HEALTH-PROMOTING BEHAVIORS IN PREGNANT WOMEN:

A STUDY OF PERCEIVED BENEFITS

AND BARRIERS TO ACTION

WILAWON THANOMROOP

A THESIS SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR
THE DEGREE OF MASTER OF NURSING SCIENCE
(MATERNAL AND CHILD NURSING)
FACULTY OF GRADUATE STUDIES
MAHIDOL UNIVERSITY
2000

ISBN 974-664-814-4

Thesis

entitled

HEALTH-PROMOTING BEHAVIORS IN PREGNANT WOMEN: A STUDY OF PERCEIVED BENEFITS AND BARRIERS TO ACTION

Wilawon Thanomroop
.....
Miss Wilawon Thanomroop
Candidate

Yupin Chandaragga
.....
Asst. Prof. Yupin Chandaragga, M. Ed.
Major–Advisor

Supranee Athaseri
.....
Assoc. Prof. Supranee Athaseri, M. Ed.
Co–advisor

Nittaya Sinsuksai
.....
Asst. Prof. Nittaya Sinsuksai, Ph. D.
Co–advisor

.....
Prof. Liangchai Limlomwongse, Ph. D.
Dean
Faculty of Graduate Studies

Kobkul Phancharoenworakul
.....
Assoc. Prof. Kobkul Phancharoenworakul, Ph. D.
Chairman
Master of Nursing Science
Faculty of Nursing

Thesis

entitled

HEALTH-PROMOTING BEHAVIORS IN PREGNANT WOMEN: A STUDY OF PERCEIVED BENEFITS AND BARRIERS TO ACTION

was submitted to the Faculty of Graduate Studies, Mahidol University
for the degree of Master of Nursing Science (Maternal and Child Nursing)
on
September 29, 2000

Wilawon Thanomroop
Miss Wilawon Thanomroop
Candidate

Yupin Chandaragga
Asst.Prof.Yupin Chandaragga,
M.Ed.
Chairman

Fongcum Tilokskulchai
Assoc.Prof.Fongcum Tilokskulchai,
Ph.D.
Member

Supranee Athaseri
Assoc.Prof.Supranee Athaseri,
M.Ed.
Member

Kitirat Techatraisak
Dr.Kitirat Techatraisak,
M.D., Ph.D.
Member

Nittaya Sinsuksai
Asst.Prof.Nittaya Sinsuksai,
Ph.D.
Member

Liangchai Limlomwongse
Prof.Liangchai Limlomwongse,
Ph.D.
Dean
Faculty of Graduate Studies
Mahidol University

Kobkul Phancharoenworakul
Assoc. Prof. Kobkul Phancharoenworakul,
Ph.D.
Dean
Faculty of Nursing
Mahidol University

ACKNOWLEDGEMENT

I would like to express my deepest gratitude to a number of person who helped me with this thesis. First of all, my gratitude is expressed to the members of my thesis committee, without whom I would not have been able to complete my study. Asst.Prof.Yupin Chandaragga, who chaired the committee, has kindly given her time and invaluable suggestion in developing this thesis from an unorganized research idea to a proposal and to the actual research. Assoc.Prof.Supranee Athaseri, Asst.Prof. Nittaya Sinsuksai, Assoc.Prof. Fongcum Tilokskulchai and Dr. Kitirat Techatraisak also gave me innumerable constructive comments and informative insights about various thesis components. This thesis would not have existed without the guidance of these thoughtful and approachable professors.

I would also like to thank all the experts, who carefully evaluated the questionnaires for content validity as well as all the subjects participating in this study, who willingly shared their time and energy in completing the questionnaires and participating in the field testing.

I am very in debt for the director of Nan Hospital, University Development Commission (UDC.) and Faculty of Nursing of Srinakharinwirot University for their financial support.

Last but not least, I owe my profound gratitude to my beloved parents who continuously give me morale support and enable me to complete my studies at Mahidol University.

Miss Wilawon Thanomroop.

4137044 NSMC/M : MAJOR : MATERNAL AND CHILD NURSING ; M.N.S (MATERNAL AND CHILD NURSING)
KEY WORDS : HEALTH-PROMOTING BEHAVIORS / PERCEIVED BENEFITS / PERCEIVED BARRIERS / PREGNANT WOMEN

WILAWON THANOMROOP: HEALTH-PROMOTING BEHAVIORS IN PREGNANT WOMEN: A STUDY OF PERCEIVED BENEFITS AND BARRIERS TO ACTION. THESIS ADVISORS: YUPIN CHANDARAGGA, M.Ed., SUPRANEE ATHASERI, M.Ed., NITTAYA SINSUKSAI, Ph.D. (NURSING), 100 P. ISBN 974-664-814-4.

Health-promoting behaviors in pregnant women bring about healthy mothers and infants. The purposes of this study were to explore perceived benefits of action, perceived barriers to action, health-promoting behaviors and to examine predictors of health-promoting behaviors in pregnant women. The sample was composed of 250 pregnant women who attended the antenatal care units at Siriraj Hospital, Rajvithi Hospital, Bangkok Metropolitan Administration Medical College and Vajira Hospital. Four different questionnaires concerning personal data, perceived benefits of action, perceived barriers to action and health-promoting behaviors were used for data collection. Data were analyzed by using multiple correlation coefficients and the stepwise multiple regression.

The results of the study demonstrated that health-promoting behaviors of most pregnant women were at a rather good level. A mean score of perceived benefits of action was at a high level and a mean score of perceived barriers to action was at a low level. Multiple regression revealed that 22 percent of variance of health-promoting behaviors was accounted for by three factors: age, perceived benefits of action and perceived barriers to action ($p < 0.01$).

The researcher suggested that nurses should screen pregnant women with three significant factors: age, perceived benefits of action and perceived barriers to action in order to know who are at risk to have poor health-promoting behaviors. Moreover, nurses should initiate an intervention program to help the women to realize the importance of health-promoting behaviors in order to maintain those behaviors.

4137044 NSMC/M : สาขาวิชา : การพยาบาลแม่และเด็ก; พย.ม. (การพยาบาลแม่และเด็ก)

วิลาวัลย์ ถนอมรูป : การศึกษาการรับรู้ประโยชน์ การรับรู้อุปสรรคของการปฏิบัติกิจกรรมส่งเสริมสุขภาพกับพฤติกรรมส่งเสริมสุขภาพกับพฤติกรรมส่งเสริมสุขภาพของหญิงตั้งครรภ์ (HEALTH-PROMOTING BEHAVIORS IN PREGNANT WOMEN: A STUDY OF PERCEIVED BENEFITS AND BARRIERS TO ACTION). คณะกรรมการควบคุมวิทยานิพนธ์ : ยุพิน จันทรัคคะ , ค.ม., สุปราณี อัทธเสรี , ค.ม., นิตยา สินสุกใส , Ph.D., 100 หน้า. ISBN 974-664-814-4.

พฤติกรรมส่งเสริมสุขภาพจะช่วยให้หญิงตั้งครรภ์และทารกในครรภ์มีสุขภาพสมบูรณ์ ผู้วิจัยจึงสนใจศึกษาพฤติกรรมส่งเสริมสุขภาพของหญิงตั้งครรภ์ และปัจจัยที่มีอิทธิพลต่อพฤติกรรมส่งเสริมสุขภาพของหญิงตั้งครรภ์ ได้แก่ การรับรู้ประโยชน์ การรับรู้อุปสรรคของการปฏิบัติกิจกรรมส่งเสริมสุขภาพ อายุ ระดับการศึกษา รายได้ของครอบครัว อายุครรภ์ และลำดับที่ของการตั้งครรภ์ กลุ่มตัวอย่างเป็นหญิงตั้งครรภ์ ที่มาฝากครรภ์ที่โรงพยาบาลศิริราช โรงพยาบาลราชวิถี และวิทยาลัยแพทยศาสตร์และวชิรพยาบาล จำนวน 250 ราย ผู้วิจัยเก็บข้อมูลโดยใช้แบบสอบถามพฤติกรรมส่งเสริมสุขภาพ การรับรู้ประโยชน์และการรับรู้อุปสรรคของการปฏิบัติกิจกรรมส่งเสริมสุขภาพ วิเคราะห์ข้อมูลโดยการคำนวณค่าสัมประสิทธิ์สหสัมพันธ์พหุคูณ และวิเคราะห์การถดถอยพหุแบบขั้นตอน

ผลการวิจัยพบว่า หญิงตั้งครรภ์มีพฤติกรรมส่งเสริมสุขภาพอยู่ในระดับค่อนข้างดี การรับรู้ประโยชน์ของการปฏิบัติกิจกรรมส่งเสริมสุขภาพอยู่ในระดับมาก และการรับรู้อุปสรรคของการปฏิบัติกิจกรรมส่งเสริมสุขภาพอยู่ในระดับน้อย และพบว่าอายุ การรับรู้ประโยชน์ และการรับรู้อุปสรรคของการปฏิบัติกิจกรรมส่งเสริมสุขภาพ สามารถร่วมทำนายพฤติกรรมส่งเสริมสุขภาพของหญิงตั้งครรภ์ได้ร้อยละ 22.0 อย่างมีนัยสำคัญทางสถิติที่ระดับ 0.01

ผู้วิจัยมีข้อเสนอแนะว่า พยาบาลควรประเมินหญิงตั้งครรภ์ใน 3 ปัจจัย ได้แก่ อายุ การรับรู้ประโยชน์และการรับรู้อุปสรรคของการปฏิบัติกิจกรรมส่งเสริมสุขภาพ เพื่อที่จะทราบว่าหญิงตั้งครรภ์รายใดที่มีภาวะเสี่ยงต่อการมีพฤติกรรมส่งเสริมสุขภาพอยู่ในระดับต่ำ เพื่อที่พยาบาลจะได้ให้คำแนะนำแก่หญิงตั้งครรภ์เหล่านั้น ให้มีการรับรู้ประโยชน์ของการปฏิบัติกิจกรรมส่งเสริมสุขภาพ และมีพฤติกรรมส่งเสริมสุขภาพที่ถูกต้องในขณะตั้งครรภ์ต่อไป

LIST OF CONTENTS

LIST OF CONTENTS (CONT.)

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

INTRODUCTION

Background and Significance of the Study

Having a baby is a normal natural physiological event for which a woman's body is designed, although it has never been considered to be free of risk. In Thailand, the maternal and neonatal mortality rates are still high. In 1996, the maternal mortality rate was 43.9 per 100,000 live births, whereas the infant mortality rate was 26.1 per 1,000 live births (Ministry of Public Health, 1997: 23). One of the major goal of The Eighth National Economic and Social Development Plan (1997-2001) is the decreasing of infant and maternal mortality to be less than 20 per 100,000 and 21 per 1,000 live births respectively (Ministry of Public Health, 1997: 11).

Inappropriate health behavior may be cause of the infant and maternal mortality. Poor nutrition, strenuous work, insufficient rest, anxiety, stress and lack of prenatal care lead to unhealthy mothers and infants as well as severe complications (Tongsong & Wanapirak, 1998: 82-100). Common complications of pregnant women include antepartum hemorrhage, pre-eclampsia, anemia, premature labor, pre- and post-partum hemorrhage (Jatukrajinda, et al., 1991: 95). Health-promoting behaviors, on the contrary, can prevent and control those complications and lead to good quality life for mothers and infants (Simarak & Tongsong, 1994: 186-192; Srisomboon, Oranratanachai & Wanapirak, 1995: 103-116). Health-promoting behaviors should be considered beneficial for improving the health status of pregnant women, controlling

and preventing serious complications, leading happiness to their family, and bringing good results to the country.

Health-promoting behaviors in pregnant women are the activities that women perform in order to improve their physiological, psychological and social conditions. The healthy lifestyle, classified by Pender (1996: 66-73), is composed of six major components as follows: health responsibility, physical activity, nutrition, interpersonal relations, spiritual growth, and stress management.

Health responsibilities for every pregnant woman are seeking routine prenatal care services and information related to pregnancy in order to improve her self-care. The informations related to pregnancy include signs and symptoms of disorder or complications, nutritional diet, activity and rest, and dental care play an important role in prevention of complications during pregnancy (Wren, 1985: 29). A study of Poungsub (1989: 90) showed that the pregnant women who were lack of prenatal care or received few prenatal cares had a higher mortality rate than the ones who received prenatal care regularly.

Physical activity is the activity about body movement, which includes exercises and activities in daily life. A pregnant woman should remain active during pregnancy, participate in her normal activities but avoid activity that causes unnecessary fatigue especially during the later months. Premature labour and low birth weight infant may be induced (Clark, Affonso & Harris, 1979: 30, Jensen, Benson & Bobak, 1979: 20). Proper bending and lifting techniques help a pregnant woman to avoid back and muscle strain (Intaraprasert, 1987: 63).

Nutrition is the behavior about eating habits and an appropriate diet for pregnant women. The women should develop healthy eating habits including adequate

caloric intake, a high protein diet and appropriate vitamin-mineral supplements. Some eating habits, such as taking alcohol as well as other forms of alcohol including spirits, fortified wines and beer should be avoided. A list of nutrients, which is necessary during pregnancy such as menu suggestions, recipes and shopping advice should be provided for pregnant women. Abel (1979: 176) found that to promote good nutrition to pregnant woman is to make her understand about the important of nutrition. Moreover, good nutrition would decrease the mortality and morbidity of both mother and infant.

Interpersonal relationships are the activities about the ability to make relationship with other people. A pregnant woman should have these activities in order to support and help herself when she has some problems. A good relationship brings a warm comfort atmosphere for encouraging health-promoting behaviors (Caplan, 1974: 94). Moreover, a study of Oprasertsawat (1988: 94) found that social support positively affected the health promoting behaviors.

Spiritual growth is the activity to develop one's spiritual nature to its greatest potential, including the ability to discover and articulate one's basic purpose in life, to learn how to help, to love, to be joyful, to be peaceful and to be fulfilled and how to help oneself and others achieve their greatest potentiality. A pregnant woman who is enthusiastic in her activities will meet her goal and have spiritual growth (Wallace, Brennan & Haines, 1984: 261-262). A study of Pongsphus (1980) found that a sense of self-value influences health-promoting behavior.

Stress management is the activity which could make self-relaxation. These activities include having leisure time and sufficient rest. Pregnant women should practice relaxation technique, take the balance of work and rest, and plan to manage

their situation (Tongsawat, 1988: 227). According to Sunakorn, et al. (1988: 42), levels of stress in pregnant women were correlated with low-birth weight infant, neonatal death and perinatal death (Norbeck & Tilden, 1983:46).

According to Health Promotion Model (Pender, 1996), health-promoting behavior of a pregnant woman may be influenced by two groups of major factors: the first group, behavior-specific cognition and affect and the other, individual characteristics and experiences. Behavior-specific cognition and affect are considered to be of major motivational significance in health-promoting behavior. This category of variables consists of perceived benefits of action, perceived barriers to action, perceived self-efficacy, activity-related affect, interpersonal influences and situation influences. Individual characteristics and experiences affect subsequent actions. The strength of effects depends on the target behaviors. Individual characteristics and experiences consist of prior related behaviors and personal factors. Many previous studies had explored the relationships of health-promoting behaviors and those variables such as perceived self-efficacy, perceived benefits of action, perceived barriers to action and selected personal factors (Patanavanichnun, 2000; Suwabhabh, 1999). However, limitation of the studies was all the subjects were pregnant industrial workers. Therefore, this study chose to study health-promoting behaviors in all career pregnant women.

Perceived benefits of action are belief, feeling and cognition of a pregnant woman about the heath-promoting behaviors. A pregnant woman who has believes in benefits or positive outcome expectation will have appropriate health-promoting behaviors. A study of Nirattharadorn (1996: 84) found the positive correlation between

the perceived benefit of health-promoting behavior and health-promoting behavior in adolescent pregnant women.

Perceived barriers to action are the anticipated barriers about the unavailability, inconvenience, expense, difficulty or time-consuming nature of a particular action. Anticipated barriers of a pregnant woman may block the health-promoting behavior (Becker, 1974: 4-5). Barriers usually arouse motives of avoidance in relation to a given behavior. A pregnant woman who perceives low barriers will be ready to perform health-promoting behaviors (Pasunun, 1986: 82).

The **personal factors** including **age, education, family income, gestational age** and **gravidity** are proposed to have effects on health promoting behaviors (Pender, 1996). The older should have more experience to make them capable of considering or judging well (Lazarus & Folkman, 1984: 172). Lambert & Lambert (1979: 210) found that adults who had maturity were more responsible for their health and easily understood their treatment and their self-care. Education is an important factor that have an influence on the seeking-knowledge behaviors. It is correlated with health prevention. Opasiriwit (1988: 44) found that educational level was positively affected the perceived benefits of self-care services. It helps people to learn, understand, and perform their basic need activity (Edelman & Mandle, 1990: 18). Nounboonang (1992: 85) found statistically positive correlation between family income and health-promoting behavior in pregnant women.

A difference of gestational age would bring a different feeling and interest in health status of a pregnant woman (Olds, et al., 1980: 228-299). The previous pregnancy also gives an experience to engage in health-promoting behavior and helps

pregnant women to understand and solve problem better than the primigravida (Cropley, 1979: 14).

Health-promoting behaviors in pregnant women are very important to improve the health status of both mothers and infants. Therefore, the researcher aimed to study the health-promoting behaviors and some influencing variables including perceived benefits of action, perceived barriers to action and some personal factors such as age, education, family income, gestational age and gravidity in order to be a guideline for prenatal care service to promote health-promoting behavior for pregnant women.

Statement of the Problem

How well do age, education, family income, gestational age, gravidity, perceived benefits of action and perceived barriers to action explain health-promoting behaviors?

Purposes of the Study

1. To describe perceived benefits of action, perceived barriers to action and health-promoting behaviors in the pregnant women.

2. To investigate whether some demographic characteristics such as age, education, family income, gestational age, gravidity, perceived benefits of action and perceived barriers to action can explain the variability of health-promoting behaviors in the pregnant women.

Conceptual Framework

This study used Pender's Health-Promotion Model to be conceptual framework. Health-promoting behaviors for pregnant women included six major components of healthy lifestyle. Walker, Sechrist & Pender (1987: 76-81; 1996: 136) described the six components as follows: health responsibility, physical activity, nutrition, interpersonal relations, spiritual growth and stress management. Moreover, unique personal characteristics, experiences, behavior-specific cognitions and affect are considered to be major motivations and influence health-promoting behavior (Pender, 1996 & Becker, 1974). The anticipated benefits or outcomes and barriers to action, the variables within behavior-specific cognitions and affect, influence health-promoting behavior of pregnant women. Age, education, family income, gestational age, gravidity, variables within personal factors, are also depicted to have an effect on health-promoting behaviors of pregnant women as shown in ***Figure I***.

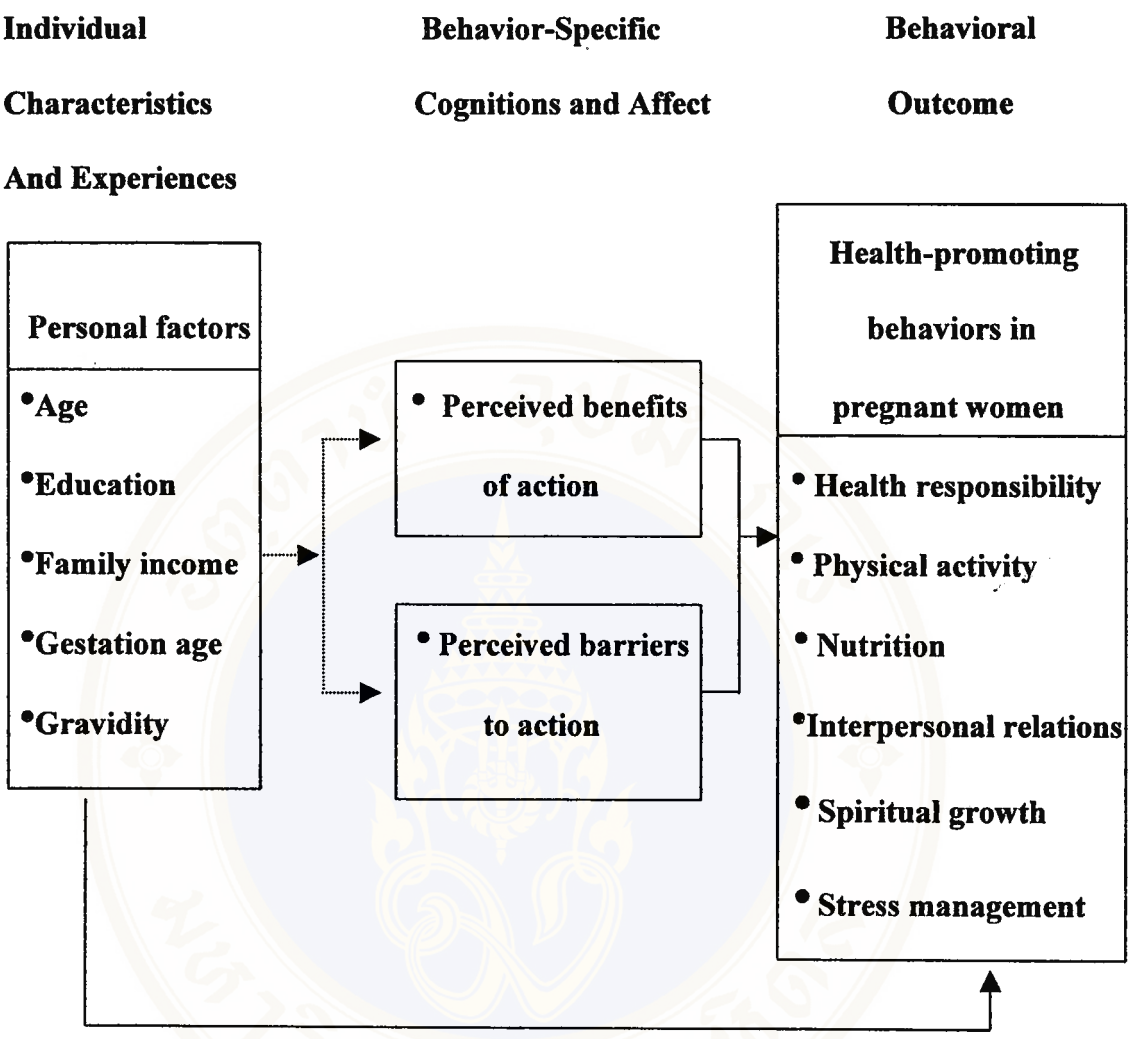

Figure I: Conceptual framework of the study demonstrates the relationships of factors influencing health-promoting behaviors in pregnant women.

Source: Adapted from the Health Promotion Model (Pender, 1996)

Hypothesis

Perceived benefits of action, perceived barriers to action, age, education, family income, gestational age and gravidity are the factors that can predict health-promoting behaviors in the pregnant women.

Scope of the Study

This research studies the factors influencing health-promoting behaviors in pregnant women. The sample was pregnant women who visitted antenatal care clinics at Siriraj Hospital, Rajvithi Hospital, Bangkok Metropolitan Administration Medical College and Vajira Hospital.

Definition of Terms

1. **Health-promoting behaviors in pregnant women** mean the actions of pregnant women in daily activities in order to improve their health status in physiological, psychological, emotional and social conditions. It could be determined by the questionnaires developed from Walker, Sechrist & Pender (1996:134) which is divided into six subsclaes:

1.1 Health responsibility means the actions of pregnant women about their health concern, including self-care, monitoring their physiological change, seeking health education and health care services in order to prevent some serious complications during pregnancy.

1.2 Physical activity means the actions of motor and body movement which require energy supply such as exercises and daily living activities in order to maintain the balance of their bodies.

1.3 Nutrition means the behaviors of pregnant women concerning eating habits and a proper diet judgement.

1.4 Interpersonal relations mean the actions of pregnant women about the ability to make a relationship with other people in order to receive social support.

1.5 Spiritual growth means the actions of pregnant women that express awareness of life priorities, determine purpose or plans of life, articulate to achieve their greatest potentiality and peace in life.

1.6 Stress management means the actions of pregnant women that help them to relax, have appropriate emotional expressions, have activities in leisure time and sufficient rest.

2. Perceived benefits of action are defined as the belief, the thought and the feeling of pregnant women regarding health-promoting behaviors, which give benefits to both themselves and their infants. The perception included the benefits of health responsibilities, physical activity, nutrition, interpersonal relationship, spiritual growth and stress management. In this study, perceived benefits of action was measured by the perceived benefits of health-promoting behaviors of adolescent pregnant women questionnaire developed by Nirattharadorn (1996) according to Backer's Health Belief Model (1974).

3. Perceived barriers to action are defined as the belief, the thought and the feeling of pregnant women regarding things, events, and activities that inhibit the conduct of health-promoting behaviors during pregnancy such as, money, facilitators and misbelieves.

4. Personal factors are defined as characteristics of pregnant women that affect health-promoting behaviors as follows:

4.1 Age means a full year of age of pregnant women starting to count since the date of birth and up to the date of the study.

4.2 Educational level means full years of education of the pregnant women since the first class to the final class.

4.3 Family income means the average income per month of pregnant women and their husbands.

4.4 Gestational age means the time period from the date of last menstruation period to the date of antenatal care counted by week at the time of this study.

4.5 Gravidity means the number of pregnancy of the pregnant women that are counted regardless of the outcome of the pregnancy.

Expected outcomes and benefits

Guidance for nurses to bring perceived benefits of action, perceived barriers to action and others factors to be components of assessment, planing to give knowledge, suggestion and assistance to promote health-promoting behaviors in the pregnant women.

CHAPTER II

LITERATURE REVIEW

The study is a descriptive research to examine health-promoting behaviors, the perceived benefits of and perceived barriers to health-promoting behaviors of pregnant women. The literature review is presented in following topics: a) health-promoting behaviors of pregnant women. b) factors influencing health-promoting behaviors of pregnant women.

Health-promoting behaviors of pregnant women

Health-promoting behaviors of pregnant women is important because pregnancy is one of the developmental tasks in women life. Pregnancy normally causes many complex and automatic physical, psychological and social changes in a women and may lead to some deviation from normal (Pritchard & MacDonald, 1985: 245). One cause of serious complications of pregnancy may be the effects of inappropriate health-promoting behaviors of pregnant women such as receiving inadequate recommended dietary allowances, insufficient rest, vigorous working, anxiety, stress and lack of prenatal care (Tongsong & Wanapirak, 1998: 82-100). Serious complications, which may occur during pregnancy, delivery and postpartum period, are bleeding per vaginal during pregnancy, pregnancy induced hypertension, maternal anemia (Jaturajinda, et al., 1991:95), preterm labour, postpartum hemorrhage, low birth weight, intrauterine growth retardation and neural tube defects. Those complications increase mortality and morbidity both for mothers and infants (Cranley, 1983: 14-16).

Health-promoting behaviors are very important for pregnant women to perform in their daily living in order to maintain their own health and baby health (Simarak & Tongsong, 1994:186-192; Srisomborn, Oranratanachai & Wanapirak, 1995:103-106). The good health behaviors can reduce the problem of infant health, control and prevent complications, decrease maternal mortality rate and infant mortality rate. Health-promoting behaviors can lead to the targets of the Eight National Socio-Economic Development Plan (1999-2001). That is well-being in family life.

The concept of health-promoting behaviors is the positive action life-style that is directed toward sustaining or increasing the individual's level of well-being, self-actualization and personal fulfillment (Walker, et al., 1992: 268; Palank, 1991: 818, Pender, 1996: 134). Health-promotion component of activities increase the levels of health and well-being and actualize or maximize the potential health of individual, family groups, community and country (Marray & Zentner, 1993: 659).

Health-promoting behaviors in pregnant women following Health-Promotion Model.

Pregnant women have to establish good health behaviors for the benefits of a healthy mother both physical and psychological condition during their pregnancy as well as a normal, growth development baby.

According to Health-Promotion Model (Walker, Sechrist & Pender, 1987: 76-81; Pender, 1996: 134), the major components of a healthy lifestyle will be developed by six dimensions including health responsibility, physical activity, nutrition, interpersonal relations, spiritual growth and stress management. Therefore, pregnant women should have these components in their health-promoting behaviors as follows:

1. Health responsibility. Pregnant women should have activities related to self-care management, observation of their body changes during pregnancy, seeking information or knowledge and prenatal care in order to promote their own health and the baby health as described below:

1.1 General hygiene. A woman is likely to perspire profusely during pregnancy. Frequent baths at least 2 times per day, either in the tub or in the shower, are needed. They should avoid hot water during the first trimester because it affects the development of neuro system of the fetus (Stoppard, 1993 cited by Tanansert, et al., 1995: 107).

The pregnant women should have good dental hygiene and have dental investigated regularly. Special breast care should be done especially after the first trimester by soap and clean water everyday (Chareonpanit, 1998:96). Beginning at about the sixth to seventh month of pregnancy, the nipple should be dried after bathing with a somewhat rough towel. Very limited soap should be applied to the breasts because soap removes the natural oils provided by Montgomery's glands. The women should be instructed to grasp the nipple firmly between the thumb and the index finger and to pull out slightly then twirl it back and forth several times. This exercise should be done daily in order to prepare breast-feeding.

Even though normal vaginal secretions are intensified during pregnancy, the women should not be douched unless it is prescribed for a vaginal tract infection. Only cleaning with soap and water around the outside genital area is sufficient (Burroughs, 1986:122).

1.2 Clothing. The clothing worn during pregnancy should be lightweight, non-constricting and comfortable. It is important that the pregnant women wear good

support brassieres, and she needs a larger size of brassieres as the pregnancy progresses. The high-heeled shoes increase the lumbar curvature and aggravate backaches, as pregnancy progresses and the women's center of gravidity moves forward. Lower-heeled shoes may be suggested and more comfortable (Novak & Broom, 1995: 128-129).

1.3 Prevent infection. Pregnant women should avoid the infectious person especially measles, mump, influenza, and chicken pox. Those infections may cause a deviation from normal structure or function of the fetus.

1.4 Smoking, alcohol consuming and drug addiction. Cigarette smoking should be stopped or reduced to a minimum during pregnancy. Nicotine contained in cigarette can impair maternal nutrients and have an impact on the fetus. Carboxyhemoglobin, which increases from cigarette smoking, can reduce oxygen available to the body tissues of the fetus. Therefore, cigarette smoking is not only jeopardizes the women's health but also has been associated with low birth weight, increased embryonic and fetal mortality rates as well as incidence of congenital anomalies (Cranley, 1983:15).

The ingestion of alcoholic beverages, such as beer, wine, liquor, during pregnancy should be discontinued. Mothers who consume alcohol during their pregnancy place their infant at risk for fetal alcohol syndrome (FAS) (Burrough, 1986: 115; Benson & Pernoll, 1994: 146-147).

1.5 Surrounding. The pregnant women should avoid the polluted environment such as air or noise pollution, toxin, chemicals and dust. They should try to find the green area.

1.6 Employment. Most women can continue their work during pregnancy. However, they should not be exposed to hazardous conditions or become seriously fatigue. They can continue their employment if it is not dangerous through out their pregnancy. However, it depends on several factors, one of which is the type of work, industrial hazards, the policy of the employer, and the health of the employee. The women whose employment requires more physical exertion should be adviced to take maternity leave earlier. Taking a rest during the day may help to avoid undue fatigue (Benson & Pernoll, 1994:145).

1.7 Sexual intercourse. In healthy pregnancies, no restriction on sexual intercourse exists. Intercourse is contraindicated, however, in the case of premature labor, rupture of membranes, vaginal bleeding, incompetent cervix, threatened or habitual abortion, multiple pregnancy (after the 28 th week), and vaginal herpesvirus or other sexually transmitted infection (Benson & Pernoll, 1994:145).

1.8 Drug. Pregnant women should not take drug by themselves. If there are some necessary condition, it should be closed supervision by physician (Hymovich & Chambelin, 1980:123). Some drugs such as tetracycline, choloquine, quinine, aspirin, can cross the placenta to embryo and fetus. Congenital abnormally, abnormal coagulogram, fetal distress, and low-birth weight are the consequences of those drugs.

1.9 Health-care service. Pregnant women should try to gain knowledge about all aspects of pregnancy and seek for health-care services. Regular prenatal care will assure that everything is normal and will help to detect for any deviation (Burrough, 1986:101). Pregnant women should go to visit ANC as early as possible.

2. Physical activity. Pregnant women should be encouraged to continue physical activity including suitable postures to avoid backpain and muscle strain.

Exercise is beneficial during pregnancy because it helps to improve strength and flexibility of muscles and joints as well as relief muscle strain (Chareonpanit, 1996:18; Burroughs, 1992:104). The appropriate exercise can improve the cardiovascular function, reduce common discomfort of pregnancy and tolerate the process of labor with less alteration in fetal cord blood (Benson & Pernoll, 1994: 145; Hacker & Moore, 1986: 8).

Walking is considered the ideal exercise for pregnant women, and they should be encouraged to walk at least 30 minutes in green area everyday (Intraraprasert, 1997: 63). Aggressive or vigorous exercise should be avoided. Women should be caution when they do activities requiring balance and co-ordination. A physician might be asked to provide the women with information of safe exercise. However, vigorous exercise during the third trimester may be a cause of premature labor or low birth weight baby (Clark, Affonso & Harris, 1979: 30).

3. Nutrition. The pregnant women should have appropriate eating habit to meet their requirements for nutrients. During pregnancy, fetal development requires many-listed nutrient to help their fetal growth. Good maternal nutrition is a major determinant of normal fetal growth and development. Clark, Affonso & Harris (1979: 176) reported that if pregnant women actually understood the importance of nutrition and promoted good maternal nutrition, the morbidity and mortality of both mother and baby would decrease.

The important nutrient for pregnant women are discussed below:

3.1 Protein provides necessary amino acids for rapid fetal tissue growth and builds supportive tissues for the mother and the fetus such as placenta, uterus, maternal blood volume and breast tissues. In order to meet her needs and those of the

developing fetus, the expectant mother should increase her daily intake of protein by about 30 grams or at least 40 % added of the non-pregnant women (Koawnu, 1991:272)

3.2 Carbohydrate gives calories to pregnant women to spend during activities of daily living. Food sources rich in carbohydrates include rice, bread, sugar and potato that a pregnant woman should eat as normal people (less than 6 cups per day).

3.3 Fat should receive as normal people, which is not more than 2.5 to 3 tablespoons per day and should be fat from plant not from animals.

3.4 Vitamins are essential for amino acid metabolism, protein synthesis, fetal growth and development. Therefore, vitamins should be included in pregnant women's diet, particularly vitamin A, C, and D intake need to be higher. These vitamins are found in citrus fruits, cantaloupes, tomatoes, green and yellow vegetables, and fish liver's oil.

3.5 Minerals. Minerals that need to be increased during pregnancy are calcium, iron and phosphorus. Cheese, ice cream, enriched cereal and green leafy vegetables are high in calcium. Iron is needed for hemoglobin formation, however, iron is poorly absorbed, therefore, in order to meet the demands of pregnancy a woman's intake of iron is supplemented by 300 mg of ferrous sulfate per day (a medical iron). Eggs, dark green leafy vegetable, dried fruit, red meat, liver are good food source of iron. Moreover, a pregnant woman should drink clean water at least 8-10 glasses per day.

4. Interpersonal relations. A pregnant woman should have some activities to create a relationship with other persons. They should contact people in the society

(Caplan, 1974: 73). People in social network can support each other in various aspects including in health-promoting behaviors. Pregnant women may receive some support about information that they can use it to solve their problems and to decrease their stress. Oprasertsawat (1988: 94) found that social support had a positive relationship with health-promoting behaviors and was a good predictor to health-promoting behaviors.

5. Spiritual growth. Spiritual health is the ability of pregnant women to develop one's spiritual nature to its greatest potential. These abilities include the ability to discover and articulate the basic purpose in their lives, the ability to learn how to experience love, joy, peace, and fulfillment, and the ability to help themselves and others to achieve their greatest potential (Pender, 1996: 129-130). If pregnant women could achieve their life goals, they will realize their reality and know better about themselves. They can use their power of knowledge and ability to solve any possible problems and have hope and zest for living to support. Similarly, Pongproug (1980) found that self-esteem had positive relationship with health-promoting behaviors.

6. Stress management. Pregnant women should have some activities by which could release the physical and psychological stress such as exercise, talk to close friends, travelling, or take time to relax. However, they to balance between physical activity and rest (Tongsawat, 1988: 227). Sunakorn, et al. (1988: 42) reported that a high level of stress during was associated with low birth weight and perinatal death.

Factors influencing health-promoting behaviors in pregnant women

According to Pender (1987) the six components of healthy lifestyle can enhance maternal and infant health if a pregnant woman engages in health-promoting behaviors. However, the differences in her lifestyle behaviors depend on many factors. According to Health Belief Model (Becker, 1974:3), an individual who takes an action to avoid an illness, the one needs to believe in 1) perceived susceptibility, 2) perceived severity, 3) perceived benefits, 4) perceived barriers and 5) have health motivation. This model is a foundation of the Health-Promotion Model developed by Pender (1987, 1996). Pender (1996: 66-73), the continuity of health-promoting behaviors depends on the two groups of major factors: individual characteristics and experiences and behavior-specific cognitions and affect presented in ***Figure II***.

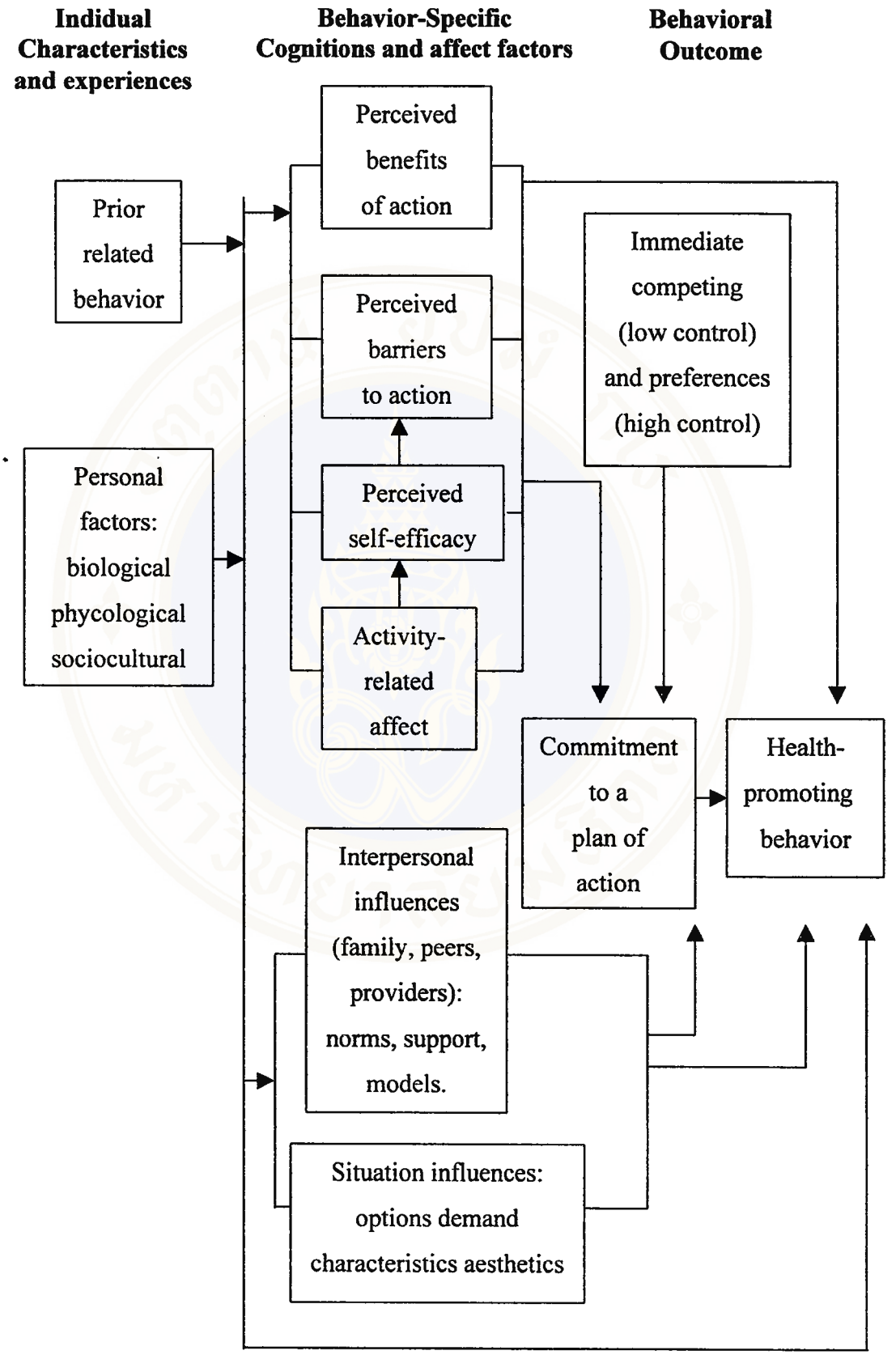

Figure II Revised Health Promotion Model

1. Individual characteristics and experiences consist of two factors: prior related behavior and personal factors.

1.1 **Prior related behavior** is proposed as having direct and indirect effects on the likelihood of engaging in health-promoting behaviors (Pender, 1996: 66 -67). The direct effect of current health-promoting behaviors may be due to habit formation, predisposing one to engage in the behavior automatically. The indirect effects influence health-promoting behaviors through perceptions of self-efficacy, benefits of, and barriers to those behaviors, and activity-related affect. Therefore, prior related behaviors have an impact on the behavior-specific cognitions and affect, which in turn, have an influence on health-promoting behaviors.

1.2 **Personal factors** have been categorized as biologic, psychologic and sociocultural aspects. **Personal biologic factors** include age, gender, body mass index, pubertal status, aerobic capacity, strength, agility, and balance. **Personal psychologic factors** include self-esteem, self-motivation, personal competence, perceived health status, and definition of health. **Personal sociocultural factors** include race, ethnicity, acculturation, education, and socioeconomic status.

2. Behavior-specific cognition and affects consist of six factors including perceived benefits of action, perceived barriers to action, perceived self-efficacy, activity-related affect, interpersonal influences and situational influences. The interrelationships are described below:

2.1 **Perceived benefits of action.** According to Pender (1996: 68-69), one's plan to engage in a particular behavior often depends on the anticipated benefits or outcomes that will occur. According to expectancy-value theory, a person will engage and persist in a given action when the outcome of taking action is of positive

personal value and is based on available information that is likely to bring about the desired outcome. In the health-promoting model, perceived benefits are proposed as having direct as well as indirect effects on health-promoting behavior (Pender, 1996).

2.2 **Perceived barriers to action** are the cognition, belief and affect, which come together with the perceived benefits of action. According to Pender (1996: 66-73), most individuals will not invest their efforts in any action, if they think that it is impossible to achieve their goals. Perceived the benefits of those behaviors. Perceived barriers to action are the obstacle for health-promoting behaviors. The barriers may be imagined or real which consist of perceptions concerning the unavailability, inconvenience, expense, difficulty, or time-consuming nature of a particular action (Pender, 1996: 69).

2.3 **Perceived self-efficacy** is a judgement of one's abilities to accomplish a certain level of performance. Perceptions of skill and competence in a particular domain motivate individuals to engage in those behaviors that they excel in. Feeling efficacious and skilled in one's performance is likely to encourage one to engage in the target behavior more frequently than feeling inept and unskilled. In the Health-Promotion Model, perceived self-efficacy is proposed as being influenced by activity-related affect. The more positive the affect, the greater the perceptions of efficacy. In turn, self-efficacy is proposed as influencing perceived barrier to action, with higher self-efficacy resulting in lowered perception of barriers to the performance of the target behavior. Self-efficacy motivates people to spend more time and effort to do health-promoting behaviors. Moreover, it makes people to persevere with the difficulties. Self-efficacy has an indirect effects on health-promoting behaviors

through lowering perceived barriers to action and persevering to do a plan of action (Pender, 1996: 69-70).

2.4 **Activity-related affect** is proposed as influencing health-promoting behaviors directly as well as indirectly through self-efficacy and commitment to a plan of action (Pender, 1996: 70). The affect associated with the behavior reflects a direct emotional reaction or gut-level response to the thought of the behavior, which can be positive or negative, and also may be is fun, delightful, enjoyable, averse, or unpleasant. Behaviors associated with positive affect are likely to be repeated, whereas those associated with negative affect are likely to be avoided. For some health-promoting behaviors, both positive and negative feeling states will be induced. Thus, the relative balance between positive and negative affect prior to, during, and following the behavior is important to ascertain. Based on social cognitive theory (Bandura, 1997), emotional responses either positive or negative and their induced physiologic states during a behavior serve as sources of self-efficacy.

2.5 **Interpersonal influences** are cognitions concerning the behaviors, beliefs or attitudes of others. They include norms (expectations of significant others), social support (instrumental and emotional encouragement), and modeling (vicarious learning through observing others engaged in a particular behavior). Individuals vary in the extent to which they are sensitive to the wishes, examples, and praise of others. However, given sufficient motivation to behave in a way consistent with interpersonal influences, individuals are likely to undertake behaviors for which they will be admired and socially reinforced. Susceptibility to the influence of others may vary developmentally and be particularly evident in adolescence (Pender, 1996: 70-71).

2.6 **Situational influences** on health-promoting behaviors include perceptions of options available, demand characteristics, and aesthetic features of the environment in which a given behavior is proposed to take place. Individuals are drawn to and perform more competently in situations or environmental contexts in which they feel compatible rather than incompatible, related rather than alienated safe and reassured rather than unsafe and threatened. Environments that are fascinating and interesting are also desirable for the performance of health behaviors (Pender, 1996: 71).

Since numerous influenced factors exist, those factors to be included in this study were limited to a few that include perceive benefits of action, perceived barriers to action and personal factors (age, education, family income, gestational age and gravidity). Although some variables such as perceived self-efficacy also have influenced on health-promoting behaviors of pregnant women, previous researches have been already explored the relationship among those variables. For example, Patanavanichnun (2000) reported that perceived self-efficacy and parity accounted for 29.6 percent of the variance in health-promoting behaviors of pregnant industrial workers. These results are consistent with the study of Suwabhabh (1999) which found that perceived self-efficacy, perceive benefits of action, and perceived barriers to action explained 35 percent of the variance in health-promoting behaviors of pregnant industrial workers. Because of limitation in specific samples, this study included perceive benefits of action and perceived barriers to action to be explore as well as some personal factors that are theoretically relevant to explanation and prediction of health-promoting behaviors during pregnancy of pregnant women as follows:

1. Perceived benefits of health-promoting behaviors in pregnant women.

Pregnant women's mental factors including cognition, belief and affect have an impact on health behavior outcome. Pregnant women tend to do health-promoting behaviors if they anticipate the benefits of doing those behaviors. They tend to invest time and resources in order to do those activities. Health-promoting behaviors in pregnant women include eating good nutrition, visiting prenatal care regularly, observing abnormal signs and symptoms, exercise, rest, making interpersonal relationships (Pilliteri, 1995:442-445), stopping cigarette smoking, stopping alcohol consumption and caffeine beverages, using drugs with physician prescribed and controlling their stress (Gorric, et al., 1994). The motivational importance of perceived benefits of those activities as described above has been supported by the conduct of Nirattharadorn (1996: 73). Her results showed a positive and significant relationship between perceived benefits of actions and the health-promoting behaviors of adolescent pregnant women. The benefits of each health-promoting behavior in pregnant women are described below:

1.1 **Nutrition**. Pregnant women should know that good maternal nutrition is a major determinant of fetal growth and development (Benson, 1980:121). Moreover, good nutrition can decrease the mortality of both mother and infant (Clark, Affonso & Harris, 1979: 276). Nutritious food enhances structure and functioning of the body for both the mother and the baby.

1.2 **Exercise:** Pregnant women should know that suitable physical activity can increase bowel movement that prevent constipation (Andolsek, 1990). Moreover, it help the mother to sleep well, to relax muscle, to relieve mental stress, to enhance feeling of well-being and to quickly return to normal after delivery (Broom & Novak,

1995: 128). Ferguson, et al. (1989: 114) indicated that perceived benefits of exercise were significantly associated with the willing to continue exercise.

1.3 **Rest:** Pregnant women should know that getting adequate rest can release stress and strain of body muscles. A side-lying position provides optimal circulation to the placenta and comfort for the pregnant women.

1.4 **Employment:** The pregnant women should know that avoiding heavy exertion work or avoiding work with chemical, pollution and toxin are good result for the health of the mothers and their fetuses (Beischer, 1986: 63).

1.5 **Accident prevention:** The pregnant women should know that awareness of traveling, climbing upstairs, and walking on wet and slippery floor as well as wearing low-heeled shoes is important to prevent accident (Pillitteri, 1995: 960).

1.6 **Personal hygiene:** Pregnant women should know the benefits of brushing teeth, checking teeth by a dentist, changing brassieres, cleaning genital area, and wearing light weight, non-constriction and comfortable clothes in order to prevent infection and enhance blood circulation.

1.7 **Avoidance of drug and other chemical substances**: Pregnant women should know that they should consult a physician when ever they use drugs. Moreover, alcohol, tea, coffee and cigarette smoking can cause congenital anormally and low-birth weight infant (Scott, Disaia, Hammond & Spellacy, 1994: 72).

1.8 **Prenatal care:** The pregnant women should know the benefits of prenatal care that can help to detect abnormal signs and symptoms. Furthermore, during antenatal visit, pregnant women will receive information regarding to pregnancy, health-promoting practice, and preparation for childbirth. Regular antenatal

visits are found to reduce the complication during pregnancy, intra- and post- partum period.

1.9 **Observing abnormal signs and symptoms:** The pregnant women should notice atypical signals including, bleeding from vagina, abdominal pain, edema, decreasing or increasing of fetal movement, static weight gain. If a pregnant woman can detect abnormal signs earlier, it can help to prevent or alleviate serious complication to the mother and the fetus (Andolsek, 1990: 15).

1.10 **Interpersonal relations:** The pregnant women should know that building relationship with others can help them for many aspects. They may have support and information from their social network. They can release a stress or anxiety if there is someone ready to listen to. Moreover, their member of social network may encourage them to conduct health-promoting behaviors (Pilliteri, 1995: 442).

2. Perceived barriers to health-promoting behaviors in pregnant women

The barriers to health-promoting behaviors in pregnant women may be imagined or real which consist of perceptions concerning the unavailability, inconvenience, expense, difficulty, or time-consuming nature of a particular action (Pender, 1996: 69). Stuifbergen, et al. (1990: 10) reported that perceived barriers to action were significantly related to the health-promoting behaviors. Pasunun (1986: 82) found that persons who perceived less barriers had good cooperation with the therapeutic plan. Nirattharadorn (1996: 92) also demonstrated that perceived barriers to health-promoting behaviors were accounted significantly for health-promoting behaviors of adolescent pregnant women.

The barriers to health-promoting behaviors for pregnant women are described as follows:

2.1 **Inconvenience for both time availability and traveling:** The pregnant women may perceive that health-promoting behaviors are time consuming. For example, the women have to wait for a long period to get through the process of ANC or to see a physician Klinger (1984: 32-37). Moreover, travelling from place in Bangkok is not convenient for people, particularly, pregnant women. Moreover, pregnant women may also perceived that exercise consume much time to do. Therefore, they are not interested in exercise (Hacker & Moore, 1986: 58).

2.2 **Lack of resources**: Financial problems and lack of some resources are the barriers to health-promoting behaviors that pregnant women may perceived (House, 1978). The resources may be income vehicles, significant others. Low socioeconomic pregnant women are at risk to be malnutrition because they can not afford the nutritious food (Gift, 1978). Moreover, they may be lack of prenatal care or received inadequate prenatal care, which lead to lack of advice. Therefore, the pregnant women who perceive high barriers (lack of money and resources) to health-promoting behaviors may have inappropriate behaviors and may be expose to complication during pregnancy (Bethea, 1984: 186).

2.3 **Lack of social support**: The pregnant women, who lack of support from significant other persons may feel lonely, that leads to have more stress. The women may have no one to encourage them conduct health-promoting behavior (Mackay & Beischer, 1986:47). Therefore, lack of social support is one of the barriers to health-promoting behaviors.

2.4 **Lack of information**: The pregnant women may not know how to do health-promoting behaviors, or may not have information about these behaviors. They may not know how to obtain health services (Scott, Disaia, Hammond & Spellacy, 1994: 81). These are barriers to health-promoting behaviors.

2.5 **Misbelief about some behaviors**: Some pregnant women belief in the wrong ideas. For example, someone thinks that take more food and vitamin supplement will make the baby big, then make it difficult to give birth (Hacker & Moore, 1986: 62). Such beliefs are the barriers to health-promoting behaviors in pregnant women.

2.6 **Inconvenience to reach services:** In general, prenatal care is often in official time (08.00 AM. to 12.00 AM.) especially for the public hospital, which the cost of service is inexpensive. Some pregnant women can not leave their work to receive the services during this period (Melnyk, 1988). Therefore, this may be the barriers to visit prenatal care.

2.7 **Lack of good relationships** between health-care providers and pregnant women: Relationship between health-care providers and pregnant women is important to enhance regular prenatal care especially in adolescents (Pilliteri, 1995: 442). Health care providers should pay attention to the pregnant women needs, respect them, and be friendly. Moreover, good communication and explanation are important to encourage them to do health-promoting behaviors during pregnancy (Gift, 1978). If these relationships are failure, the pregnant women may perceive it as barriers to visit prenatal care. Then, the inappropriate health-promoting behaviors may be results because of lack of information.

2.8 **Poor attitude:** The psychosocial factors including negative feeling or opinion of the women toward health care providers or the process of antenatal care, fear, or anxiety can be the barriers to do health-promoting behaviors.

3. Personal factors: Personal characteristics are considered to be the important variables, which affect health-promoting behaviors of pregnant women as described below:

3.1 **Age**: The maturity of women may increase with age. The older women may have more experiences, more ability to think, critique, and make decision (Lazarus & Folkman, 1984: 172). The mature adults should have high responsibility to their health, understand the plan of treatment easily, concern with their health and give high cooperation with health care providers (Lambert & Lambert, 1979: 210). Langlie (1977: 254) also reported that the older the patients, the more health-preventing behaviors increase.

3.2 **Education**: According to Pender (1987: 48), education is an important factor for making decision, understanding the information, and planning to do health-promoting behaviors. Education was found to have positive relationship with the health-promoting behaviors. Karl & Cobb (1966: 250) reported that education had closed relationship with the cooperative behaviors. Opassiriwit (1988: 44) also found that education was positively related to the perceived benefits of self-care in pregnant women.

3.3 **Family income**: Family income or economic status is the basic need for health-care system. Family income is a good resource for individuals to use it to facilitate their lives. A study of Nounboonrang (1992: 85) found the positive and significant relationship between the family income (per month) disease-preventing and

health-promoting behaviors. Nitrattharadorn (1996: 87) also reported that income was positive related with health-promoting behaviors in adolescent pregnant women.

3.4 **Gestational age** has indirect effect to perform health-promoting behaviors in pregnant women. During the first trimester, evidence of pregnancy is included amenorrhea, nausea and vomiting, fatigue, breast tenderness and other body changes (Novak & Broom, 1995: 112). During the early weeks, feelings range from positive to negative fears and ambivalence. The women's baby does not seem real to her and she focuses only on herself and her pregnancy.

The health-promoting behaviors may be less interested for her. In the second trimester, the women's physical discomforts usually improve and she brings to accept the reality of her pregnancy. Quickening brings a sense excitement and is compared by dreams and fantasies about what the fetus will be like a person (e.g. gender) and about herself and her partner as parents (Novak & Broom, 1995: 112). The women may seek all information about pregnancy with eager to learn and to share with other pregnant women. The health-promoting behaviors may be improved during this period.

During the third trimester, women frequently complain of impatience with the discomfort of pregnancy and the awkwardness of their bodies. They also experience increase feeling of dependency and concerns about their own safety, the safety of the fetus and of their partner. The family is important support and promotes appropriate health behavior for pregnant women.

3.5 **Gravidity**: A woman who has had several pregnancies may have experienced and understand to perform health-promoting behaviors. She may solve her problem better than the primipara. However, previous studies (Opasiriwit, 1988:63;

Boontab, 1991:57) did not find the relationship between gravidity and self-care behaviors of pregnant women.

Health-promoting behaviors are important and essential for pregnant women. A women who has well-being, normal pregnancy, and well fetal growth and development depends upon appropriate health-promoting behaviors. However, the appropriate health-promoting behaviors hinge on many factors included the perceived benefit and barriers to health-promoting behaviors and personal factors (age, education, family income, gestational age and gravidity).

CHAPTER III

METHODOLOGY

The purposes of this study were to describe the health-promoting behaviors in pregnant women and to determine whether health-promoting behaviors in pregnant women could be predicted by selected factors including, perceived benefits of action, perceived barriers to action, age, education, family income, gestational age, and gravidity which were discussed as follows:

Research Design

A descriptive design was used to obtain health-promoting behaviors and to identify the factors influencing health-promoting behaviors in pregnant women.

Population and Sampling

The target population of this study was the pregnant women who attended the antenatal care clinics at Siriraj Hospital, Rajvithi Hospital, Bangkok Metropolitan Administration Medical College and Vajira Hospital. A purposive sampling was applied for this study. Inclusion criteria for selecting the participants of this study were as follows:

1. Could read, listen and write Thai
2. Without complication during pregnancy at the time of study
3. Visit antenatal care clinic at least 2 times or more

The sample size was calculated based on the following formula: (Kerlinger & Padhazer, 1973; Varapongsathorn, 1987: 60).

$$n \geq 30k$$

When n was the sample size, k was a total of number of variables measured in this study (k = 7). The calculated sample size should be at least 210 subjects, therefore, the real sample size in this study was 250 pregnant women.

Setting

Antenatal care clinics at the Out Patient Departments (OPD) at Siriraj Hospital, Rajvithi Hospital, Bangkok Metropolitan Administration Medical College and Vajira Hospital which had very similar protocol of antenatal care such as take care of pregnant women, investigate and monitor some complications. Data was collected subjects from different hospitals as below:

Location	**Number of subjects**
- Siriraj Hospital	90
- Rajvithi Hospital	80
-Bangkok Metropolitan Administration Medical College and Vajira Hospital	80

Instruments

The instruments of this study was a questionnaire including four parts as follows:

Part I: Demographic data (See Appendix C) was assessed by a questionnaire. The data included age, education, familiy income, gestational age and gravidity.

Part II: Health-promoting behaviors in pregnant women questionnaire.

This questionnaire was developed from Walker, Sechrist & Pender (1996 :134) consisted of 49 items divided into six subscales (See Appendix C):

- Health responsibility (items 1 - 11)
- Physical activity (items 12 - 15)
- Nutrition (items 16 - 24)
- Interpersonal relationship (items 25 - 33)
- Spiritual growth (items 34 - 41)
- Stress management (items 42 - 49)

The items consisted of 47 positive items and 2 negative items (15 and 18). Questions were asked about the frequency of the behavior that pregnant women had done. The four-point Likert scale was used to range the score. Item responses range from 1 to 4. The follows are the description of the scores:

4 = the pregnant women always do these behaviors.

3 = the pregnant women often do these behaviors.

2 = the pregnant women sometimes do these behaviors.

1 = the pregnant women never do these behaviors.

The interpretation of level of health-promoting behavior scores judged as appropriate behaviors was the average rating scores ($\bar{x}$) ranging from 1.00 to 4.00.

1.00 - 1.50 = poor health-promoting behaviors.

1.51 - 2.50 = rather poor health-promoting behaviors.

2.51 - 3.50 = rather good health-promoting behaviors.

3.51 - 4.00 = good health-promoting behaviors

Part III: Perceived benefits of action in pregnant women questionnaire.

The perceived benefits of action in pregnant women questionnaire was developed form Nirattharadorn (1996) (by permission) based on Pender's (1987) and Becker's (1974) frameworks (See Appendix C). This questionnaire consisted of 17 positive items. The four-point Likert scale was used to range the score. Item responses range from 1 to 4. The following is the description of the scores:

4 = Strongly agree with the information

3 = Agree with the information

2 = Partially agree with the information

1 = Disagree with the information

The level of perceived benefits of action in pregnant women was judged by the average rating scores ($\bar{x}$) ranging from 1.00 to 4.00.

1.00 - 1.50 = low perceived benefits of action.

1.51 - 2.50 = rather low perceived benefits of action.

2.51 - 3.50 = rather high perceived benefits of action.

3.51 - 4.00 = high perceived benefits of action.

Part IV: Perceived barriers to action in pregnant women questionnaire.

The perceived barriers to action in pregnant women questionnaire was developed form Nirattharadorn (1996), (by permission) based on Pender's (1987) and Becker's (1974) frameworks. This instrument consisted of 16 negative items. The

four-point Likert scale was used to range the score. Item responses range from 1 to 4. The following is the description of the scores:

4 = Strongly agree with the information

3 = Agree with the information

2 = Partially agree with the information

1 = Disagree with the information

The level of perceived benefits of action in pregnant women was judged by the average rating scores ($\bar{x}$) ranging from 1.00 to 4.00.

1.00 - 1.50 = low perceived barriers to action.

1.51 - 2.50 = rather low perceived barriers to action.

2.51 - 3.50 = rather high perceived barriers to action.

3.51 - 4.00 = high perceived barriers to action.

Validity and Reliability of Instruments

Content validity of health-promoting behaviors; perceived benefits and barriers to action in pregnant women questionnaire were tested by a group of five experts (See Appendix A). Then, the revised questionnaires were tried out in 30 pregnant women and tested for reliability by using Cronbach Alpha Coefficient (Varapongsathorn, 1987: 65). The results obtained for reliability of the instrument are as follows:

Health-promoting behavior scale = 0.8525

Perceived benefits of action = 0.7876

Perceived barriers to action = 0.8876

Data Collection Procedure

Pregnant women who met the study criteria were approached at the antenatal care clinics in three hospitals as follows:

Location	Day	Time	Week of
- Siriraj Hospital	Mon - Fri	08.00 - 12.00	1 -3
- Rajvithi Hospital	Mon - Fri	08.00 - 12.00	4 - 6
-Bangkok Metropolitan Administration Medical College and Vajira Hospital	Mon - Fri	08.00 - 12.00	7 - 9

After informed consent was obtained, eligible pregnant women were asked to participate in this study with the semi-structured interview schedule, demographic data, the health-promoting behaviors, perceived benefits and barriers to action in pregnant women questionnaire. After completing the interview questionnaire researcher checked the items of each questionnaire to make it completed.

Protection of Human Subjects

The research proposal was submitted to and approved by the Human Subject Committee of Siriraj Hospital, to conduct the study. It was also submitted to the Director of Siriraj Hospital, the Director of Rajvithi Hospital, and the Director of Bangkok Metropolitan Administration Medical College and Vajira Hospital. The Director of Nursing and the head-nurse of the Out Patient Departments in each setting obtained provisional permission. Also, the researcher met with the nursing staff in the Out Patient Departments to explain the nature of the study and the study procedures.

Before being asked to participate in the study, all subjects were informed about the study by reading aloud the Thai information sheet (Appendix B). The names of subjects on the data collection forms were deleted, and were replaced by the code numbers.

During the data collection procedure, if the patients wanted to stop giving information, the researcher terminated this process. There was not any effect on the treatment and nursing care.

Data Analysis

The Program Computer SPSS for Windows was used to analyze the data.

1. Frequency and percentage were used to describe the demographic data.

2. Scores perceived benefits of action, perceived barriers to action and health-promoting behaviors were analyzed using means and standard deviation.

3. Multiple correlation coefficient was applied to examine the prediction of health-promoting behaviors in pregnant women by selected factors including age, education, family income, gestational age, gravidity, perceived benefits of action and perceived barriers to action. The analysis to examine a predictor was performed by a stepwise multiple regression technique.

CHAPTER IV

RESULTS

This study is a descriptive research to study the health-promoting behaviors in pregnant women and to determine whether the health-promoting behaviors could be predicted by selected factors including perceived benefits of action, perceived barriers to action, age, education, family income, gestational age and gravidity. The results were presented in five parts as follows:

Part I Demographic data of pregnant women was presented in Table 1-2.

Part II Perceived benefits of action and perceived barriers to action in pregnant women were presented in Table 3-5.

Part III Health-promoting behaviors of pregnant women were presented in Table 6-7.

Part IV Relationships between selected factors (perceived benefits of action, perceived barriers to action, age, education, family income, gestational age and gravidity) and health-promoting behaviors in pregnant women were presented in Table 8.

Part V Multiple correlation between predictor variables and health-promoting behaviors in pregnant women were presented in Table 9-10.

Part I Demographic data

Table 1 Frequency and percentage of pregnant women classified by age, education, family income, gestational age, family characteristics and marital status (n = 250).

Characteristics	No	Percentage
Age of pregnant women (years)		
(Range 15- 44, $\bar{x}$ = 26.06, S.D. = 5.94)		
Lower than 20	32	12.8
20-35	199	79.6
More than 36	19	7.6
Education (years)		
(Range 3-16, $\bar{x}$ = 8.62, S.D. = 3.33)		
Primary level	112	44.8
High school / Certificate	110	44.0
Diploma	28	11.2
Family income / month (bahts)		
(Range 6,000-70,000, $\bar{x}$ = 11,521.6, S.D. = 8614.21)		
Less than 8,000	100	40.0
8,000-16,000	106	42.4
More than 16,000	44	17.6
Gestational age (wks)		
(Range 12-40, $\bar{x}$ = 2.29, S.D. = 0.74)		
Less than 15	7	2.8
15-27	101	40.4
28 and more	142	56.8
Gravidity		
1	131	52.4
2	72	28.8
3	38	15.2
4	7	2.8
5	2	0.8
Family characteristics		
Nuclear family	176	70.4
Extended family	74	29.6
Marital status		
Married	238	95.2
Divorced / Separated	12	4.8

As shown in Table 1, the majority of samples (79.6 %) were age ranged from 20–35 years old. Most of the subjects had primary and high school education (44.8 % and 44.0 % respectively). Family income mostly ranged from 8,000-16,000 bahts /month (42.4 %). Nearly 40 % of the subjects had family income less than 8,000 bahts /month. The majority of the subjects was 28 weeks of gestational age or more (56.8 %) and was a primigravida (40.4 %). Most of them were still married (95.2 %) and lived in nuclear families (70.4 %).

Table 2 Frequency and percentage of husbands of the pregnant women classified by age, education, occupation and alteration of relationship (n = 250).

Characteristics	No	Percentage
Age of husband (years)		
(range 18-51, $\bar{x}$ = 29.26, S.D.= 7.05)		
Lower than 20	9	3.6
20-35	178	78.4
36 and more	45	18.0
Education		
(range 3 -18, $\bar{x}$ = 9.45, S.D. = 3.73)		
Primary level	96	38.4
High school / Certificate	110	44.0
Diploma or higher	44	17.6
Occupation		
Employee	202	80.8
Commerce / Business	21	8.4
Government / Semi-government services	22	8.8
No job	5	2.0
Alteration of relationship		
No change	240	96.0
Change	10	4.0

As shown in Table 2, The ages of the majority of husbands (78.4 %) ranged from 20-35 years. Of all husbands, 38.4 % finished primary education, 44.0 % had

high school or certificate education, and 17.6 % graduated diploma or higher education. Occupation of husbands was mostly employee (80.8 %). Their relationship in family did not change (96.0 %) during pregnancy.

Part II Perceived benefits of action and perceived barriers to action.

Table 3. Percentage, mean, standard deviation and level of perceived benefits of action, perceived barriers to action in pregnant women (n = 250).

Perception of pregnant women	High	rather high	low	rather low	$\bar{x}$	S.D.	Interpretation
	%						
Total perceived benefits	88.2	11.8	0.0	0.0	3.67	0.27	High
Total perceived barriers	0.0	0.0	37.5	62.5	1.48	0.49	Low

From table 3, pregnant women mostly have high total scores of perceived benefits of health-promoting behaviors which represented that 88.2% and 11.8% of the subjects had high and rather high perceived benefits of health-promoting behaviors level, respectively.

For perceived barriers to health-promoting behaviors, the total scores were low 62.5% and 37.5 % of the sample had low and rather low perceived barriers to health-promoting behaviors level, respectively.

Table 4. Percentage, mean and standard deviation of perceived benefits of action in pregnant women (n = 250).

Perceived benefits of action	High	rather high	low	rather low	$\bar{x}$	S.D.	Interpretation
	%						
Total score	**72.0**	**24.0**	**3.0**	**1.0**	**3.67**	**0.27**	**High**
ANC	82.8	16.8	0.4	0.0	3.82	0.39	High
Relaxation	78.0	22.0	0.0	0.0	3.78	0.41	High
Eat protein	80.8	17.2	0.4	1.6	3.77	0.53	High
Sleep	80.4	17.6	1.2	0.8	3.77	0.49	High
Eat vegetable	79.6	17.6	2.0	0.8	3.76	0.52	High
Clean air	75.2	24.0	0.4	0.4	3.74	0.47	High
Drink milk	75.2	21.6	2.4	0.8	3.71	0.54	High
Choose shoes	78.0	18.0	0.8	3.2	3.70	0.64	High
Received spouse support	73.2	24.8	1.6	0.4	3.70	0.51	High
Brassier	74.8	20.8	3.6	0.8	3.69	0.57	High
Listen to music...	70.4	25.6	3.6	0.4	3.66	0.56	High
Take vitamin	70.0	24.4	4.4	1.2	3.63	0.62	High
Teeth Checked	68.8	26.4	3.6	1.2	3.62	0.61	High
Talk with other pregnant	66.0	27.6	6.0	0.4	3.59	0.62	High
Leg stretching	61.6	30.8	7.6	0.0	3.54	0.63	High
Exercise	54.0	39.2	5.2	1.6	3.45	0.67	Rather High
Work	56.0	32.8	8.0	3.2	3.41	0.77	Rather High

From Table 4, the total scores of perceived benefits of action were at a high level ($\bar{x}$ = 3.67, S.D. = 0.27). For items scores, perceived benefits of action mostly were at a high level except two items which were at a rather high level. These were exercise following physician and nurses recommendation which will help easily delivery and light work during pregnancy which will enhance muscle strength.

The majority of pregnant women (more than 80%) agreed with the benefits of antenatal care, eating more protein diet and getting sufficient sleep, which would prevent complications during pregnancy. However some subjects hardly or did not

perceive the benefits of doing light work (8.0% and 3.2% respectively) and lying or leg stretching (7.6%).

Table 5. Percentage, mean and standard deviation of perceived barriers to action in pregnant women (n = 250).

Perceived barriers to action	High	rather high	rather low	low	$\bar{x}$	S.D.	Interpretation
	%						
Total scores	**6.5**	**5.2**	**18.3**	**70.0**	**1.48**	**0.49**	**Low**
Difficult to receive ANC *	2.4	1.6	10.4	85.6	1.20	0.58	Low
...not want to see people*	3.6	2.4	7.6	86.4	1.23	0.66	Low
...complex advice..can not do *	4.0	2.8	8.8	84.4	1.26	0.70	Low
...not want to investigate *	4.8	1.2	12.4	81.6	1.29	0.72	Low
...nurses...can't ask for... *	4.4	3.6	9.6	82.4	1.30	0.74	Low
...no support other significant *	4.8	1.6	14.4	79.2	1.32	0.73	Low
...long waiting for antenatal care*	5.2	2.4	12.8	79.6	1.33	0.76	Low
..can't speak...no one understand *	1.6	6.8	15.6	76.0	1.34	0.67	Low
..no time to exercise*	4.8	2.0	18.4	74.8	1.36	0.75	Low
..can't afford nutrient diet*	6.4	8.0	14.4	71.2	1.49	0.89	Low
..not exercise..afraid of injury *	6.0	4.0	29.6	60.4	1.55	0.83	Rather low
..vitamin..increase baby weight *	8.8	6.4	18.0	66.8	1.57	0.95	Rather low
..can't afford new brassier *	7.6	5.6	26.4	60.4	1.60	0.90	Rather low
..insufficient rest.. more activities *	8.4	8.8	26.4	56.4	1.69	0.94	Rather low
..work..insufficient rest*	10.8	8.4	30.0	50.8	1.79	0.99	Rather low
..some events..can't sleep*	20.0	18.4	38.8	22.8	2.35	1.04	Rather low

* Negative items.

The total scores of perceived barriers to action were at a low level (Table 5). In other words, the pregnant women perceived low barriers to do health-promoting behaviors. However, some pregnant women perceived about six items of barriers as follows: no exercise because of fear of injury to her fetus, to receive vitamin supplement would make big baby and make it difficult to give birth, no ability to

afford new brassier· insufficient rest because of more activities, their work or some events (10%, 15.2%, 13.2%, 17.2%, 19.2% and 38.4% respectively).

Part III Health-promoting behaviors in pregnant women.

Table 6. Percentage, mean and standard deviation of total and subscales of health-promoting behaviors in pregnant women (n = 250).

Health-promoting Behaviors	Good	Rather good	Rather poor	Poor	$\bar{x}$	S.D.	Interpretation
	%						
Total	**20.4**	**75.5**	**4.1**	**0.0**	**3.20**	**0.33**	**Rather good**
Subscales							
Stress management	0.0	100.0	0.0	0.0	3.28	0.51	**Rather good**
Nutrition	22.2	77.8	0.0	0.0	3.28	0.40	**Rather good**
Interpersonal relations	22.2	77.8	0.0	0.0	3.17	0.49	**Rather good**
Spiritual growth	12.5	87.5	0.0	0.0	3.17	0.45	**Rather good**
Health responsibility	36.4	54.5	9.1	0.0	3.15	0.43	**Rather good**
Physical activity	25.5	50.0	25.0	0.0	3.05	0.48	**Rather good**

From Table 6, the total scores of health promoting behaviors were rather good ($\bar{x}$ = 3.2, S.D. = 0.33). Each subscale including the stress management, nutrition interpersonal relations, spiritual growth, health responsibility and physical activity scores was at a rather good level score ($\bar{x}$ = 3.28, 3.28, 3.17, 3.17, 3.15 and 3.05; S.D. = 0.51, 0.40, 0.49, 0.45, 0.43 and 0.48 respectively).

However, many pregnant women were at a rather poor level in two subscales, 9.1 % in health responsibility and 25.0 % in physical activity.

Table 7. Percentage, mean and standard deviation of health promoting behaviors in pregnant women for each item (n = 250).

Health-promoting behaviors	Regular	Often	Some-time	Never	$\bar{x}$	S.D.	Interpretation
	[%]						
Stress management							
• ..create relax mind..	61.2	26.8	11.2	0.8	3.48	0.72	Rather good
•..stop and rest when tired.	59.6	23.2	16.8	0.4	3.42	0.77	Rather good
•..get sufficient rest.	61.2	22.0	13.6	3.2	3.41	0.84	Rather good
•.. relax mind before go to bed.	56.0	23.2	20.0	0.8	3.34	0.82	Rather good
•..take time for rest....	58.8	13.2	25.6	2.4	3.28	0.92	Rather good
• ..accept the changed thing	41.2	38.4	20.0	0.4	3.20	0.76	Rather good
•..balance time... work and play.	45.2	28.8	22.4	3.6	3.15	0.89	Rather good
•..methods to mange stress..	37.2	27.6	32.4	2.8	2.99	0.90	Rather good
Nutrition							
•..receive vitamin as prescribed.	74.4	18.0	6.4	1.2	3.65	0.65	Good
•.. breakfast every morning...	74.8	10.4	14.4	0.4	3.59	0.74	Good
• receive sufficient value food...	59.6	24.4	15.2	0.8	3.42	0.77	Rather good
•.read labels identified nutrients.	60.4	23.2	12.4	4.0	3.40	0.85	Rather good
•..eat more vegetable and fruit.	54.8	30.4	13.6	1.2	3.38	0.76	Rather good
•..eat more protein.	51.2	25.6	23.2	0.0	3.28	0.81	Rather good
•..drink milk 2 glasses/ day.	53.2	21.2	22.4	3.2	3.24	0.90	Rather good
•..eat fat or sweet diet.*	5.2	3.6	64.2	27.2	3.13	0.70	Rather good
•..not drink tea or coffee.	31.2	11.6	31.6	25.6	2.48	1.17	Rather poor
Interpersonal relations							
•...get support from husband.	70.4	20.4	8.4	0.8	3.60	0.67	Good
•..maintain relationships..others.	56.8	38.8	4.0	0.4	3.52	0.59	Good
•.. receive love from family...	56.0	31.2	12.0	0.8	3.42	0.73	Rather good
•... glad with someone..success.	42.0	32.0	24.0	2.0	3.14	0.85	Rather good
•..discuss problems with other..	43.2	23.6	30.8	2.4	3.07	0.91	Rather good
• ..show love..with people	37.2	31.2	30.8	0.8	3.04	0.84	Rather good
• .joint activities..with family..	39.6	24.0	34.0	2.4	3.00	0.91	Rather good

Behaviors	Regular Often		Some-time	Never	$\bar{x}$	S.D.	Interpretation
	[%]						
•..activities significant person	33.6	25.6	39.6	1.2	2.91	0.88	Rather good
•..discuss when ..had conflict...	27.6	34.4	35.2	2.8	2.86	0.85	Rather good
Spiritual Growth							
• ..have goals in my life.	60.0	33.6	5.6	0.8	3.52	0.64	Good
•..do a benefit thing in my life.	49.6	33.6	15.6	1.2	3.31	0.77	Rather good
•look forward for better future.	50.0	39.2	10.0	0.8	3.38	0.69	Rather good
•.worship and respect ..religion	45.2	30.0	22.4	2.4	3.18	0.86	Rather good
•.satisfy with myself ... my life.	40.8	38.0	19.2	2.0	3.17	0.80	Rather good
•..thought that my life. change..	32.0	45.6	21.6	0.8	3.08	0.75	Rather good
•.. follow the goal of my life...	36.8	32.0	30.0	1.2	3.04	0.84	Rather good
•concern to learn...experience	21.6	25.6	48.8	4.0	2.64	0.86	Rather good
Health responsibility							
•...have routine antenatal care	89.6	8.4	2.0	0.0	3.87	0.38	Good
•..observe my body change.	71.2	19.6	8.0	1.2	3.60	0.68	Good
•..follow the recommend...	68.0	22.0	9.2	0.8	3.57	0.69	Good
• ..observe abnormal symptoms	67.6	17.6	10.8	4.0	3.48	0.84	Rater good
•abnormal symptoms see doctor	65.6	14.0	19.6	0.8	3.44	0.83	Rather good
•..seeking..health care education	43.2	30.0	24.0	2.8	3.13	0.87	Rater good
•.change brassier.suitable size..	47.2	23.6	24.0	5.2	3.12	0.95	Rather good
•..avoid infectious people	46.0	22.0	22.4	9.6	3.04	1.03	Rather good
•..ask health professionals...	38.0	17.6	38.8	5.6	2.88	0.99	Rather good
•..ask for information behavior..	32.8	14.4	39.2	13.6	2.66	1.07	Rather good
• ...teeth checked with dentist.	10.4	8.8	40.4	40.4	1.89	0.94	Rather poor
Physical Activity							
•..vigorous exercise... *	2.0	0.4	6.4	91.2	3.86	0.49	Good
•..avoid the same position ..long	38.8	25.6	30.0	5.6	2.97	0.95	Rather good
•..exercise by walking.....	38.8	19.6	32.8	8.8	2.88	1.02	Rather good
•...exercise...as recommend...	24.8	14.8	46.8	13.6	2.50	1.01	Rather poor

* Negative items

All items of six subscales of the health-promoting behaviors in pregnant women were shown in Table 7. Every item in stress management scores was at a rather good level. For example, 61.2% of the subjects created relax mind for their fetal health regularly and get sufficient rest at least 8 hours. Moreover, 59.6 % of the sample stopped to work and rest when they felt tried.

However, some women hardly and could not find any method to control their stress by exercise or reading a book (32.4% and 2.8% respectively). They also barely and could not manage time to find the balance between work and rest in order to avoid excessive fatigue (22.4% and 3.6% respectively).

For the nutrition subscale, the behaviors of the sample were at a mostly in a rather good level. Two items were at a good level, receiving vitamins and some minerals supplement as prescribed and taking breakfast every morning. However, one item was at a rather poor level, which was the continuous drinking tea, coffee or alcohol consumption during pregnancy (25.6%). Moreover, some women usually and mostly eat very fat and sweet diet (5.2% and 3.6% respectively).

For the interpersonal relationship subscale, the samples were at a rather good level. There were also good level in two items: received good support from their husbands and were good friends with other persons ($\bar{x}$ = 3.60 and 3.52; S.D. = 0.67, and 0.59 respectively). However, some women hardly or did not meet with their special persons such as their close friends (39.6% and 1.2% respectively). They also hardly and did not discuss when they had conflict with anyone (35.2% and 2.8 respectively). Moreover, they hardly and did not join in any activity with their family and neighbors (34 % and 2.4% respectively).

The majority of the subjects were mostly at a rather good level of spiritual growth. Only one item was at a good level: had goal in their life. From Table 6, 60% of the subjects always had goals in their life. About half of the women also usually looked forward for better future and did a benefit thing in their life (50% and 49.6% respectively).

However, nearly half of women hardly or did not concern about learning new challenging experiences (48.8% and 4.0% respectively). Some women hardly or did not follow their goal of life (30% and 1.2% respectively) and sometimes or did not use the concept of religion to be their refuge (22.4% and 2.4% respectively).

For health responsibility subscale, the sample was mostly at a rather good level. Only three items were at a good level as follows: visiting antenatal care regularly, observing their body changes and following the recommended advice. However, one item was at a rather poor level: to go to check their teeth with a dentist. Most of the women hardy and did not go to check their teeth with a dentist (40.4 % and 40.4% respectively). Moreover, they hardy and did not asked for any advice about how to do self-care during pregnancy from health care providers (39.2% and 13.6 respectively).

For physical activity subscale, the sample was at a good level in one item, a rather good level in other two items and a rather poor level in one item. The sample was at a rather poor level in exercise as recommended. Nearly half of sample hardly and did not exercise as recommended (46.8% and 13.6% respectively). Some women hardly and did not exercise by walking at least 30 minutes daily (32.8% and 8.8 respectively). Moreover, two percent of sample had vigorous exercise such as aerobic dance regularly.

Part 4. Relationship among age, education, family income, gestational age, gravidity, perceived benefits of action, perceived barriers to action and health-promoting behaviors in pregnant women.

Table 8. Correlation among age, education, family income, gestational age, gravidity, perceived benefits of action, perceived barriers to action and health-promoting behaviors.

Variables	1	2	3	4	5	6	7	8
1. Age	1.00							
2. Education	-0.094	1.00						
3. Family income	0.204**	0.284**	1.00					
4. Gestation age	0.072	0.015	-0.046	1.00				
5. Gravidity	0.465**	-0.216**	-0.013	0.115	1.00			
6. Perceived benefits of action	0.121	-0.015	0.038	-0.115	-0.064	1.00		
7. Perceived barriers to action	0.168**	-0.273**	-0.149*	0.049	0.118	-0.164**	1.00	
8. Health-promoting behaviors	0.207**	0.134**	0.155*	-0.056	0.074	0.388**	-0.235**	1.00

*p < 0.05 ; ** p < 0.01

As shown in Table 8, maternal age, education, family income and perceived benefits of action were positively correlated to the health-promoting behaviors ($r = 0.207$, $p < 0.01$; $r = 0.134$, $p < 0.01$; $r = 0.155$, $p < 0.05$ and $r = 0.388$, $p < 0.01$ respectively. Besides, perceived barriers to action was negatively correlated to the health promoting behaviors ($r = -0.235$, $p < 0.01$).

The results showed that age was associated with family income, gravidity, perceived barriers to action and health-promoting behaviors ($r = 0.204$, $p<0.01$; $r = 0.465$, $p< 0.01$; $r = 0.168$, $p< 0.01$ and $r = 0.207$, $p< 0.01$ respectively). Education was positively correlated to family income and health-promoting behaviors ($r = 0.284$, $p< 0.01$ and $r = 0.134$, $p< 0.01$ respectively) and negatively correlated to gravidity and perceived barriers to action ($r = - 0.216$, $p<0.01$ and $r = - 0.273$, $p<0.01$ respectively). Family income was positively correlated to health-promoting behaviors ($r = 0.155$, $p< 0.05$) and negatively associated with perceived barriers to action ($r = - 0.149$, $p<0.05$). Perceived benefits of action was positive correlated to health-promoting behaviors ($r = 0.388$, $p< 0.01$) and negatively correlated to perceived barriers to action ($r = - 0.164$, $p< 0.01$) and Perceived barriers to action was negatively associated with health-promoting behaviors ($r = - 0.235$, $p< 0.01$)

Part 5. Multiple correlation between predictor variables and health-promoting behaviors.

Table 9 Multiple regression to the predicting factors of health-promoting behaviors.

Predictor	b	Beta	SE	t	Sig.
• Age	0.009475	0.166	0.004	2.449*	0.015
• Education	0.01089	0.107	0.006	1.725^{NS}	0.086
• Family income	0.00000201	0.051	0.000	0.836^{NS}	0.404
• Gestational age	- 0.00126	0.003	-0.027	-0.472^{NS}	0.638
• Gravidity	0.02578	0.025	0.067	1.017^{NS}	0.310
• Perceived benefits of action	0.422	0.340	0.073	5.790***	0.000
• Perceived barriers to action	-0.121	-0.177	0.041	-2.915**	0.004
Constant (a) = 1.459					

Multiple R = 0.486, R^2 = 0.236, Adjusted R^2 = 0.214, SEE = 0.3013, Over all F = 10.700

*p < 0.05; ** p < 0.01; ***p < 0.001, NS = Non-significant

As shown in Table 9, seven predictor variables significantly correlated to the health-promoting behaviors (age, education, family income, perceived benefits of action and perceived barriers to action). These variables were entered into a multiple regression equation concurrently. The result of multiple regression analysis showed that all seven predictor variables accounted for 23.6 % (R^2 = 0.236) of the variance of health-promoting behaviors. However, only three variables (age, perceived benefits of action and perceived barriers to action) significantly correlated to health-promoting behaviors (p < 0.001, p < 0.01, p < 0.05 respectively).

Table 10 Stepwise multiple regression between the predictor factors and health-promoting behaviors.

Step	Independent	Multiple R	R^2	R^2 change	Adj R^2	B	Beta	t
1.	Perceived benefits of action	0.388	0.150	0.150	0.147	0.482	0.38	6.627***
2.	Perceived benefits of action					0.446	0.35	6.148***
	Perceived barriers to action	0.425	0.181	0.030	0.174	-0.120	-0.17	-3.019**
3.	Perceived benefits of action					0.408	0.32	5.679***
	Perceived barriers to action					-0.147	-0.21	-3.704***
	Age	0.469	0.220	0.039	0.210	0.0161	0.20	3.516**

Constant (a) = 1.620 **SEE = 0.3020** **Over all F = 23.110**

** $p < 0.01$;*** $p < 0.001$

As shown in Table 10, the variables, which could predict the health-promoting behaviors were perceived benefits of action, perceived barriers to action and age respectively. The predictive power was 22.0 % ($R^2 = 0.22$; $p < 0.01$).

CHAPTER V

DISCUSSION

The purposes of this study were to describe perceived benefits of action, perceived barriers to action and health-promoting behaviors in the pregnant women also, to investigate whether some demographic characteristics such as age, education, family income, gestational age, gravidity, perceived benefits of action and perceived barriers to action can explain the variability of health-promoting behaviors in the pregnant women.

The discussion presented in this chapter has arisen from the purposes of this study:

Objective I: Description of perceived benefits of action, perceived barriers to action and health-promoting behaviors of pregnant women.

Perceived benefits of health-promoting behaviors

It is found in this study that the total scores of the perceived benefits of health-promoting behaviors were high (Table 3). Namely, the pregnant women viewed the health-promoting behaviors as a considerable advantage. For example, visiting prenatal care regularly could prevent complications during pregnancy, relaxing mind would enhance fetal development, getting adequate rest and sleep will help prevent undue fatigue, and having sufficient nutrients could help women and fetuses to be in healthy conditions. The possible explanations are related with the characteristics of the subjects. The first one is that the subjects were the women who came to prenatal care

at least two times. Visiting ANC regularly showed the concern about their health and motivation to engage in health-promoting behaviors in order to enhance their health. They perceived the benefits of this action as they came to ANC at a large hospital. They could receive more information about all aspects of pregnancy and health-promoting behaviors from nurses and physicians to enhance their fetal health. The second is that most of the pregnant women lived in nuclear families (70.4%) which composed of their husbands and children. A husband is the closest person of a pregnant woman and could give help and support when she has any problems. The third is that the pregnant women had a good marital relationship (96%). They received love, attention, support and concern from their husbands both in instrumental and mental support. Family seems to be a resource, which increase and enhance motivation as well as promote desire to improve their health. Lastly, the pregnant women have intention to have a baby and readiness for their maternal roles. As a result of which mentioned above, these subjects had high level of perceived benefits of the health-promoting behaviors. This result is supported by the previous conducts of Suwabhabh (1999), Nirattharadorn (1996) and Jaruwatchareewong (1993) which also showed that the pregnant women had high levels of perceived benefits of health-promoting behaviors.

As considered in each item, the result indicated that some subjects did not agree or partially agreed with the benefit of the light work (8.0% and 3.2% respectively) because they feared that light work would cause danger to their fetuses. Moreover, some women (7.6%) also partially agreed with the benefit of stretching leg at least 30 minutes daily (Table 4). They gave a reason that this behavior was not relevant to their fatigue. It may be the result of inadequate information about

appropriate exercise and the benefit of this behavior. The conduct of Pungbangkadee (1997) also supported the above findings that pregnant adolescence did no or minimal exercise by only walking in the morning or in the evening 10 to 15 minutes daily.

Perceived barriers to health-promoting behaviors

It is found in this study that the total scores of the perceived barriers to health-promoting behaviors were low. Namely, the women perceived that those statements were very little barriers to their health-promoting behaviors (Table 3). For example, the majority of subjects (79.6%) did not think that the time spent in visiting ANC was a barrier, although most subjects (85.6%) had to take off from duty and were lack of income to visit ANC. In addition, most women (80%) did not view that the advice of nurses or doctors was too complicate to follow (Table 5). Therefore, those statements about these barriers did not exceed their effort to engage in their intended behaviors. Moreover, the subject had high level of perceived benefits of health-promoting behaviors as discussed previously (Table 3). The person who perceived high benefits of action would perceived low barriers to action (Pender, 1996). Suwabhabh (1999), Nirattharadorn (1996) and Jaruwatchareewong (1993) also supported that the pregnant women also had low level of perceived barriers to health-promoting behaviors.

However, the results indicated that some subjects had barriers to some health-promoting behaviors. The first is about the anxiety about their pregnancies and their deliveries as well as the hot weather, which were the barriers to their sleep at night. It is possible that some subjects were in the third trimester which they had already increased their concern about their own safety and the safety of their fetuses during delivery. Moreover, the awkwardness of their bodies and high metabolism would

induce discomfortness and difficulty to sleep well. The second is that their jobs and responsibilities in their homes were barriers to sufficient rest and sleep (Table 5). They gave reasons that they had to go off to work and take responsibilities for their housework after they came home. One possible explanation is that some subjects (40%) had low income less than 8,000 baht per month (Table 1). Therefore, they had to have a job and contribute money to their family. As economic depression in Thailand progresses, every member in the family is constrained to take part in both housework and paid job at the same time.

Health-promoting behaviors of pregnant women

The study found that total scores and subscales scores of the health-promoting behaviors of pregnant women were in rather good levels (Table 6). It may be concluded that the subjects came to visit ANC at the large hospitals, which were medical schools. They would receive information and advice provided by those hospitals and could ask when they wonder. The result indicated that some subjects always asked for additional information when they suspected in any aspect and asked for more advises from health care providers (38% and 32.4% respectively). The high level of perceived benefits of health-promoting behaviors in these subjects brought them readiness to engage in health-promoting behaviors. Therefore, they had rather high level of health-promoting behaviors.

According to the Health Promotion Model (Pender, 1996), a pregnant woman who perceived benefits of their health-promoting behaviors will engage in health-promoting behaviors. The results indicated that perceived benefits of health-promoting behaviors had significantly positive relation to health-promoting behaviors (Table 8).

Namely, the pregnant women who had high level of perceived benefits of those behaviors would have good level of health-promoting behaviors. These results are consistent with the previous researches of Nirattharadorn (1996) and Jaruwatchareewong (1993) which also showed that the perceived benefits of the health-promoting behaviors of pregnant women had significantly positive relation to health-promoting behaviors.

These results are also discussed in sub-scales as follows:

1. Stress management.

For stress management subscale, the results showed that pregnant women had a rather good level (Table 6). It may be the result of the good marital relationships. The majority of subjects (95.2%) were married and lived with their husbands. They had good relationship, understood, loved and supported each other when their spouses had any problems. This result is consistent with the conduct of Prakobsup (1998) which reported that support from the husband had positive relationship with health-promoting behaviors of pregnant adolescence. Namely, pregnant adolescence who received support from their husbands would have good level of health-promoting behaviors.

However, the results indicated some pregnant women had inappropriate stress management behaviors. For example, 3.6 % of pregnant women never managed time to have suitable rest. Some women said that they did not know how to mange their time. The other gave the reasons that although they knew the way to manage, they had more responsibility to do such as housework. Boonsom (1997) also proposed that 57% of pregnant women had rather poor and poor sleeping and rest behaviors in the daytime.

Other examples are about finding the suitable way to control and seeking the way to ventilate their stress (2.8 %). It may be the result of Thai tradition that most people who have considerate attitude would not bring their problems to trouble others. This is an inappropriate behavior. When someone has prolonged anxiety, they will have stress (Byrne & Hunsberger, 1989: 705). The conduct of Wayuhuerd (1996) supported that pregnant adolescence had unsuitable behaviors about the way to ventilate their feeling when they were in trouble.

2. Nutrition.

For nutrition subscale, the health-promoting behaviors of pregnant women were at a rather good level (Table 6). One possible explanation is the regularly visiting ANC (89.6%), which they could receive repeated advice and continuous information about how to have suitable nutritional behaviors. The results also indicated that the majority of subjects usually received vitamins and completed nutrients need as doctors prescribed (74.4% and 59.6% respectively). This result is consistent with the conduct of Nirattharadorn (1996) which found that the majority of pregnant adolescence had appropriate nutrition behaviors.

However, 25.6 % of pregnant women still drank tea, coffee, soft drink and alcoholic beverages during pregnancy (Table 7). They said that they liked to drink and thought that these beverages did not jeopardize to their fetuses. Because of low education such as some educated from primary school, they might not know or understand about the danger of these beverages. Moreover, they would be lack of skill in seeking the information about appropriate nutrition behaviors.

3. Interpersonal relations.

The findings showed that pregnant women had a rather good level in interpersonal relationship behaviors (Table 6). This result may be associated with the marital status and good marital relationship of these subjects (95.2% and 96% respectively). Moreover, most women also usually received attention from their husbands and their closed people (70.4% and 56% respectively). The good support and attention from her husband bring a good attitude and accepted to be one member of that family. Meisenhelder (1986) documented that a husband was a key person who has an effect on wife's self-esteem and self-confidence. The high self-confidence and self-esteem of pregnant women would bring an appropriate interpersonal relationship.

However, 2.4 % of pregnant women joined in neither family activities nor neighbor activities and did not want to talk or ventilate their problems with any close people. They said that they did not want to talk with other people because they did not have any close people. They mostly migrated from the rural area. In urban society, the close relationship seems to disappear. Moreover, they had considerate attitude, not to trouble others with their problems. The conduct of Wayuhuerd (1996) supported that some pregnant adolescence (23%) had unsuitable behaviors about how to ventilate their feeling when they were in trouble.

4. Spiritual growth.

The finding showed that the pregnant women had a rather good level in spiritual growth behaviors (Table 6). It may be the results from the high anticipation about having a baby. In one's life cycle, a woman will be proud of being grownup then getting married and having a baby (Dyer, 1983). The results also indicate that 60% of subjects had a goal in their lives, which was having a baby (Table 7). The intention

and realization about the value of having a baby bring a rather good spiritual growth behavior for this group of women. The marital status and good relationship with their husbands in more than 90% of the subjects also associated with a rather good spiritual growth behavior. They received love, attention and could share their responsibility with their husbands. They would have more confidence and power to engage effectively in any actions to promote their health. Moreover, some subjects who were in the third a nearly had a new role-maternal role, which is designated by Thai society to be a woman role. This role will enhance their self-value to be a woman. Therefore, the pregnant women had a rather good level of spiritual growth.

However, some women had unsuitable spiritual growth behaviors (Table 7). First is about having new or challenging experiences (4.0 %). Some of them gave the reasons that they did not have or had less attention to those experiences because they had more responsibility for their home and their work. The other is about the utilization of the principles of religion to be their refuge (2.4%). They used the sacred things to be their refuge in stead of the principles of religion. One possible explanation may be about the characteristics of the religion, which require more components than faith. Faith in some sacred things is easier than the practice in the principles of religion and may be barriers to the skill of seeking suitable promotion of spiritual growth.

5. Health responsibility.

The finding showed that the health responsibility behaviors of pregnant women were in a rather good level (Table 6). It is possible that the pregnant subjects were the ones who came to ANC for at least two times. They already had their health responsibility behaviors. They received some advice, information from booklets, watched televisions and videos, which the hospitals provided for them. The majority

of were also primigravida (56.8%), so they would have great attention to seek for knowledge and try to have appropriate behaviors during pregnancy. In addition, more than 50% of the subjects had gestational age more than 28 weeks of which period the physical discomfort usually deteriorated but they have experience a sense of acceptance. They would have more interest, more observation and more self-attention and could adjust their behaviors to be health-promoting behaviors (Olds et al., 1980: 228-229). When they had come to visit ANC for several times, they would receive repeated and continued advises about health-promoting behaviors. As a result, they had rather good health responsibility (Table 7).

However, some pregnant women had poor health responsibility in some aspect. For example, 40.4 % of women did not go to check their teeth with dentists during pregnancy because they did not have any problems with their teeth. This study is consistent with that of Prakobsup (1998:79) which found that 61.4 % of the pregnant adolescence did not go to check their teeth. Another example, 13.6 % of samples did not ask for any advice about how to take care of themselves during pregnancy because they received some education from ANC. They did not dare enough to ask any additional advice from doctors or nurses. Because of only primary school education, some subjects (44.8%) might be lack of skill in seeking or asking additional information. Nualyong (1992) also proposed that 41.7% of pregnant women never asked doctors or nurses about how to perform appropriate behavior during pregnancy.

6. Physical activities.

The physical activities of pregnant women were in a rather good level (Table 6). It may be related to regularly visiting ANC of the subjects (89.6%; Table 7).

The important of exercise to their health may be informed during visiting ANC. The results also indicate that some subjects (24.8%) exercised following the recommendation of doctors or nurses (Table 7). More than half of the subjects perceived the benefits of the light work and the exercise (56% and 54% respectively; Table 4). A woman who has high level of perceived benefits of that action will have rather good physical activities. Laffery & Isenberg (1983) documented that the perceived benefits of exercise were related to the frequency of exercise behaviors.

However, some pregnant women had unsuitable physical activities. For example, 13.6 % of pregnant women did not exercise as recommended by health care providers. Some women felt that exercise is harmful to their fetuses. Other said that protruding abdomen made them difficult to move. Another example, 8.8 % of the subjects did not walk for exercise at least 30 minutes per day. They felt they did not have time enough to exercise because they had to go off to work and to do their housework. They thought that doing their housework is one form of exercise. They did not have suitable places for walk. They felt too tried to exercise. They may have inadequate information about suitable exercise and did not perceive benefits of exercise because of only primary school education (44.8%). This result is consistent with the conduct of Pungbangkadee (1997) which supported that pregnant adolescence (35.2%) did not exercise or did less exercise by walking in the morning or in the evening 10 to 15 minutes daily.

Objective II: An investigation whether some personal factors (age, education, family income, gestational age and gravidity), perceived benefits of

action and perceived barriers to action can explain the variability of health promoting behaviors in pregnant women.

Hypotheses: Age, education, family income, gestational age, gravidity, perceived benefits of action and perceived barriers to action can explain the variability of the health-promoting behaviors of pregnant women.

The factors which can predict 22 % of health-promoting behaviors of pregnant women are the perceived benefits of actions, perceived barriers to action and age ($p < 0.001$, $p < 0.001$, $p < 0.01$ respectively; Table 10).

Perceived benefits of action

The perceived benefits of action are positively and significantly related with health- promoting behaviors ($r = 0.388$, $p < 0.01$; Table 8) and accounted for 15 % of the variance of health-promoting behaviors of pregnant women. Namely, the pregnant women who had high perceived benefit of health-promoting behaviors would had good health-promoting behaviors. On the contrary, the ones who had low perceived benefit of health-promoting behaviors would have poor health-promoting behaviors.

The perceived benefits of action is the first variable which was selected to accounted for the variance of health-promoting behaviors of pregnant women. Namely, the perceived benefits of these behaviors would have positive effect on the health of pregnant women and their fetuses. According to Pender (1996: 66-73), the perceived benefits of actions had an influence on the action of health-promoting behaviors. The Expectancy-Value Theory also said that person would engage in behaviors or maintain these behaviors when those outcomes were relevant to personal

or vicarious experience and anticipated benefits that would occur. Health Belief Model of Becker (1974: 89) also documented that perceived benefits were a direct motivation to health-promoting behaviors.

The results indicate that nearly half of subjects (44%) were educated from high school. Women of this education level would understand the information received from the health-care providers. This result is consistent with the conduct of Opassiriwit (1988) which found the positively and significantly relationship between education level and the perceived benefits of those actions. Moreover, the results also presented that the majority of subjects visited ANC regularly, could observe the abnormal signals during pregnancy, had sufficient rest and sleep, received sufficient nutrient diet, and more than one third had exercise regularly (89.6%, 67.6%, 61.2%, 59.2% and 38.8% respectively). They engaged in those behaviors because they perceived the benefits of those actions. Therefore, the perceived benefits of action is the first variable which was selected to accounted for the variance of health-promoting behaviors of pregnant women.

The perceived benefits of action are mental representations of the positive or reinforcing consequences of a behavior (Pender, 1996:68). This result is consistent with the conduct of Opassiriwit (1988) and Tungchareon(1991) which found the positively and significantly relationship between self care behaviors and the perceived benefits of those actions. Nirattharadorn (1996:85) also found that the perceived benefits of action of pregnant women were positively and significantly related with the health- promoting behaviors.

Perceived barriers to action

The perceived barriers to action were negatively, significantly related with the health-promoting behaviors ($r = -0.235$, $p < 0.01$) and accounted for 3.1 % of the variance of health-promoting behaviors of pregnant women. When it cooperate with perceived benefits of action they can accounted for 18.1 %. Namely, the pregnant women who perceived low barriers to those behaviors would have good health-promoting behaviors. On the contrary, the ones who perceive high barriers to those behaviors would have poor health-promoting behaviors. The perceived barriers to action were the second variable which was selected to account for the variance of health-promoting behaviors of pregnant women.

One possible explanation is that the pregnant women estimated the benefits of outcomes and barriers to engage in action. If the pregnant women perceived that those actions have more benefits outcomes than barriers to do, they would decide to engage in health-promoting behaviors. According to Pender (1996: 66-73), when pregnant women perceived low barriers, they would have high readiness to perform health-promoting behaviors. Health Belief Model of Becker (1974: 89) also supported that perceived barriers to action had direct effects on health-promoting behaviors. Therefore, the pregnant women who perceived high benefits of actions and low barriers to actions, would have an opportunity to engage in health-promoting behaviors. The perceived barriers to action, thus, were the second predictor variable of health-promoting behaviors.

The results also documented that most of the subjects had good attitude to health care provider and were convenient to come to ANC (82.4% and 79.6% respectively). Nearly half of the subjects (42.4%) had family income ranged from

8,000 to 16,000 baht per month. They could afford some needed resources, which were good for their health during pregnancy (Edelman & Mendle, 1990: 18). They also had caregiver and mental support from their husbands because most of them had good marital relationship (90%; Table 1). This result is consistent with the conduct of Connenwett (1985: 134) which reported that an important factor, which produced behaviors, is good marital relationship. In addition, some of the subjects (44%) educated high school level, as a result, they could understand about the information received from health care provider and could plan to have effective health-promoting behaviors.

Therefore, the pregnant women who had available free time, moderate family income, good attitude to health care provider, good marital relationship, and moderate education, had low perceived barriers to health-promoting behaviors. These results are consistent with the previous studies (Pasunun, 1986: 82; Opasiriwit, 1988; Nirattharadorn, 1996) which found the negative relationship between perceived barriers to actions and the giving cooperation to therapy behaviors, self-care behaviors and the health-promoting behaviors of pregnant women respectively.

Age

Age is positively related with health-promoting behaviors ($r = 0.207$, $p < 0.01$; Table 7). When it cooperates with perceived benefits and perceived barriers to action, they can increasingly account for 3.9% of variance of health-promoting behaviors of pregnant women. When it cooperate with perceived benefits of action and perceived barriers to action they can accounted for 22.0 %. Namely, the older pregnant women will have better health-promoting behaviors whereas the young ones will have worse

health-promoting behaviors. Age is the third variable, which was selected to account for the variance of health-promoting behaviors of pregnant women. It could be concluded that the elder women would have more experiences, higher maturity, make careful consideration and better decision than the younger ones (Lazarus & Folkman, 1984: 172). These findings are consistent with the previous studies (Tumgunma, 1997; Boonsom, 1997) which found that age was significantly, positively related with health-promoting behaviors in high-risk and normal pregnant women.

Therefore, the perceived benefits of action, perceived barriers to action and age accounted for 22 % of the variance in health-promoting behaviors of pregnant women.

Other variables including education level, family income, gestational age and gravidity did not explain the variance in health-promoting behaviors of pregnant women because they did not have significant relationship with health-promoting behaviors (Table 6) which could be discussed as follows:

Education level have no significant relationship with health-promoting behaviors of pregnant women ($p > 0.5$; Table 6). This result is not consistent with the study of Ruth (1973: 136-156) which found that the highly educated person could easily perceive and understand the information than the lower one. It may be the result of little variation of the education level of the subjects, which mostly had primary and high school level (44.8% and 44% respectively). The health-promoting behaviors of pregnant women seem to have no difference. Moreover, they also received some advice and information for ANC because they had visited ANC at least two times. In addition, the health-promoting behavior questionnaire did not assess the basic knowledge of the subjects. Therefore, education level did not have significantly relationship with health-promoting behaviors. These results are consistent with some

previous studies (Nirattharadorn, 1996; Wayuhuerd, 1992) but are inconsistent with the conducts of Poksinjumroon (1995) and Nualyong (1991) which found positive relationship with health-promoting behaviors in pregnancy induced hypertension women.

Family income have no significant relationship with health-promoting behaviors of pregnant women ($p > 0.5$; Table 6). This result is not consistent with the Health-Promotion Model (Pender, 1982: 161-162) which stated that the women with high socioeconomic status could have more opportunity to find good and beneficial resources to their health than the lower ones. It is possible that other variables such as family system, their husbands and relatives, and health care providers had more effects on their health-promoting behaviors. Therefore health-promoting behaviors did not depend on the family income. This result is consistent with the studies of Boonsom (1997) but is inconsistent with the conducts of Wayuhuerd (1994).

Gestational age has no significant relationship with health-promoting behaviors of pregnant women ($p > 0.5$; Table 6). It may be the result of the regularly visiting ANC of these subjects (89.6%; Table 7). They would receive gradually augmentation of information and advice about their pregnancy following their increasing gestational age. Moreover, they could ask the doctors or nurses when they wondered (38%; Table7). As a result, health-promoting behaviors did not depend on the gestational age. This result is consistent with that one of Boonsom (1997).

Gravidity has no significant relationship with health-promoting behaviors of pregnant women ($p > 0.5$; Table 6). One possible explanation is that whether fetus was whatever number of her children, the feeling of maternal woman always loved and had attention to her fetus. Moreover, the information and advice, which provided ANC,

would be the same information to every pregnant woman both in primigravida and multipara. In addition, those pregnant women could exchange their experience to each other by talking. As a result, health-promoting behaviors did not depend on the gravidity. This result is consistent with the studies of Boonsom (1997) and Boontub (1991).

Those variables, which have no significant relationship with health-promoting behaviors of pregnant women, also have interrelationship between each variable (Table 8). Namely, some variables could be chosen to explain health-promoting behaviors. The most related variables will be chosen to explain first (Elazar, 1982; Pedhazur, 1982) then the next variables. The effects of interrelationship between each variable may lead to reduce explanation in health-promoting behaviors.

This result partially supported the Health-Promotion Model of Pender (1996) which age, perceived benefits of action and perceived barriers to action are proposed as a determinant of health-promoting behaviors. However, the other variables include education level, family income, gestational age and gravidity did not explain the variance in health-promoting behaviors of pregnant women.

In conclusion, age, perceived benefits of action and perceived barriers to action accounted for 22 % of the variance in health-promoting behaviors of pregnant women. 78% of the variance in health-promoting behaviors of pregnant women could not explain by the variables include education level, family income, gestational age and gravidity. According to Pender (1996), there are many variables which may have effect on health-promoting behaviors of pregnant women and may be needed for further exploration such as perceived self-efficacy, activity-related affect, interpersonal influences and situational influences.

CHAPTER VI

CONCLUSION

Conclusion of the study

This study is a descriptive research of which the purposes are to study the perceived benefits and barriers to health promoting behaviors and health-promoting behaviors of pregnant women. The predictive factors to health promoting behaviors as follows: perceived benefits and barriers to action and personal factors (age, education, family income, gestational age and gravidity) are also examined.

The samples were the pregnant women who came to ANC at least 2 times at Siriraj Hospital, Rajvithi Hospital, Bangkok Metropolitan Administration Medical College and Vajira Hospital. There were 250 pregnant women by purposive sampling who met the inclusion criteria and included in this study. The instruments used in this study composed of four parts and had semi-structured interviews. The data was analyzed with SPSS program and presented in the form of frequency, the percentage, the mean, standard deviation, multiple correlation and multiple stepwise regression. The results are as follows:

1. The majority of subjects were 20-35 years old (79.6 %). Most of them educated form primary school and high school (44.8 % and 44.0 % respectively). The family income mostly was in range of 8,000-16,000 baht/month (42.4 %). Their gestational ages were more than 28 weeks (56.8 %). Most of them (52.4 %) were primigravida. The majority of the subjects were married (95.2 %) and lived in a nuclear family (70.4 %). The age of spouses mostly ranged from 20-35 years old (78.4

%). They mostly educated from high school (38.4 %). Most of their occupation was employee (80.8 %). During pregnancy, the marital relationship did not change in nearly all of the subjects (96.0 %). (Table 1 and 2).

2. The total scores of the perceived benefits of health-promoting behaviors in the study were at a high level. (Table 3 and 4).

3. The total scores of the perceived barriers to health-promoting behaviors in the study were at a low level. (Table 3 and 5).

4. The total scores and subtotal subscale scores of health-promoting behaviors were of at rather good levels. (Table 6).

5. The age, perceived benefits and barriers to action accounted for 22 % of the variance in health-promoting behaviors ($p < 0.01$; Table 10).

Recommendations

From the findings, although pregnant women had good and rather good health promoting behavior levels, some behaviors were of poor and rather poor level. They included: appropriate method to control stress, the abstinence from alcohol, tea, coffee and beer during pregnancy, the joining in family or neighborhood activities, the talking or discussion about their anxiety and problems with trusting person, the interesting in learning new things and challenging them, the practice following the principles of religion in order to be a refuge, the checking teeth with dentist and the exercise as recommended by health care provider. Therefore, the researcher has recommends as follows:

Suggestions and applications of research findings:

The implication and application for nursing practice:

1. From the results, nurses should screen pregnant women with three significant factors: age, perceived benefits and barriers to action in order to know who are at risk to have poor health-promoting behaviors. Therefore, nurses in ANC should assess perceived benefits and barriers to action of every pregnant woman and have more awareness of young pregnant women who come to attend ANC in order to explore the problems during health-promoting behaviors. Those data would give some guidelines to cooperate a plan with pregnant women to promote health behaviors.

2. Nurses in ANC should set a group, which can give education or advice about the health-promoting behaviors for pregnant women. They may develop a class or some media such as booklet, sheet or video. Moreover, they should be aware with young pregnant women about these behaviors as follows:

2.1 Nurses should check the teeth of pregnant women and cooperate with the dentist in the hospital in order to refer the pregnant women who have tooth problems. Moreover, they should stimulate and motivate the women of perceived benefits of dental care during pregnancy.

2.2 Nurses should provide exercise programs for pregnant women. These programs may be for an individual or for a group. There should really be a demonstration and a practice as well as an evaluation about the ability and confidence of pregnant women to follow the program.

2.3 Nurses should advice about time management, meditation or relaxation technique for pregnant women in order to promote and stimulate the perceived benefits of suitable stress management.

2.4 Nurses should emphasize on giving information about the bad results of drinking tea, coffee and alcohol during pregnancy.

Suggestions for further studies

1. There should be a qualitative research about the perceived benefits and perceived barriers of health-promoting behaviors.

2. A qualitative research should also be done to explore health-promoting behaviors of pregnant women.

3. To study other factors which may affect health-promoting behaviors such as the perceived self-efficacy, activity-related affect, interpersonal influences and situational influences of pregnant women.

BIBLIOGRAPHY

Abel, M. (1979). Nutrition part I : Implication for maternal,fetal and neonatal systems. In Clark,A.L.,Affonso,D,D. & Harris,T,R. (Eds.), Child bearing : A nursing perspective. (2 nd ed .).Pliladelphia: F.A. Davis Company.

Andolsek, K.M. (1990). Obstetric care: Standards of prenatal, intrapartum and postpartum management. Philadelphia: Lea & Febiger.

Becker, M.H.,et at. (1974). "The Health Belief Model and Sick Role Behavior." In the health belief model and personal health behavior. New Jersy : Charles B. Slack.

Benson, R.C. (1980). Handbook of obstetrics and gynecology. (5 th ed.). Los Altos: Calif., Lange.

Benson,R.C.& Pernoll,M.L.(1994).Handbook of obstetrics and gynecology. (9 th ed.).Singapore:McGraw-Hill.

Beischer, N.A. (1986). Obstetrics and the newborn: An illustrated textbook. (2 nd ed.). Sydney:Saunders.

Bethea, D.C. (1984). Introductory maternity nursing.(4 th ed.). Philadelphia :J.B.lippincott.

Broom,B.L. & Novak, J.C. (1995). Ingalls & salerno's maternal and child health nursing. St. Louis: Mosby.

Burroughs, A. (1986). Maternity nursing. (5 th ed.). Philadelphia:W.B.Sauders.

Byrne, C. & Hunsberger, M.M. (1989). Concepts of illness: Stress, crisis, and coping. In R.L.R. Foster, M.M.Hunsberger & J.J.T. Anderson (Eds.), Family-centered-nursing care of children. Philadelphia: W.B.Saunders.

Caplan, G. (1974). Support system and community mental health. New York : Behavioral Publication.

Clark, A.L., Affonso, D.D. & Harris, T.R. (1979). Child bearing : A nursing perspective.(2 nd.ed.).Philadephia : F.A. Davis.

Connenwett, L.R. (1985). " Network structure social support and the buffering hypothesis. Psychological bullitin, 98, 310-353.

Cranley, M.S.(1983). Perinatal risk. JOGN Nursing, 22 (May-June), 13-18.

Cropley,C.(1983).Assessment of mathering behavior: in high risk perinatal nursing. Edithed by Vestal, K.W. and Mckenzie, C.A.Philadelphia : W.B.Saunders.

Dyer, E.D. (1983). Courtship, marriage and family: American style. Homewood Illinios: The Dorsey Press.

Edelman , C.L.&Mandle, C.L.(1990).Health promotion throughout the lifespan. (3 rd.ed.).Pliladelphia: Mosby-Yearbook, Inc.

Elazar, J. P.(1982). Multiple regression in behavioral research explanation and prediction. (2 nd ed.). Newyork : Holt, Rinechart and Winstion.

Ferguson, K., et al. (1989). Attitudes, knowledge, and beliefsas predictors of exercise intent and behavior in schoolchildren. Journal of School Health, 59, 112-115.

Gift, H.C. (1978). Social & psychological barriers to dental care. Consideration of the nonpoverty income individaul. Jornal of the American College of Dentistry, 45, 70-183.

Gorric, T.M., McKinney, E.M. & Murray, S.S.(1994). Foundations of maternal newborn nursing . W.B. : Saunders Company.

Hacker,N.F. & Moore,J.G. (1986). Essentials of obstetrics and gynecology. Philadelphia: Saunders.

House, D.R. (1978). Barriers to access to dental care: An economic examination. Journal of the American College of Dentists, 45, 160-169.

Hymovich, D.P. & Chamberlin, R.W.(1980).Child and family development : Implication for primary health care. New-York : McGraw-Hill Book.

Jenzen, M.D.,Benson, R.C. & Bobak, I.M.(1979). Maternity care, the nurse and the family.Saint Louis : The C.V.Mosby.

Karl, S.V. & Cobb, S. (1966). "Health Behavior, Illness Behavior and Sick Role Behavior : I. Health and Illness Behavior." Archives Environmental of Health,12 (February): 246-261.

Kerlinger, F.N. & Pedhazur, E.J. (1973). Multiple regression in behavior research. New York: Holt, Rinehart and Winston.

Klinger, M. (1984). " Compliance and post MI patient ". The Canadian Nurse, 80 (August): 32-38.

Laffery, S.C. & Isenberg, M. (1983). The relationship of internal locus of control, value placed on health, perceived importance of exercise, and participation in physical activity doing leisure. International Journal of Nursing Studies, 20 (3),187-196.

Lambert ,V.A. & Lambert,C.E.(1979) .The impact of physical illness: And melted mantal health concepts. Englewood cliffs, N.J:Prentice-Hall.

Langlie ,J.K.Z.(1977).Social network,health beliefs, and preventive health behavior, Journal of Health and Social Behavior,18(September) ,244-260.

Lazarus, R.S. & Folkman, S. (1984). Stress, appraisal and coping. New York: Springe.

Marshall, V.A. (1991). Maternal health practices and complication of term labour. Journal of Nurse-Midwifery, 36 (3), 168-173.

Meisenheder, J.B. (1986). Self-esteem in women: The influence of employment and perception of husband appraisal. Image: Journal of Scholarship, 18(1), 8-13.

Melnyk, K.A. (1988). Barriers: Acritical review of recent literature. Nursing Research,37, 196-201.

Norbeck, J.S. and Tilden, V.P. (1983). Life stress, social support and emotional disequilibrium complication of pregnancy : A perspective multivariate study. Journal of Health and Social Behavior, 24 (March), 30-46.

Olds, S.B., et al. (1980). Obstetric Nursing. California : Addison Wesley

Palank, C.L.(1991). Determinants of health-promoting behavior. Nursing Clinics of North America,30 (December) : 815-832.

Pedhazur, E.J. (1982). Multiple regression in behavioral research:Explanation and Prediction, (2 nd ed.). New York: Holt, Rinehart and Watson.

Pender, N.J. (1987). Health promotion in nursing practice. (2 nd ed). California : Appleton & Lang.

_____.(1996). Health promotion in nursing practice. (3 rd ed). Connecticut : Appleton & Lang.

Pilliteri, A. (1995). Maternal and child health nursing : Care of the childbearing and childbearing family. (2 nd ed). Philadelphia : J.B. Lippincott.

Pritchard, J.A. & MacDonald, P.C. (1985). Williams Obstetrics. (17 th ed). New York : Appleton-Century-Crofts.

Scott, J.R., Disaia, P.J., Hammond, C.B. & Spellacy, W.N. (1994). Obstetrics and Gynecology. (7 th ed.). Philadelphia: J.B. Lippincott.

Stuifbergen, A.K., et al. (1990).Barriers to health promotion for individuals with disabilities. Family Community Health,13, 11-12.

Walker, S.N., Sechist, K.R. & Pender, N.J. (1987). The health-promoting lifestyle profile : development and psychometric characteristics. Nursing research, 36 (March–April), 76-81.

_____. (1995). Health-promoting lifestyle profile II.

Walker,L.O. (1992). Parent-infant nursing science: Paradigms, phenomena, methods. Philadelphia: F.A. Davis company.

Wallace, P.G., Brennan, B.J. & Haines, A.P.(1987) . "Are general practitioners doing enough to promote health lifestyle ? : finding of medical research council's general practice research framework study on lifestyle and health ". British Medical Journal, 294 (April) : 940-941.

Wren, B.G. (1985) . Hand book of obstetrics and gynecology. London : Chamman and Hall.

กรมอนามัย กระทรวงสาธารณสุข. (2540). (Misnistry of Public Health, 1997). ข้อมูลอนามัยแม่และเด็ก ประเทศไทย 2540. กรุงเทพมหานคร:อัลฟา รีเสริช์.

กาญจนา บุญทับ.(2534). (Kanjana Boontab, 1991). ปัจจัยพื้นฐานบางประการ แรงสนับสนุนทางสังคม และความสามารถในการดูแลตนเองของหญิงตั้งครรภ์ . วิทยานิพนธ์ปริญญาวิทยาศาสตรมหาบัณฑิต, สาขาพยาบาลศาสตร์ บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล.

กำแหง จาตุรจินดาและคณะ.(บรรณาธิการ). (2534). (Kumhang Jaturajinda, 1991). สูติศาสตร์รามาธิบดี .(พิมพ์ครั้งที่ 3). กรุงเทพมหานคร: เมดิคัล มีเดีย.

ค้วน ขาวหนู.(2534).(Kon Koawnu, 1991). โภชนศาสตร์ .(พิมพ์ครั้งที่ 5).กรุงเทพมหานคร: อักษรพิพัฒน์.

ณัฏฐญา พัฒนะวาณิชนันท์. (2543). (Nuttaya Patanavanichnun, 2000). การรับรู้สมรรถนะของตนเอง และพฤติกรรมส่งเสริมสุขภาพของสตรีตั้งครรภ์ ที่ทำงานในโรงงานอุตสาหกรรม . วิทยานิพนธ์ปริญญาพยาบาลศาสตรมหาบัณฑิต, สาขาการพยาบาลแม่และเด็ก บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล.

ดารินี สุวภาพ. (2542).(Darinee Suwabhabh, 1999). ปัจจัยที่มีอิทธิพลต่อพฤติกรรมส่งเสริมสุขภาพของคนงานสตรีที่ทำงานในโรงงานอุตสาหกรรมที่มารับบริการที่หน่วยฝากครรภ์. วิทยานิพนธ์ปริญญาพยาบาลศาสตรดุษฎีบัณฑิต บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล.

เทียมศร ทองสวัสดิ์. (2531). (Temsorn Tongsawat, 1988). การพยาบาลในระยะตั้งครรภ์. (พิมพ์ครั้งที่ 1).กรุงเทพมหานคร :โอเดียนสโตร์.

ธวัชชัย วรพงศธร. (2532). (Tawatchai Varapongsathorn, 1989). ข้อพิจารณาการใช้สถิติการถดถอยพหุสำหรับงานวิจัย. วารสารวิจัยวิทยาศาสตร์การแพทย์, 3 (1), 55-62.

ธีระ ทองสงและชเนนท์ วนาภิรักษ์ (บรรณาธิการ). (2541). (Tera Tongsong and Chanien Wanapirak, 1998). สูติศาสตร์. (พิมพ์ครั้งที่ 4). กรุงเทพมหานคร : พี. บี. ฟอเรน บุ๊คส์ เซ็นเตอร์.

นิตยา ภาสุนันท์.(2529).(Nitaya Pasunun, 1986). ความสัมพันธ์ระหว่างความเชื่อด้านสุขภาพและความรู้เกี่ยวกับความร่วมมือในการรักษาของผู้ป่วยโรคหัวใจขาดเลือด .วิทยานิพนธ์ปริญญาวิทยาศาสตรมหาบัณฑิต, สาขาพยาบาลศาสตร์ บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล.

เบนสัน, อา, ซี และเพอร์นอลล์, เอ็ม, แอล. (2538). (Benson, R.C. & Pernol, M.L., 1995). คู่มือสูติศาสตร์ และนรีเวชวิทยา .(จตุพล ศรีสมบูรณ์, อภิชาต โอฬารรัตนชัย และชเนนท์ วนาภิรักษ์, ผู้แปล) กรุงเทพมหานคร : แมคกรอ-ฮิล อินเตอร์เนชั่นแนล เอ็มเตอร์ไพรส์อิงค์.

ประมวน สุนากร.(2531).(Pamol Sunakorn, 1988). ระบาดวิทยาและปัจจัยเสี่ยงของทารกน้ำหนักน้อยและพิการแต่กำเนิดในประเทศไทย. กรุงเทพมหานคร :โพรแอนด์.

ประเสริฐ แย้มกลิ่นฟุ้ง และคณะ. (2529). (Prasert Jamkinfung, 1986). สังคมชนบทไทย. กรุงเทพฯ: โรงพิมพ์จุฬาลงกรณ์มหาวิทยาลัย.

พิชัย เจริญพานิช. (2539). (Pichai Chareonpanit,1996). แก่นแท้ของสูติศาสตร์ ปัญหาและแนวทางแก้ไข. กรุงเทพมหานคร :พี. เอ.ลีฟวิ่ง จำกัด.

พิมพ์ใจ จารุวัชรีวงศ์. (2536). (Pimjai Jaruwatchareewong,1993). การศึกษาอิทธิพลของปัจจัยด้านความรู้และการรับรู้ ปัจจัยส่งเสริมต่อพฤติกรรมส่งเสริมสุขภาพของหญิงตั้งครรภ์ในชนบท จังหวัดอุบลราชธานี. วิทยานิพนธ์ปริญญาพยาบาลศาสตรมหาบัณฑิต มหาวิทยาลัยขอนแก่น.

ภาวิณี โภคสินจำรูญ. (2538). (Pawinee Pokasinjumroon, 1995). ความสัมพันธ์ระหว่างความเชื่อด้านสุขภาพกับพฤติกรรมการดูแลตนเองของหญิงตั้งครรภ์ชาวไทยมุสลิมที่มีภาวะความดันโลหิตสูงเนื่องจากการตั้งครรภ์. วิทยานิพนธ์ปริญญาวิทยาศาสตรมหาบัณฑิต, สาขาพยาบาลศาสตร์ บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล.

มยุรี นิรัติธราดร. (2539). (Mayuree Niratharadorn,1996). การศึกษาการรับรู้ประโยชน์ การรับรู้อุปสรรคของการส่งเสริมสุขภาพของหญิงตั้งครรภ์วัยรุ่น. วิทยานิพนธ์ปริญญาพยาบาลศาสตรมหาบัณฑิต, สาขาการพยาบาลแม่และเด็ก บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล.

มัลลิกา ตั้งเจริญ.(2534). (Muliga Tungchareon,1991). การรับรู้เกี่ยวกับโรคเอดส์กับความสามารถในการดูแลตนเองเพื่อป้องกันการติดเชื้อโรคเอดส์ในหญิงอาชีพพิเศษ. วิทยานิพนธ์ปริญญาวิทยาศาสตรมหาบัณฑิต, สาขาพยาบาลศาสตร์ บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล.

รภีพร ประกอบทรัพย์. (2541). (Rapeeporn Prakobsup,1998). การสนับสนุนทางสังคมจากสามี การสนับสนุนทางสังคมจากมารดา และพฤติกรรมส่งเสริมสุขภาพของหญิงตั้งครรภ์วัยรุ่น. วิทยานิพนธ์ปริญญาพยาบาลศาสตรมหาบัณฑิต, สาขาการพยาบาลแม่และเด็ก บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล.

ฤดี ปุงบางกระดี่. (2540). (Rudee Pungbangkadee, 1997). การศึกษาการรับรู้ภาวะสุขภาพและพฤติกรรมการดูแลตนเองของหญิงตั้งครรภ์วัยรุ่น. วิทยานิพนธ์ปริญญาพยาบาลศาสตรมหาบัณฑิต, สาขาการพยาบาลแม่และเด็ก บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล.

ศุภาวดี วายุเหือด. (2536). (Supawadi Wayuhuerd, 1993). ความสัมพันธ์ระหว่างความรู้สึกมีคุณค่าในตนเอง การสนับสนุนทางสังคม กับพฤติกรรมการดูแลตนเองของหญิงตั้งครรภ์.

วิทยานิพนธ์ปริญญาวิทยาศาสตรมหาบัณฑิต, สาขาพยาบาลศาสตร์ บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล.

สต็อปปาร์ด,เอ็ม.(2538). (Stopard, M., 1995).280 วัน เพื่อครรภ์คุณภาพ. (เฉลิมศรี ธนันตเศรษฐ และคณะ , ผู้แปล). กรุงเทพมหานคร : แปลน พริ้นติ้ง.

สานิตย์ พ่วงทรัพย์.(2532). (Sanit Poungsub,1989). การตายของทารกปริกำเนิด ในมารดาครรภ์เดี่ยวที่โรงพยาบาลสระบุรี :2526 – 2530.วิทยานิพนธ์ปริญญาวิทยาศาสตรมหาบัณฑิต, สาขาการเจริญพันธ์และวางแผนประชากร บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล.

สุรี สิมารักษ์ และธีระ ทองสง. (2537). (Sure Simarak & Teera Tongsong, 1994). การตั้งครรภ์และการคลอด. (พิมพ์ครั้งที่ 2). กรุงเทพมหานคร : พี. บี. ฟอเรนบุ๊คส์เซ็นเตอร์.

สุรี โอภาสศิริวิทย์.(2531).(Suree Opasiriwit,1988).ความสัมพันธ์ระหว่างการรับรู้และปัจจัยบางประการกับการดูแลตนเองของหญิงตั้งครรภ์.วิทยานิพนธ์ปริญญาวิทยาศาสตรมหาบัณฑิต,สาขาการพยาบาลศาสตร์ บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล.

สุวชัย อินทรประเสริฐ. (2530).(Suwachai Intraraprasert,1987). คู่มือตั้งครรภ์ เตรียมคลอด. กรุงเทพมหานคร : อักษรสัมพันธ์.

อรทัย ธรรมกันมา. (2540).(Orathai Tumgunma, 1997). การสนับสนุนจากคู่สมรส และพฤติกรรมการส่งเสริมสุขภาพในหญิงตั้งครรภ์ที่มีภาวะเสี่ยง. วิทยานิพนธ์ปริญญาพยาบาลศาสตรมหาบัณฑิต, สาขาการพยาบาลแม่และเด็ก บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล.

อังคณา นวลยง. (2535). (Aungkana Nualyong, 1992). ความสัมพันธ์ระหว่างการรับรู้เกี่ยวกับโรค การสนับสนุนจากคู่สมรส กับความร่วมมือในการปฏิบัติตนตามแผนการรักษาของหญิงตั้งครรภ์ที่มีภาวะความดันโลหิตสูงเนื่องจากการตั้งครรภ์. วิทยานิพนธ์ปริญญาวิทยาศาสตรมหาบัณฑิต , สาขาพยาบาลศาสตร์ บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล.

อัจฉรา โอประเสริฐสวัสดิ์. (2531). (Autchara Oprasertsawat,1988). ความสัมพันธ์ระหว่างการสนับสนุนทางสังคมกับพฤติกรรมการปฏิบัติตนด้วยสุขภาพในผู้ป่วยโรคหลอดลมอุดกั้นเรื้อรัง. วิทยานิพนธ์ปริญญาวิทยาศาสตรมหาบัณฑิต , สาขาพยาบาลศาสตร์ บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล.

อุษาพร ชวลิตนิธิกุล. (2535). (Ausaporn Chalvalitnitikul, 1992). การยกระดับคุณภาพชีวิตแรงงานสตรี. วารสารพยาบาล, 41(3), 221-227.

อุ่นจิตต์ บุญสม. (2540). (Unjit Boonsom, 1997). การศึกษาพฤติกรรมการส่งเสริมสุขภาพของหญิงตั้งครรภ์. วิทยานิพนธ์ปริญญาพยาบาลศาสตร์มหาบัณฑิต, สาขาพยาบาลศาสตร์. บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล.

APPENDIX

APPENDIX A

List of Experts

There are five experts who have validated the content of research instrument. They are:

1. Assoc.Prof.Dr. Nirat Imamee: Department of Public Education and Behavioral Science Faculty of Public Health, Mahidol University.

2. Asst.Prof. Thitima Champiratana: Maternal and Child Nursing Department, Faculty of Nursing, Mahidol University.

3. Dr. Nantawon Suwannaroop: Puplic Nursing Department, Faculty of Nursing, Mahidol University.

4. Dr. Kitirat Techatraisak: Department of Obstetrics and Gynecology , Faculty of Medicine Siriraj Hospital, Mahidol University.

5. Asst.Prof. Yaowalak Serisathien: Maternal and Child Nursing Department, Faculty of Nursing, Mahidol University.

APPENDIX B

Consent Form

การตั้งครรภ์เป็นภาวะที่มีการเปลี่ยนแปลงของชีวิต ทั้งทางด้านร่างกาย จิตใจ และสังคม ท่านเป็นบุคคลหนึ่งซึ่งตั้งครรภ์ ท่านมีประสบการณ์โดยตรงเกี่ยวกับการเปลี่ยนแปลงดังกล่าว ข้อมูลเกี่ยวกับการกระทำที่ท่านปฏิบัติในชีวิตประจำวัน เพื่อให้ตนเองมีสุขภาพที่ดี ทั้งทางด้านร่างกาย จิตใจ อารมณ์ และสังคม และความคิดเห็นของท่านเกี่ยวกับการกระทำที่ก่อให้เกิดประโยชน์ต่อตนเองและทารกในครรภ์ รวมถึงความคิดเห็นของท่านเกี่ยวกับเหตุการณ์ต่าง ๆ ที่ขัดขวางการกระทำที่ท่านปฏิบัติในชีวิตประจำวัน เพื่อให้ท่านมีสุขภาพที่ดี ข้อมูลเหล่านี้เป็นข้อมูลที่สำคัญและเป็นประโยชน์ สำหรับพยาบาลนำมาเป็นแนวทางในการให้บริการสุขภาพ เพื่อให้ความช่วยเหลือแก่หญิงตั้งครรภ์คนอื่น ๆ ต่อไป

ดังนั้น ท่านจึงเป็นบุคคลสำคัญที่ได้เป็นตัวแทนของหญิงตั้งครรภ์ ในการให้ข้อมูลดังกล่าวข้างต้น ซึ่งในการให้ข้อมูลในครั้งนี้ ขึ้นอยู่กับความสมัครใจของท่าน ข้อมูลที่ได้จากท่านทั้งหมดจะเป็นความลับและไม่มีการระบุชื่อ แม้ภายหลังเกิดการเปลี่ยนใจ ท่านมีสิทธิ์ที่จะขอถอนตัวได้โดยไม่มีข้อแม้ใด ๆ และไม่ว่าท่านจะเข้าร่วมวิจัยหรือไม่ก็ตาม จะไม่มีผลกระทบต่อการรักษาพยาบาลใด ๆ ที่ท่านควรจะได้รับทั้งสิ้น

ขอขอบคุณในความร่วมมือของท่าน

วิลาวัลย์ ถนอมรูป
ผู้วิจัย

สำหรับผู้เข้าร่วมวิจัย

ข้าพเจ้าได้อ่าน หรือได้รับคำอธิบายตามรายละเอียดข้างบนอย่างครบถ้วน และมีความเข้าใจเป็นอย่างดี ยินดีเข้าร่วมวิจัยครั้งนี้

ลายเซ็น .....
(.....)
ผู้เข้าร่วมวิจัย
วันที่ .....เดือน.....พ.ศ.....

APPENDIX C

แบบสัมภาษณ์ข้อมูลทั่วไปของหญิงตั้งครรภ์

คำชี้แจง: ให้ท่านขีดเครื่องหมาย ✓ ลงใน ☐ หรือเติมคำลงในช่องว่างให้ตรงกับความเป็นจริง

1. ปัจจุบันท่านมีอายุ.....ปี.....เดือน
2. ท่านจบการศึกษาชั้น.....
3. ท่านและสามีมีรายได้รวมกันประมาณเดือนละ.....บาท
   - ☐ พอใช้
     - ☐ มีเหลือเก็บ
     - ☐ ไม่มีเหลือเก็บ
   - ☐ ไม่พอใช้
     - ☐ มีหนี้
     - ☐ ไม่มีหนี้
4. ขณะนี้อายุครรภ์.....สัปดาห์
5. ท่านตั้งครรภ์ครั้งนี้เป็นครรภ์ที่.....
6. จำนวนบุตรของท่านที่มีชีวิตอยู่ในปัจจุบัน.....คน
7. ท่านเคยแท้งบุตรมาแล้ว.....ครั้ง
8. ลักษณะของครอบครัว
   - ☐ ครอบครัวเดี่ยว (อยู่ร่วมกับสามีและ/ หรือบุตร)
   - ☐ ครอบครัวขยาย (อยู่ร่วมกับสามีและ/หรือบุตร) และญาติ
9. ปัจจุบันสามีท่านมีอายุ.....ปี.....เดือน
10. สามีท่านจบการศึกษาชั้น.....
11. สามีท่านมีอาชีพ.....
12. สัมพันธภาพของท่านและสามีในระยะตั้งครรภ์
    - ☐ เหมือนเดิม
    - ☐ ไม่เหมือนเดิม ระบุเหตุผล.....
13. สถานภาพสมรสของท่าน
    - ☐ โสด
    - ☐ แต่งงาน
    - ☐ หย่า
    - ☐ แยกกันอยู่

แบบสอบถามพฤติกรรมส่งเสริมสุขภาพของหญิงตั้งครรภ์

คำชี้แจง: แบบสอบถามชุดนี้ประกอบด้วยข้อความจำนวน 49 ข้อ ขอให้ท่านพิจารณาว่าในระหว่างการตั้งครรภ์ท่านได้ปฏิบัติกิจกรรมด้านสุขภาพตามข้อความนั้นๆ บ่อยเพียงใด กรุณาตอบแบบสอบถามตามความเป็นจริง คำตอบของท่านไม่มีถูกหรือผิดและจะสรุปออกมาเป็นส่วนรวม เพื่อนำไปเป็นแนวทางในการปรับปรุงการให้บริการด้านการตรวจและการฝากครรภ์ให้มีคุณภาพดียิ่งขึ้น ซึ่งจะก่อให้เกิดประโยชน์อย่างมากแก่หญิงตั้งครรภ์ที่มารับบริการต่อไป

โปรดอ่านข้อความอย่างรอบคอบ แล้วทำเครื่องหมาย ✓ ลงในช่องที่ตรงกับความเป็นจริงตามการปฏิบัติหรือความรู้สึกของท่าน ขอให้ท่าน **เลือกตอบเพียงคำตอบเดียว** และ กรุณา **ตอบทุกข้อ** การเลือกตอบจะถือเกณฑ์ ดังนี้

เป็นประจำ	หมายถึง	ท่านปฏิบัติทุกครั้งหรือมีความรู้สึกทุกครั้ง เมื่อมีเหตุการณ์ตามข้อความในประโยคนั้น
เป็นส่วนมาก	หมายถึง	ท่านปฏิบัติบ่อยครั้ง หรือเป็นส่วนมาก หรือมีความรู้สึกบ่อยครั้งหรือเป็นส่วนมาก เมื่อมีเหตุการณ์ตามข้อความในประโยคนั้น
เป็นบางครั้ง	หมายถึง	ท่านปฏิบัติบ้างเป็นบางครั้ง แต่ไม่บ่อย หรือทำน้อยครั้ง หรือมีความรู้สึกบ้างเป็นบางครั้ง แต่ไม่บ่อยหรือทำน้อยครั้ง เมื่อมีเหตุการณ์ตามข้อความในประโยคนั้น
ไม่ปฏิบัติเลย	หมายถึง	ท่านไม่ค่อยได้ปฏิบัติหรือ ไม่เคยปฏิบัติเลย หรือไม่ค่อยมีความรู้สึกหรือไม่มีความรู้สึกเลย เมื่อมีเหตุการณ์ตามข้อความในประโยคนั้น

ตัวอย่าง

ข้อความ	เป็นประจำ	เป็นส่วนมาก	เป็นบางครั้ง	ไม่ปฏิบัติเลย
ก. ฉันรับประทานอาหารเช้า		✓		
ข. ฉันพักผ่อนอย่างเพียงพอ			✓	

ข้อความ	เป็นประจำ	เป็นส่วนมาก	เป็นบางครั้ง	ไม่ปฏิบัติเลย
1. ถ้ามีอาการผิดปกติเกิดขึ้นในระยะตั้งครรภ์ ฉันจะไปปรึกษาแพทย์หรือพยาบาล				
.....				
.....				
49. ฉันหยุดพักทุกครั้งเมื่อรู้สึกเหนื่อยจากการทำงาน				

แบบสอบถามการรับรู้ประโยชน์ของการปฏิบัติกิจกรรมส่งเสริมสุขภาพของหญิงตั้งครรภ์

คำชี้แจง: แบบสอบถามชุดนี้มีวัตถุประสงค์ เพื่อต้องการทราบความคิดเห็น หรือความเชื่อของท่านที่มีต่อประโยชน์ของการปฏิบัติกิจกรรมส่งเสริมสุขภาพในขณะตั้งครรภ์ ในแบบสอบถามนี้จะมีข้อความให้ท่านตอบจำนวน 17 ข้อ กรุณาตอบแบบสอบถามตามความรู้สึกที่แท้จริงของท่านให้มากที่สุด คำตอบของท่านจะไม่มีถูกหรือผิด และจะเป็นประโยชน์อย่างยิ่ง โดยผู้วิจัยจะนำคำตอบที่ได้ไปสรุป เพื่อหาแนวทางในการปรับปรุงการให้บริการ และให้การดูแลหญิงตั้งครรภ์รายอื่นต่อไป

โปรดอ่านข้อความแต่ละข้ออย่างรอบคอบ แล้วทำเครื่องหมาย ✓ ลงในช่องว่างที่ตรงกับความคิดเห็นของท่านมากที่สุด ขอให้ท่าน**เลือกตอบเพียงคำตอบเดียว** และกรุณา**ตอบทุกข้อ** การเลือกตอบจะถือเกณฑ์ดังนี้

เห็นด้วยมาก	หมายถึง	ท่านเห็นว่าข้อความในประโยคนั้น ตรงกับความคิดเห็นของท่านมากที่สุด หรือทั้งหมด
เห็นด้วยค่อนข้างมาก	หมายถึง	ท่านเห็นว่าข้อความในประโยคนั้น ตรงกับความคิดเห็นของท่านค่อนข้างมาก แต่ไม่ทั้งหมด
เห็นด้วยน้อย	หมายถึง	ท่านเห็นว่าข้อความในประโยคนั้น ตรงกับความคิดเห็นของท่านเพียงเล็กน้อย
ไม่เห็นด้วย	หมายถึง	ท่านเห็นว่าข้อความในประโยคนั้น ไม่ตรงกับความคิดเห็นของท่านเลย

ตัวอย่าง

ข้อความ	มาก	ค่อนข้างมาก	น้อย	ไม่เห็นด้วย
ก. การดื่มนมช่วยทำให้ฉันแข็งแรง		✓		
ข. การนอนหลับช่วยทำให้ฉันรู้สึกสดชื่น			✓	

ข้อความ	มาก	ค่อนข้างมาก	น้อย	ไม่เห็นด้วย
1. การรับประทานเนื้อสัตว์ ไข่ ถั่ว นม เพิ่มมากขึ้น ในขณะตั้งครรภ์จะช่วยในการสร้างอวัยวะต่าง ๆ ของลูกในท้องของฉัน				
.....				
.....				
17. การมาฝากครรภ์อย่างสม่ำเสมอ ช่วยให้แพทย์และพยาบาลดูแลฉันอย่างต่อเนื่อง เพื่อป้องกันอันตรายที่อาจจะเกิดขึ้นกับฉันและลูกในท้อง				

แบบสอบถามการรับรู้อุปสรรคของการปฏิบัติกิจกรรมส่งเสริมสุขภาพของหญิงตั้งครรภ์

คำชี้แจง: แบบสอบถามชุดนี้มีวัตถุประสงค์ เพื่อต้องการทราบความคิดเห็น หรือความเชื่อของท่านที่มีต่ออุปสรรคของการปฏิบัติกิจกรรมส่งเสริมสุขภาพในขณะตั้งครรภ์ ในแบบสอบถามนี้จะมีข้อความให้ท่านตอบ จำนวน 16 ข้อ กรุณาตอบแบบสอบถามตามความรู้สึกที่แท้จริงของท่านให้มากที่สุด คำตอบของท่านจะไม่มีถูกหรือผิด และจะเป็นประโยชน์อย่างยิ่ง โดยผู้วิจัยจะนำคำตอบที่ได้ไปสรุป เพื่อหาแนวทางในการปรับปรุงการให้บริการ และให้การดูแลหญิงตั้งครรภ์รายอื่นต่อไป

โปรดอ่านข้อความแต่ละข้ออย่างรอบคอบ แล้วทำเครื่องหมาย ✓ ลงในช่องว่างที่ตรงกับความคิดเห็นของท่านมากที่สุด ขอให้ท่านเลือกตอบเพียงคำตอบเดียว และกรุณาตอบทุกข้อ การเลือกตอบจะถือเกณฑ์ดังนี้

เห็นด้วยมาก	หมายถึง	ท่านเห็นว่าข้อความในประโยคนั้น ตรงกับความคิดเห็นของท่านมากที่สุด หรือทั้งหมด
เห็นด้วยค่อนข้างมาก	หมายถึง	ท่านเห็นว่าข้อความในประโยคนั้น ตรงกับความคิดเห็นของท่านค่อนข้างมาก แต่ไม่ทั้งหมด
เห็นด้วยน้อย	หมายถึง	ท่านเห็นว่าข้อความในประโยคนั้น ตรงกับความคิดเห็นของท่านเพียงเล็กน้อย
ไม่เห็นด้วย	หมายถึง	ท่านเห็นว่าข้อความในประโยคนั้น ไม่ตรงกับความคิดเห็นของท่านเลย

ตัวอย่าง

ข้อความ	มาก	ค่อนข้างมาก	น้อย	ไม่เห็นด้วย
ก. การออกกำลังกายในแต่ละวัน ทำให้ฉันเสียเวลา		✓		
ข. การมาตรวจครรภ์ตามแพทย์นัดต้องใช้เวลานาน ทำให้ฉันไม่อยากมาตรวจ			✓	

ข้อความ	มาก	ค่อนข้างมาก	น้อย	ไม่เห็นด้วย
1. ฉันไม่สามารถซื้ออาหารบำรุงร่างกาย เช่น นม ผัก ผลไม้ เนื่องจากต้องเสียค่าใช้จ่ายเพิ่มขึ้น				
.....				
.....				
16. ฉันกลัวแพทย์ หรือ พยาบาลดุ จึงไม่กล้าถาม หรือขอคำแนะนำ เกี่ยวกับการดูแลสุขภาพในขณะตั้งครรภ์				

BIOGRAPHY

Name : Miss Wilawon Thanomroop

Date of Birth : 21 March 1973

Place of Birth : Nan, Thailand

Institutions Attended : Bachelor of Nursing Science,
Uttraradit Nursing College, 1990-1994.

: Master of Nursing Science (Maternal and Child Nursing),
Mahidol University, 1998-2000.

Scholarship : University Development Commission (UDC)
Ministry of University Affairs, Thailand

Position & Office :1994-1998, Obstetric &Gynecology room, Nan Hospital
Position: Registered nurse

:1999-present,Obstetric& Gynecology of nursing
department, Nursing Faculty, Srinakharinwirot University.
Position: Lecturer