs and give appropriate curriculum modification if necessary.

1.7.3 Limitations of the study.

1.7.3.1 In this study, health-promoting lifestyles of nursing students were not studied directly by mean of observation, which could be the most valid measure of behaviors. Rather, it was conducted through the self-reported questionnaires which may be susceptible to bias due to over- or under-reporting of their lifestyles. However, this survey was designed anonymously to reduce such bias.

1.7.3.2 Universal conclusion could not be generalized since this study just selected undergraduate nursing students who were studying in one university.

1.7.3.3 This study was based upon the health promotion model. However, not all the variables in the model were selected.

CHAPTER 2
LITERATURE REVIEW

In this study, researcher has studied the health-promoting lifestyles of nursing students in Faculty of Nursing, Mahidol University, Thailand. The literature review was composed with followings:

2.1 Health –promoting lifestyle

2.1.1 Health promotion
2.1.2 Lifestyle
2.1.3 Health –promoting lifestyle

2.2 Health –promoting lifestyle and nurse

2.2.1 The nurses' role in health promotion
2.2.2 Health –promoting lifestyle of nurses
2.2.3 Health –promoting lifestyle of nursing students

2.3 Health promotion model

2.4 The factors related to health –promoting lifestyle

2.1 Health –promoting lifestyle

2.1.1 Health promotion

The last twenty years has seen an exponential growth in a new movement for health known as "health promotion". The origins of the health promotion movement

are complex and no single driver is responsible. Most commentators would agree that the shift thinking began to occur around an important Global meeting of WHO at Alma Ata in 1978.

However, the first of a series of global health promotion conferences held in Ottawa in 1986 was seen as the formal birthplace of health promotion. The Ottawa Charter that emerged is now considered the bedrock of the health promotion movement. According to this conference, health promotion is the process of enabling people to increase control over and to improve their health (10). This perspective is derived from a concept of 'health' as the extent to which an individual or group is able, on the one hand, to realize aspirations and satisfied needs, and on the other hand, to change or cope with the environment. Health is, therefore, seen as a resource of everyday life, not the objective of living. Health is a positive concept emphasizing social and personal resources, as well as physical capacities. Therefore, health promotion is not just the responsibility of the health sector, but goes beyond healthy lifestyles to wellbeing.

Health promotion represents a comprehensive social and political process, not only embracing actions directed at strengthening the skills and capabilities of individuals, but also action directed towards changing social, environmental, and economic conditions so as to alleviate their impact on public and individual health.

2.1.2 Lifestyle

The earliest definition of lifestyle is from the1920s, when Max Weber distinguished between two independent aspects of lifestyle: life conduct and life chances. Weber emphasized lifestyle as a means to social differentiation, which could be used to acquire or maintain a certain social status (15). Lifestyle was based not so much on what a person produced but on what he or she consumed. In Weber's opinion, the difference between socioeconomic status groups was a result of what was consumed.

In health research and at its most basic, lifestyle can be understood as behavior that is typical of a particular individual or group. Arden (16) defined lifestyle as the entirety of the fundamental features of everyday life which are formed by the behavior, choices and experiences of an individual when the individual acts as a member of society. The content of Wiley (16) definition is almost the same: the lifestyle of an individual is the any behavioral patterns that affect the individual health.

Flynn & Griffin (17) described lifestyle as individual living pattern including diet, exercise, smoking, drinking, and weight control.

WHO(18) presents a more holistic conception of lifestyle, which is taken to mean a general way of living based on the interplay between living conditions in the wide sense and individual patterns of behavior as determined by social factors and personal characteristics.

In today's consumer society, there exist an increasing variety of alternative lifestyle orientations. Abel (19) suggests that one should focus on health-oriented lifestyle in order to master the transition from theory to empirical analysis rationally. The decision on health lifestyle measures depends on the particular research interest. An epidemiologist studying risk factors may concentrate on behavioral factors that can be directly linked with health outcomes, while a more sociological approach would consider a broader set of behavioral and attitudinal measures that are significant indicators of the modern health culture.

So, as mentioned above, lifestyle in the context of health is broadly defined as a constellation of discretionary activities with significant impact on health status that are integral part of one's pattern of living.

2.1.3 Health –promoting lifestyle

The first person who mentioned about health behavior is Harris and Gruten(21) who gave the meaning of health-protective behavior as "any behavior

performed by a person regardless of his or her perceived or actual health status, in order to protect, promote or maintain his or her health, whether or not such behavior is objectively effective toward the end".

Gochman (22) gave the meaning of the health-protecting behavior as the way that a person acted with overt behavior, including unnoticeable acting, which requires other evaluations for good health.

Merray and Zentner (22) gave the meaning of health-promoting behavior as behavior which contained various activities for increasing the health condition of human being and brought together the highest health of the person, family, group, community and society.

Green and Krueter (23) gave the meaning of health-promoting behavior as the total of overall educational and environmental support for practical and condition for good health.

Pender (9) said that health-promoting behaviors are an expression of the actualizing tendency. Such behaviors are directed toward maximizing positive arousal such as increased self-awareness, self-satisfaction, enjoyment, and pleasure. Health-promoting behavior represent man acting on his environment as he moves toward higher levels of health rather than reacting to external influences or threats posed by the environment. Persons seek to increase the complexity, variation, and meaningfulness of stimuli within their environment in order to increase positive tensions that promote maturation and expression of human potential.

From the meaning of health-promoting behavior as mentioned above, the summarization of health-promoting lifestyle is "a multidimensional pattern of self-initiated actions and perceptions that serve to maintain or hence the level of wellness, self-actualization and fulfillment of the individual". Health-promoting lifestyle aims to lift up the personal health status as well as the overall living standard of the society.

2.2 Health –promoting lifestyle and nurse

2.2.1 The nurse's role in health promotion.

Never before has health promotion been more important than it is today. Nurses in education, practice, and research settings can participate in the advancement of health promotion not only to the mainstream but to the forefront of nursing practice. Historically, nurse educators have taught patients how to manage illness; in the future, the focus must be on teaching people how to remain healthy. Nurses must have an evidence-based understanding of the significant effect that can be made through health promotion interventions and communicate this understanding to the public at large. As more people grow in their awareness of activities that lead to good health and become knowledgeable about their own health status and the health of their families, the overall health of the population will improve.

Nurses should be acting as both role model and health educator (24). Nurses first need to demonstrate that they can guide themselves. Nursing administrators face significant challenges in managing health care delivery and nursing within the multidisciplinary team in the transformed system. In all areas, education must be directed to meet the challenges and nursing must assume the leadership for ensuring the health care needs of individuals and communities, now and in the future.

Nurses, because of their recognized expertise and frequent, continuing contact with clients, have the unique opportunity of providing leadership in the promotion of better health among individuals, families, and communities (9). Nurses are in a unique position that allows them to assist people in examining their lifestyle behaviors. If nurses wish to be at the forefront of current health service strategies they must be seen to embrace the radical health promotion reforms.

2.2.2 Health –promoting lifestyle of nurses.

A number of studies have examined the health-related behaviors of practicing nurses with different or even contradictory results among a few of them. There were only a few studies framed conceptually with a health-promotion perspective. Sheehan

(25) studied the health-promoting lifestyle practices of 222 nurses by using health-promoting lifestyle profile. The profile (16) has 48 items with the scale ranging from 48 to 192(1=never, 4=routinely), the mean score of the respondents was 132. As noted by the investigator, the need for improvement in the nurses' health practices suggested that they were not serving as role models for health-promotion efforts to the fullest possible extent.

However, contradictory findings were identified in two studies (26, 27), both of which investigated critical care nurses' (CCNs) health-promoting lifestyles. Haughey et al (26) et al conducted the survey to describe the health practices of 499 critical care nurses' health-promoting lifestyles. Data were gathered by questionnaires that elicited information regarding smoking habits, oral health and dietary practices, energy expenditure, seat belt use, alcohol consumption, and health surveillance behaviors. Among the nurses in the this study, 58 per cent of them ate breakfast irregularly; 67 per cent did not floss their teeth on a daily basis; fewer than half had limited intake of fat (39.65 per cent), salt (48 percent), and sugar (40.5 per cent) on a routine basis, and only 43 per cent engaged in physical activity at least three times a week. Results of the study suggest that the CCNs surveyed were not fulfilling their roles as health exemplars. Although some reported favorable health practices, many indicated habits that were less than desirable. These data document the need to develop strategies for improving the health behaviors of CCNs, thereby protecting their future health. Ultimately, these strategies may benefit their patients.

Connolly et al (27) investigated 127 critical care nurses attending a Midwestern critical care conference completed a two-part questionnaire designed to produce a health profile. In a man-on-the-street approach, 23 nurses participated in an interview via video camera. Descriptive statistics were used to analyze the data retrieved from the questionnaires. Interviews were transcribed verbatim and analyzed for themes with a constant comparative method. The results showed that more than 70% of the critical care nurses who responded engage in exercise and follow a healthy, low-fat diet. 71 percent said that they anticipate making a change in their lifestyle in the future, and 70 percent said that they would recommend their lifestyle to their

patients. Five themes emerged from the videotaped interviews: (1) Heart-healthy practices predominated the responses. (2) Incorporating a healthy lifestyle was easy for some and a struggle for others. (3) Critical care nurses readily listed barriers to healthy living. (4) The nurses had a positive attitude about their healthy lifestyles and felt optimistic about being role models for their patients. (5) Future plans were either singular in focus or limited to maintenance of current health habits. The majority of the nurses reported practicing a healthy lifestyle and thought that they were good role models for patients.

Guidry ML, Wilson AM (28) studied the health promoting behaviors of African-American nurses. The sample consisted of 49 African-American registered nurses recruited from members of a nursing sorority. The results indicated that the African-American nurses had high percentages of adherence to the following health-promoting behaviors: minimal alcohol consumption, avoidance of smoking, cholesterol screening, assessment of blood sugar levels, monthly breast self-examination, pap smears, mammogram screening and regular measurement of blood pressure. Lower percentages of adherence were reported for two health-promoting behaviors: diet and exercise. Results of this study support the need for the incorporation of diet and exercise into all health promotion intervention programs for African-American women. Implications include additional research to validate the findings of this study.

Results of another two studies regarding to Chinese nurses were also not encouraging. In a study of 139 public health Chinese nurses (29, Chen, Chou, Liao, & Liao, 1994), the participants indicated routine or more often practicing health-promoting lifestyles in only 25 per cent of the total items of a HPL-relevant questionnaire. Most of the nurses failed to perform regular exercise and they did not consume more than 1,500mL of water daily, though they performed slightly better on stress management and health responsibility items. However, most of the nurses were enthusiastic and optimistic about their lives and were aware of their personal strengths and the sources of their stress. They reported eating a regular diet and having adequate sleep as well.

Callaghan (30)studied 92 Hong Kong practicing nurses' health-related behaviors and the results were: only 16 per cent reported no smoking or regular use of alcohol, 74 per cent reported brushing their teeth twice or more per day, 56 per cent reported sleeping 7 to 8 hours each night, 86 per cent reported maintaining body weight within a normal range, 52 per cent reported avoiding fatty food, 56 per cent reported avoiding foods with cholesterol, 10 per cent reported not eating between meals, and 57 per cent reported eating breakfast on a daily basis. Less satisfactory results related to secondary preventive health behaviors were also found. Although the investigator concluded that they were health exemplars by their health-related behaviors, concerns were raised both on the health risks they had and their potential to fulfill important requirements of their role in health promotion.

Unfortunately, there have been very few published studies on Thailand nurses' health-related issues.

2.2.3 Health –promoting lifestyle of nursing students

Riordan &Washburn (31) compared the health-promoting behaviors of 82 baccalaureate-nursing students at the beginning and later at the completion of their program. Of the 82 nurses, 77 per cent were generic full-time students and 23 per cent were registered nurses. The majority of them were married. The findings showed no significant difference on the total health-promoting lifestyles from the time that they entered the program and when they graduated. However, physical activity was significantly lower (P _ .001) as they approached graduation.

MacDonald (32) surveyed a class of first-year baccalaureate nursing students who did engage in a considerable amount of health-promoting behaviors and had high scores on self-actualization and interpersonal support.

Clement's study (33) focused on first-year undergraduate nursing students only. The predictive variables of the health-promoting behaviors of the 176 students were perception of self-efficacy, perception of one's state of health, the influence of professors, and place of birth.

In a study (12) comparing a group of 197 university nursing students with 209 staff nurses in China, the investigators found that the nurses reported insufficient exercise and unsatisfactory frequency in practicing health-promoting lifestyles.

Dittmar SS (34) studied the health practices of nursing students from several nursing programs in western New York. Findings from a sample of 1,081 female students who responded to a questionnaire showed considerable variability in the extent to which students engage in health-related practices. While the majority obtain six to eight hours of sleep per night, exercise regularly, and have annual dental and physical examinations, less than half those surveyed eat breakfast everyday, over three-quarters eat between meals, and less than one-half limit fat, salt, and sugar in their diets. Less than one-third perform breast self-examination monthly; and 90% consume alcoholic beverages and one-quarter have five or more drinks per occasion. Analyses demonstrated a statistically significant relationship between preventive-health orientation scores and age and type of basic nursing education. These data suggest that nurse faculty and health educators need to influence students' health-promoting and disease-preventing behaviors. This need is particularly salient since these students are expected to act as exemplars when they complete their education and assume positions in the health-care system.

Haddad L et al (14) compared health-promoting practices of Canadian (n = 49) and Jordanian (n = 44) first-year nursing students using the revised Health-Promoting Lifestyle Profile II. Results indicated significant differences between the groups on three subscales: health responsibility, physical activity, and interpersonal relations; however, both groups had similarly low scores. Implications for nurse educators are discussed from both curricular and cross-cultural perspective that focuses on health-promotion activities and programs.

Adderley-Kelly (23) studied the health behaviors of undergraduate African American nursing students and compared the results to findings from studies of other college students. A convenience sample of 214 undergraduate African American nursing students participated in the study. Results showed over 80% of the sample had excellent scores for cigarette smoking, alcohol and drug use, and safety behaviors.

Over 60% had good scores for nutrition and stress control behaviors. Fifty-one percent of the sample had low scores for exercise and fitness behaviors indicating they are taking unnecessary risk with their health. Compared to other findings, these findings were consistent in all areas except alcohol and drug use. Early identification of at-risk behaviors among nursing students can contribute to the development and implementation of programs by faculty that fosters healthy lifestyle behaviors throughout the life span.

Wai-Hing Choi Hui (35) studied health-promoting lifestyles of 169 undergraduate nurses in Hong Kong by using the Health Promoting Lifestyle Profile II (HPLP II). Among different age groups, gender, income, employment status, and levels in undergraduate nursing education, the student nurses performed best in interpersonal relations but worst in physical activity. There were significant differences among the various classes in stress management and spiritual growth, with senior classes (Years 3 and 4) reporting worse in both areas. The older age group also had lower scores in stress management and exercise practice. It was also identified that more than halves of the students were supported on low parental income with many of them working a part-time job. These outcomes were explored with future recommendations made to improve the weaknesses in the students' health-promoting lifestyles.

2.3 Health Promotion Model (see figure 2)

Pender (36) developed health promotion model from Social Learning Theory, which referred to the important of perception in adjusting behavior and explaining preventive behavior and health-promoting behavior**.** Pender (1987:57-68) said that in order to people to begin to performing the health promotion behavior altogether continuously until becoming lifestyle activities, there were3 factors: Cognitive-perceptual factors, Modifying factor or Background factors and Cues to action. The details of each factor are as followed:

2.3.1. Cognitive-perceptual factors are the basic factor for motivation in practicing and maintaining the health promotion behavior of a person. There are 7 sub factors, each of them has direct effect for a person to perform health promotion behavior (Pender 1987:60 Stuifbergen and Becker 1994:3). The details of the 7 sub factors are as followed:

2.3.1.1 The importance of health is how much people value his/her own health, that person will seek information on health for practical usage in health promotion behavior.

2.3.1.2 Perceived control of health is that the tendency of health promotion behavior will be high for person who realizes that he or she has the internal locus of control personal health system than the person who has extend locus of control personal health system.

2.3.1.3 Perceived self-efficacy is that the way persons believe that they have capability to perform the activities. When they perceive that they have ability and able to perform the health promotion behavior, they will have better health condition and tendency of practicing health promotion behavior will also increase.

2.3.1.4 Definition of health such as someone who give the meaning of health as concerning on personal adjustment and making balance, will stimulating the health protecting behavior. Meanwhile a person who gives the meaning of health as self-actualization status will have self-satisfactions, good self esteem, and could perform activities for good health and well being as much as possible. This means that those who give different meaning of health will lead to the differences in health promotion behavior.

2.3.1.5 Perceived health status is a personal health evaluating condition, which could affect the action of health promotion behavior and being an important factor that leads to the frequency and seriousness of performing health-promoting behavior. Form the experience of persons who performed the health promotion behavior, it brought the happiness and good health condition. This could influence in increasing repetition of performing health-promoting behavior than the person who knows that they were not in a good health condition.

2.3.1.6 Perceived benefits of health promotion behavior will lead to the correctness in practical of health promotion behavior and having a tendency to continue promotes

the health promotion behavior. They would have more frequency of practice than the person had less perceived benefits of health promotion behavior.

2.3.1.7 Perceived barriers to health promotion behavior is the perception or estimation of a person that may be true or not true. Perceiving of barriers including to uncomfortable or difficulties and less chances of performing health promotion behavior which may result in negative attitude of performing health promotion behaviors. In other words, the less perceived barriers would increase the performance.

2.3.2. Modifying factors are indirect effect to health promotion behavior by going through the cognitive perceptual factors of person. This will have direct effect to the cognitive perceptual factors. Modifying factors consist of the following:

2.3.2.1 Demographic factors such as gender, age, race, religious, education, responsibility, work experience, chronic disease and income. These factors are indirect influence to performing health promotion behavior through the cognitive perceptual system e.g. the importance of health, the perceived of self-efficacy, the perceived of benefits and the perceived barriers of health promotion. Conversations with others regarding their patterns of exercise, nutrition management of stress, and interpersonal relationships can serve as external cues for action on health promotion.

2.3.2.2 Biological characteristics such as size and weight that affect the exercise intention. The person who has heavy weight may have less exercise intention than the lighter one.

2.3.2.3 Interpersonal influences factors between people, including the expectant on of the family, marriage status, trust, family health pattern and health team relationship are all influences to the health promotion behavior of husband, family and friends including the health team. The social relationship would lead person to gain support form various ways such as information, suggestion, finance and emotional reaction. These issues will help the person to feel valuable and needed by someone that could help in readiness for action health promotion behavior.

2.3.2.4 Situational factors or environmental factors will stipulate the performing of health promotion behavior together with the comfortable in choosing to perform those behaviors too. The more choices for a person the mare action of health promotion behavior but the situation or environment would limit it.

2.3.2.5 Behavior factors. The past experiences of practicing health promotion behavior will lead to other practicing behavior. Cognitive and psychomotor skills are important supporting part of complex health promotion behavior such as exercise program, confronting of stress by learning from the old, will make person to perform the similar behaviors from the past and be able perform a complete health promotion behavior.

2.3.3 Cause to action factors

The likelihood of taking health-promoting action is hypothesized to depend on activating cues either of internal origin such as: personal awareness of the potential for growth, or increased feeling of well-being form beginning health promotion efforts important internal cues for behavior. For example, "feeling good" as a result of physical activity.

From the health promotion model, The related factors as cognitive perceptual factors consisted of 7 sections such as: importance of health, perceived control of health, perceived self-efficacy, definition of health, perceived health status, Perceived benefits of health promotion behavior, Perceived barriers of health promotion behavior are proposed as directly related to health-promoting behavior, modifying factors are proposed as indirectly affect to health-promoting behavior though cognitive perceptual factors, and cues to action factors will serve as a cue for continuing behaviors.

2.4 The factors related health –promoting lifestyle

2.4.1 Age

Kuster and Fong (37) claimed that age, among other demographic variables, was most highly correlated with the total health-promoting lifestyles. The sample included those 18 to 66 years old and a mean age of 27.7 and almost half of the sample (49.1 per cent) was 25 years old or younger. Other results (38) also paralleled the same findings in which a greater incidence of desirable health behaviors was found among older adults. On the other hand, the older age group in a sample of

mainly mid-30 blue-collar workers (39Weitzel) performed less exercise but reported more health responsibility and practiced healthier nutrition. The reduced-exercise pattern can be explained by the nonprofessional job nature of the respondents when compared with clerical that included managerial rank in the previous studies.

Walker et al (40) compared the health-promoting lifestyles of 452 adults of 18 to 88 years old and a mean age of 41.9. The results showed older adults (55-88) had higher scores than did either young (18-34) and middle-aged (35-54) adults on three HPLP subscales: health responsibility, nutrition, and stress management.

2.4.2 Gender

Apart from age, gender has also been shown to relate to health-protective behaviors (Harris & Gutten, 21). In a study of 452 adults (Walker et al., 40), gender was found to contribute to the explanation of variance in the overall health-promoting lifestyles (F_19.1) in the dimensions of health responsibility, exercise, nutrition, and interpersonal support, with women performing better than men in all instances. This notion is further supported by a study involving a sample of 113 nurses (Callaghan, 41) in which women generally indicated more compliance with health behaviors than men. There were significant differences in the outcomes based on gender. In the study, there were 64 per cent women compared with 42 per cent men who were either nonsmokers or ex-smokers; 20 per cent of women compared with 11 per cent of men who did not consume alcohol; 70 per cent of women compared with 53 per cent of men who exercised during the past 14 days; 85 per cent of women compared with 28 percent of men who practiced sun protection; 9 per cent of women compared with 28 per cent of men who drank more than five cups of coffee per day; and 98 percent of women knew how to perform breast self-examination compared with 41 per cent of men who knew how to perform testicle self-examination. The only comment from the investigator was that the female nurses had taken greater risks with their own and others' health by an occasional tendency to drink and drive.

Stock C, Wille L, Kramer A. (42) Performed a survey using a sample of 288 male and 362 female university freshmen from 19 to 33 years of age. Results showed

that male students were significantly more likely to engage in drug-taking behaviors, referring to alcohol and cannabis use, and had a higher body mass index. No gender difference was noted in the numbers of regular smokers. Preventive behaviors with respect to healthy nutrition and dental hygiene were reported more often in females, whereas the duration of physical activity per week and the use of condoms with a new sexual partner showed no gender difference. There was a strong demand for group health-oriented programs (79.5% of respondents). Substantial proportions of students had a high interest in individual counseling aiming at stress management (24.5%), healthy nutrition (19.3%) and prevention of sexually transmitted diseases (18.2%). Women expressed a greater interest in most programs than men. Multivariate regression analyses showed that a disposition for alcohol abuse was the strongest predictor of interest in health counseling in male students ($p < 0.001$), while psychosocial stress was the most important predictor in female students ($p < 0.001$). From the prevalence of health risks and the students' interest in health promotion programs it was concluded that there is a strong need for health promotion in the university setting in Germany.

Von Bother MI et al (43) conducted a study *to* investigate gender differences in students' health habits and motivation for a healthy lifestyle. The sample of students comprised a probability systematic stratified sample from each department at a small university in the south-west of Sweden ($n = 479$). A questionnaire created for this study was used for data collection. Female students had healthier habits related to alcohol consumption and nutrition but were more stressed. Male students showed a high level of overweight and obesity and were less interested in nutrition advice and health enhancing activities.

2.4.3 Studying years

Wai-Hing Choi Hui (34) studied health-promoting lifestyles of 169 undergraduate nurses in Hong Kong by using the Health Promoting Lifestyle Profile II (HPLP II). There were significant differences among the various classes in stress management and spiritual growth, with senior classes (Years 3 and 4) reporting worse

in both areas. The older age group also had lower scores in stress management and exercise practice.

2.4.4 Income

There were also contradicted results regarding to the relationship between income and health-promoting lifestyles.

Pender et al (16) found no significant relationship between income and health-promoting lifestyles scores. But Weitzel et al found income to be positively associated with overall health-promoting lifestyles**.**

2.4.5 Living arrangement

Sung Suh-jen et al (45) studied 280 nurses and 267 nursing students' health-promoting lifestyles and found that the person who lived with their family can perform a better health-promoting lifestyle.

2.4.6 Health promotion course

Afifi Soweid R (46) conducted a study to evaluate the impact of a university level "Health Awareness" course on attitudes and behaviors of undergraduates enrolled in the course. A self-administered survey was used to assess attitude and self-reported behavior of students at the beginning and end of the course. Results indicated an improvement of at least 20% from pretest score in four out of eleven health topic areas, and of 10-20% in additional five topical areas. In addition, movement in a health primitive direction along the stages of change was evident for smoking, eating fruits and vegetables, and exercise. The results presented herein are encouraging and indicate support for the impact of a health awareness class on knowledge, attitude, and behavior of undergraduate students.

Ya-Chu Hsiao et al (47) developed a teaching course on health promotion for nursing students in Taiwan and evaluated the effects of this teaching course sample of 65 randomly selected female nursing students took an 18-week course developed by the investigators, which included 30 h of classroom lectures and 4 weeks of written reports by students chronicling the changes in their behavior. Health promotion

questionnaires administered before and after the course and content analysis of the student's reports were used to evaluate the effects of the course. Student's questionnaire scores after course completion indicated significantly increased intent to adopt healthy lifestyles. Content analysis of students reports on their personal behavior-changing experiences showed that they accepted the potential value of curriculum aspects such as experiencing the struggle, suffering, and even abandonment of the process, experiencing the benefits of change, increasing self-confidence, and empathizing with how difficult it is for clients to change behavior. These results support the value of teaching courses on health promotion to nursing students. The authors recommend including such a course as part of a regular nursing education.

Callaghan (40) surveyed a group of nurses about their health-related behaviors. These nurses either attended advanced professional nursing or undergraduate courses that included a considerable amount of health promotion teaching and the social and psychological aspects of health and illness. The results showed a generally high level of compliance across most behaviors compared with previous studies undertaken by Panatela (48) and Soeken, Bausell, Winklestein, and Carson (49). It provides an indication that increases in the amount of health promotion education may contribute to positive health-promoting lifestyles.

2.4.7 Biological Characteristics.

A number of biological factors have been found to be related to exercise adherence. Pender found weight to be a significant predictor of intention to engage in exercise. The higher the total body weight, lower the intention to exercise regularly. In several studies, percent body fat and total body weight discriminated consistently between exercise program adheres and dropouts, with over weight people finding it more difficult to continue with regular exercise when compare to individuals with less body fat or lower weight.

Ubonrat Rungruengsilp(22)found the body mass index was highly related with the health promotion behaviors of vocational students and could predict the

behavior at 34.1 percent. Kanokwan Chandaeng(22) studied about health promotion behavior of Islam leader and found that the body mass index could predict the behavior at 16.5 percent.

However, according to Prakit Potiarch (22), who found that body mass index was not related with alcoholic drinking behavior of teenagers. Maeeporn Anusornpanich also reported that body mass index was not related with health promotion behavior of primary school teacher.

2.4.8 Perceived health status

Gillis AJ (50) studied 184 adolescents and their parents and tried to find the relationship between health-promoting lifestyle and definition of health, perceived health status, self-efficacy, maternal and paternal health-promoting lifestyle, and selected demographics. Results indicated that a strong relationship existed between the predictor variables of perceived health status and adolescents' health-promoting lifestyles.

Larouche R (51) conducted a descriptive study of 151 university students in Boston to determine the relationships of their perceived health status, sex, grade point average, and their health-promoting lifestyles by using the health promoting lifestyle profile. Results also indicated that students' perceived health status was significantly predictive of total health promoting lifestyle.

2.4.9 Perceived self-efficacy

Perceived self-efficacy is more specific concept that refers to individual’s conviction that they can successfully execute the require behavior necessary to produce a desired out come (52).

Stuifbergen et al (53) studied a sample of 117 adults to examine the usefulness of Pender's (1987) Health Promotion Model in explaining the occurrence of health-promoting behaviors among these adults with disabilities. The results showed that adults with disabilities were more likely to engage in a health-promoting lifestyle if

they had higher self-efficacy for health behaviors. Findings from this study suggest that interventions aimed at enhancing health promotion behaviors would be strengthened by addressing perceived ability to successfully carry out health-promoting behaviors.

Gillis (54) reported an integrative review of the research literature published between 1983 and 1991 that focused on identifying the determinants of a health-promoting lifestyle. Twenty-three studies were reviewed, six of which were concerned with children and adolescents and the remaining 17 with adults. Results indicated that self-efficacy was the strongest predictor of a health-promoting lifestyle

From the literature review, based upon the health promotion model, there are some related studies have also shown that demographic factors, health promotion course, living arrangement and other factors which can play influence on health-promoting lifestyle. However, there are still some different or even contradictory results among these studies .Nevertheless, no any published studies on Thailand nursing students' health-Promoting lifestyle can be found. The interesting factors that included perceived self-efficacy, perceived health status, age, gender, income, studying years, living arrangement, health promotion course, biological factors were selected in this research.

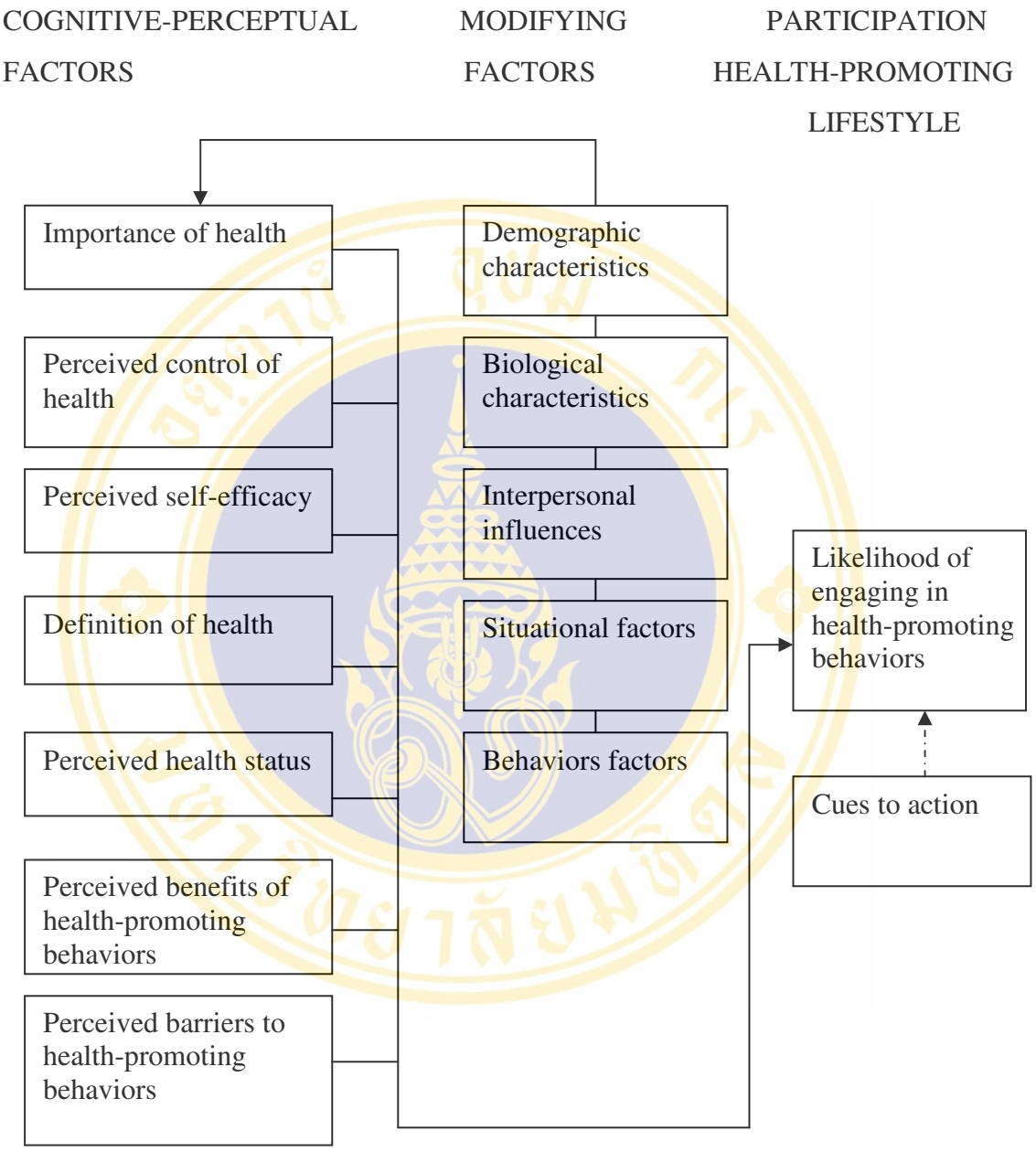


Figure 2 Health Promotion Model

CHAPTER 3
RESEARCH METHODOLOGY

3.1 Study design

A cross-sectional study was designed to study the health-promoting lifestyle of nursing students in Mahidol University. A self-reported questionnaire was administrated.

3.2 Study population

The target population included all the undergraduate nursing students who were currently studying at Faculty of nursing ,Mahidol University in 2005 (included the first year students, second year students, third year students, fourth year students). The number of whole target population was reported by registration department of Mahidol University. (Total undergraduate nursing students number was 859)

3.3 Sample size

The sample was taken from the target population (N=859). From the previous study (45) toward the health-promoting lifestyle of undergraduate nursing students and nurses (from the literature review), the standard deviation of the score (16.82) was used in this study. Therefore, the sample size for this study was calculated by using the figure in the formula :(from biostatistics book).

$$n = \frac{NZ^2_{\alpha/2}\sigma^2}{d^2(N-1)+Z^2_{\alpha/2}\sigma^2} = \frac{859*1.96^2*16.82^2}{1.682^2(859-1)+1.96^2*16.82^2} = \mathbf{266}$$

While: N: the number of whole target population

n: the desirable calculated sample size

Z: the standard score at alpha (α) level is 0.05; therefore Z (two-tail) is 1. 96

σ : As mentioned above, is 16.82(10.02 from pre-test)

d : the difference between the mean of sample and population setting at 10% σ

Considering estimated response rate of 80%, 335 questionnaires were distributed.

3.4 Sampling technique

3.4.1 Identify target population

3.4.2 Get the approval of Faculty of Nursing

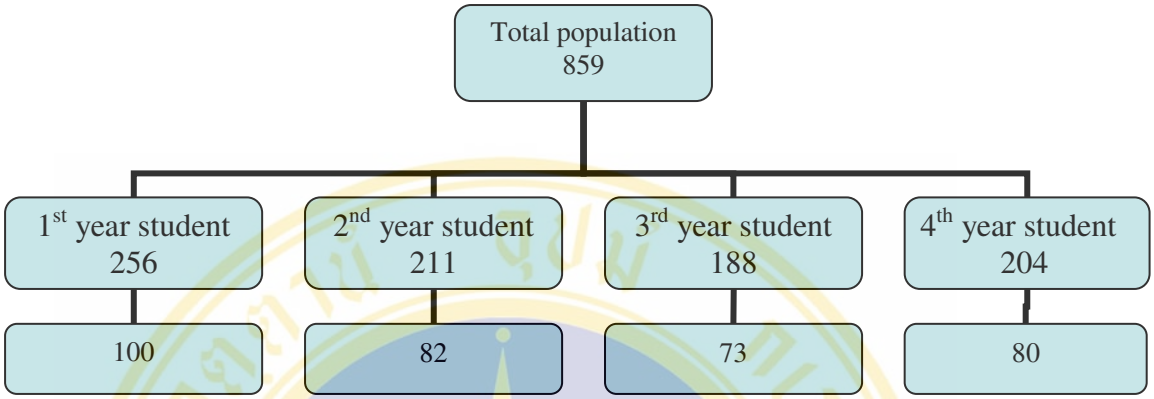
3.4.3 Contact with person who are responsible for target class.

3.4.4 Inform the participants through student notice board (nursing faculty) 2 weeks before the data collection is undertaken.

3.4.5 A stratified systematic random sampling technique was used.

- All the undergraduate nursing students were divided into 4 strata according to their study years
- A sample was obtained by drawing students from each stratum with the help of the teacher staff, during the core-course of each grade .Systematic random sampling was used to draw the sample.
- Sample size for each stratum was proportional to size to total number of students in each year.

Stratified systematic random sampling



3.5 Research instruments

The instruments (see appendix) included 4 parts: Part 1: socio-demographic characteristics of respondents; Part 2: perceived health status questionnaire; Part 3: Health-Promoting Lifestyle Profile; Part 4: perceived health self-efficacy Scale.

3.5.1 Socio-demographic and biological characteristics of respondents

With the questionnaire, general information of respondents, including age, gender, income, studying years, health promotion course, living arrangement, height, weight was obtained.

3.5.2 Perceived health status scale

It measures the level of health status which participants evaluate themselves when comparing with the peers .The three-point response format to each item measures the respondents self-reported level for health status with high scores indicating more good health status. The answer of item 3 was selected as representative for perceived health status.

Result interpretation

The level of self-reported health status was classified into 3 levels, i.e. good, moderate, and poor level.

Score Range	Meaning
1	The level of health status was poor
2	The level of health status was moderate
3	The level of status was good

3.5.3 Health-Promoting Lifestyle Profile

It was originally developed with a wellness framework (16Walker Sechrist & Pender, 1987) by analyzing 952 participants .The profile measures how frequently Respondents engaged in 48 health-promoting behaviors. The four-point response format to each item (1=never, 4=routinely) measures the respondents self-reported health-promoting lifestyles. The items are categorized into six subscales:
Health responsibility, exercises nutrition, spiritual growth, interpersonal relations, and stress management. The instrument was found to have a high internal consistency, with alpha coefficients ranging from 0.702 to 0.904 for individual subscales and 0.922 for the total instrument. Test-retest reliability over 2-week period for the total instrument was 0.926 and subscales ranged from 0.808 to 0.905.Content validity were established by four nursing faculty members who are familiar with health promotion. The original authors of this instrument (Pender et al.) have reported construct validity.

Based on the literature review, the researcher modified the original health-promoting lifestyle profile .This instrument has a total of 43 items which includes six dimensions as following:

-Self-actualization 14 questions (1-14)
-Health Responsibility 11 questions (15-25)
-Stress Management 6 questions (26-31)
-Interpersonal Relations 4 questions (32-35)
-Nutrition 5 questions (36-40)
-Exercise 3 questions (41-43)

The questions consist of favorable statements or positive statement with the below rating scale:

Degree of self evaluation	Score
Routinely	4 points
Often	3 points
Sometimes	2 points
Never	1 points

Result interpretation

The level of health-promoting lifestyle was classified into 3 levels, i.e. high, moderate, and low level. The classification was done by group reference using below criteria.

Score Range	Meaning
< Median-IQR	The level of health-promoting lifestyle was low
Median-IQR ~ Median+IQR	The level of health-promoting lifestyle was moderate
> Median+IQR	The level of health-promoting lifestyle was high

3.5.4 Perceived Health Self-efficacy Scale

Based on the literature review, the researcher modified the original Self-rated health abilities scale. It measures the belief of level which participants can achieve when they engage in 20 health practices. The five-point response format to each item (0=no ability, 4=with 100% confidence) measures the respondents self-reported self-efficacy for health practices with high scores indicating more confidence with their abilities of their health practices .The items were categorized into four sub scales: health responsibility, exercise, nutrition , psychological wellbeing. The instrument consisted 20 items, which includes four dimensions as following:

-Nutrition	4	questions (1-4)
-Exercise	6	questions (5-10)

-Health Responsibility 5 questions (11-15)

-Psychological wellbeing 5 questions (16-20)

The questions consist of favorable statements or positive statement with the below rating scale:

Degree of self evaluation	**Score**
With 100 %(highest) confidence you can do it	4 points
With higher confidence you can do it	3 points
With moderate confidence you can do it	2 points
With low confidence you can do it	1 points
No ability to do it	0 points

Result interpretation

The level of perceived health self-efficacy was classified into 3 levels, i.e. high, moderate, and low level. The classification was done by group reference using below criteria.

Score Range	**Meaning**
< Median-IQR	the level of health self-efficacy was low
Median-IQR ~ Median+IQR	the level of health self-efficacy was moderate
> Median+IQR	the level of health self-efficacy was high

Content validity and reliability

Validity: before data collecting, content validity of questionnaire was examined by research committee member who were expert on the field of health promotion.

Reliability: the pre-test for reliability of questionnaire was done in another similar nursing college with 30 undergraduate nursing students from first year to fourth year on January 16th 2006. Then, the answers were analyzed to test the reliability by using Crobach's alpha coefficient. It revealed (was shown in table 1,2) that the Crobach α-coefficient of health-promoting lifestyle profile part was 0.8295,

perceived health self-efficacy part was 0.8163 ,and perceived health status part was 0.5045. After the real data collection, the test for reliability of questionnaire was done among the entire 321 sample again and the Crobach α-coefficient of health-promoting lifestyle profile part was 0.9005, perceived health self-efficacy part was 0.8876, and perceived health status part was 0.5987. Results were shown in table 3, 4.

Table 1 Reliability Coefficients of Nursing Students'Health-promoting Lifestyles from Pre-test

Health-promoting lifestyle profile	Mean	S.D.	Crobach's Alpha
Overall scale	125.40	10.02	0.8295
Self-actualization dimension scale	44.167	4.052	0.7040
Health responsibility dimension scale	30.700	3.426	0.6855
Stress management dimension scale	14.867	1.978	0.6217
Interpersonal relations dimension scale	13.100	1.539	0.6188
Nutrition dimension scale	15.133	2.569	0.7277
Exercise dimension scale	7.433	1.633	0.6863

Table 2 Reliability Coefficients of Nursing Students' Perceived Health Self-efficacy Scale from Pre-test

Perceived health self-efficacy scale	Mean	S.D.	Crobach's Alpha
Overall scale	57.80	6.47	0.8163
Nutrition dimension	12.000	1.597	0.5117
Exercise dimension	15.400	2.621	0.7281
Health responsibility dimension	16.200	2.524	0.7679
Psychological wellbeing dimension	14.200	2.644	0.7721

Table 3 Reliability Coefficients of Nursing Students' Health-promoting Lifestyles from All the Sample.

Health-promoting lifestyle profile	Mean	S.D.	Crobach's Alpha
Overall scale	129.16	14.21	0.9005
Self-actualization dimension scale	46.794	5.385	0.8367
Health responsibility dimension scale	29.900	5.291	0.7978
Stress management dimension scale	16.196	2.815	0.7048
Interpersonal relations dimension scale	13.763	1.922	0.7515
Nutrition dimension scale	15.498	2.889	0.7335
Exercise dimension scale	7.006	2.031	0.8430

Table 4 Reliability Coefficients of Nursing Students' Perceived Health Self-efficacy Scale from All the Sample

Perceived health self-efficacy scale	Mean	S.D.	Crobach's Alpha
Overall scale	58.234	9.661	0.8876
Nutrition dimension	12.617	2.236	0.6629
Exercise dimension	13.280	4.655	0.8690
Health responsibility dimension	16.645	2.867	0.8111
Psychological wellbeing dimension	15.692	3.111	0.8294

3.7 Data collection

Following the introduction of AIHD, researcher submitted the thesis proposal and researcher's background information to the academic ethic committee of Faculty of Nursing, Mahidol University at December 2005. The objective of this study and methods were reported in detail. After get the approval, data collection was started from 26 th, Jan and finished on 6, Feb, 2006. In order to maximize response rate, all the questionnaires were delivered and collected face-to-face by researcher and coordinators immediately after their lecture at an appropriate time with the help of teacher. Researcher introduced the objective and expected outcome of thesis to the

students before distribution the questionnaire. The rights for refusing to answer were also mentioned. Nevertheless, an introduction for answering was attached to the front of the questionnaires .To ensure anonymity, no name is required on the questionnaires.

3.8 Data analysis

Minitab 14 and SPSS11.5 software program according to each specific objective of research. The statistics used were described as follows:

-The personal demographic characteristics, biological characteristic, health promotion course taken, self-reported health self-efficacy, self-reported health status data were reported by using descriptive statistics: frequencies, percentage, mean, standard deviations, minimums, and maximums.

-The health-promoting lifestyle score and six dimensions were reported by means, standard deviations, frequencies, percentage, minimums, and maximums.

-Kruskal-Wallis test was used to identify the difference of health-promoting lifestyle score among different age groups, gender, studying years, allowance, and living arrangement. The reason for using Kruskal-Wallis test was that: 1) the health-promoting lifestyle score may not be normally distributed; and 2) the score of health-promoting lifestyle was not continuous data, it was four-rating scale.

-Both Chi-square and Spearman rank correlation were used for identifying the association between the health promotion course taken, BMI, perceived health status, perceived health self-efficacy and health-promoting lifestyle.

-Multiple regression was used for predicting the relationship between mean of health-promoting lifestyle and the independent variables.

CHAPTER 4
RESULTS

The results of the study a health-promoting lifestyles of nursing students in Mahidol University were presented in the following order:

4.1 Personal demographic characteristics, and other independent variables, namely, health promotion course taken factor, biological characteristics factor , self-reported health self-efficacy and self reported health status among nursing students.
4.2 The level of health-promoting lifestyles among nursing students;
4.3 The difference in health-promoting lifestyles among nursing students in relation to their demographic characteristics;
4.4 The association between health-promoting lifestyles and health promotion course taken, biological characteristics, perceived health self-efficacy, and perceived health status factors ;
4.5 The prediction between health-promoting lifestyles and other independent variables presented in the conceptual framework (i.e.,demographic characteristics, health promotion course taken, biological characteristics , perceived health self-efficacy , and perceived health status factors) .

4.1 Personal demographic characteristics, health promotion course taken factor, biological characteristic factor, perceived health self-efficacy and perceived health status among nursing students

4.1.1 Personal demographic characteristics

The total number of nursing students in Faculty of Nursing, Mahidol University was 859, 335 persons and stratified systematic random sampling was then applied to selected the students in this study. There were 321 students who completed the questionnaires. The demographic characteristics of nursing students that were

investigated included their age ,gender, studying years, living arrangement, and income(monthly allowance: Baht).It was shown in table 5.

A great majority (93.15%) participant were female. Their ages ranged from 17 years to 33 years old, with the mean age of 20.386 and standard deviation of 1.668 years old. Almost one-third (35.83%) of the respondents were 19 years old and younger. About one-fourth (23.99%) of them were in the age of 22 years old or over.

With respect to studying years, the first year students accounted for the largest group (31.78%), the fourth year students were the second (25.23%), while the second and third year students were 23.99% and 19.00% respectively.

As to the living arrangement, among all the nursing students, majority (90.03%) lived in the school dormitory; a small percentage of the sample (7.79%) lived with their family.

It was shown that the range of their monthly allowance was from 1000 baht to 15000 baht and almost one-half (54.21%) was in the 3000-4500 baht group, with the mean of 3,709 Baht monthly allowance, and standard deviation of 1341.5 Baht. For those who had monthly allowance less than 3000 Baht or more than 4500 Baht accounted for approximately 23% individually.

Table 5 Number and Percentage of the Respondents by Personal Demographic characteristics

Variable	Number (Total:321)	Percent %
Age: (age group)		
≤ 19 years	115	35.83
20years~	62	19.31
21~ years	67	20.87
22~ years	77	23.99

Table 5 Number and Percentage of the Respondents by Personal Demographic characteristics. (cont.)

Variable	Number (Total:321)	Percent %
Age: (age group)		
(mean = 20.386 , SD = 1.668, min = 17 ,max =33)		
Gender		
Male	22	6.85
Female	299	93.15
Studying years		
First	102	31.78
Second	77	23.99
Third	61	19.00
Fourth	81	25.23
Living arrangement		
With family	25	7.79
Dormitory	289	90.03
Rent house alone	2	0.62
Other	5	1.56
Monthly allowance		
<3000 Baht	73	22.74
3000-4500Baht	174	54.21
>4500Baht	74	23.05
(Mean=3709.2, SD=1341.5, Min=1000, Max=15000)		

4.1.2 Health promotion course taken factor

From the second semester of first year, the students started to learn the health promotion course. The credits for the first year were two credits. At the second semester of second year, the students went to clinical setting to learn the practice of this course. The total credits for this semester was three credits. Up to the day for data collection in this study, the second year students already finished two credits for this

semester. Therefore, the total course credits for second year students were four credits. The third and fourth year students already took five credits since they finished all the theory and the practice learning process of this course. As shown in table 2, about 43.93% nursing students took 5 credits course, while 32.09% just took almost 2 credits course learning.

Table 6 Number and percentage of respondents by Health promotion course taken

Variable	No.(Total=321)	Percentage (%)
2 credits course taken	103	32.08
4 credits course taken	77	23.99
5 credits course taken	141	43.93

4.1.3 Biological characteristic factor

Based on the International Obesity Task Force for Asians, the standard evaluation of BMI is as: “Underweight” means BMI is less than 18.5; “Normal” means BMI is between 18.5-22.9; “Overweight” means BMI is over 23. The mean of BMI of respondents was 19.854,SD 2.512, majority(64.80%) of students had a normal BMI, as pointed in the table 7.

Table 7 Number and Percentage of Respondents by Biological Characteristic

Variable (BMI)	No.(Total=321)	Percentage (%)
Underweight	88	27.41
Normal	208	64.80
Overweight	25	7.79

4.1.4 Perceived health self-efficacy

The overall score and mean score of sub aspects of perceived health self-efficacy was shown in table 8 and table 9. The mean of overall score of perceived

health self-efficacy was 58.115 with the standard deviation 9.644.Almost half participants (51.40%) were at a moderate level when comparing with 25.86% students with a low level of health self-efficacy, while 22.74 % of nursing students were at a high level.. Nearly one-fourth (23.68%) of participants had a high level of psychological wellbeing self-efficacy, followed by 23.36% of participants had a high level of health responsibility and 23.05% of nutrition. On the contrast, only one-fifth participants (20.87%) had a high level of exercise self-efficacy.

It was also shown in table 9, there was a significant difference among four dimensions of perceived health self-efficacy. The health responsibility scored highest with the mean=3.3290 and S.D.=0.5733. Nutrition ranked the second. The exercise dimension scored lowest with mean=2.2015, S.D.=0.7754.

Table 8 The Number and Percentage of Respondents by the Level of Perceived Health Self-efficacy

Self-efficacy	Level of perceived health self-efficacy					
	High		Moderate		Low	
	No.	%	No.	%	No.	%
Overall scale	73	22.74	165	51.40	83	25.86
Mean=58.115, S.D.=9.644, Min=17.000, Max=80,000, Median=59, Q1=52, Q3=65						
Nutrition	74	23.05	148	46.11	99	30.84
Exercise	67	20.87	195	60.75	59	18.38
Health responsibility	75	23.36	180	56.07	66	20.56
Psychological wellbeing	76	23.68	173	53.89	72	22.43

Table 9 Mean Score of Perceived Health Self-efficacy Among Respondents

Variables	Mean	SD	Min	Max
Overall health self-efficacy	2.9058	0.4822	0.8500	4.0000
Exercise	2.2015	0.7754	0.0000	4.0000
Psychological wellbeing	3.1340	0.6210	0.0000	4.0000
Nutrition	3.1480	0.5635	1.2500	4.0000
Health responsibility	3.3290	0.5733	0.6000	4.0000

4.1.5 Perceived health status

The answer of the third question was picked out as the representative of perceived health status since it is directly related the overall self-evaluation health status. The table 10 was shown, 38.01% students reported they were in a good health status, 57.01 % of them told their health status were moderate and 4.98% reported a poor health status when comparing with their peers.

Table10 Number and Percentage of Respondents by the Level of Perceived Health Status

Health status	Number(Total=321)	Percentage
Poor	16	4.98
Moderate	183	57.01
Good	122	38.01

4.2 2 The level of health-promoting lifestyles among nursing students

As described in table 11 and 12, the overall score of all participants was 128.87 with the standard deviation 14.29.More than half of the students (53.58 %) were at a moderate level of health-promoting lifestyle. About one-fourth (25.23%) students reported a low level and 21.18% students were at a high level of overall score. There was a significant difference between each dimension shown in table 12 and 13, the mean score of interpersonal relations was the highest

(mean,SD=3.4408,0.4805). 25.23% of students had a high score while comparing with 12.46% of students had a low score in interpersonal relation dimension . Self-actualization took the second rank (mean,SD=3.3338, 0.3832). The percentage(31.46%) of high score in Self-actualization dimension also higher than that (23.99%) of low score. The mean score of exercise was the lowest one(mean, SD=2.3354,0.6770). About 50.16% students had a low score of exercise while 23.05% students were in a high level..

Table 11 Score of Health-promotingLifestyles AmongRespondents

Variables	Score	SD	Min	Max
Overall HPL	128.87	14.29	88	170.00
interpersonal relation	13.763	1.922	6.000	16.000
self-actualization	46.673	5.365	30.000	56.000
nutrition	15.439	2.899	8.000	20.000
health responsibility	29.801	5.285	15.000	44.000
stress management	16.190	2.814	10.000	24.000
exercise	7.006	2.031	3.000	12.000

Table 12 Mean Score of Health-promoting Lifestyles Among Respondents

Variables	Mean	SD	Min	Max
Overall health-promoting lifestyle	2.9970	0.3323	2.0465	3.9535
interpersonal relation	3.4408	0.4805	1.5000	4.0000
self-actualization	3.3338	0.3832	2.1429	4.0000
nutrition	3.0879	0.5798	1.6000	4.0000
health responsibility	2.7091	0.4804	1.3636	4.0000
stress management	2.6983	0.4689	1.6000	4.0000
exercise	2.3354	0.6770	1.0000	4.0000

Table 13 The Level of Overall Health-promoting Lifestyle and Sub-dimensions of Respondents

Variable	High		Moderate		Low	
	No.	%	No.	%	No.	%
Overall HPL	68	21.18	172	53.58	81	25.23
Interpersonal relation	81	25.23	200	62.31	40	12.46
Self-actualization	101	31.46	143	44.55	77	23.99
Nutrition	87	27.10	183	57.01	51	15.89
Health responsibility	72	22.43	161	50.16	88	27.41
Stress management	54	16.82	172	53.58	95	29.60
Exercise	74	23.05	86	26.79	161	50.16

4.3 The difference in health-promoting lifestyles among nursing students in terms of their demographic characteristics

4.3.1 The difference in health-promoting lifestyles among nursing students according to their age groups

Table 14 found significantly difference in health-promoting lifestyles among nursing students according to their different ages. Who were in the elder age group when compared with the younger age group had significant high level of overall health-promoting lifestyles. This pattern was also repeated in four dimensions including self-actualization, health responsibility, stress management and nutrition. Only two dimensions on interpersonal support and exercise were not found the difference among nursing students.

Table14 Comparison of HPL Mean Score ofRespondents Among Different Age Groups

Variable	No.	Mean of HPL	S.D.	H-value	p-value
Overall HPL					
≤ 19	115	2.8746	0.3007	41.22	.000**

Table14 Comparison of HPL Mean Score ofRespondents Among Different Age Groups. (cont.)

Variable	No.	Mean of HPL	SD	H-value	p-value
Overall HPL					
20	62	2.9606	0.2752		
21	67	3.0864	0.3610		
22	77	3.1592	0.3044		
Self-actualization					
≤19	115	3.2385	0.3698	21.23	.000**
20	62	3.3018	0.3341		
21	67	3.3998	0.4400		
22	77	3.4805	0.3468		
Health Responsibility					
≤19	115	2.5273	0.5683	46.30	.000**
20	62	2.6613	0.4077		
21	67	2.8168	0.4280		
22	77	2.9634	0.4125		
Stress Management					
≤19	115	2.6043	0.4085	13.23	.004*
20	62	2.6075	0.3610		
21	67	2.8532	0.5509		
22	77	2.7814	0.5103		
Interpersonal support					
≤19	115	3.3848	0.4651	5.1	.160
20	62	3.4194	0.4678		

Table14 Comparison of HPL Mean Score ofRespondents Among Different Age Groups. (cont.)

Variable	No.	Mean of HPL	SD	H-value	p-value
Interpersonal support					
21	67	3.5000	0.5094		
22	77	3.4903	0.4857		
Nutrition					
≤19	115	2.820	0.5854	43.60	.000**
20	62	3.1581	0.5336		
21	67	3.2239	0.4818		
22	77	3.3610	0.5079		
Exercise					
≤19	115	2.4000	0.6416	2.62	.454
20	62	2.2312	0.5649		
21	67	2.2985	0.6645		
22	77	2.3550	0.8099		

4.3.2 The difference in health-promoting lifestyles among nursing students in terms of their gender

As shown in table 15, there was no significant difference in overall health-promoting lifestyles and six dimensions among nursing students according to their different gender .

Table 15 Comparison of HPL Mean Score of Respondents Among Different Gender

Variable	No.	Mean of HPL	S.D.	H-value	p-value
Overall HPL					
Male	22	3.085	0.428	1.28	.258
Female	299	2.998	0.322		
Self-actualization					
Male	22	3.419	0.455	0.99	.320
Female	299	3.337	0.379		
Health Responsibility					
Male	22	2.835	0.559	2.10	.147
Female	299	2.710	0.475		
Stress Management					
Male	22	2.841	0.516	1.66	.198
Female	299	2.689	0.465		
Interpersonal support					
Male	22	3.284	0.508	2.44	.119
Female	299	3.452	0.477		
Nutrition					
Male	22	3.127	0.606	0.05	.822
Female	299	3.098	0.577		
Exercise					
Male	22	2.591	0.741	2.15	.143
Female	299	2.317	0.670		

4.3.3 The difference in health-promoting lifestyles among nursing students according to their studying years

Table 16 found significantly difference in health-promoting lifestyles among nursing students in terms of their different studying year's groups. Students in the 3rd and 4th year group as compared with the 1st and 2nd year, had significantly high level of overall health-promoting lifestyles.Again, this pattern was also repeated in four dimensions including self-actualization, health responsibility, stress management and

nutrition. Only two dimensions on interpersonal support and exercise were not found the difference among nursing students.

Table 16 Comparison of HPL Mean Score of Respondents Among Different Studying Years

Variable	No.	Mean of HPL	S.D.	H-value	p-value
Overall HPL					
1st year	102	2.8600	0.2718	40.48	.000**
2nd year	77	2.9864	0.3086		
3rd year	61	3.0530	0.3585		
4th year	81	3.1639	0.3193		
Self-actualization					
1st year	102	3.2556	0.3273	21.09	.000**
2nd year	77	3.2764	0.3939		
3rd year	61	3.3700	0.4524		
4th year	81	3.4938	0.3437		
Health Responsibility					
1st year	102	2.5250	0.3947	37.97	.000**
2nd year	77	2.6907	0.4435		
3rd year	61	2.7750	0.5524		
4th year	81	2.9450	0.4585		
Stress Management					
1st year	102	2.5605	0.3831	14.27	.003*
2nd year	77	2.6797	0.3981		
3rd year	61	2.7760	0.5304		
4th year	81	2.8354	0.5346		
Interpersonal support					
1st year	102	3.3578	0.4727	6.09	.107
2nd year	77	3.4675	0.4559		

Table 16 Comparison of HPL Mean Score of Respondents Among Different Studying Years . (cont.)

Variable	No.	Mean of HPL	S.D.	H-value	p-value
Interpersonal support					
3rd year	61	3.5082	0.4894		.
4th year	81	3.4691	0.5006		
Nutrition					
1st year	102	2.7373	0.5650	56.75	.000**
2nd year	77	3.2130	0.4913		
3rd year	61	3.2590	0.5194		
4th year	81	3.3284	0.4983		
Exercise					
1st year	102	2.3824	0.5866	5.66	.130
2nd year	77	2.3117	0.6564		
3rd year	61	2.1937	0.7133		
4th year	81	2.4033	0.7651		

(*p-value<0,01,**p-value<0.001)

4.3.4 The difference in health-promoting lifestyles among nursing students according to their living arrangement

As shown in table 17, there was no significant difference in overall health-promoting lifestyles and all the six dimensions among nursing students according to their different living arrangement groups.

Table 17 Comparison of HPL Mean Score of Respondents Among Different Living Arrangement Groups

Variable	No.	Mean of HPL	S.D.	H-value	p-value
Overall HPL					
With family	25	3.0093	0.3152	2.67	.446

Table 17 Comparison of HPL Mean Score of Respondents Among Different Living Arrangement Groups.(cont.)

Variable	No.	Mean of HPL	S.D.	H-value	p-value
Overall HPL					
dormitory	289	2.9992	0.3289		
rent house alone	2	3.4767	0.4769		
others	5	3.0465	0.4176		
Self-actualization					
With family	25	3.3429	0.3630	4.14	.247
dormitory	289	3.3374	0.3867		
rent house alone	2	3.8571	0.1010		
others	5	3.4286	0.3677		
Health Responsibility					
With family	25	2.7055	0.5144	1.64	.650
dormitory	289	2.7172	0.4773		
rent house alone	2	3.1364	0.5785		
others	5	2.6727	0.5842		
Stress Management					
With family	25	2.7467	0.4618	4.91	.179
dormitory	289	2.6880	0.4632		
rent house alone	2	3.4167	0.3536		
others	5	2.8333	0.7454		
Interpersonal relation					
With family	25	3.4400	0.4910	1.54	.674
dormitory	289	3.4386	0.4773		
rent house alone	2	3.1250	1.2374		
others	5	3.7000	0.3260		
Nutrition					
With family	25	3.0400	0.6683	1.13	.770
dormitory	289	3.1010	0.5723		

Table 17 Comparison of HPL Mean Score of Respondents Among Different Living Arrangement Groups.(cont.)

Variable	No.	Mean of HPL	S.D.	H-value	p-value
rent house alone	2	3.5000	0.7071		
others	5	3.1600	0.4561		
Exercise					
With family	25	2.4667	0.5932	6.28	.099
dormitory	289	2.3218	0.6769		
rent house alone	2	3.5000	0.7071		
others	5	2.0000	0.7071		

4.3.5 The difference in health-promoting lifestyles among nursing students according to their allowance

Table 18 found no significant difference in overall health-promoting lifestyles and all the six dimensions among nursing students in terms of their different allowance groups.

Table 18 Comparison of HPL Mean Score of Respondents Among Different Monthly Allowance Groups

Variable	No.	Mean score of HPL	S.D.	H-value	p-value
Overall HPL					
<3000baht	73	2.9618	0.3160	2.40	.301
3000-4500baht	174	3.0084	0.3354		
>4500 baht	74	3.0339	0.3327		
Self-actualization					
<3000 baht	73	3.2779	0.4272	1.64	.441
3000-4500baht	174	3.3571	0.3631		
>4500 baht	74	3.3716	0.3882		
Health Responsibility					
<3000 baht	73	2.6463	0.4501	3.83	.147

Table 18 Comparison of HPL Mean Score of Respondents Among Different Monthly Allowance Groups.(cont.)

Variable	No.	Mean score of HPL	S.D.	H-value	p-value
3000-4500baht	174	2.7137	0.4889		
>4500 baht	74	2.7998	0.4857		
Stress Management					
<3000 baht	73	2.7192	0.4275	0.46	.793
3000-4500baht	174	2.6897	0.4846		
>4500 baht	74	2.7027	0.4772		
Interpersonal support					
<3000 baht	73	3.3390	0.5611	2.61	.272
3000-4500baht	174	3.4698	0.4611		
>4500 baht	74	3.4730	0.4292		
Nutrition					
<3000 baht	73	3.0932	0.5860	0.07	.965
3000-4500baht	174	3.1023	0.5801		
>4500 baht	74	3.1000	0.5717		
Exercise					
<3000 baht	73	2.4064	0.6508	1.57	0.457
3000-4500baht	174	2.3276	0.6366		
>4500 baht	74	2.2838	0.7894		

4.4 The association between health-promoting lifestyles and health promotion course taken, biological characteristics, perceived health self-efficacy, and perceived health status factors by using Chi-square analysis

4.4.1 The association between health-promoting lifestyles and health promotion course taken

As shown in table 19, there was a significantly positive association between the health-promoting lifestyles and health promotion course taken. The more health

promotion course taken ,the higher score the students had. About 70.59 % students had a high score who already took 5 credits course while 7.35 % students had a high score who just took 2 credits course.

Table 19 The Association Between HPL and Health Promotion Course Taken

	Health-promoting lifestyle							
	High		Moderate		Low			
Course taken	No.	%	No.	%	No.	%	Chi-square	p-value
2 credits	5	7.35	57	33.14	41	50.62	39.027	.000*
4 credits	15	22.06	43	25.00	19	23.46		
5 credits	48	70.59	72	41.86	21	25.93		

(*p-value<0.001)

(Note: Spearman rank correlation between health promotion course taken and HPL was .341, *p-value<0.001)

4.4.2 The association between health-promoting lifestyles and biological characteristic

The table 20 was shown, no significant association between health-promoting lifestyles and biological characteristics. The students who had a normal BMI were still the leading group in the all levels of health-promoting lifestyle group no matter their BMI were normal or not.

Table 20 The Association Between HPL and Biological Characteristic Factor

	Health-promoting lifestyle							
	High		Moderae		Low		Chi-	p-
BMI	No.	%	No.	%	No.	%	square	value
Underweight	26	38.24	41	23.84	21	25.93	5.935	.204
Normal	38	55.88	115	66.86	55	67.90		
Overweight	4	5.88	16	9.30	5	6.17		

4.4.3 The association between health-promoting lifestyles and perceived health self-efficacy

As described in table 21 and 22, there was a significantly positive association between the health-promoting lifestyles and perceived health self-efficacy. The higher perceived health self-efficacy was, the higher score of health-promoting lifestyles the students had. Among those students who had a high level of health-promoting lifestyles, 51.47% of them also had a high level of health self-efficacy.The pattern was same when shown in opposite way. Sub-dimensions between perceived health self-efficacy factor and health-promoting lifestyles correlated with each other significantly.

Table 21 The Association Between HPL and Perceived Health Self-efficacy Factor

Variable	Health-promoting lifestyles						Chi-square	p-value
Health self-efficacy	High		Moderate		Low		91.965	.000*
	No.	%	No.	%	No.	%		
High	35	51.47	36	20.93	2	2.47		
Moderate	29	42.65	104	60.47	32	39.51		
Low	4	5.88	32	18.60	47	58.02		

(*p-value<0.001)

Table 22 The Association Between Overall , Four Dimensions of Perceived Health Self-efficacy and Overall , Six Dimensions of HPL by Using Spearman Correlation Test

	Overall selfefficacy (r)	Nutrition (r)	Exercise (r)	Health responsibility (r)	Psychological wellbeing (r)
Overall HPL	.601**	.496**	.367**	.536**	.489**
Self actualization	.459**	.380**	.251**	.439**	.421**

Table 22 The Association Between Overall , Four Dimensions of Perceived Health Self-efficacy and Overall , Six Dimensions of HPL by Using Spearman Correlation Test.(cont.)

	Overall selfefficacy (r)	Nutrition (r)	Exercise (r)	Health responsibility (r)	Psychological wellbeing (r)
Health responsibility	.476**	.377**	.296**	.501**	.319**
Stress management	.378**	.297**	.181**	.360**	.409**
Interpersonal relations	.343**	.283**	.126*	.264**	.451**
Nutrition	.409**	.500**	.185**	.385**	.287**
Exercise	.355**	.150**	.495**	.062	.157**

(*p<0.05, **p<0.001)

4.4.4 The association between health-promoting lifestyles and perceived health status

As shown in the e table 23, there was a significantly positive association between health-promoting lifestyles and perceived health status. Those who reported good health status also had higher score of health-promoting lifestyles. Among 68 participants who had a high level of health-promoting lifestyles, more than half (51.47%) reported a good health status while a few (7.35%) told a poor health status. On the contrast, those participants who had a moderate score of health-promoting lifestyles also reported moderate level of health status. In other words, among those who had a moderate level score of health-promoting lifestyle, majority (61.05%) of them also reported a moderate health status .

Table 23 The Association between HPL Perceived Health Status Factor

Variable	Health-promoting lifestyles						Chi-square	p-value
Self-reported health status	High		Moderate		Low		17.317	.002*
	No.	%	No.	%	No.	%		
Good	35	51.47	64	37.21	23	28.40		
Not good	33	48.53	108	62.79	58	71.60		

(since 2 cells with expected counts less than 5,so group "moderate" and "poor" into one "not good" group, *p<0.01)

(Note: Spearman rank correlation between health promotion course taken and HPL was .197, *p<0.001)

4.5 The prediction of related factors toward health-promoting lifestyles by using Multiple regression analysis

In this study, firstly, the correlation of all independent variables were examined (see apendix E). Secondly, all independent variables were put into regression analysis in order to get full model . Finally , five significant variables which shown by chi-square test were included in the final model in order to get the most appropriate model. The result was shown in table 24, age, perceived health status, perceived health self-efficacy were significantly predictive factors which contribute 41.8% variance of health-promoting lifestyle. Among these factors, self-reported health self-efficacy was the most strongly predictive factor when adjusted for studying years, health promotion course taken, age, perceived health status.

If the nursing students mean of perceived health self-efficacy increase 1 score, his or her mean score of health-promoting lifestyles will increase 0.382 after adjusting for other factors.

Table 24 Prediction Between Related Factors and Health-promoting Lifestyle

Predictor	Coefficient	Standardize	T	P-value
Age	0.02709	0.1360**	2.18	.030*
Perceived health status	0.06679	0.1140*	2.64	.009**
Perceived health	0.37962	0.5509***	11.93	.000***
Self-efficacy				

R-Sq = 42.7%, R-Sq (adj) = 41.8%

*p<0.05, **p<0.01, ***p<.001

CHAPTER 5
DISCUSSION

This research was a study of health-promoting lifestyles of nursing students in Mahidol University by answering the questionnaires concerned with health-promoting lifestyle. The percentage of returned questionnaires was 96.1%, which was considered a high response and would yield valid and reliable information for data analysis.

The results showed that the overall health-promoting lifestyles of the nursing students was considered at a moderate level (mean, SD=128.87, 14.29).

The results showed that the nursing students had a good level in sub-dimensions: interpersonal support, self-actualization. Other four sub-dimensions such as nutrition, health responsibility, stress management, and exercise were at a low level.

The results showed there were difference in health-promoting lifestyles among groups who differ in age and studying year's groups. There were no difference in health-promoting lifestyles among groups who differ in gender, allowance, and living condition groups.

The results showed that the health promotion course taken, perceived self-efficacy, and perceived health status were associated with their health-promoting lifestyles. There was no significant association between biological characteristic and health-promoting lifestyles.

Among all the factors in the conceptual framework, perceived health self-efficacy was the most predictive factor of the overall health-promoting lifestyles.

The results of data analysis were discussed based on hypotheses as followed:

5.1 The levels of health-promoting lifestyles

The overall score of health-promoting lifestyles among nursing students in this study was at a moderate level, which was higher than the findings from a group of Hong Kong undergraduate nursing students (35) and a group of practice nurses(25).

As to six dimensions of health- promoting lifestyles, the students in this study scored highest in interpersonal relations ,which was consistent with the finding obtained from a group of Canadian first-year baccalaureate nursing students (14) .Nevertheless, the study of Hong Kong undergraduate nursing students (35) and Tai Wan clinical nursing students (45) also confirmed the same findings with this study. Nowadays, interpersonal relations have become increasingly important in many careers, it is one of the prerequisites for effective communication in nursing area too. Therefore, it is favorite to see the students can get a high score in this dimension.

On the other hand, the students' weakest point was on exercise .The score was far below that of the other dimensions. This finding was similar to another study on clinical nursing students and registered nurse in China (45). Such a finding was also consistent with that shown by Wai-Hing Choi Hui (35) and Riordan(31) of undergraduate nursing students. Other studies about the health-promoting lifestyles of nurses also confirmed the same results by Guidry ML, Wilson AM (28), Haughey BP (26), Chen (29). The problem seems to be a universal health issue that could result in some adverse effects such as high risk of obesity in the near future or even already contributed to the abnormal BMI among these nursing students. The reason for the lowest score of exeicise may be very complicated. The lowest health self-efficacy on exercise might be one important reason and this relation was also confirmed in the later discussion part. Causes for the low exercise of undergraduate nursing students need to be carefully examined.

5.2 The difference in health-promoting lifestyles among nursing students in terms of demographic characteristics

Not all the significant difference can be found in health-promoting lifestyles among nursing students who belong to different age, gender, studying years, monthly allowance, living arrangement groups.

Age

This study confirmed that age was related to the overall health-promoting lifestyle and four sub-dimensions of self-actualization, stress management, nutrition and health responsibility, which agreed with the first hypothesis. The elder age students had a significantly high score on the overall health-promoting lifestyle and four sub-dimensions when comparing with those students who belong young age group. This finding was consistent with the Kuster and Fong (37) who claimed that the age, among other demographic variables, was most highly correlated with the total health-promoting lifestyle as well as self-actualization, stress management, health responsibility, and nutrition behaviors. Other results (38) also paralleled the same findings that age contributed significantly to the explanation of variance in an overall health-promoting lifestyle and four dimensions.

However, in this study, age was not a significant contributor to the explanation of variance in the dimensions of interpersonal relation and exercise. This may due to all the different age groups got the highest score in interpersonal relation and the lowest score in exercise. In other words, the interpersonal relationship between nursing students and surroundings were very simple whatever their age varied. As to exercises, almost all of them didn't pay much attention to it maybe they just focused on academic performance.

Yet, the result was contrary to the study by Suwonkhong , Sakbunditsakul (22) who found no significant correlation between the age and health-promoting lifestyles.

Gender

In this study, there was no difference in overall health-promoting lifestyle and all sub-dimensions in terms of gender. The finding contradicted with Pender's (8) result. Pender claimed that gender was one of the demographic variables most predictive of preventive behaviors with women performing better than men in all instances. However, the gender effect on health-promoting lifestyles could not be substantiated since there were only twenty two male nursing students in this study.

Studying years

It was observed that the more senior year the nursing students were at, the higher score of overall health-promoting lifestyle and four dimensions they got. A significant difference was found between the student's overall health-promoting lifestyle, self-actualization, stress management, health responsibility, nutrition behaviors and their studying years. Because most of elder students were in senior class, the finding further reinforces the earlier results.

The finding was consistent with the Callaghan's (41) study in which the increase in the years of nursing education has a positive effect on the nurse's health-related behaviors. However ,the finding in this study was contradicted those identified in Wai-Hing Choi Hui's study who claimed that the senior had the lower score , particularly in the final-year students from students of other years.

One thing need to be noticed here was that the first year student had the lowest score among four studying years group, particularly in the health responsibility and stress management dimension. First year is the beginning of the college life. Entering college can be an exciting, yet stressful event for many adolescents and young adults. Traditional college students enter college immediately after high school (age 18 or 19 years) and are faced with trying to adapt to changes in academic workloads, support networks, and their new environment. Coupled with these changes and new-found responsibilities, college students have greater freedom and control over their lifestyles

than ever before. Thus, this transitional period is an opportune time to establish healthy lifestyle behaviors (55). However, researchers have shown globally that many college students engage in various risky health behaviors, including alcohol use, tobacco use, physical inactivity and unhealthy dietary practices, feel stressful which may have long-term implications for their health (56, 57, 58).

Stress is known to influence health through its direct physiological effect and its indirect effect via altered health behaviours. Stress occurs when a person appraises a situation demand and/or challenge as exceeding available coping resources (59). Researchers have shown that stress among college students can have detrimental effects on both academic performance and health (60). College students, because of the transitional nature of college life, are particularly prone to stress, and the majority experience stress because of varying academic commitments, financial pressures, and lack of time management skills (61). Misra found that students in their first year of college were particularly vulnerable to stress because of the inherent conflict and frustration of managing new responsibilities and unfamiliar situations. In addition, they often lack the strong social support networks and coping skills needed to handle college stress effectively (62).

Therefore, identifying the source of stress in first year college students and strenghen the health responsibility of them warrant further attention.

Living arrangement

There was no difference in overall health-promoting lifestyle and all sub-dimensions in terms of different living arrangement. This was conflict with the result of Sung Suh-jen's(45) study who found that the person who lived with their family can perform a better health-promoting lifestyle. However, the living condition effect on health-promoting lifestyle could not be distinguished since there were predominantly percentage nursing students (90.03%) lived in the dormitory in this study.

Monthly allowance

In this study, there was no difference in overall health-promoting lifestyle and all sub-dimensions in terms of the student's monthly allowance. This finding was consistent with Pender, Walker and Sechrist's (16) study who found that income was not related to maintenance of the fitness program among employees. Oumpram (63) also found no correlation between family income and health promoting behaviors. Ngoutheat claimed that income was not significantly related to health-promoting lifestyle among nurses.

However, the result was contrary to the study by Pojana Lapying (63) who found health-promoting lifestyle depended upon income and those who had a high income more potentially had a good health-promoting lifestyle. Pender also stated that person with good finances will be able to seek benefits for health care, get good foods and high quality services, and find the right products and equipment for their health promotion.

5.3 Association between health-promoting lifestyles and health promotion course taken

This study revealed that there was a significant positive association between health-promoting lifestyles and health promotion course taken, which confirmed the second hypothesis. The p-value was both significant at 0.001 level by using Spearman rank correlation and Chi-square test.

Such finding was consistent with other researcher's results. Ya-chu Hsiao's (47) developed a 18-week teaching course on health promotion for nursing students in Taiwan and evaluated the effects of this teaching course. Student's health promotion questionnaires scores after course completion indicated significantly increased intent to adopt healthy lifestyles. The authors recommend including such a course as part of a regular nursing education since the results support the value of teaching courses on health promotion to nursing students. Callaghan (30) also confirmed that increase in

the amount of health promotion education might contribute to positive health-promoting lifestyles.

In Thailand, many nursing faculties already have integrated health promotion course into the nursing curriculum. Finding from this study showed that students also had a higher score on health-promoting lifestyle with the more course credits taken. However, there was still no any difference in exercise dimension among different course taken groups. All the students had the lowest score in exercise dimension no matter how many health promotion course credits they took. Therefore, some classification or emphasis on the role of exercise should be put into the course contents modification in the near future.

5.4 Association between health-promoting lifestyles and biological characteristic

It was found that there was no significant association between health-promoting lifestyles and biological characteristic. This did not follow the third hypothesis. This result might be explained that there was no obviously difference in BMI of respondents in this study. In other words, the association between health-promoting lifestyles and biological characteristics could not be easily identified since the BMI of the respondents was homogeneous and their age was not at a risk of being obesity. This finding was consistent with the study of Prakit Potiarch (22), who found that body mass index was not related with alcoholic drinking behavior of teenagers.

Nevertheless, further analysis (see appendix D) showed that there was also no relationship between the weight and exercise dimension which was conflicted with Pender's finding. According to pender, she found weight to be a significant predictor of intention to engage in exercise. The higher the total body weight, lower the intention to exercise regularly. In several studies, percent body fat and total body weight discriminated consistently between exercise program adheres and dropouts, with over weight people finding it more difficult to continue with regular exercise when compare to individuals with less body fat or lower weight.

Yet, the result was contrary with Ubonrat Rungruengsilp(22) who found the body mass index was highly related with the health promotion behaviors of vocational students and could predict the behavior at 34.1 percent.

5.5 Association between health-promoting lifestyles and perceived health self-efficacy

As shown in table 20, it was found that there was a significant association between health-promoting lifestyles and perceived health self-efficacy, which was followed the fourth hypothesis. Linear association analysis pointed that self-reported health self-efficacy could explain 37.8% variance of health-promoting lifestyles .The overall perceived health self-efficacy of nearly half participants (49.22%) were at a moderate level which was higher than another group of clinical nursing students in Taiwan(45). This might contribute the higher score of health-promoting lifestyles when comparing with clinical nursing students in Taiwan.

This finding was consistent with health-promoting behaviors among 117 adults with disabilities studied by Stuifbergen(53). It was reported that the adults with disabilities were more likely to engage in a health-promoting lifestyles if they had higher self-efficacy for health behaviors. Gillis (54) who reviewed twenty-three articles and found that self-efficacy was the strongest predictor of health-promoting lifestyles also confirmed the finding. Conversely, evidence suggests that low self-efficacy contributes to maladaptive health behavior. Skutle (64) surveyed 203 adult and young adult alcoholic men and found a significant association between lower self-efficacy scores and experience of greater psychological benefit from drinking. Likewise, it has been reported that failure of college students to eat healthy diets could be, in part, because of decreased self-efficacy in making healthy food choices (65).

It was clear to see that four dimensions of perceived self-efficacy were significantly correlated with the dimensions of health-promoting lifestyles .Among four dimensions, the health responsibility scored the highest that can be explained that

the students might think they could take good care of themselves since they were health personnel. Unfortunately, they didn't practice it well in reality. In other words, as it can be seen in table 11, the health responsibility dimension in health-promoting lifestyles was in the fourth rank. It leaves a large space to identify the reasons for this gap between perception and practice. Also it would be very weak to persuade the clients follow nurse's advice if they couldn't perform a high health responsibility of themselves.

Perceived self-efficacy is an individual's belief that they are capable of achieving a goal. Bandura's Theory of self-efficacy (52) suggests that behavior is better predicted by people's beliefs in their capabilities to do whatever is needed to succeed than by the behavior's importance. Therefore, the further study can focus on how to improve the level of self-efficacy of nursing students and thus can enhance the level of health-promoting lifestyles.

5.6 Association between health-promoting lifestyles and perceived health status

It was revealed in this study that there was a significant positive association between health-promoting lifestyles and perceived health status, which confirmed the fifth hypothesis. The p-value was both significant at 0.01 level by using Spearman rank correlation and Chi-square test.

Such finding was similar to the Gillis's (50) study which indicated that a strong relationship existed between the predictor variables of perceived health status and adolescents' health-promoting lifestyles. Results from Larouche R's (51) and Clement's study also claimed that students' perceived health status was significantly predictive of total health promoting lifestyle. However, it was contrary with Stuifbergen's the result from a group of adults with disabilities that the perceived health status has no significant association between health-promoting lifestyles.

Additionally, it was still uncertain that whether the perceived health status could affect the health-promoting lifestyles directly or indirectly. It was possible that

positive perception of one's health status could increase the individual confidence thus enhanced the level of health self-efficacy, which indirectly contributes to the health-promoting lifestyle.

5.7 The prediction of related factors toward health-promoting lifestyles

It was shown in table 23 that there were three variables which had significantly positive association with health-promoting lifestyle . These three variables include age, perceived health self-efficacy , and perceived health status. Among all the related factors, perceived health self-efficacy was the strongest predictor for health-promoting lifestyle . If the nursing students perceived health self-efficacy mean score increase 1, his or her health-promoting lifestyles mean score will increase 0.38 score after adjusting for other factors. This finding confirmed the sixth hypothesis and also reinforced the earlier discussion part.

However, other two factors, namely, studying years and health course promotion taken, were found no significant association with health-promoting lifestyle. This may be explained that both of these two variables had a high correlation with age variable which shown in appendix E. Also , these two variables may have an indirect influence toward health-promoting lifestyle . In other words, they may enhance the health-promoting lifestyle by improving the health self-efficacy. Senior students with the more health promotion course taken might think they were more confident with their health practice abilities.

CHAPTER 6
CONCLUSION AND RECOMMENDATION

6.1 Conclusion

A cross-sectional analytic study was conducted among undergraduate nursing students at Faculty of Nursing, Mahidol University. This study aimed to examine the level of Health-Promoting Lifestyles of Nursing Students in Mahidol University, compare the health-promoting lifestyles among nursing students in terms of their demographic characteristics, as well as to identify the association between health-promoting lifestyles and possible related factors such as health promotion course taken, biological characteristic, perceived health self-efficacy , perceived health status .

This study was done from December 2005 to February, 2006. The target population was undergraduate nursing students who currently studied in Faculty of Nursing, Mahidol University. The sample comprised 321 nursing students from the freshman to senior who consented to participate in this study. The research instruments used for data collection was a self-administrative questionnaire that was consisted 4 parts: Socio-demographic and biological characteristics of respondent, Health-Promoting Lifestyle Profile, perceived health self-efficacy, perceived health status . The sections of questionnaire dealing with health-promoting lifestyle and perceived health self-efficacy were modified from Walker et al.(16) and Stuifbergen (52).The reliability of these two parts was 0.8295 and 0.8163 respectively. The data entered by using epidata and processed by Minitab 14 and SPSS software program. Kruskal-Wallis tests, Chi-square tests, Spearman rank correlation tests, Multiple regression were employed for data analysis. The results of this study according to the hypotheses were stated as the followings:

6.1.1 The overall health-promoting lifestyle of was considered at a moderate level (mean, SD=128.87, 14.29). The six dimensions of health-promoting lifestyle ranged from low to high. Interpersonal relations scored highest (mean=3.4408) and lowest in exercise (mean=2.3354), with ascending scores on stress management, health responsibility, nutrition and self-actualization.

6.1.2 Among demographic characteristics factor, there were difference in health-promoting lifestyles among groups who differ in age and studying year's groups. There were no difference in health-promoting lifestyles among groups who differ in gender, allowance, and living condition groups. This partially confirmed the first hypothesis.

6.1.3 There was significantly positive association between health promotion course taken and health-promoting lifestyles by using Chi-square (x^2=26.561,p<.001) and Spearman rank correlation (r=.341,p<.001). This was consistent with the second hypothesis .

6.1.4 There was no significant association between biological characteristic and health-promoting lifestyles by using Chi-square (x^2=3.949, p=.139) and Spearman rank correlation (r=-0.066 , p=0.242). This was contrary with the third hypothesis.

6.1.5 There was significantly positive association between perceived health self-efficacy and health-promoting lifestyles by using Chi-square (x^2=54.411, p<.001) and Spearman rank correlation (r=.617, p<.001). This was consistent with the fourth hypothesis.

6.1.6 There was significantly positive association between perceived health status and health-promoting lifestyles by using Chi-square (x^2=9.414,p<.01) and Spearman rank correlation (r=.596, p<.001). This was consistent with the fifth hypothesis.

6.1.7 Among all the related factors, perceived health self-efficacy was the strongest predictive variable that can explain 37.8% of health-promoting lifestyles.

6.2 Recommendations

6.2.1 Implications of Research Findings

6.2.1.1 These findings provide evidence that the most nursing students were at a moderate level of health-promoting lifestyles .There was still gap between the client's expectation and the nurse's real model performance. Nursing educators, as well as nursing students themselves should raise the concern about health-promoting lifestyles. It was preferred that they can take good care of themselves before they care others in the near future.

6.2.1.2 All the students reported a lowest score on exercise and the first year students scored low on stress management. Therefore, the nursing educator should pay much emphasis on the source of stress of freshman and find the suitable solutions. Moreover, some course modification was also suggested such as modify the contents of health promotion course, increase the time for physical activity course etc. Furthermore, the holistic evaluation would be encouraged for the student if academic performance oriented evaluation was existed.

6.2.1.3 The finding revealed self-reported health self-efficacy was the strongest predictive variable of health-promoting lifestyle. Thus, the nursing educator could motivate the students' potential to perform health-promoting lifestyles. Moreover, instructor's model role might also inspire the students to do the same thing.

6.2.2 Implications for future studies

6.2.2.1 Studies of health-promoting lifestyles among nursing students should be conducted on various groups of different setting in the future. The students who are studying in different college or even in different country, for instance, should be selected as target population to confirm the level of health-promoting lifestyles and related factors.

6.2.2.2 Focus group interview or in-depth interview could be a good method may provide more qualitative information about their understanding of health-promoting lifestyles concept and possible influential factors.

6.2.2.3 Longitudinal study was suggested for further study because it could give more evidence of causal factors.

6.2.2.4 Some experimental study was also suggested after launching some health education program or curriculum modification.

6.2.2.5 More variables in the Health Promotion Model would be selected in order to test the model.

REFERENCES

1. Center for Disease Control (CDC). Behavior risk factors surveillance –selected states: 1986. MMWR. 1987; 36: 252-54.
2. Thornbery OT. Health promotion and disease prevention provisional data from the National Interview Survey:United States, January-June 1985. Advance data from Vital and Health Statistics of the National Center for Health Statistics. 1986; 119:116.
3. Report of the U.S. Preventive Service Task Force. Guild to Clinical preventive services: An assessment of the effectiveness of 169 interventions. Baltimore,MD: Williams & Wilkins; 1989.
4. American Public Health Association. Health communities 2000:model standards. 3rd ed. Washington,DC: American Public Health Association; 1991.
5. Public Health Services.Healthy people 2000 national health promotion and disease prevention objectives.Washington,DC:US Government Printing Office;1991 DHHS publication no.(PHS) 91-50212.
6. National Health Planning Committee. Health Development Plan Under The Eight National Economic and Social Development Plan (1997-2001). Bangkok: Veteran Organization Press. 1996: 293.
7. Turner J. World Health Organization-charter for health promotion. Lance. 1986; 2:1407.
8. Pender NJ. Health production in nursing practice. New York: Appleton-Century-Crofts; [n.d.]
9. Pender NJ. Health promotion in nursing practice. 3rd ed. New York: Appleton & Lange. 1996.
10. Helen Keleher,Berni Murphy. Understanding Health:a determinants approach. 1st ed. Oxford university press; 2004.
11. Ley P. Communication with patients: Improving communication,satisfaction and compliance. London: Chapman and Hall; 1988.

12. Chen MY & Liao JC. Preliminary study of practicing health promotion lifestyle among the student nurses and nurses in Taoyuan area (Chinese). Nursing Research China. 1995: 3, 6-16.
13. Donoghue J, Duffeld,C, Pelletier,D , Adams,A. Health promoting as a nursing function: Perceptions held by university students of nursing. International Journal Nursing Studies. 1990: 27, 51-60.
14. Linda Haddad,Debbie Kane,Dale Rajacich, et al. A comparison of health practices of Canadian and Jordanian nursing students. Public Health Nursing. 2004; 21(1): 85-90.
15. Cockerham WC, Kunz G, Lueschen G. Social stratification and health lifestyles in two systems of health care delivery: a comparison of the United States and West Germany. J Health Soc Behav. 1988 Jun; 29(2): 113-26.
16. Walker, S.N., Sechrist, K. R., Pender, N.J. The health-promoting lifestyle profile. Nursing Research. 1987; 36(2): 76-81.
17. Flynn JB,Griffin PA.Health promotion in acute care setting.Nursing Clinics of North America. 1984; 19: 239-250.
18. WHO. Health education unit. Lifestyle and health. Social science and medicine. 1986; 22: 117-124.
19. Abel T . Measuring health lifestyles in a comparative analysis: theoretical issues and empirical findings. Soc Sci Med. 1991; 32(8): 899-908.
20. David S.Gochman. Health Behavior. New York :Plenum Press; 1988.
21. Harris DM,Guten S. Health-protective behavior: A exploratory study. Jounal of Health and Social behavior. 1979; 20: 17-29.
22. Reanu Payngulume. Health-promoting lifestyle of health personnel. [Master's thesis of public health] Bangkok: Faculty of Graduates Studies,Mahidol University;1996.
23. Green L.W., Krueter M.W. Health promotion planning: An educational and ecological approach. 3rd ed. Mountain View,CA: Mayfield; 1999.
24. Adderley-Kelly B, Green PM. Health behaviors of undergraduate African American nursing students. ABNF J. 2000 Jan-Feb; 11(1): 7-12.

25. Sheehan, M. M. Value of health, locus of control, and health behaviors among nurses. Master's project. Buffalo, NY: State University of New York at Buffalo; 1987.

26. Haughey, B. P., Kuhn, M. A., Dittmar, S. S., Wu, Y. W. Health care of critical care nurses. Heart & Lung: The Journal of Critical Care. 1992; 21: 203-208.

27. Connolly M. A., Gulanick M., Keough V., Holm K. Health practices of critical care nurses: Are these nurses good role models for patients?. American Journal of Critical Care. 1997; 6: 261-66.

28. Guidry ML, Wilson AM. Health promoting behaviors of African-American registered nurses. ABNF J. 1999 Mar-Apr; 10(2): 37-42.

29. Chen M. Y., Chou C. C., Liao J. C., Liao J. H. The preliminary study of health-promotion life-styles of public health nurses. Nursing-Research (China). 1994; 2: 41-54.

30. Callaghan, P. Hong Kong nurses' health-related behaviours: Implications for nurses' role in health promotion. Journal of Advanced Nursing. 1997; 25, 1276-82.

31. Riordan, J. M., & Washburn, J. Comparison of baccalaureate student lifestyle health behaviours entering and completing the nursing program. Journal of Nursing Education. 1997; 36: 262-65.

32. MacDonald M. B., Laing G. P., Faulkner, R. A. The relationship of health-promoting behaviour to health locus of control: Analysis of one baccalaureate nursing class. Canadian Journal on Cardiovascular Nursing. 1994; 5: 11-18.

33. Clement M., Bouchard L., Jankowski L. W., Perreault M. Health promotion behaviours in first-year undergraduate nursing students: A pilot study. Canadian Journal of Nursing Research. 1995,27, 111-131.

34. Dittmar SS, Haughey BP, O'Shea RM, Brasure J. Health practices of nursing students: a survey. Health Values. 1989 Mar-Apr;13(2):24-31.

35. Wai-Hing Choi Hui. The health-promoting lifestyles of undergraduate nurses in Hong Kong. Journal of Professional Nursing. 2002; 18: 101-111.

36. Pender NJ. Health promotion in nursing practice. 2rd ed. New York: Appleton & Lange; 1987.

37. Kuster A., Fong C. Further psychometric evaluation of the Spanish language health-promoting lifestyle profile. Nursing Research. 1993; 42: 266-69.

38. Pender N. J., Walker S. N., Sechrist K. R., Frank-Stromberg M. Predicting health-promoting lifestyles in the workplace. Nursing Research. 39, 326-332.

39. Weitzel, M. H. (1989). A test of the health promotion model with blue collar workers. Nursing Research. 1990; 38: 99-104.

40. Walker Volkan, Sechrist Pender. Health-promoting lifestyles of older adults:Comparisons with young and middle-aged adults,correlates and patterns. Advances in Nursing Science. 1988; 11: 76-90.

41. Callaghan P. A preliminary survey of nurses' health-related behaviors. International Journal Nursing Standard. 1995; 32: 1-15.

42. Stock C, Wille L, Kramer A. Gender-specific health behaviors of German University students predict the interest in campus health promotion. Health Promot Int. 2001 Jun; 16(2): 145-54.

43. Von Bothmer MI, Fridlund B. Gender differences in health habits and in motivation for a healthy lifestyle among Swedish university students. Nurs Health Sci. 2005 Jun; 7(2): 107-18.

44. Lucas JA, Orshan SA, Cook F. Determinants of health-promoting behavior among women ages 65 and above living in the community. Sch Inq Nurs Pract. 2000; 14(1): 77-100

45. SungSuh-jen, HuangJui-mei, LinLih-ying. Health-promoting lifestyles and its related factors among clinical nurses and students nurses. Rong Zong nursing. 2001; 18(2): 147-58.

46. Afifi Soweid R, El Kak F, Major S, Karam D, Rouhana A. Changes in health-related attitude and self-reported behaviour of undergraduate students at the American university of Beirut following a health awareness course. Educ Health (Abingdon). 2003 Nov; 16(3): 265-78.

47. Hsiao YC, Chen MY, Gau YM, Hung LL, Chang SH, Tsai HM. Short-term effects of a health promotion course for Taiwanese nursing students. Public Health Nurs. 2005.Jan-Feb; 22(1): 74-81.

48. Pantaleo N. Nurse, do you take care of yourself? Association of Operating Room Nurses Journal. 1977; 25: 54-59.

49. Soeken K. L., Bausell R. B., Winklestein, M., Carson V. J. Preventive behaviour: Attitudes and compliance of nursing students. Journal of Advance Nursing. 1989; 14: 1026-1033.

50. Gillis AJ. Determinants of health-promoting lifestyles in adolescent females. Can J Nurs Res. 1994 Summer; 26(2): 13-28.

51. Larouche R. Determinants of college students' health-promoting lifestyles. Clin Excell Nurse Pract. 1998 Jan; 2(1): 35-44.

52. Bandura, A. Self-efficacy: Toward a unifying theory of behavioral change. Psychological Review. 1977; 84: 119-215.

53. Stuifbergen AK, Becker HA. Predictors of health-promoting lifestyles in persons with disabilities. Res Nurs Health. 1994; 17(1): 3-13.

54. Determinants of a health-promoting lifestyle: an integrative review. J Adv Nurs. 1993 Mar; 18(3): 345-53.

55. Dinger M.K. & Waigandt A. Dietary intake and physical activity behaviors of male and female college students. American Journal of Health Promotion. 1997; 11(5): 360–362.

56. Centers for Disease Control. Youth Risk Behavior Surveillance: National College Health Risk Behavior Survey: United States. Mortality and Morbidity Weekly Report. 1997; 46(SS-6): 1–54.

57. Steptoe A., Wardle J. Health behaviour, risk awarenes and emotional well-being in students from Eastern Europe and Western Europe. Social Science & Medicine. 2001; 53: 1621–30.

58. Steptoe A., Phil D., Wardle J., et al. Trends in smoking, diet, physical exercise, and attitudes toward health in European university students from 13 countries, 1990–2000. Preventative Medicine. 2002; 35: 97–104.

59. Lazarus R.S. , Folkman S. Stress, Appraisal, and Coping. New York: Springer ; 1984.

60. Campbell R.L. , Svenson L.W. Perceived level of stress among university undergraduate students in Edmonton Canada. Perceptual and Motor Skills. 1992; 75: 552–554.

61. Misra R. Academic stress of college students: comparison of student and faculty perceptions. College Student Journal. 2000; 21: 1–10.

62. Allen S. , Heibert B. Stress and coping in adolescents. Canadian Journal of Counseling . 1991; 25: 19–32.

63. Pojana Lapying. Factors related to health-promoting lifestyle among health personnel at Chaoprayayomaraj Hospital,Suphanburi Province. [Master's thesis of public health] Bangkok: Faculty of Graduates Studies,Mahidol University; 2003.

64. Skutle A. The relationship among self-efficacy expectancies, severity of alcohol abuse, and psychological benefits from drinking. Addictive Behaviors. 1999; 24(1): 87–98.

65. Cusatis D.C. , Shannon B.M. Influences on adolescent eating behavior. Journal of Health and Social Behavior. 1996; 18: 27–34.

APPENDIX

APPENDIX A

Questionnaires on

Health-promoting lifestyle of nursing students in Mahidol University

Instruction Guide for Answering Questionnaire

Dear students:

I am a student of ASEAN Institute for Health Development, Mahidol University. Now, I am doing my master degree thesis which title is "Health-Promoting Lifestyles of Nursing Students in Mahidol University". This questionnaire is for research on this thesis.

The major objective of this study is to examine the level of Health-promoting lifestyle of nursing students, Mahidol University and analyse related factors. The result of this study will be reported to the nursing faculty as well. It is hoped that the result of this study would be beneficial for the model development of health-promoting lifestyle in our nursing students.

The questionnaires include 4 parts: Part 1: socio-demographic characteristics of respondents; Part 2: Self-reported health status; Part 3: Health-Promoting Lifestyle Profile; Part 4: Self-Reported health self-efficacy Scale. Would you please be kindly to answer every question in all 4 parts based on the truth so that I can process it just for research purpose? Your answer would be kept in highly confidential and processed statistically in overview manner. You also have rights to refuse answering it.

If you have any questions, please feel free to contact me: 051918352

Thank you very much!

Hong Jing Fang
1st, Jan, 2006.

ID:------

PART1: **Socio-demographic and biological characteristic of respondents**

Please fill in spaces or tick in a box of each item that is true

1. What is your gender?

☐ Male ☐ Female

2. How old are you? _____ Years

3. You are _____ year nursing student.

☐ First ☐ Second ☐ Third ☐ Fourth

4. How much money do you receive from your parents (parents refer to your father, mother or any kin) per month? _____ Baht

5 What is the type of your present accommodation/living place?

☐ With family ☐ Dormitory ☐ Rent house alone

☐ Others, please specify----------.

6. Your height: _____ cm

7. Your weight: _____Kg

8. Have you ever taken the course which title is "Health and Health promotion"?

☐ Already have taken ☐ Still have not taken

Part 2: self-reported health status scale

Please select one answer for each item and tick in a box of the answer which you think is true

1. Do you think whether you are easily to get sick when comparing with the peers?

☐ Yes ☐ almost same with others ☐ no

2. Do you think whether you are healthier than others when comparing with the peers?

☐ No ☐ almost same with others ☐ Yes

3. Comparing with the peers, please evaluate the overall heath status of yourself

☐ Bad ☐ not good, not bad, "normal" ☐ good

PART 3: Health-Promoting Lifestyle Profile

Please tick (✓)one answer the most appropriate practice which you engage in.

Scales below, you have four levels to express the frequency to do the things mentioned below. Please circle the level that is the closest to your real situation.

R: Routinely; **O:** Often; **S**: Sometimes; N: Never

Statement	R	O	S	N
Factor 1:Self-actualization 1. I believe that my life has purpose				
2. I am optimistic about life				
3. I look forward to the future				
4. I feel I am growing personally in positive directions				
5.I find each day interesting and challenging				
6.I feel happy and content				
7.I work toward long-term goals in my life				
8.I respect my own accomplishments				
9. I like myself				
10.I praise other people easily for their accomplishments				
11.I am aware of the sources of stress in my life				
12.I find my living environment pleasant and satisfied				
13.I can find constructive ways to express my feelings				
14.I am realistic about the goals that I set				
Factor 2:Health Responsibility 15.I can seek information from health personnel about how to take good care of myself				
16.I can discuss my health care concerns with health personnel				
17.I attend educational programs on personal health care				
18. I attend educational programs on improving the environment in which I live				
19.I observe my body at least monthly for physical changes/danger signs				

20.I check my pulse rate when exercising	R	O	S	N
21.I have my body pressure checked and know what it is				
22.I question my physician or seek a second opinion when I do not agree with recommendations				
23.I have annual dental examination				
24.I have annual physical examination				
25.I have six to eight hours of sleep per night				
Factor 3:Stress Management 26. I use specific methods to control my stress				
27. I take some time for relaxation each day				
28.I consciously relax muscles before sleep				
29.I concentrate on pleasant thoughts at bedtime				
30.I am aware of my personal strengths and weaknesses				
31.I practice relaxation or mediation for 15-20 minutes daily				
Factor 4:Interpersonal Support 32. I can get support from the person who care about me				
33.I spend time with close friends				
34.I discuss personal problems and concerns with persons close to me				
35.I maintain meaningful interpersonal relationships				
Factor 5:Nutrition 36. I eat breakfast everyday				
37.I eat 3 regular meals a day				
38.My regular diet include roughage/fiber (whole grains, raw fruits, raw vegetables)				
39.I choose foods without preservatives or other additives				
40.I drink water at least 6-8 glasses everyday				
Factor 6:Exercise 41.I do exercise vigorously for 20-30 minutes at least 3 times per week				
42.I perform stretching exercises at least 3 times per week				
43.I engage in recreational physical activities (such as swimming ,or walking, or soccer, or bicycling, or jogging)				

PART 4: **Self-Reported Health Self-efficacy Scale**

Supposing, you have scores from 0 to 4 in your hand to express the ability to do the things mentioned below. Please circle the scale that is closest to the level which you think **you are able** to do it **NOT** the things you do it daily.

0: you can not do it; **1: the level of your ability to do it is low;**

2: the level of your ability to do it is moderate; **3: the level of your ability to do it is high**

4: the level of your ability to do it is the highest

Statement	0	1	2	3	4
Factor1 :Nutrition 1.I Eat nutrition-balanced food, vegetables and fruits everyday					
2. I know which food has high fiber					
3. I can find healthy food which is suitable to my economic ability					
4. I drink enough water daily					
Factor 2:Exercise 5. I can do some exercises which is good for my health					
6. I can include exercises to my daily life					
7. I can find the convenient place to do the exercises					
8.I can do stretching exercises					
9. I can avoid to be hurt when do the exercises					
10.I know when I should stop the exercises					
Factor3: health responsibility 11. I can calculate my idea weight					
12. I brush my teeth regularly					
13. I can observe the abnormality of my body					
14. I can find the consulting place where need health information					
15. I know I need to see the health professionals when I have some signs					
Factor 4 psychological wellbeing 16. I do not feel lonely					
17. I can change something to reduce the stress					
18 I can do some pleasant things					
19. I can take some relaxed methods					
20. I can tell the family member or friends when I have some problem					

Appendix B: Frequencies, percentages, means and standard deviations of health-promoting lifestyles by item analysis

Statement	R (%)	O (%)	S (%)	N (%)	$\overline{X}$	SD	Comment
Factor 1:Self-actualization							
1.I believe that my life has purpose	72.59	21.50	5.91		3.67	.58	H
2.I am optimistic about life	49.53	43.61	6.85		3.43	.62	H
3.I look forward to the future	56.39	36.14	7.48		3.49	.63	H
4. I feel I am growing personally in positive directions	68.22	29.91	1.87		3.66	.51	H
5. I find each day interesting and challenging	29.91	43.61	26.17	0.31	3.03	.76	M
6. I feel happy and content	41.12	49.22	9.66		3.31	.64	H
7.I work toward long-term goals in my life	64.17	31.46	4.36		3.60	.57	H
8.I respect my own accomplishments	61.99	29.60	8.41		3.54	.65	H
9. I like myself	43.61	46.73	9.35	0.31	3.34	.66	H
10. I praise other people easily for their accomplishments	53.58	40.50	5.61	0.31	3.47	.62	H
11. I am aware of the sources of stress in my life	29.91	57.01	12.46	0.62	3.16	.66	M
12. I find my living environment pleasant and satisfied	19.63	52.02	27.73	0.62	2.91	.70	M
13. I can find constructive ways to express my feelings	20.56	52.34	27.10		2.93	.69	M
14. I am realistic about the goals that I set	28.97	55.76	14.95	0.31	3.13	.66	M
Factor 2:Health Responsibility							
15.I can seek information from	23.68	41.43	32.09	2.80	2.86	.81	M

health personnel about how to take good care of myself							
16. I can discuss my health care concerns with health personnel	24.30	41.12	32.09	2.49	2.87	.81	M
17.I attend educational programs on personal health care	44.55	48.29	7.17		3.37	.62	H
18. I attend educational programs on improving the environment in which I live	30.53	47.66	19.94	1.87	3.07	.76	M
19. I observe my body at least monthly for physical changes/danger signs	35.51	37.38	24.61	2.49	3.06	.84	M
20.I check my pulse rate when exercising	17.13	30.22	43.61	9.03	2.55	.88	M
21.I have my body pressure checked and know what it is	12.77	24.92	51.40	10.90	2.40	.85	M
22. I question my physician or seek a second opinion when I do not agree with recommendations	31.15	37.69	30.53	0.62	2.43	.80	M
23. I have annual dental examination	25.86	60.12	13.08	0.93	2.33	.89	L
24. I have annual physical examination	4.05	12.46	49.84	33.64	1.87	.78	L
25. I have six to eight hours of sleep per night	31.15	37.69	30.53	0.62	2.99	.80	M
Factor 3:Stress Management							
26. I use specific methods to control my stress	25.86	60.12	13.08	0.93	3.11	.65	M
27. I take some time for relaxation each day	37.38	52.65	9.66	0.31	3.27	.64	H

28. I consciously relax muscles before sleep	11.84	25.55	49.53	13.08	2.36	86	L
29.I concentrate on pleasant thoughts at bedtime	13.08	34.58	49.84	2.49	2.58	.75	M
30.I am aware of my personal strengths and weaknesses	28.04	50.47	20.25	1.25	3.05	.73	M
31. I practice relaxation or mediation for 15-20 minutes daily	5.30	6.85	51.71	36.14	1.81	.78	L
Factor 4:Interpersonal Support							
32. I can get support from the person who care about me	59.19	36.45	4.36		3.55	.58	H
33.I spend time with close friends	38.94	48.29	11.84	0.93	3.25	.70	H
34.I discuss personal problems and concerns with persons close to me	50.16	38.32	10.90	0.62	3.38	.70	H
35.I maintain meaningful interpersonal relationships	61.06	36.14	2.80		3.58	.55	H
Factor 5:Nutrition							
36. I eat breakfast everyday	45.79	25.55	26.79	1.87	3.15	.88	M
37.I eat 3 regular meals a day	44.86	28.66	24.92	1.56	3.17	.86	M
38.My regular diet include roughage/fiber (whole grains, raw fruits, raw vegetables)	45.17	42.68	11.84	0.31	3.33	.69	H
39.I choose foods without preservatives or other additives	20.87	50.47	25.86	2.80	2.89	.76	M
40.I drink water at least 6-8 glasses everyday	21.50	49.53	26.17	2.80	2.90	.76	M

Factor 6:Exercise

41.I do exercise vigorously for 20-30 minutes at least 3 times per week	7.79	13.40	65.11	13.71	2.15	.75	L
42.I perform stretching exercises at least 3 times per week	11.84	29.91	49.84	8.41	2.45	.81	M
43.I engage in recreational physical activities (such as swimming ,or walking, or soccer, or bicycling, or jogging)	9.97	27.73	54.83	7.48	2.40	.77	M

Appendix C: Frequencies, percentages, means and standard deviations of Self-reported health self-efficacy by item analysis

Statement	0 (%)	1 (%)	2 (%)	3 (%)	4 (%)	$\bar{X}$	SD	Comment
Factor 1: Nutrition								
1.I Eat nutrition-balanced food, vegetables and fruits everyday	0.31	3.12	22.43			44.5 29.60		3.00
2. I know which food has high fiber		0.62	9.03	32.71	57.63	3.47	.68	H
3. I can find healthy food which is suitable to my economic ability		0.31	18.07	49.84	31.78	3.13	.70	M
4. I drink enough water daily		4.67	25.23	36.76	33.33	2.99	.88	M
Factor 2:Exercise								
5. I can do some exercises which is good for my health	2.80	22.43	42.99	22.43	9.35	2.13	.96	L
6. I can include exercises to my daily life	6.85	34.89	40.81	11.84	5.61	1.74	.95	L
7. I can find the convenient place to do the exercises	4.05	23.99	41.74	20.56	9.66	2.08	.99	L
8. I can do stretching exercises	5.92	31.78	42.06	14.64	5.61	1.82	.95	L
9. I can avoid to be hurt when do the exercises	1.87	9.35	34.27	36.14	18.38	2.60	.95	M
10. I know when I should stop the exercises	2.18	5.92	24.61	40.81	26.48	2.83	.96	M

Factor3: health responsibility								
11. I can calculate my idea weight	0.31	2.18	11.21	31.78	54.52	3.38	.79	H
12. I brush my teeth regularly		0.31	2.49	11.21	85.98	3.83	.46	H
13. I can observe the abnormality of my body	0.31	0.62	14.02	36.45	48.60	3.32	.76	H
14. I can find the consulting place where need health information	0.31	3.74	23.36	37.07	35.51	3.04	.88	M
15. I know I need to see the health professionals when I have some signs		2.49	23.99	37.07	36.45	3.07	.84	M
Factor 4 psychological wellbeing								
16. I do not feel lonely	1.56	4.98	23.99	41.43	28.04	2.89	.92	M
17. I can change something to reduce the stress	0.31	1.56	18.69	47.66	31.78	3.09	.77	M
18 I can do some pleasant things	0.62	0.31	9.66	48.60	40.81	3.29	.70	H
19. I can take some relaxed methods	0.31	1.56	9.97	49.84	38.32	3.24	.72	H
20. I can tell the family member or friends when I have some problem	0.62	1.87	18.69	38.94	39.88	3.16	.83	M

Appendix D: Correlation between BMI and mean of exercise dimension of HPL by pearson correlation analysis

Variable	BMI	Mean Exercise
BMI		
Pearson correlation	1.00	-0.058
p-value		.298
Mean Exercise		
Pearson correlation	-0.058	1.00
p-value	.298	

Appendix E: Matrix correlation between independent variables

	Age	Study year	Allowance	course	Health efficacy	Health status	Living arrange	Gender
Studying	0.726							
year	.000							
Allowance	0.095	0.137						
	0.089	.014						
course	0.690	0.913	0.135					
	.000	.000	.016					
Health	0.279	0.336	0.057	0.366				
efficacy	.000	.000	.308	.000				
Health	0.089	0.071	-0.078	0.049	0.131			
status	.110	.207	.165	.385	.019			
Living	0.113	0.020	0.195	0.021	0.069	0.019		
arrange	.043	.718	.000	.704	.216	.739		
Gender	-0.16	-0.092	-0.024	-0.061	-0.106	-0.016	-0.061	
	.004	.102	.664	.273	.059	.775	.274	
BMI	0.073	-0.086	0.056	-0.094	-0.079	-0.110	0.032	-0.07
	.192	.126	.318	.092	.156	.048	.571	.241

No 3/2549

Documentary Proof of Ethical Clearance

The Committee of Ethical Screening and Human Rights Protection in Research

Faculty of Nursing,Mahidol University,Bangkok,Thailand

Title of Project: Health-Promoting Lifestyles of Nursing Students in Mahidol University

Principle Investigator: Miss Hong Jingfang

Name of Institute: ASEAN Institute for Health Development,Mahidol University

Approved by

The Committee of Ethical Screening and Human Rights Protection in Research

From 26 January ,2006 to 26,January,2007

Associate Professor Chaweewan Posre

Associate Dean for Administrative and Environmental Development

Date of Approval: 26 January ,2006

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