THE EFFECTIVENESS OF HEALTH EDUCATION PROGRAM ON THE COMPLICATION OF PREGNANCY AMONG PREGNANT WOMEN ATTENDING ANTENATAL CARE CLINIC AT RATCHABURI HOSPITAL

VITCHUORN PUNNEANG

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Vitchuorn Punneang

Miss.Vitchuorn Punneang

Candidate

Tharadol Kengganpanich

Assoc.Prof.Tharadol Kengganpanich,

B.Sc., M.A.

Major-Advisor

Anchalee Vongtangswad

Asst.Prof.Anchalee Vongtangswad

B.Ed., M.Ed.

Co-Advisor

Suree Chantramolee

Assoc.Prof.Suree Chantramolee

M.P.H., Dr.P.H.

Co-Advisor

Liangchai Limlomwongse

Prof.Liangchai Limlomwongse

Ph.D.

Dean

Faculty of Graduate Studies

Vason Silpasuwan

Assoc.Prof.Vason Silpasuwan, Dr.P.H.

Chairman

Master of Science (Public Health)

Major in Health Education and

Behavioral Sciences

Thesis

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on

October 20, 2000

Vitchuorn Punneang

Miss.Vitchuorn Punneang
Candidate

Tharadol Kengganpanich

Assoc.Prof.Tharadol Kengganpanich,
B.Sc., M.A.
Chairman

O. Pacheun

Asst.Prof.Oranut Pacheun
B.Sc., M.Sc., Dr,P.H.
Member

Suree Chantramolee

Assoc.Prof.Suree Chantramolee
M.P.H., Dr.P.H.
Member

Liangchai Limlomwongse

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

Kanda Vathanophas

Assoc.Prof.Kanda Vathanophas
M.D., M.Sc. in Hygiene
(P.H.Microbiology)
Dean
Faculty of Public Health
Mahidol University

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Vitchuorn Punneang

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The complication of pregnancy is presently a major public health problem that has detrimental effects on health of mothers and babies. Part of the cause is due to improper health behavior of pregnant women. This quasi-experimental research was to study the effectiveness of health education program on complication of pregnancy among pregnant women attending antenatal care clinic at Ratchaburi Hospital. The sample consisted of 103 respondents who were attending antenatal care clinic at Ratchaburi Hospital. There were 50 respondents in the experimental group and 53 in the comparison group, selected by random sampling. The experimental group received a planned health education program. The Protection Motivation Theory was applied as a construct of behavioral change. The experimental group participated in a health education program for 7 weeks. Data were collected by using questionnaires and antenatal records before and after the intervention. Statistical analysis was done by using percentage, mean, standard deviation, student's t-test and paired samples t-test.

The results revealed that after the intervention, the experimental group had changes in choosing food, resting and exercise, tension relaxation, excretion, observation of unusual signs and symptoms, and follow-up. The mean values of perceived severity, vulnerability, self-efficacy, response efficacy and health behavior were higher than those of the pre-test and comparison group with statistically significant differences, showing the effectiveness of the health education program. Because of limited time, the change of health behavior was not clear for decreasing Pregnancy-induced Hypertension but it was valuable for decreasing severity. Thus, it is recommended that this program should be applied to pregnant women for changing health behavior, as a means of decreasing risk of severe complications in another hospital.

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วท.ม. (สาธารณสุขศาสตร์)

วิชชุอร ปั้นเหน่ง : ประสิทธิผลของโปรแกรมสุขศึกษาในการลดโอกาสเกิดภาวะแทรกซ้อนระหว่างตั้งครรภ์ของหญิงตั้งครรภ์ที่มารับฝากครรภ์ โรงพยาบาลศูนย์ราชบุรี (THE EFFECTIVENESS OF HEALTH EDUCATION PROGRAM ON THE COMPLICATION OF PREGNANCY AMONG PREGNANT WOMEN ATTENDING ANTENATAL CARE CLINIC AT RATCHABURI HOSPITAL). คณะกรรมการควบคุมวิทยานิพนธ์ : ธราดล เก่งการพานิช, M.A., สุรีย์ จันทรโมลี, Dr.P.H., อัญชลี วงศ์ทางสวัสดิ์, M.Ed.97 หน้า.
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ภาวะแทรกซ้อนขณะตั้งครรภ์เป็นปัญหาสาธารณสุขที่สำคัญ อันจะมีผลต่อสุขภาพของมารดาและทารก ซึ่งสาเหตุส่วนหนึ่งนั้นเกิดจากการมีพฤติกรรมสุขภาพที่ไม่ถูกต้องของมารดาในขณะตั้งครรภ์ การวิจัยครั้งนี้เป็นการวิจัยกึ่งทดลอง เพื่อศึกษาประสิทธิผลของโปรแกรมสุขศึกษาในการลดโอกาสเกิดภาวะแทรกซ้อนระหว่างตั้งครรภ์ของหญิงตั้งครรภ์ที่มารับบริการฝากครรภ์ โรงพยาบาลศูนย์ราชบุรี กลุ่มตัวอย่างเป็นหญิงตั้งครรภ์ที่มารับฝากครรภ์ที่แผนกฝากครรภ์ โรงพยาบาลศูนย์ราชบุรี จำนวนทั้งสิ้น 103 คน แบ่งเป็นกลุ่มทดลอง 50 คนและกลุ่มเปรียบเทียบ 53 คน กลุ่มทดลองได้เข้าร่วมโปรแกรมสุขศึกษาที่ประยุกต์ทฤษฎีแรงจูงใจในการป้องกันเป็นแนวทางในการกำหนดกิจกรรม เป็นระยะเวลา 7 สัปดาห์ รวบรวมข้อมูลก่อนและหลังการทดลองโดยใช้แบบสอบถามและแบบบันทึกข้อมูลการฝากครรภ์ วิเคราะห์ข้อมูลด้วยสถิติ ร้อยละ ค่าเฉลี่ย ส่วนเบี่ยงเบนมาตรฐาน Student's t-test และ Paired sample t-test

ผลการวิจัยพบว่า ภายหลังการทดลองกลุ่มทดลองมีการเปลี่ยนแปลงดีขึ้นด้านการเลือกอาหาร การพักผ่อนและการออกกำลังกาย การผ่อนคลายความเครียด การขับถ่าย การสังเกตอาการผิดปกติ การมาตรวจตามนัด และมีคะแนนเฉลี่ยการรับรู้ความรุนแรง การรับรู้โอกาสเสี่ยง การรับรู้ความสามารถตนเอง ความคาดหวังในประสิทธิผลการตอบสนอง และพฤติกรรมสุขภาพเพิ่มขึ้นมากกว่าก่อนการทดลอง และมากกว่ากลุ่มเปรียบเทียบอย่างมีนัยสำคัญทางสถิติ แสดงให้เห็นถึงประสิทธิผลของโปรแกรมสุขศึกษาดังกล่าว เนื่องจากการดำเนินกิจกรรมสุขศึกษาในระยะสั้นทำให้การเปลี่ยนแปลงพฤติกรรมสุขภาพที่เกิดขึ้นนั้น จะยังไม่ส่งผลเด่นชัดนักต่อการลดโอกาสเกิดภาวะความดันโลหิตสูงจากการตั้งครรภ์ก็ตาม แต่ก็มีประโยชน์อย่างมากในการลดอันตรายที่รุนแรงอาจถึงแก่ชีวิตได้ ดังนั้นจึงควรนำโปรแกรมสุขศึกษานี้ไปประยุกต์ใช้ในการเปลี่ยนแปลงพฤติกรรมสุขภาพของหญิงตั้งครรภ์ เพื่อลดโอกาสเกิดอันตรายจากภาวะแทรกซ้อนในโรงพยาบาลอื่นต่อไป

CHAPTER I

INTRODUCTION

1. Rationale and Background

The condition of the world, including Thailand has changed rapidly in economics and societies, which affect the environment and the way of Thai's lives. The public health problems have shifted from communicable diseases to non-communicable diseases. Most of public health problems come from the factors of the unsuitable behaviors of people. Therefore, to solve public health problems, the improvement of people on education and skills to promote their health and prevent diseases, or emphasize the changing of health behaviors must be emphasized. According to the eighth national plan for socio-economic development (1997-2001), the national policy emphasized on the development of human resources. A pregnant woman is the important target of the development. The maternal and perinatal – mortality rates are the important indicator of standard and quality services, including mothers and infants' conditions used in other countries around the world. From 1990, the World Health Organization (WHO) has launched the safe motherhood campaign by decreasing the maternal - mortality rate in 2000 (Kanchana, S. quoted in Bunsri Chanratchakul, B. 1999: 3). According to the 1997 research of the Department of Health, the maternal - mortality rate in 1995 was 44.8 per 100,000 live births and in 1996 was 43.9 per 100,000 live births (Kanchana, S cited by Chanratchakul, B. 1999: 6). The perinatal - mortality rate decreased from 14.02 per 1,000 live births to 9.94 per 1,000 live births in 1997 (Department of Health, Ministry of Public Health

1998: 41). According to the 8th Public Health Development Plan (1997 - 2001), the maternal mortality rate must not exceed 20 per 100,000 live birth, and the perinatal mortality rate must not exceed 10 per 1,000 live birth. From the statistics mentioned above, the maternal mortality rate is still much higher than the target.

The pregnancy causes the changing of woman's anatomy and the risk of unusual health. The woman's body and mind will change, especially in the first pregnancy. If a pregnant woman is not ready and without knowledge and experience, she will have the complications in pregnancy. The complications which are often found, are the hypertensive disorder, anemia, hemorrhage, abortion, premature infant, and so on. The mother who has the complications will have the infant's health problems. The problems are such as the abortion, congenital anomaly, dead infant in the womb and slow-growing infant. All of the complications cause the low birth weight. Some prematurity-related factors are inbalanced hormone, less blood in the womb, and so on. Those will usually show with unusual conditions; that is, twin, polyhydramios, the hypertensive disorder in pregnancy, especially the patient with pre-eclampsia and eclampsia (Crawford, & Morris, 1994 : 63-64). Besides, a newborn baby whose weight is less than 2,500 grams has higher risk to die and to be crippled than a normal weight new born baby, especially at the first year of life (Suthatwrawut, S., In Ooprasertsward, P., Poupradit, V. & thaneepanichkul, S., Eds., 1996: 98-100).

The cause of maternal mortality with hypertensive disorder in pregnancy is the second leading cause of death in Thailand (Ministry of Public Health, 1997: 87). The pregnant woman will have the hypertensive disorder when her gestational age is

from 20 weeks up. It is an important problem. The hypertensive disorder in pregnancy causes the othper complications. They are such as abruptio placenta acute renal failure, cardio vascular collapse, coagulation defect, intrapartum and portpartum hemorrhage, cerebral hemorrhage, convulsion and syncope. The hypertensive disorder causes the infant such as low birth weight, lack of oxygen because of his mother's convulsion. If the pregnant woman know the hypertensive disorder, she will know how to take care of herself. It will help her decrease the risk and prevent the severity of disease, and decrease mother and infant mortality rate.

In Public Health Region 4, in 1996 there was one case of pre-eclampsia and newborn babies weighed less than 2,500 grams were 8.37% in Ratchaburi province. In 1998, there was no maternal mortality by pregnancy and delivery, but newborn babies weighed less than 2,500 grams increased to 8.94%. The data of mother and child health's job in Ratchaburi hospital showed that the perinatal mortality rate per 1,000 live births was 12.52% and 11.59% in 1998 and 1999. There was no maternal mortality by pregnancy and delivery. Mothers with the complications in pregnancy were found and kept higher. It was at 12.86% and 14.88%. There were 3.26% and 1.88% of mothers with hypertensive disorder in pregnancy in 1998 and 1999. Although the work of Ratchaburi Hospital's maternal and child health has been effective to a certain extent, the perinatal mortality rate and low birth weight rate still exceed the goal set by the 8th Public Health Development Plan. Particularly, the incidence of mothers with complications in pregnancy is on the upward trend which will result in maternal and infant mortality.

In the study about health behaviors of pregnant women who attended the antenatal care unit at Ratchaburi Hospital, Lawrence Green's Precede Framework was used (Green, 1980: 71). It was to interview 12 pregnant women, at the age of 17-30. Most of them were daily-wage workers and had elementary level education. The study has found that half of them did not know about the complications in pregnancy, which risk both the mothers and their babies. Most of them believed that only their babies would be at risk from the complications ; and it would result in an abortion. Nine women did not know that they could have the complications and they did not know the basic symptoms. They got some advice from nurses when they first came to the antenatal care unit. They watched video, listened to nurses advice, but they did not remember all of the details.

About the nutrition, the study showed that nine women did not know about the five main foods and the food to eat when they were pregnant. Most of them know that they should only drink milk and did not know what to eat instead. Five women ate fermented food and spicy food because they liked them. Another five women still worked hard, carried heavy things. Eight women did not know that the antenatal care was helpful, and could help them decrease the risk of the complications in pregnancy. Most of them believed that good food was useful for their babies, not for themselves.

The pregnant women's health behaviors indicated that they did not have the right health behaviors. Those behaviors made both mothers and babies at risk. The analysis of health education program of the antenatal care clinic in Ratchaburi hospital has found that it has limited staff. One or two doctors came to the hospital from 8.00 to 12.00 on Monday to Friday. Three nurses were in the department and fifty pregnant women came to the antenatal care clinic daily. The nurses did not have

enough time to give advice about pregnancy self-care. In fact, the nurses would give advice to those who have some problems with her gestation.

From the background of the problems, the researcher has seen the importance and necessity to decrease the risk of life for a pregnant woman and infant. She should be healthy and strong to fight with the complications, which cause the delivery of an unhealthy baby. The researcher has applied the Protection Motivation Theory to health education program for the pregnant women. The program would help pregnant women to perceive severity and vulnerability of the complication in pregnancy, perceived self-efficacy and response efficacy in changing health behaviors to help pregnant women understand and change their health behaviors into the suitable way and decreasing of the complication in pregnancy.

2. Research Question

Will the health education program applying the Protection Motivation Theory be effective to initiate behavior changes among pregnant women?

3. Research Objectives

3.1 General Objective

To study the result of the health education program applying the Protection Motivation Theory in changing the behavior of the pregnant women who came to the antenatal care clinic (ANC) at Ratchaburi Hospital, Ratchaburi province.

3.2 Specific Objectives

1. To explain the changes in pregnant women after participating in the health education program on the following aspects:

1.1 Perceived severity of the complication in pregnancy.

1.2 Perceived vulnerability of the complication in pregnancy.

1.3 Self-efficacy in changing health behaviors.

1.4 Response efficacy in changing health behaviors.

1.5 The health behaviors of the pregnant women.

2. To compare the rate of the complications in pregnancy between the experimental group and the comparison group.

4. Research Hypotheses

The health education program was effective for pregnant women who attended the program with reference to the following aspects:

1. Perceived severity of the complication in pregnancy.
2. Perceived vulnerability of the complication in pregnancy.
3. Self-efficacy in changing health behaviors.
4. Response efficacy in changing health behaviors.
5. The health behaviors of the pregnant women.

5. Research Variables

1. Independent variable : The health education program applying the Protection Motivation Theory.
2. Dependent variables :

2.1 Perceived severity of the complication in pregnancy.

2.2 Perceived vulnerability of the complication in pregnancy.

2.3 Self-efficacy in changing health behaviors.

2.4 Response efficacy in changing health behaviors.

2.5 The health behaviors of the pregnant women.

2.6 The complication in pregnancy.

6. Scope and Limitation

This research focused on studying pregnant womens' health behavior. The sample groups were the pregnant women who were cared at antenatal care clinic at Ratchaburi hospital. The study was undertaken during December 1999 to March 2000.

7. Operational Definition

1. **Health Education Program** refers to the activity process for pregnant women by applying the Protection Motivation Theory; it is presented by the information media, flip-chart, video, demonstration, and discussion. All are for changing the pregnant women's behaviors on perceived severity of the complication in pregnancy, perceived vulnerability of the complication in pregnancy, self-efficacy in changing health behaviors, response efficacy in changing health behaviors and the health behaviors for decreasing the complication in pregnancy.

2. **The health behaviors of the pregnant woman** are the actions or activities for decreasing the complication in pregnancy. The health behaviors of the pregnant woman consist of the nutrition, resting and exercise, tension relaxation, excretion, the observation of unusual signs and symptoms, and follow-up.

3. **The complications in pregnancy** are unusual symptoms, which are dangerous for a pregnant woman. This study uses the Pregnancy-induced Hypertension as an indicator.

4. **The Pregnancy-induced Hypertension (PIH)** means the hypertension with albumin in urine or edema or both of them. They include the following aspects:

- **Mild pre-eclampsia** consists of the 140/90 mm.Hg. of blood pressure or the systolic/diastolic pressure increasing from 30/15 mm.Hg. to edema with the albumin in urine at the level of 1 to 2^+.

- **Severe pre-eclampsia** consists of blood pressure above 160/110 mm.Hg. with the albumin in urine at the level of 3^+ to 4^+. It is also found the headache, blurred vision, pigastric discomfort as well.

- **Eclampsia** consists of the pre-eclampsia with convulsion and faint.

5. **Perceived severity of the complications in pregnancy** means the pregnant woman's thoughts and beliefs that the complications in pregnancy will be dangerous for herself and her baby.

6. **Perceived vulnerability of the complications in pregnancy** means the pregnant woman's thoughts and beliefs that she may have the complications in pregnancy. Therefore, she needs to keep good health behaviors to avoid the complications in pregnancy.

7. **Self-efficacy in changing health behaviors** means the pregnant woman's thoughts and beliefs that she could do the suitable things for herself to avoid the complications in pregnancy.

8. **Response efficacy in changing health behaviors** means thoughts and beliefs about changing the health behaviors that are useful and decrease the complications in pregnancy.

9. **Pregnant women** means the women who has pregnancy.

CHAPTER II

LITERATURE REVIEW

The concepts, theories, and related studies were reviewed in order to help conceptualization and provide direction for the formulation of this research. These were presented as follows:

Part 1 The concepts about the complication in pregnancy

Part 2 The health behavior for pregnant women

Part 3 The concepts and theories for application in the health education program

3.1 Protection Motivation Theory

3.2 Group discussion

3.3 Demonstration

Part 4 The related studies

4.1 The related studies about the Protection Motivation Theory

4.2 The related studies about the Pregnancy-induced Hypertension

Part 1 : The concept about the complication in pregnancy

Pregnancy-induced Hypertension means the hypertension with albumin in urine or edema or both of them.

Definition of Hypertension in Pregnancy

Hypertension in pregnancy is defined as either a systolic blood pressure of ≥ 140 mmHg or an increase of ≥ 30 mmHg from a baseline in the first half of pregnancy, or a diastolic blood pressure of ≥ 90 mmHg or an increase of ≥ 15 mmHg from a baseline in the first half of pregnancy. To meet strict criteria for hypertension in pregnancy, the elevated blood pressures must be observed on at least two occasions 6 hour apart.

Pre-eclampsia

Traditionally, pre-eclampsia has been defined as a syndrome of Pregnancy-induced Hypertension accompanied by proteinuria or edema. It is frequently accompanied in other organ systems. It is unique to the pregnant human and most often occur in primagravidas. Proteinuria has been traditional defined as more than 300 mg of protein in a 24-hour urine specimen or, less accurately, more than 1^+ protein (equivalent to approximately 100 mg/dl) on dipstick sampling of a random urine specimen. Proteinuria is a highly variable and usually late sign of pre-eclampsia that correlates with the glomerular lesion associated with pre-eclampsia.

The degree of swelling or excessive weight gain subjectively estimates edema. However, many normal pregnant women have generalized edema late in pregnancy, and it is often difficult to distinguish this from the edema of pre-eclampsia. Thus, edema should be considered pathologic only if it is generalized and involves the hands, face, and legs. Note also that edema maybe absent in-patients with pre-eclampsia and eclampsia.

Severity of Pregnancy-induced Hypertension. The severity of Pregnancy-induced Hypertension is assessed by the frequency and intensity of the abnormalities. The more profound the frequency and intensity of these aberrations, the more likely is the need for pregnancy termination. Importantly, the differentiation between mild and severe pre-eclampsia can not be rigidly pursued, because apparently mild disease may progress rapidly to severe disease.

Blood pressure alone is not always a dependable indicator of severity. For example, an adolescent woman may have 3^+ proteinuria and convulsions while her blood pressure is 140/85 mm Hg, whereas most women with blood pressures as high as 180/120 mm Hg do not have seizures. Convulsions are usually preceded by an unrelenting severe headache or visual disturbances; thus, these symptoms are considered ominous.

Proteinuria is an important indicator of severity, because it usually develops late in the course of the disease. Certainly, persistent proteinuria of 2^+ or more, or 24 hour urinary excretion of 4 g or more, is severe pre-eclampsia. With severe renal involvement, glomerular filtration may be impaired, and the plasma creatinine concentration may begin to rise.

Epigastric or right upper quadrant pain likely results from hepatocellular necrosis and edema that stretches Glisson's capsule. The characteristic pain is frequently accompanied by elevated serum liver enzymes, and usually it is a sign to terminate the pregnancy. Rarely, the pain presages liver rupture, or more correctly, catastrophic rupture of a hepatic subcapsular hematoma.

Table 1 Pregnancy-induced Hypertension: Indications of Severity

Abnormality	Mild	Severe
Diastolic blood pressure	< 100 mg Hg	110 mm Hg or higher
Proteinuria	Trace to 1+	Persistent 2+ or more
Headache	Absent	Present
Visual disturbances	Absent	Present
Upper abdominal pain	Absent	Present
Oliguria	Absent	Present
Convulsions	Absent	Present (eclampsia)
Serum creatinine	Absent	Elevated
Thrombocytopenia	Absent	Present
Hyperbilirubinemia	Absent	Present
Liver enzyme elevation	Absent	Marked
Fetal growth retardation	Absent	Obvious
Pulmonary edema	Absent	Present

Thrombocytopenia is characteristic of worsening pre-eclampsia, and probably is caused by microangiopathic hemolysis induced by severe vasospasm. Whatever the cause, evidence of gross hemolysis such as hemoglobinemis, hemoglobinuria, or hyperbilirubinemia is indicative of severe disease.

Other factors indicative of severe hypertension are most often associated with pregnancy-aggravated hypertension. These factors include cardiac dysfunction with pulmonary edema as well as fetal growth retardation.

Eclampsia

Eclampsia is a more severe form of pre-eclampsia in which generalized seizures or coma ensues. Convulsions usually are preceded by headaches, epigastria

pain, hyperreflexia, and hemoconcentration, but at times, they occur suddenly and without warning in asymptomatic women with only mild hypertension disease of pregnancy. Neuralgic disorders such as coincidental epilepsy or other causes of seizures must be excluded.

Cause of Pregnancy-induced Hypertension (PIH)

Imbalances of prostaglandin lead to PIH and the clinical manifestations of the condition appear as a result of alternation in uterine and renal blood flow.

In normal pregnancy, blood volume increases at the beginning of gestation and is maintained until term. Blood vessels respond by vasodilatating to accomodate increasing blood volume. This system is controlled by prostaglandin. The imbalance of 2 hormones in the prostaglandin family are thought to be the main causes of PIH. There is general agreement that in PIH, prostacyclin (vasodilatation) is less than in a normal pregnancy, and the level of serum thromboxane (vasoconstriction and platelet aggregation) was higher than in a normal pregnancy.

A disturbance in circulatory adaptation during pregnancy is caused by the effect of these 2 hormones, so that the increase in blood volume in woman with PIH is less than in normal pregnancy. This abnormality leads to a reduction in uteroplacental and renal blood flow (Figure 1).

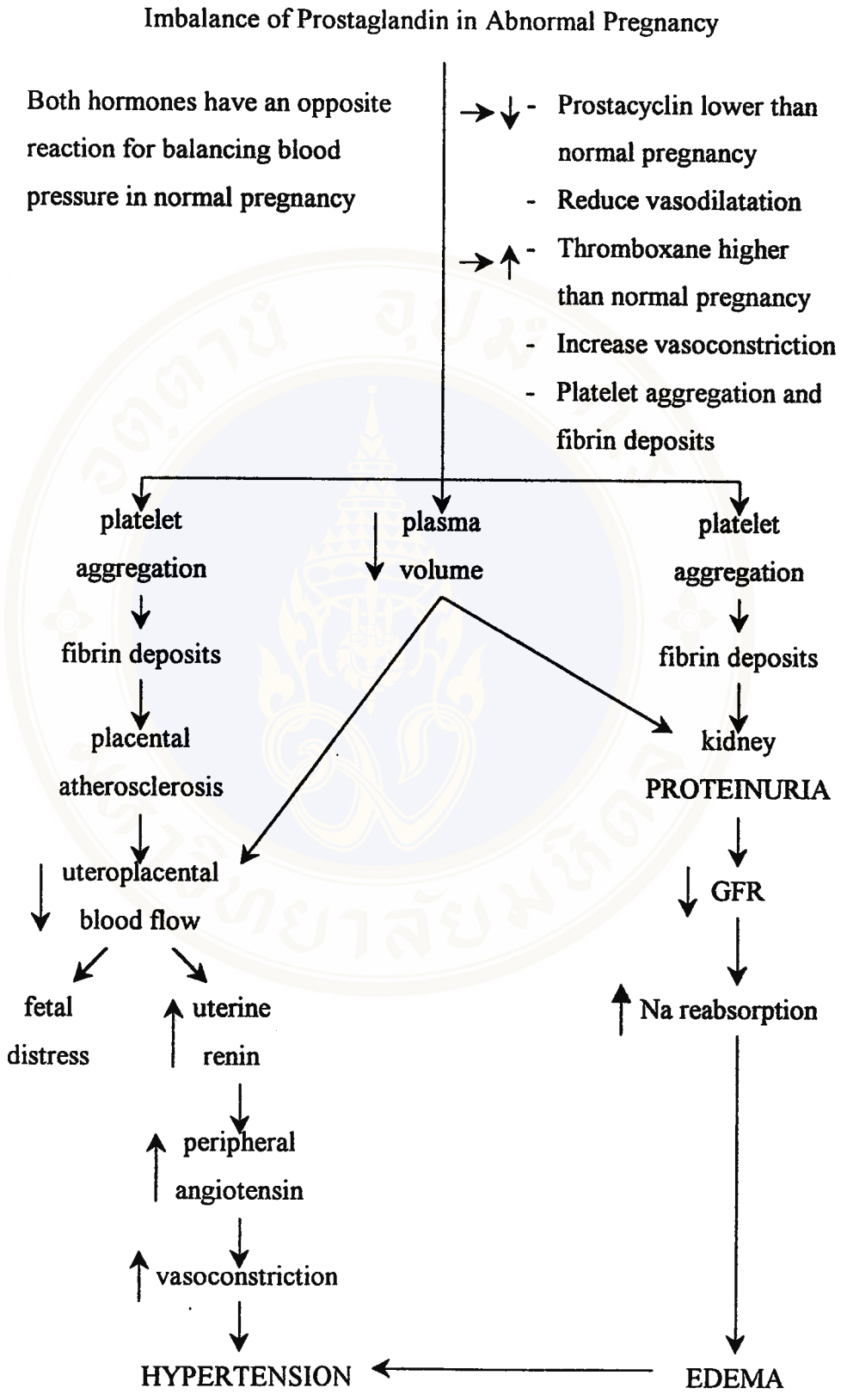


Figure 1 Hypotheses of Pregnancy-induced Hypertension

Part 2 : The health behavior for pregnant women

1. Nutrition

It is about eating food in both types and habits. The pregnant women need to have enough of the five main types of food for their babies. The food will be used of making many parts in mothers' and babies' bodies, including mothermilk. If the pregnant women could get good food, the babies will get the heavier weight. A pregnant women should weigh more 10-12.5 kilograms. The 1st trimester, she should increase her weight at least 1-1.5 kilograms. The second three months, she should increase about 5-6 kilograms. And the third three months, she should increase about 4-5 kg. Those would have the babies weighted more and more (Cunningham, et al., 1993: 216). To be a good health pregnant woman and a good baby, the pregnant woman should get good food and enough quality food. It has been found that a pregnant woman needs the energy about 300 kilocalories (1993: 216). If a pregnant woman could not get enough food, a baby would catch food from his mother as much as he needs. The results would be that the pregnant woman would be lack of food, unhealthy, weak, and have complications in pregnancy easily; that is, a pre-eclampsia, an anemia. If the pregnant woman could not get enough quality food less and less, it caused the low birth weight baby. The baby would risk in growing up and developing. The baby might weigh less than it should be. It would develop in an unusual way and an abnormal intelligence. Cranley, (1983: 4) said that a baby born in a small weight would be a premature infant and had a congenital anomaly, including the number and quantity anomaly of brain. It was found that the pregnant woman who was lack of food, her baby would have a low birth weight, prematurity and die in the high rate. Abel, (In Clark, Affonso & Harris, Eds., 1979: 176) said that

making the pregnant woman understand about the importance of nutrition could help her and her baby decrease a morbidity and mortality. Therefore, the pregnant woman should receive the enough quality and good quantity food (Reeder, 1992: 909). It should be as follows:

1.1 Protein helps the baby grow up, especially in the first three months before delivery. The pregnant woman needs protein from food one hundred per cent of normal people. She should have ½ -2 cups of meat every day and one egg, seafood, entrails, nuts, as well.

1.2 Carbohydrates, e.g. starch in rice, bread, sugar. These foods increase the weight. The pregnant woman does not need to have them much, but must not stop having them. She should have them as much as normal people. It should not be more than six cups.

1.3 Fat is a needed as much as normal person for the pregnant woman. It should be 2.5-3 tablespoons daily.

1.4 Vegetable and fruit also are needed for the pregnant woman. She needs more than as usual one hundred per cent, especially green vegetables and yellow ones. They give vitamin A, B2, and calcium. The pregnant woman should have vegetables at least 2-3 cups a day. She also needs fruit, e.g. ripe mangoes, ripe papayas, because they give a high vitamin A. Besides, the vegetable and fruit can solve a constipation problem, which was found very often.

1.5 Minerals

1.5.1 Calcium and phosphorus

The pregnant woman should receive 1,200-1,600 milligrams a day of calcium to improve the growth of baby's bones, especially the third three months

of pregnancy. If the mother could not receive enough calcium and phosphorus, she would have the convulsion easily (Nisawander, 1982: 626). The pregnant woman should drink at least 1-2 cups of milk a day because the daily food would give 200-300 milligrams of calcium only. If she receives enough calcium, she will receive enough phosphorus as well. Milk, green vegetables, small fish and shrimps will give the most phosphorus.

1.5.2 Irons

The pregnancy needs more irons. The pregnant woman needs irons about 600-800 milligrams to make red blood cell for herself and her baby. The pregnant woman who is anemia at the level of less than a gram percent of hemoglobin will deliver the low birth weight baby (Chalernpanit, P. 1988: 24-26). In general, a healthy person will absorb irons about 10 percent of eaten food. If we follow RDA (Recommend Daily Allowance), a person will receive ten times of irons from food. That will be enough for our body. It is quite difficult to get enough irons from food because the daily food will give only 10-15 milligrams of irons. The irons were found in livers, entrails, eggs, green vegetables, fruit, and so on. Although a pregnant woman will receive more irons, it might not be enough to protect the anemia because of lacking of irons in pregnancy.

1.5.3 Folic acid

A pregnant woman needs it more about 3-5 times to make the baby's, and help it absorb irons. The folic acid was found in meat and vegetable, especially in entrails and green vegetables.

1.5.4 Iodine

It is needed for the growth of the baby. The pregnant woman needs to have seafood for 2-3 times a week and use iodine salt for cooking.

1.5.5 Vitamin A

It is needed for the growth of baby, and the protection of diseases. Vitamin A was found in yellow vegetables, fruit and livers.

1.5.6 Vitamin B

The pregnant woman needs Vitamin B2 more than usual. She has numbness, so she needs milled but unpolished rice. Cooking rice without pouring water is a way to reserve the vitamin. She also needs no-fat pork, eggs, milk, green vegetables, and nuts.

1.5.7 Vitamin C

The pregnant woman needs it every day in the enough quality. It was found in fresh fruit, especially sour fruit, oranges, pineapples, strawberries, and green vegetables.

1.5.8 Vitamin D

It is used of keeping calcium and phosphorus. It is important for pregnancy. It was found in fish, livers, milk and eggs.

1.5.9 Water

The pregnant woman needs more than 8 glasses of water a day to compensate the needs of body. If the pregnant woman could receive enough water, it would decrease the hemoconcentration and protect the hypertensive disorder (Olds, et al., 1984: 272).

There was a study about the relationships of minerals and the complication in pregnancy. It showed that the magnesium was a mineral which related to an eclampsia. Newman & Fullerton (1990: 285) agreed that the magnesium related to the eclampsia and explained that the magnesium made smooth muscle (myocardium, artery, womb) relax. Therefore, at the suitable level of magnesium would make an artery relaxation and stop the hypertensive disorder. Newman & Fullerton (1990: 206) said that the calcium was another element which decreased the vasospasm. It probably played the main role for the prevention of the pre-eclampsia. Both the magnesium and calcium were the main elements which the pregnant women should receive them enough. The pregnant woman should have vegetables, nuts, eggs, small shrimps, and small fish.

1.5.10 Sodium

The pregnant woman should have 2.5-7 grams of sodium a day. That is no need to eat more or less (Pritchard, et al., 1985: 254; Willis, 1982: 802). However, she should avoid very salty food, e.g. canned food, fermented food. The edema or hypertension case needs to reduce salt, but no need to limit less than 2-4 grams of sodium (1 teaspoon = 2.4 grams of sodium). If the sodium is limited, it will activate angiotansin which causes the hypertensive disorder (Willis, 1982: 802).

2. Resting and Exercise

A pregnant woman needs the relaxation in both body and mind. She should sleep about 8 hours in bedtime and at least one hour in daytime. Sleeping will help blood run to the heart, and the level of blood running to kidney and placenta (Clark, et al., 1979: 101-105). The suitable nesting will protect the hypertensive

disorder at 94 percent (Spinaplice & Harrigan cited by Sumon Sutacha, 1987: 56). Chesley (1976: 818) cited that the observation of Persianinov which was found that the different relaxation caused the hypertensive disorder in pregnancy. The observation showed that a) the patient who slept more than eight hours a day would have three per cent of the hypertensive disorder, b) the patient who slept 7-8 hours a day would have 38 per cent of the hypertensive disorder, and c) the patient who slept less than seven hours a day would have seventy percent of the hypertensive disorder. The most suitable sleeping pose is to lie on one side with alternating left and right. It is for running blood to the heart, womb and placenta well.

Exercise is important for a pregnant woman. It makes her relax and get a good sleep. The best exercise for the pregnant woman is to go for a walk in good air about thirty minutes a day. (Intraraprasert, S. et al., 1993: 85) She should avoid the hard work which causes sore muscles. She should do a small job, e.g. cooking, cleaning up. To do activities need to sit on the chair instead of standing. To stand and sit on the heels will decrease the blood running of heart and womb. It causes the hypertensive disorder (Willis, 1982: 803-804).

3. Tension Relaxation

If the pregnant woman is stressed or anxious, her body will activate the catecholamine. It causes the hypertensive disorder which is from the decrement of blood running to the womb (Moore, 1981: 60-61). Therefore, the pregnant woman should adjust her mind to decrease the anxiety and stress. She should be cheerful, do hobbies, or ask for advices from a suitable one, e.g. her husband, cousins, or health officers.

4. Excretion

4.1 The urine

A pregnant woman will often urinate in the first period and the almost delivery period. She must urinate because it will reduce the infection of urine drain. If she has little urine with the edema or the hypertensive disorder, see the doctor suddenly.

4.2 The stool

A pregnant woman usually has a flatulency and constipation because of progesterone which makes a bowel move more slowly. In the unexercise case will have more constipation. Drinking a lot of water, having fruit and doing a suitable exercise will protect the constipation.

5. The observation of an unusual signs and symptoms which causes the hypertensive disorder in pregnancy.

As the Pregnancy-induced Hypertension can usually be found, especially in the third period of pregnancy, and a doctor cannot see the exactly symptoms of disease when she comes to the doctor. Therefore, she needs to observe her symptoms herself. It helps the doctor consider its cause faster. It also decreases the severity of diseases. She needs to learn how to report her symptoms when something goes wrong, i.e. when her weight goes up rapidly more than 1 kilogram a week or she has an edema on her face, stomach, hands, and feet. The edema on her feet is the first event to observe. Though she will lie down, the edema does not cure. A headache, blurred vision of eyes, and epigastric discomfort are the important symptoms to observe and go to the see doctor quickly.

6. Follow-up as assigned

It is important for the pregnant woman to check her body. The objectives are to protect mother's body and baby's body, to consider the protection of the complication in pregnancy at the first period, e.g. the hypertensive disorder, and to make the pregnant woman and her family understand about how to do with themselves when someone in the family is pregnant. The antenatal care is the first importance and should do it regularly. It will help her avoid the complications in pregnancy and other symptoms (Phoungpaka, A. 1997: 31). The pregnant woman needs the antenatal care before delivery and needs to check her gestation at least four times.

Part 3 : The concept and theories applied to the health education program

3.1 Protection Motivation Theory (PMT) (Rogers & Prentice-Dunn, 1986: 153-161; Egger, et al., 1995: 25-27)

PMT offers a social psychologic perspective, similar to the Health Belief Model (HBM), as an approach to motivating health protective behavior. The theory focuses primarily on health threats or fear appeals to change behavior by emphasizing the harmful personal consequences of health damaging behaviors. Although the theory was initially formulated in 1975 that will be discussed.

As can be seen in figure 2, environmental or intrapersonal sources of information about a health threat initiates two cognitive processes, threat appraisal and coping appraisal. The *threat appraisal* process evaluates the factors that increase or decrease the probability of making the maladaptive response. The maladaptive

action can be a behavior that could be enacted, such as beginning to smoke, or it could be a current behavior such as not wearing a seat-belt. Variables the increase the likelihood of the maladaptive response are intrinsic rewards (e.g. social approval). Factors reducing the probability of the maladaptive response are the assessed severity of the threat and perceived vulnerability to the threat. Fear arousal influences perceived severity but has only and indirect effect on the eventual behavior enacted. The total threat appraisal is an algebraic sum of the variables that increase and decrease the maladaptive behavior likelihood.

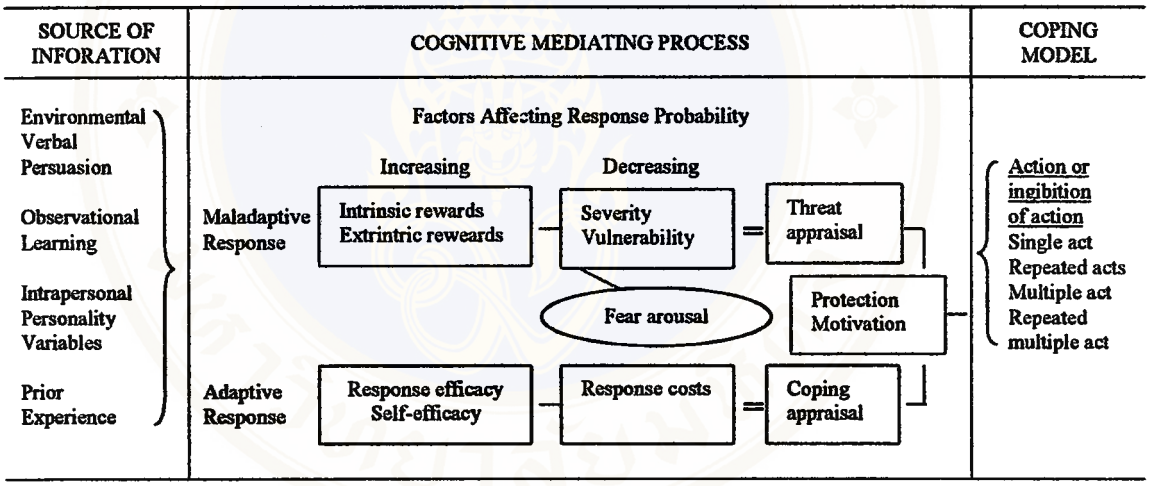


Figure 2 Scheme of Protection Motivation Theory (from Rogers, 1983)

In addition to evaluating threat, the individual also makes a *coping appraisal.* This consists partially of judgements about the efficacy of a preventive response that will avert the perceived threat (response efficacy) plus the assessment of one's ability to successfully initiate and complete the adaptive response (self-efficacy). The self-efficacy component is crucial to the successful avoidance of the threatening situation. An important feature of PMT, the explicit role of personal mastery has been neglected in virtually all expectancy-value theories. Thus, the

implication is that the existence of an effective alternative to the maladaptive health behavior is not sufficient; one must also believe himself of herself capable of carrying out the preventive regimen. It should be noted that an individual's sense of self-efficacy is conceptually independent of the 'barriers' referred to in the HBM. Thus, a person with a strong sense of self-efficacy might easily overcome any barriers (e.g. inconvenience, expense), while a person with a weak sense of self-efficacy might be over whelmed by the same barriers. Self-efficacy influences not only the initiation of the coping response, but also the amount of energy expended and the person's persistence in the face of obstacles.

Response efficacy and self-efficacy evaluations are factors increasing the probability of making the adaptive response. Decreasing that likelihood are response costs. Response costs may consist of 'inconvenience, expense, unpleasantness, difficulty, complexity, side effects, disruption of daily life, and overcoming habit strength. Coping appraisal is totalled from a sum of the efficacy components minus any costs with the adaptive response.

Figure 2 indicates that threat appraisal and coping appraisal are combined to form protection motivation. As an intervening variable, protection motivation intitiates, sustains and directs behavior. A coping response produced by protection motivation may be an explicit behavior (e.g. beginning an aerobic exercise program) or the inhibition of an action (e.g. ceasing to smoke).

As an intervening variable, protection motivation may be measured by a variety of methods. However, an assumption of PMT is that it is most appropriately assessed by behavioral intentions. Pmt developed from theory and research on fear-arousing communications and attitude change. Traditionally, attitudes have

directional and dynamic (i.e. motivational) influences on behavior. Furthermore, the traditional dependent measure in this area has been attitude change, the internalized acceptance of the communicator's recommendation. The current concept the best retains these characteristics is behavioral intentions. Although we are not arguing the intentions are a completely satisfactory substitute for single-act, repeated-acts, or multiple-acts behavioral criteria, we agree with Fishbein and his colleagues that intentions accurately predict behavior if: (i) they are measured at the same level of specificity; (ii) the intentions remain stable; and (iii) the behavior in question is under volitional control. For example, Harrison et al. (1985 cited by Rogers & Prentice-Dunn, 1986 : 156) found that intentions not only predicted college attendance among high school students some 2-3 years after initial measurements were taken, but also successfully predicted the ultimate educational level attained 15 years later. Such results should allay any concerns about the choice of behavioral intentions as the appropriate tool for evaluating the impact of protection motivation.

In sum. PMT assumes that protection motivation is maximized when: (i) the threat to health is severe: (ii) the individual feels vulnerable: (iii) the adaptive response is believed to be an effective means for averting the threat: (iv) the person is confident in his or her abilities to complete successfully the adaptive response: (v) the rewards associated with the maladaptive behavior are small: and (vi) the costs associated with the adaptive response are small. Such factors produce protection motivation and, subsequently, the enactment of the adaptive, or coping, response.

An additive model holds *within* each appraisal process. When combining components occur *between* the threat and coping appraisal processes, interaction effects will occur. It is assumed that if response efficacy and/or self-efficacy are high,

then increases in severity and/or vulnerability will produce a positive main effect on intentions: on the other hand, if response efficacy and/or self-efficacy are low increases in severity and/or vulnerability will either have no effect on a boomerang effect. Actually reducing intentions to comply with the health recommendation. Thus, the theory predicts outcomes that violate a completely rational decision-making process. There are at least two conditions in which individuals feel incapable of protecting themselves: (i) if the only available coping response is ineffective (i.e. low response efficacy); and (ii) if they believe they cannot perform the necessary coping response (i.e. low self-efficacy). Research has confirmed this predicted interaction effect between vulnerability and response efficacy. If the recommended coping response was a highly effective preventive response then increasing beliefs in vulnerability to the danger increased intentions to adopt the practice; but, if the response was believed to be ineffective increasing feelings of vulnerability *decreased* intentions to adopt the response, producing a boomerang effect (i.e. smokers actually intended to increase their cigarette consumption, Rogers and Mewborn, 1976 cited by Rogers & Prentice-Dunn, 1986 : 156). ; and social drinkers intended to increase their alcohol consumption, Kleinot and Rogers, 1982 cited by Rogers & Prentice-Dunn, 1986 : 156).

The evaluating threat consists of two items; that is, the perceived threat and the perceived risk. Both would bring about attitude and behavior changes, response adjustment or the adaptive behaviors (e.g. wearing a seat-belt, ceasing to smoke, etc.), and also response adjustment or the maladaptive behavior (e.g. not wearing seat-belt, beginning smoking). However, factors which promote the maladaptive behavioral change are intrinsic rewards and extrinsic rewards, e.g. social acceptance.

The evaluating the face of obstacles consists of the perceived self-efficacy and the expected response efficacy. The successful threat avoidance is an important factor which brings about behavioral change to a satisfactory direction. Some barriers which decrease the response efficacy are inconvenience, expense, unpleasantness, difficulty, chaos, complication, and unagreement of life proceeding.

In sum, PMT assumes that the protection motivation is maximized when:

1. The threat to health is severe.
2. The individual feels vulnerable.
3. the adaptive response is believed to be an effective means for averting the threat.
4. The person is confident in his or her abilities to complete successfully the adaptive response.
5. The rewards are low associate with the maladaptive behavior are small.
6. The costs are low associated with the adaptive response are small.

PMT and health enhancement

At times we engage in preventive health behaviors not because of fear, but due to anticipation of positive consequences. For example, many people report that their participation in regimens of aerobic exercise is motivated most by the concomitant increases in self-esteem and conditioning. Stanley and Maddux have noted the emphasis in theories of health decision making on disease prevention rather than health enhancement. Indeed, most attempts to change health attitudes and behaviors are premised on negative appeals rather than on messages emphasizing the beneficial consequences of accepting the adaptive recommendation.

Robberson and Rogers (in press) used the PMT framework to investigate the effects of three message valences (positive versus negative versus a combination of the two) and two appeal targets (health versus self-esteem) on intentions to initiate a regular exercise program. Although no main effect for valence or appear target was found, significant interaction was discovered. Negative appeals were more effective than positive appeals, compared with a control group, when the message targeted health. As noted by the authors. "Apparently the allure of obtaining the positive benefits of health enhancement does not have the persuasive appeal of a voiding the negative consequences". When the appeal was directed toward self-esteem, positive appeals were more effective than negativeness in strengthening intentions to exercise.

Results of their investigation led Robberson and Rogers to advocate attention to three issues in constructing preventive health messages. First, when the emphasis is placed on health enhancement, positive appeals can be used. In contrast, a disease prevention emphasis should be accompanied by negative appeals. Third, because people are motivated to protect themselves from danger, whether the danger is physical, psychologial or social, people may be persuaded to adopt healthy lifestyles for reasons other than health (e.g. self-esteem).

The aforementioned study indicates that values such as self-esteem can be instrumental in persuading people to pursue good health. PMT provides a convenient framework for understanding both illness avoidance and health enhancement. Indeed, the results corroborate Beck's (1984 cited by Rogers & Prentice-Dunn, 1986 : 160) assertion that PMT has 'utility for explaining protective decisions in areas other than just personal health issues'.

In conclusion, preventive health psychology is based on two crucial assumptions: (i) behaviors increase the risk of certain chronic diseases: and (ii) changes in behaviors can reduce the probability of risk of certain diseases: Kaplan (1984) cogently reminds us that such premises do not always hold. While keeping such cautions in mind, health researchers and educators have persistently sought models of self-protective behavior that may be applied to the vast numbers of human lives in which the above assumptions are true. PMT offers a very promising vehicle for that application.

3.2 Group Discussion

The group discussion is widely used in the health education for the target groups. Members of the groups can exchange their opinions and experiences. It helps the members find the reality, listen to others' opinions. The members cooperate to find a solution together. The group discussion can be used with any target groups, no education or ages limitation. It is not a discussion to find a certain answer, but it helps the members think over for daily life. Group influence helps the members decide their minds, and bring about the health behavioral change.

The group discussion consists of the leader and two or more members. It is appropriate with a small group. The members have the objectives as the following:

1. to know about news and care for the group's problems
2. to give opinions freely
3. to think over something which is useful for the members
4. to improve the leader role to the members

5. to enhance the process of group discussion and good understanding of the members

6. to gather the members' opinions

7. to explore problems

8. to use the members' opinions to find a solution

9. to plan

3.3 Demonstration

The demonstration is an approach to stress in skills. It is an explanation by using equipments and Audio-Visual materials. It stresses the learning of observation. It can apply for any target groups. The way of demonstration will get learners to study faster, more accurately, save time and more practical. It consists of an explanation of the theory and the practice. This study had the demonstration about arranging a menu for pregnant women. It had the five essential food and some food for pregnancy. After the demonstration, it had an evaluation by asking the pregnant women to choose their own menu for themselves, observe their own edema, and discuss in group about problems and barriers in the nutrition of pregnant women.

Part 4 : The related studies

4.1 The related studies about Protection Motivation Theory

Srijangwang, A. (1996: Abstract) studied the use of Protection Motivation Theory to health behavior change of pregnant women who are carrier of hepatitis B at Sirirat Hospital. The samples were 84 pregnant women. The study showed that the mean score of threat appraisal of Hepatitis B, the mean score of coping appraisal and

the preventive behavior of Hepatitis of the experimental group were significantly higher than the comparison group and than before the experiment.

Svangvongsin, S. (1998: 9) studied the application of Protection Motivation Theory and Group Process causing preventive behavior of anemia because of the lack of irons of pregnant women who came to the antenatal care unit at Pra Nung Klao Hospital, Nontaburi province. The samples were 80 pergnant women. They were in the experimental group and the comparison group. The result showed that after enrolling in the health education program, the pregnant women learned more the perceived severity of amenia on the lack of irons, the perceived risk of amenia on the lack of irons, the perceived self-efficacy and the expected preventive behavior of amenia on the lack of irons, and the preventive behavior of amemia on the lack of irons than before giving the treatment and than the compare group at significant differences ($P < 0.001$).

Compbell, M. B. (Mackay 1992: 227 cited by Junwipa Diloksumpun, 1995: 42) studied the application of PMT for AIDS protection and the condom use behavior by description with campaign. The campaign was to give the information to make fear arousal. The treatment group was 87 males (love females). The comparison group was 77 males (love males and homosexuals). The result showed that both groups had no differences on the perceived risk of infection and the compare group tended to use less condoms.

4.2 The related studies about the Pregnancy Induce Hypertension

Chanchana, P. (1990: Abstract) studied effect to planned instruction on self-care behavior and health state in pregnancy induce hypertension pregnant women. The sample was composed of 42 pregnancy induce hypertension pregnant women who attended antenatal and high risk clinic at Siriraj Hospital. The sample was purposively assigned into 2 groups. The first 21 pregnancy induce hypertension pregnancy women were assigned as control group who received routine care from the hospital personnel. The other 21 pregnancy induce hypertension pregnant women were assigned as the experimental group who received the planned instruction by individual teaching combined with using appropriate media hypertension from the researcher. The results were the pregnancy induce hypertension pregnancy women who received the planned instruction demonstrated significantly higher score on self-care behavior and health state than the control group.

Therakulchai, J. (1993: Abstract) studied to evaluate the effects of supportive-educative nursing system on self-care agency and pregnancy induce hypertension prevalence in mothers at risk the purposive samples consisted of 180 mothers at risk receiving antenatal care and delivered at Ramathibodi Hospital. Subjects in both groups received usual nursing care provided in the antenatal care clinic, but the experimental group received the supportive-educative nursing system from the researcher during their antenatal care visit until delivered, in addition. Results of the study showed that self-care agency scores of all the mothers in the experimental group were increased compared to the scores before receiving the treatment. In addition, the mean score on self care agency for the experimental group was significantly higher than in the control group, although the incidence of

pregnancy induce hypertension in both groups was not significantly different ($p > 0.05$).

Seasat, J. (1994: Abstract) studied the relation between perception of disease, spousal support and the therapeutic compliance behavior in pregnancy induce hypertension patients by using baker health belife model theory and sick role behavior as theoritical framework. The samples consisted of 161 pregnancy induce hypertension, who attended high risk clinic of antenatal care. The study concluded that full spouse's support and perception of disease would encourage pregnancy induce hypertension patients to comply accurately and appropriately with therapeutic compliance behavior. It was also found that the spouse's support and perception of disease was used as predictor the therapeutic compliance behavior.

Pokasinjumroon, P. (1995: Abstract) studied the relationship between health belief and self-care behavior. The sample was composed of 93 pregnancy induce hypertension Muslim patients who attended at clinic for antenatal care at Mother and Child Hospital, Yala Hospital, Pattain Hospital, Narathiwat Hospital and Satun Hospital. The results of the study indicated that the pregnancy induced hypertension muslim patients who had proper health belief had demonstrated good self-care behavior.

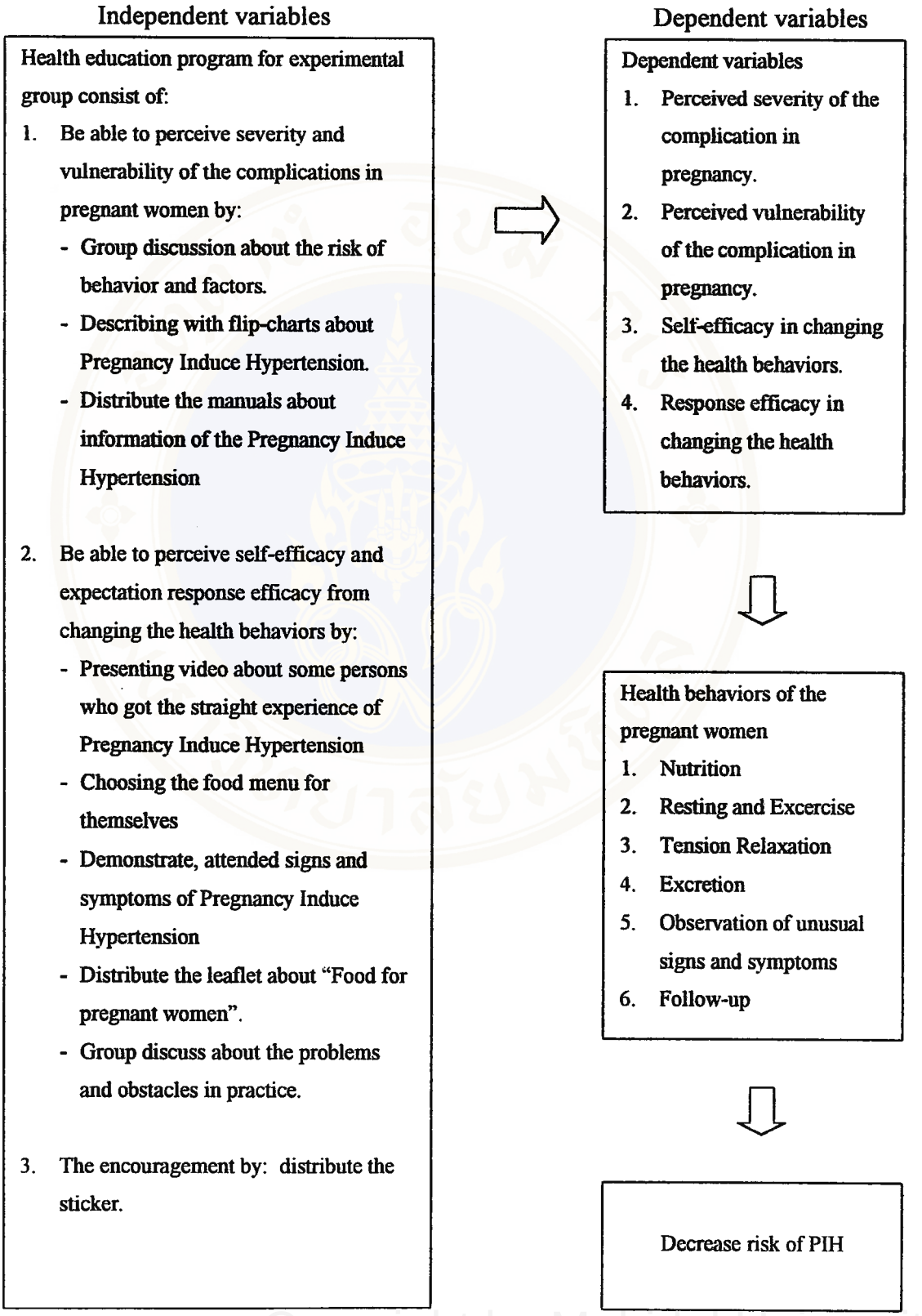
Pichainarong, N. (1995: Abstract) studied the development of criteria for prediction risk of pregnancy induced hypertension in pregnant women attending prenatal services and delivering their babies at 4 Maternal and Child Hospital. A cohort of 1,760 gravida were enrolled in the study to determine the association among risk factors and pregnancy induced hypertension and to develop risk scores as a predictor of this condition. The incidence of pregnancy induced hypertension among

all study subjects was 15%. Mean arterial pressure, average weight gain, prepregnancy baby mass index (small baby frame), maternal age, past illness and genetic factors were the significant predictory of pregnancy induced hypertension

Singhala, K. (1997: Abstract) studied factor associated with pre-eclampsia in pregnant women. The research was between January 1, 1994 to December 31, 1995. All pregnant women admitted to the antenatal ward with the diagnosis of pre-eclampsia were recruited into these analytical study. Of the 488 pregnant women studied, there was no factor associated with body mass index of greater than or equal to 21 kg/m^2 which was found to be a protective factor againt severe pre-eclampsia.

Porozhanova et al. (1994: 8-9 cited by Phoungpaka, A. 1997 : 18) studied 528 young mothers at the age of 13-17 compared with the age of 20-24 of mothers. It resulted that the young mothers would have lower hypertensive disorder in pregnancy than the compared group. However, if the young mothers had the convulsion, it would cause the mother mortality which showed that there was not enough of self-care before delivery.

Figure 3 Independent variables conceptual Framework of the research



CHAPTER III

RESEARCH METHODOLOGY

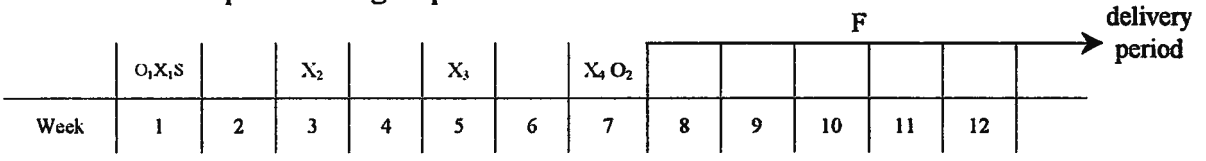
The research procedure consists of five steps as follows:

1. Research Design
2. Demography of Sample Groups
3. Research Instrument
4. Planning for experimental procedure
5. Data analysis

1. Research Design

The study is quasi-experimental research with a pre-test - post-test two group design. The samples consist of two groups: the experimental group and the comparison group. The experimental group attends the health education program. This research design is shown in figure 4:

The experimental group



The comparison group

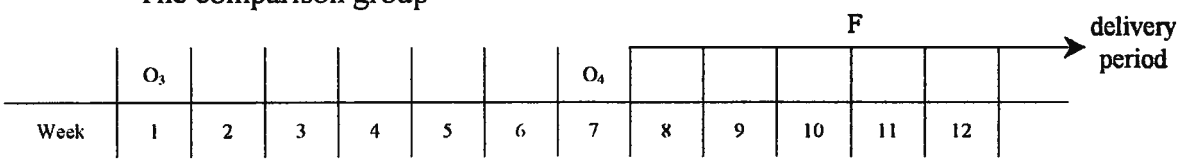


Figure 4 Research design

O_1, O_3	mean	data collection before the experiment in the experimental group and the comparison group.
O_2, O_4	mean	data gathering after the experiment in the two groups.
X_1, X_2, X_3, X_4	mean	giving the health education program to the experimental group for 4 times.
S	means	to remind and prompt the experimental group of proper practice by posting a sticker.
F	mean	following the complications from the antenatal care clinic until delivery period.

2. Population and Sample

The population was pregnant women who came to the antenatal care unit at Ratchaburi Hospital. Characteristics of the population are defined as follows:

1. primigravidarum
2. age between 15-30 years
3. pregnancy of 28-30 weeks of gestational age
4. no complications or chronic disease, i.e. hypertension, heart disease, diabetes, circulatory disease, kidney disease
5. ability to listen, speak, and read Thai language.
6. willingness to participate in the study

The samples included 103 pregnant women with the defined characteristics; 50 were assigned to the experimental group and 53 to the comparison group. The assignment procedure was done by giving numbers to all samples; those with number

one were assigned to the experimental group, and number two to the comparison group.

3. Research Instrument

The instruments used in this study were as follows:

3.1 Instruments for data collection

3.1.1 A questionnaire which was divided into 6 parts:

Part 1 : Socio-demographic data, these questions were designed to ask about the characteristics of the respondents.

Part 2, 3 : These rating scale questions were designed to measure perceived severity and perceived vulnerability of the complication in pregnancy. These questions were multiple choices (3 choices), with Agree, Uncertain and Disagree. The scores given to each choice are as follows:

Agree	=	3
Uncertain	=	2
Disagree	=	1

Part 4 : Self-efficacy on health behavior change comprises rating scale questions. The answers can be chosen from 3 choices which are: very sure, slightly sure and not sure. The scores given to each choice are as follows:

very sure	=	3
slightly sure	=	2
not sure	=	1

Part 5 : Questions about response efficacy on health behavior change were in rating scale. The answers can be chosen from 3 choices. They are : Agree, Uncertain and Disagree. The scores given to each choice are as follows:

Agree = 3

Uncertain = 2

Disagree = 1

The interpretation of these four parts (parts 2-5) was based on mean score which was calculated using the formula below:

$$\frac{\text{Maximum score - Minimum score}}{\text{Number of levels}} = \frac{3 - 1}{3} = 0.66$$

The mean score ranges were interpreted as follows:

Mean score of 2.34-3.00 refer to high perception

Mean score of 1.67-2.33 refer to medium perception

Mean score of 1.00-1.66 refer to low perception

Part 6 : The practice of health behavior included choices of practice frequency. There are 3 choices and only one can be chosen. The scores are given as follows:

Regular practice (Means regular pactice weekly) = 2

Practice sometimes (Means some pactice but not regular weekly) = 1

Never practice = 0

Bloom's criteria were applied to the evaluation of health behavior in pregnancy (Bloom, 1968: 47-62). It was divided into 5 levels:

below than the low scale	0 - 49 %
higher than the low scale	50 - 59 %
medium scale	60 - 69 %
good	70 - 79 %
very good	80 - 100 %

For this research, the criterion was adjusted to be consistent with the measured behaviors by dividing health behavior into 3 levels as follows:

high level	80 - 100 %
medium level	60 - 79 %
low level	0 - 59 %

Construction and improvement of the questionnaire.

First step. The questionnaire was developed based on the information collected regarding related activities and defined scope so as to cover objective, hypothesis and concept theories used in the research.

Second step. The questions were formed and the scores were set for the answers.

Third step. The questionnaire's content validity and clarification were verified by the research committee.

Forth step. The questionnaires were tried out with 30 pregnant women who had similar characteristics to the defined characteristics of the study subjects.

Fifth step. The discrimination and reliability powers were analyzed in order to adapt the instrument before real use.

- Each question's power of Discrimination was analyzed by dividing the group scores into high and low using the Student's t-test. The questions with t-value of 1.75 and above or p-value of less than or equal to 0.05 were selected.

- Cronbach's Alpha Coefficient was employed to analyze the reliability power for each part. The results of reliability power are 0.6015 for perception severity of the complication in pregnancy, 0.6944 for perception vulnerability of the complication in pregnancy, 0.7002 for self-efficacy of health behavior change, and 0.6780 for response efficacy on health behavior change.

The reliability power between 0.60-0.79 is considered high level according to Kusolvisitkul, V. (1991: 316). Therefore, the reliability power of questionnaire used in this research was in high level.

3.1.2 Antenatal care record for the sample such as on blood-pressure, Albumin in urine, edema.

3.2 Instruments for the experiment

3.2.1 A flip-chart on "Pregnancy-induced Hypertension" with the contents of cause, signs, symptoms, treatment and self-care.

3.2.2 A video tape about the Pregnancy-induced Hypertension women. The 10 minutes video contents cover cause, signs, symptoms self-care and suggestion on health behavior.

3.2.3 Menu for pregnant women with suggestion on necessary diets and what should be avoided.

3.2.4 The model of five essential foods and the necessary foods for the pregnant women.

3.2.5 The manual about "information on the Pregnancy-induced Hypertension" with the contents of cause, signs, symptoms, self care, treatment and health behavior for pregnant women.

3.2.6 The leaflet on "Food for Pregnant women". The content was on five essential foods, the necessary food which should be added to regular in take, the foods which should be avoided, the food which was consumed regularly normal eating and the example of menu for pregnant women.

3.2.7 The stickers "self-care for your beloved baby" to stimulate health behaviors among pregnant women.

4 Planning for experimental procedures.

4.1 Preparation.

1. Permission to conduct the study was obtained from the Director of Ratchaburi Hospital by submitting the introducing letter from Faculty of Graduate Studies Mahidol University.

2. The doctors and nurses of the antenatal care unit were informed about the steps of the study.

3. Preparing the research and setting instruments.

4.2 Experimental procedures

The researcher proceded the health education program as follows:

1. Pre-test: all samples in both groups were pretested by using questionnaire relating to the parts of perceptions of severity, vulnerability, self efficacy, response efficacy and the practice of health behavior.

2. For the experimental group, conducting the first health education activity on first week. It took about 1 hour and 30 minute as follows:

1) Pregnant women introduced their: names and their gestational ages.

2) Group discussion about the Pregnancy-induced Hypertension

3) To describe with flip-chart Pregnancy-induce Hypertension focused on cause, signs, symptoms, treatment, self-care and health behavior.

4) Video presentation about women who had experience of Pregnancy-induced Hypertension focusing on cause, signs, symptoms, self-care, treatment and suggestion on health behavior.

5) Group discussion about the topic of risk behaviors, the related factors on Pregnancy-induced Hypertension and the obstacles to conduct health behavior.

6) Distribution the manual of the Pregnancy-induced Hypertension and sticker "self-care for your beloved baby"

After all of the activities, blood-pressure, albumin in urine, body weight and edema of the samples were recorded.

The second health education activity on the third week. For the experimental group, the researcher arranged the second health education activity for 1 hour and 30 minute.

1. The samples get to know each other.

2. The experimental group their own menu from the menu charts that the researcher prepared.

3. To demonstrate the essential food for pregnant women. Observation the first sign and symptom of Pregnancy-induced Hypertension such as the edema on leg, the body weight increases more than 2 kg. in 1 week.

4. Group discussion about the problems and the obstacles of practice health behavior, these would stimulate the pregnant women to increase confidence and response efficacy on health behavior change.

5. Distribution of the leaflet on "Food for Pregnant Women"

The third health education activity on the fifth week. For the experimental group, the researcher arranged the third health education activities for 30 minute.

- Group discussion on health behavior change, problems, obstacles and unusual thing to find solution. The group discussed about ways to decrease the problems on health behavior change.

The fourth health education activity on the seventh week. For the experimental group, the researcher arranged the fourth health education activity for 30 minute.

- To discuss about health behavior change, problems, obstacles. Subjects are confident that they can change health behaviors for their own benefits.

- Post-test, the pregnant women in the experimental and comparison group were asked to answer the same questions as did in the pre-test relating to the perceptions of severity, vulnerability, self-efficacy, response efficacy and the practice of health behavior.

The researcher followed up and collected the cause of Pregnancy-induced Hypertension of the samples from antenatal care record until delivery period.

5. Data Analysis

After data collection was completed the data were analyzed by SPSS for Windows at 0.05 significant level.

5.1 Analyzing data on socio-demographic with descriptive statistics by using frequency, percentage, mean and standard deviation.

5.2 Comparison of mean scores on perceived severity of the complications in pregnancy, perceived vulnerability of the complications in pregnancy, self-efficacy on health behavior change, response efficacy on health behavior change and the health behaviors of the pregnant women between the experimental and comparison groups at pre-test and post-test with Student's t-test.

5.3 Comparison of mean scores on perceived severity of the complications in pregnancy, perceived vulnerability of the complications in pregnancy, self-efficacy on health behavior change, response efficacy on health behavior change and the health behaviors of the pregnant women within the experimental and comparison groups at pre-test and post-test with Paired Sample t-test.

CHAPTER IV

RESULT

A health education program was launched on applying Protection Motivation Theory of Rogers for pregnant women's behavioral change in order to decrease the complications in pregnancy. The researcher studied the sample of 103 respondents. They were divided into two groups: 50 of the experimental group and 53 of the comparison group. The results are presented as follows:

Part 1 General characteristics of the sample

Part 2 The perceived severity of the complications in pregnancy

Part 3 The perceived vulnerability of complications in pregnancy

Part 4 The self-efficacy on health behavior change

Part 5 The response efficacy on health behavior change

Part 6 The health behaviors of the pregnant women

Part 7 The complications in pregnancy

Part 1 General characteristics of the sample

Age

It was found that most of the experimental group were between 20-24 years old (52.0%), while 28% age between 15-19 years old. The most of the comparison group were 20-24 years old (47.1%), and 32.1% age between 15-19 years old. The mean age of both groups were equal (Table 2).

Education

The data in Table 2 show that the most predominant educational levels among the experimental group were secondary school (42.0%) and primary school (28.0%); and among the comparison group were primary school (32.1%) and diploma level (24.5%).

Occupation

It was found that the most prevalent occupation among the experimental group were daily-wage workers (50.0%) and housewives (38.0%); and among the comparison group were housewives (43.4%) and daily-wage workers (39.6%) (Table 2).

Family income

It was found that most of the experimental group earned < 5,000 baht a month (62.0%), with the average family income of 5,570 baht a month. Almost half of the comparison group earned < 5,000 baht a month (49.0%); and the average family income was 5,713 baht a month (Table 2).

Table 2 Distribution of socio-demographic characteristics of the samples.

Socio-demographic characteristics		Experimental group (n = 50)		Comparison group (n = 53)	
		f	%	f	%
Age (year)	15-19	14	28.0	17.	32.1
	20-24	26	52.0	25	47.1
	25-29	9	18.0	9	17.0
	30-34	1	2.0	2	3.8
	$\bar{X}$	21.52		21.66	
	S.D.	3.75		3.90	
	Min	15		15	
	Max	30		30	
Education	Primary school	14	28.0	17	32.1
	Secondary school	21	42.0	9	17.0
	Professional Certificates	9	18.0	13	24.5
	Diploma/higher professional certificates	4	8.0	10	18.9
	Bachelor degree or higher	2	4.0	4	7.5
Occupation	Housewives	19	38.0	23	43.4
	Merchants	1	2.0	6	11.3
	Agriculture	3	6.0	2	3.8
	Daily-wage workers	25	50.0	21	39.6
	Civil Servants	2	4.0	1	1.9
Family income (baht)					
	< 5,000	31	62.0	26	49.0
	5,000 – 10,000	19	38.0	24	45.3
	> 10,000	0	0	3	5.7
	$\bar{X}$	5,570		5,713.21	
	S.D.	3,911.01		3,339.97	
	Min	1,000		1,000	
	Max	10,000		10,500	

Part 2 The perceived severity of complication in pregnancy (pscp)

2.1 Pre-test and post-test results

The analysis in Table 3 shows that at pre-test, most of those (68%) in the experimental group had a medium level of pscp; whereas 50.9% of those in the comparison group had a high level of pscp. The post-test scores of the experimental group were markedly improved, i.e. all (100%) had high scores; while the comparison group's post-test scores remained the same, that is 50.9% still scored high.

Table 3 Numbers and percentage distribution of the samples classified by the level of the perceived severity of the complications in pregnancy of the sample at pre-test and post-test.

The level of the perceived severity of the complications in pregnancy	Experimental group (n=50)		Comparison group (n=53)	
	f	%	f	%
Pre-test				
high	16	32.0	27	50.9
medium	34	68.0	26	49.1
low	0	0.0	0	0.0
Post-test				
high	50	100.0	27	50.9
medium	0	0.0	23	43.4
low	0	0.0	3	5.7

2.2 Mean score comparison between groups at pre-test and post-test

The data in Table 4 show that at pre-test, there was no significant difference ($p = 0.142$) between the mean scores of the experimental group and the comparison group. At post-test, the experimental group's mean score considerably increased, while that of the comparison group remained the same resulting in a significant difference between the two groups mean scores ($p < 0.001$).

Table 4 Comparison on the mean scores of the perceived severity of the complications in pregnancy between the experimental group and the comparison group at pre-test and post-test.

The perceived severity of the complications in pregnancy	n	mean	S.D.	t-value	df	p-value
Pre-test						
The experimental group	50	22.50	3.32			
				-1.08	94.67	0.142
The comparison group	53	23.09	3.21			
Post-test						
The experimental group	50	28.44	1.46			
				9.12	68.30	< 0.001*
The comparison group	53	23.40	3.73			

* statistically significant at $p \leq 0.05$

2.3 Mean score comparison within groups at pre-test and post-test

The results in table 5 show that the experimental group's post-test mean score was significantly higher than the pre-test mean score ($p < 0.001$). For the comparison group, there was no significant difference between the pre-test and post-test mean scores.

Table 5 Comparison on the mean scores of the perceived severity of the complications in pregnancy within the experimental group and the comparison group at pre-test and post-test.

The perceived severity of the complications in pregnancy	n	mean	S.D.	t-value	df	p-value
The experimental group						
Pre-test	50	22.50	3.32			
				15.15	49	< 0.001*
Post-test	50	28.44	1.46			
The comparison group						
Pre-test	53	23.09	3.21			
				0.80	52	0.214
Post-test	53	23.40	3.73			

* statistically significant at $p \leq 0.05$

Part 3 The perceived vulnerability of the complication in pregnancy (pvcp)

3.1 Pre-test and post-test results

At pre-test, half of those in the experimental group (50.0%) had medium level of pvcp; while 54.7% of those in the comparison group had a high level of pvcp. At post-test, the experimental group showed a great improvement with 96.0% now having high scores; while the comparison group did not change, i.e. 54.7% still scored high (Table 6).

Table 6 Numbers and percentage distribution of the level of the perceived vulnerability of the complications in pregnancy of the sample at pre-test and post-test.

The level of perceived vulnerability of the complications in pregnancy	experimental group (n = 50)		comparison group (n = 53)	
	f	%	f	%
Pre-test				
high	24	48.0	29	54.7
medium	25	50.0	23	43.4
low	1	2.0	1	1.9
Post-test				
high	48	96.0	29	54.7
medium	2	4.0	21	39.6
low	0	0.0	3	5.7

3.2 Mean score comparison between groups at pre-test and post-test

At pre-test, the experimental group had the mean score of 23.06, S.D. = 2.76. The comparison group had the mean score of 23.32, S.D. = 2.87. No statistical significant difference was found between the two groups (p = 0.320) (Table 7).

At post-test, the experimental group's mean score was significantly higher than that of the comparison group (p < 0.0001) as shown in Table 7.

Table 7 Comparison on the mean scores of the perceived vulnerability of the complications in pregnancy between the experimental group and the comparison group at pre-test and post-test.

The perceived vulnerability of the complications in pregnancy	n	mean	S.D.	t-value	df	p-value
Pre-test						
The experimental group	50	23.06	2.76			
				-0.47	101	0.320
The comparison group	53	23.32	2.87			
Post-test						
The experimental group	50	27.56	2.22			
				6.70	85.95	< 0.001*
The comparison group	53	23.55	3.71			

* statistically significant at p ≤ 0.05

3.3 Mean score comparison within group at pre-test and post-test

For the experimental group, there was a statistically significant difference of the mean scores at pre-test and post-test ($p < 0.001$). For the comparison group, there was no difference between the pre-test and post-test mean scores (Table 8).

Table 8 Comparison on the mean scores of the perceived vulnerability of the complications in pregnancy within the experimental group and the comparison group at pre-test and post-test.

The perceived vulnerability of the complications in pregnancy	n	mean	S.D.	t-value	df	p-value
The experimental group						
Pre-test	50	23.06	2.76			
				8.91	49	< 0.001*
Post-test	50	27.56	2.22			
The comparison group						
Pre-test	53	23.32	2.87			
				0.56	52	0.29
Post-test	53	23.55	3.71			

* statistically significant at $p \leq 0.05$

Part 4 The self-efficacy on health behavior change

4.1 The level of the self-efficacy on health behavior change among the two groups at pre-test and post-test

The analysis in Table 9 reveals that at pre-test, the levels of the self-efficacy on health behavior change of both groups were high, 62.0% for the experimental group and 67.9% for the comparison group. After the experiment, the levels of both groups still remained high, 100% for the experimental group and 66.0% for the comparison group.

Table 9 Numbers and percentage distribution of the level of the self-efficacy on health behavior change of the samples at pre-test and post-test.

The level of the self-efficacy on health behavior change	Experimental group (n = 50)		Comparison group (n = 53)	
	f	%	F	%
Pre-test				
high	31	62.0	36	67.9
medium	19	38.0	15	28.3
low	0	0.0	2	3.8
Post-test				
high	50	100.0	35	66.0
medium	0	0.0	18	34.0
low	0	0.0	0	0.0

4.2 Mean scores comparison between groups at pre-test and post-test.

At pre-test the difference of the mean scores of both groups was not significant ($p = 0.238$).

At post-test, there was a statistically significant difference ($p < 0.001$) of the mean scores of the two groups as shown in Table 10.

Table 10 Comparison on the mean scores of the self-efficacy on health behavior change between the experimental group and the comparison group at pre-test and post-test.

The self-efficacy on health behavior change	n	mean	S.D.	t-value	df	p-value
Pre-test						
The experimental group	50	36.04	4.30			
				-0.71	101	0.238
The comparison group	53	36.70	5.00			
Post-test						
The experimental group	50	42.60	2.37			
				9.42	92	< 0.001*
The comparison group	53	37.08	3.51			

* statistically significant at $p \leq 0.05$

4.3 Mean score comparison within group at pre-test and post-test.

The data in Table 11 show that within the experimental group, the post-test mean score was significantly higher than the pre-test one ($p < 0.001$). However, within the comparison group, there was no significant difference between the pre-test and post-test mean scores ($p = 0.252$).

Table 11 Comparison on the mean scores of the self-efficacy on health behavior change within the experimental group and the comparison group at pre-test and post-test.

The self-efficacy on health behavior change	n	Mean	S.D.	t-value	df	p-value
The experimental group						
Pre-test	50	36.04	4.30			
				11.62	49	< 0.001*
Post-test	50	42.60	2.37			
The comparison group						
Pre-test	53	36.70	4.99			
				0.671	52	0.252
Post-test	53	37.08	3.51			

* statistically significant at $p \leq 0.05$

Part 5 The response efficacy on health behavior change.

5.1 Pre-test and post-test results

At pre-test, most of the samples in the experimental group (72%) and in the comparison group (84.9%) had high level of response efficacy on health behavior change.

At post-test, all of those (100%) in the experimental group scored in high level ; while 69.8% in the comparison group remained in high level (Table 12).

Table 12 Numbers and percentage distribution of the level of the response efficacy on health behavior change of the sample at pre-test and post-test.

The level of the response efficacy on health behavior change	Experimental group (n = 50)		Comparison group (n = 53)	
	f	%	f	%
Pre-test				
high	36	72.0	45	84.9
medium	14	28.0	8	15.1
low	0	0.0	0	0.0
Post-test				
high	50	100.0	37	69.8
medium	0	0.0	15	28.3
low	0	0.0	1	1.9

5.2 Mean score comparison between groups at pre-test and post-test

At pre-test, the mean score difference between the two groups was not significant ($p = 0.623$). At post-test, there was a statistically significant difference between the two groups mean scores ($p < 0.001$) as demonstrated in Table 13.

Table 13 Comparison on the mean scores of the response efficacy on health behavior change between the experimental group and the comparison group at pre-test and post-test.

The response efficacy on health behavior change	n	mean	S.D.	t-value	df	p-value
Pre-test						
The experimental group	50	25.46	2.67			
				-0.493	101	0.623
The comparison group	53	25.70	2.16			
Post-test						
The experimental group	50	29.40	1.05			
				9.72	65.01	< 0.001*
The comparison group	53	25.11	3.02			

* statistically significant at $p \leq 0.05$

5.3 Mean score comparison within group at pre-test and post-test

For the experimental group, the post-test mean score was significantly higher than the pre-test one ($p < 0.001$). While, for the comparison group, the within group mean score was not significantly different ($p = 0.110$) as shown in Table 14.

Table 14 Comparison on the mean scores of the response efficacy on health behavior change within the experimental group and the comparison group at pre-test and post-test.

The response efficacy on health behavior change	n	mean	S.D.	t-value	df	p-value
The experimental group						
Pre-test	50	25.46	2.67			
				10.626	49	< 0.001*
Post-test	50	29.40	1.05			
The comparison group						
Pre-test	53	25.70	2.16			
				-1.242	52	0.110
Post-test	53	25.11	3.02			

* statistically significant at $p \leq 0.05$

Part 6 The health behaviors of pregnant women.

6.1 Pre-test and post-test results

Table 15 shows that at pre-test, most of the samples in the experimental group and comparison group had high level of health behaviors (62.0% and 64.1% respectively).

At post-test, both groups still had most scores in high level but the percentage changed to 92.0% for the experimental group and 60.4% for the comparison group.

Table 15 Numbers and percentage distribution of the level of health behaviors of the pregnant women of the experimental group and comparison group at pre-test and post-test.

The health behaviors for decreasing the complications in pregnancy	Experimental group (n = 50)		Comparison group (n = 53)	
	f	%	f	%
Pre-test				
high	31	62.0	34	64.1
medium	19	38.0	17	32.1
low	0	0.0	2	3.8
Post-test				
high	46	92.0	32	60.4
medium	4	8.0	19	35.8
low	0	0.0	2	3.8

6.2 Mean score comparison between groups at pre-test and post-test

The statistical analysis in Table 16 reveals that at pre-test, the mean scores between groups were not significantly different with a p-value of 0.449 .

At post-test, the mean score of the experimental group was significantly higher than that of the comparison group ($p < 0.001$).

Table 16 Comparison on the mean scores of the health behavior of the pregnant women between the experimental group and the comparison group at pre-test and post-test.

The health behavior of the pregnant women	n	mean	S.D.	t-value	df	p-value
Pre-test						
The experimental group	50	43.86	4.56			
				0.129	101	0.449
The comparison group	53	43.74	5.16			
Post-test						
The experimental group	50	51.02	3.81			
				9.187	101	< 0.001*
The comparison group	53	43.47	4.47			

* statistically significant at $p \leq 0.05$

6.3 Mean score comparison within group at pre-test and post-test

For the experimental group, the post-test mean score was significantly higher than the pre-test one ($p < 0.001$) as shown in Table 17. For the comparison group, there was no difference between the pre-test and post-test mean scores.

Table 17 Comparison on the mean scores of the health behavior of the pregnant women within the experimental group and the comparison group at pre-test and post-test.

The health behavior of the pregnant women	n	mean	S.D.	t-value	df	p-value
The experimental group						
Pre-test	50	43.86	4.56			
				10.152	49	< 0.001*
Post-test	50	51.02	3.81			
The comparison group						
Pre-test	53	43.74	5.16			
				-0.424	52	0.336
Post-test	53	43.47	4.47			

* statistically significant at $p \leq 0.05$

Part 7 The complication in pregnancy.

The results of pre-test showed that there was no cases of PIH in either the experimental group or comparison group. However, during the intervention, a mild case of PIH was detected in the experimental group. After attending the health education program for 12 weeks, the symptoms disappeared. In fact, the doctor was informed immediately when the woman had early symptoms. Thus, proper advice could be provided ; and as a result, she recovered within 2 weeks.

CHAPTER V

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

1. Discussion

The research discussion is based on the findings with reference to the hypothesis as follows:

Hypothesis : The health education program was effective for pregnant women who attended the program. The following aspects will be discussed based on the research findings.

1. Perceived severity of the complication in pregnancy.
2. Perceived vulnerability of the complication in pregnancy.

The study showed that the participants had changed perceived severity of the complication in pregnancy. The percentage in high level of perceived severity increased from 32% at pre-test to 100% at post-test (Table 3). The high level of perceived vulnerability on the complications in pregnancy also increased from 48% before attending the program to 96% after the program (Table 6). The mean score of the experimental group was significantly higher than that of the comparison group (Table 4 and 7). Within the experimental group, the post-test mean score was significantly higher than the pre-test one (Table 5 and 8). This supports the hypotheses 1 and 2. It can be explained that the increase in perceived severity and vulnerability of the complication in pregnancy could be due to the first health education activity by using group discussion in which the participants had an

opportunity to exchange their opinions and experiences. Chantramolee, S. (2000: 78) stated the group process makes the participants think over and apply their opinions into their daily lives. This was consistent with the study of Chaisiri, P. (1991: 25) which found that the influence of the group that helped the participants change and decide their satisfactory and acceptable health behavior. This influence would result in regular behaviors.

Besides, the flip-chart about PIH and manuals could increase their perception and understanding. The video about PIH was presented. As a result, the experimental group realized the severity and risk of PIH which could be deadly harmful to pregnant mother and the fetus. The video could present the real events that could arouse viewers' emotion and feeling which could change perception and practice health behavior. Fisher & Gochros, 1975; Ross, 1981 Cited by Aemsupasit, S. (1995: 51) stated that using model could prevent or reduce undesired behaviors. This study used group discussion, video presentation, distribution handouts, which could encourage proper perception on experimental group. In this regard Suwan, P. (1994: 125) mentioned that perception could be created by several factors such as the influence of the model, the information, others' opinions and experiences. It is also in line with the study of Pokasinjumroon, P. (1995: 73-74) which found that percevied severity and vulnerability had a positive relationship with self-care behaviors of muslim pregnant women who had PIH. It is also in line with the study of Pungbangkradee, R. (1998: 42) who studied on perceived severity of complications caused self-malfunctions and baby's malfunctions. When young pregnant women knew about it, they would cooperate and self-care to avoid diseases.

3. Self-efficacy in changing health behaviors.

4. Response efficacy in changing health behaviors.

After attending the program, all participants had positive changes in their self-efficacy in health behavior change. This was confirmed by the post-test data presented in Table 9 which showed that all (100%) of the participants had self-efficacy in high level, compared with 62% at pre-test. Similarly, for response efficacy in health behavior change, at pre-test 72% of the experimental group had response efficacy in high level ; and increased to 100% at post-test (Table 12). The analysis of mean scores between groups (Table 10 and 13) revealed that there is a significant difference between the experimental group and comparison group. The mean score analysis within group (Table 11 and 14) also showed a significantly higher score at post-test than at pre-test among the experimental group samples. The increase of self-efficacy and response efficacy in changing health behaviors should come from the second health education activities arranged by symbolic model, demonstration of the essential food for the pregnancy, practice for observation their edema, and distribution of the leaflets about essential food for pregnant women.

The positive change of the self-efficacy and response efficacy of the experimental group was the baseline for practice health behaviors to prevent the complications. Evans cited by Aemsupasit, S. (1995: 58) mentioned that those who accepted their own ability and skill would be patient, not be discouraged and be successful at last. Aemsupasit, S. (1995: 58) said that the self-efficacy relates to the response efficacy. Both factors affect one's decision. It was consistent with the study of Pungbangkradee, R. (1998: 42-43) which found that if young mothers have response efficacy in self-care behaviors, they could prevent the complication and

decrease severity of complication in pregnancy. Thus, young mothers, with response efficacy and understanding in self-care behaviors, would have good practice in those behaviors.

5. The health behaviors of pregnant women.

At pretest, the health behaviors of experimental group was high at 62%. After the experiment, almost all of them (92%) had health behaviors at high level (Table 15). There were statistically significant differences of the mean scores of health behaviors between the experimental and comparison group and within the experimental group (Table 16, 17). So, it can be explained that the positive health behaviors of the experimental group were the effect from the change on perceived severity, vulnerability, self-efficacy and response efficacy which were the main variables in Protection Motivation Theory of Rogers. The PMT assumes that the protection motivation is maximized when: (i) the threat to health is severe: (ii) the individual feels vulnerable: (iii) the adaptive response is believed to be an effective means for averting the threat: (iv) the person is confident in his or her abilities to complete successfully the adaptive response: (v) the rewards associated with the maladaptive behavior are small: (vi) the costs associated with the adaptive response are small (Prentice-Dunn & Rogers, 1986: 156).

Health education method by using flip-chart is the means to transmit critical knowledge, basic principles and all the realities. Using a mother who experienced PIH to narrate the experience and video presentation could arouse the experimental group fearfulness and awareness about the complications in pregnancy. In addition, to remind them by sticker for the practice of health behaviors could also increase their practice of health behaviors.

For the complication in pregnancy, the pregnant women in experimental group had mild Pregnancy-induced Hypertension only one case. She came to see doctor immediately when she found signs and symptoms, edema on feet and hand. Some cases talked about mild PIH that they knew from the health education activities and came to see the doctor immediately. Thus, the health education program was useful in decreasing severe danger of pregnant women and their babies. PIH in comparison group was not found. In this study, the researcher could not study in the long term by the large group because of the limited time and budgets. Therefore, there were not clear differences on the rate of the complication in pregnancy of both groups. Although the decrease of complication in pregnancy was not clear, the program could decrease the risk of lives. It was conformed with the study of Therakulchai, J. (1993: Abstract) which found that the supportive-educative nursing system did not lower the PIH in the experimental group than in the comparison group. This finding was in agreement with the study of Thadapipat, S. (1995: 47) on the rate of PIH, preterm labor, low weight of babies and found that the supportive-educative nursing system did not decrease the incidence of complication in young pregnant women.

2. Conclusions and recommendations

This study is a quasi-experimental research. The main objective was to examine the effectiveness of the health education program by applying the Protection Motivation Theory with Group Discussion in pregnant women who came to antenatal care unit, Ratchaburi Hospital.

The samples were primigravida pregnant women who attended the antenatal care unit at Ratchaburi Hospital. The experimental group was 50 women and the comparison group was 53 women. The experimental group attended the health education program 4 times. Each time was 2 weeks apart. The comparison group did not attend the program. The study started from December 20, 1999 to March 24, 2000. The total time was 12 weeks.

The questionnaire and antenatal care record were used for collecting data. There were 2 times for collecting data; before and after the intervention. About antenatal care record, the researcher checked antenatal record of pregnant women who came to the antenatal care unit by appointment. The percentage, mean, S.D. Paired Sample t-test and Student's t-test were analyzed by SPSS for Windows. The conclusions and recommendations are as follows:

Summary of findings are as follows:

1. Socio-demographic characteristics

In general, the participants of both groups were similar. They were 20-24 years old. Most of them finished the elementary school and high school. Most of them were daily-wage workers and housewives. Most of them earned 1-5,000 baht a month.

2. At post-test, the perceived severity on the complications in pregnancy of the participants attended the health education program were more positive. The comparison of the participants of two groups showed that the participants who attended the program changed into the positive way rather than the participant who did not on significantly differences. This finding supports hypothesis 1.

3. At post-test, the perceived vulnerability on the complications in pregnancy of the experimental group was significantly better than at pre-test. The comparison of both groups showed that the experimental group had significantly more positive changes than the comparison group. This finding confirms hypothesis 2.

4. At post-test, the self-efficacy on health behaviors change to decrease the complications in pregnancy of the experimental group was more positive than at pre-test. The comparison of the health behaviors change between the experimental group and the comparison group showed that the participants attended the program had more positive changes than the comparison group. It accepted hypothesis 3.

5. At post-test, the response efficacy on the health behaviors change to decrease the complications in pregnancy of the experimental group was more positive than at pre-test. The comparison of the health behaviors change between the experimental group and the comparison group showed that the participants attended the program changed into the positive way more than the other group. It accepted hypothesis 4.

6. At post-test, the health behaviors to decrease the complications in pregnancy of the experimental group were more correct on significantly differences. The comparison of the change of the experimental and the comparison groups showed

that the health behaviors of the treatment group were more correct than the comparison group. It accepted hypothesis 5.

7. After attending the program, the experimental group had one pregnant woman with mild Pregnancy Induce Hypertension, and the comparison group did not.

Recommendations from Research Results

1. Strategies of health education for primigravida should be small group on changing experience the part of video presentation on model that similar the sample group could be done the pregnant women high perceived and awareness.

2. The video presentation should be made by expert and test before on health education.

3. The encouraging sticker should be make on through of group discussion.

Recommendations for the further research.

1. Should be studing cover incident on definition on PIH refer to after delivery on 10 day.

2. Random check by home visit for observe the still praction of health behavior.

BIBLIOGRAPHY

Clark, A.L., Affonso, D.D., & Harris T.R., (Eds.) (1979). Natrition part I: Implication for maternal, fetal and neonatal systems. Childbearing: A nursing perspective. (2nd ed.). Philadelphia: F.A. Davis Company.

Andolsek, K.M. (1990). Obstetric care: Standards of prenatal intrapartum and postpatum management. The United Stated of America: Lea & Febiger.

Barron, S.L., & Thomson, A.M. (eds.). (1983). Obstetrical epidemiology. London: Academic pressing.

Bloom, S.B. (1968). "Learning for mastery" Evaluation comment, center for the study of evalution of instructional programs. University of california at Los Angeles.

Brande, W.D. & Porter T.F. (1999). Danforth's obstetrics and gyneology. United State of America; World Colour, 309-325.

Bunsom, A. (1997). Spouse support and health promoting behavior in high risk pregnant women. M.A. Thesis in Nursing, Faculty of Graduate Studies, Mahidol University.

Castro, L.C., Hacker, N.F. & Moore, J.G. (1999). Essentials of obstetrics and gynecology. United State of America: WB Sannders Company Press, 196-207.

Chaisiri, P. (1991). The effectiveness of dental health education program on reduction of gingivitiss among shool student in bangkok. M.A. Thesis in Public health, Faculty of Graduate Studies, Mahidol University.

Chanchana, P. (1990). Effect to planned instruction on self-care behavior and health state in pregnancy induct hypertension pregnant women. M.A. Thesis in Nursing, Faculty of Graduate Studies, Mahidol University.

Chesley, L.C., Annitto, J.E., & Cosgrove R.A. (1676) The remote prognosis of eclampsia women. Sixth periodic report. Am I obstet Gynecol, 446-459.

Chunpradub, P. (1995). The relationship between self-esteem, social support and coping behavior in high work pregnant women. M.A. Thesis in Nursing, Faculty of Gradate Studies, Mahidol University.

Clark, A.L., Affonso, D.D. & Hawis, T.R., (1979). A Nursing perspective. (2nd ed.) Philadelphia: F.A. Davis Company.

Cramley, M.S. (1983). Perinatal risk. JOGN Nursing 12 (May-June), 13-18.

Crawford, D., & Morris, M. (1994). Neonatal nursing. London: Chapman & Hall.

Cunningham, F.G., McDonald P.C., Gant, N.F. (1993). Williams obstetrics. (19th ed.) East Norwalk. Appleton & Lange.

Egger, G.S., & Lowson, J. (1995). Health promotion strategies & Methods. (3rd ed.).Sydney: McGrow-Hill Book.

Enkin, M., et al. (1995). A guide of effective care in Pregnancy and Childbirth. (2nd ed.). Great Britain: Biddles.

Fishbein, M. (1975). Belief, attitude, intention and behavior; an introduction to theory and research. Massachusetts: Addison-Wesley Publishing Company.

Green, L.W. (1986). Measurement and evaluation in health education and health promotion. California: Mayfield Publishing Company.

Green, L.W. (1994). Community health. The United States of America: Mosby Year Book.

Green, L.W., Marshall, W.K., Sigrid, G.D., Kay, B.P. (1980). Health education planning. California: Mayfield Publishing Company.

Hallak, M. (1999). High risk pregnancy management options. London: Harcourt Brace and Company Press, 639-664.

Keodmongkun, P. (1988). The relationship between social support, selected factors and anxiety in pregnant women. M.A. Thesis in Public Health Nursing, Faculty of Graduate Studies, Mahidol University.

Kitpinyo, S. (1988). The effectivenese of intensive health education program on health primotive pregnancy's gehavior, Chulalongkorn Hospital. M.A. Thesis in health Education and Behavioral Sciecne, Faculty of Graduate Studies, Mahidol University.

Kunsom, A. (1998). Relationship among basic conditioning factors, received information and salf-care agency of pregnant women. M.A. Thesis in Nursing, Faculty of Graduate Studies, Mahidol University.

Kusolvisitkul, V. (1991). Instruments in research. Statistics and research in health sciences, 287-353. Bangkok: Chuanpim Press.

Leetherakun, J. (1998). Health perecption and health promoting behavior of pregnant women with hepatitis B carrier. M.A. Thesis in Nursing, Faculty of Graduate Studies, Mahidol University.

Lnuppel, R.A., & Drukkew, J.E. (1993). High-risk pregnancy: Ateam approdch. (2nd ed.). Mexico: Sauaders.

Mabie, C.W. & Sibai, M.B. (1984). Current obstetric & gynecologic diagnosis & treatment. Hypertensive states of pregnancy. (5th ed.). United State of America: Hall International, 380-397.

Mac Gillivray, (1983) I. Preeclampsia. The hypertensive disease of pregnancy. London: WB Saunders, 27-45.

Ministry of Public Health. (1997). Public health development plan 8 (1997-2001).

Moore, M.L. (1981). Newborn family and nurse. (2nd ed.) Philadelphia: W.B.Sounder

Newman, V. & Fullerton, J. (1990). Role of Nutrition in the Prevention of Preeclampsia Journal of nurse-midwifery, 35, 282-290.

Nirattharaol, M. (1996). The study of perceived benefits, perceived barriers to health promoting behaviors and health promoting behaviors in adolescent pregnany. M.A. Thesis in Nursing, Faculty of Graduate Studies, Mahidol Uninersity.

Nisawander, K.R. (1982). current obstetric & gynecologic diagnosis & treatment. Califonia : Lange Medical Publications, 626.

Office of the Permanent Secretary Ministry of Public Health. (1997). Division of public health statistics, public health statistics.

Old, S.B., London, M.L. and Ledewing, P.A. (1984). Maternal Newborn Nursing: A Family Centered Approach. (2nd ed.). California: Addison Wesley Publishing Company.

Opraseartsawat, P., Wongpoupan, V. & Thaneepanitchakun, S. (1986) Obstetrical Ramathibodi 1 (2nd ed.). Bangkok: Holistricpublissing.

Pavisonyakun, S. (1995). Causal relationship among daily hassless social support, self-care deficit and health outcome of pregnant women. M.A. Thesis in Nursing, Faculty of Graduate Studies, Mahidol University.

Peanmongkon, U. (1994). Relationship between health preception and health maintennance behaviors in primigravida. M.A. Thesis in Nursing, Faculty of Graduate Studies, Chiangmai University.

Phoungpaka, A. (1997). Comparative outcome between adolescent pregnancy and pregnancy in age 20-30 at Phra Pok Klao hospital chantaburi : 1994-1996. M.Sc. Thesis in Human Reproduction and Population Planning, Faculty of Graduate Studies, Mahidol University.

Pichainarong, N. (1995). Risk factor as predictors of pregnancy induced hypertension among 4 maternal and child hospitals. Doctor of Pubic Health (Epidemiology), Faculty of Graduate Studies, Mahidol University.

Pokasinjumroon, P. (1995). The relationship between health belief and self-care behavior in the thai muslim pregnant women with pregnancy induced hypertension. M.A. Thesis in Nursing, Faculty of Gradmate Studies, Mahidol University.

Prakobsub, R. (1998). Spouse support mother's support and health promoting behaviors in adolescent women. M.A. Thesis in Nursing, Faculty of Graduate Studies, Mahidol University.

Prentice-Dunn, S., & W. Rogers, R. (1986). Protection motivation theory and preventive health: beyond the health belief model. Oxford England.

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

Pungbangkradee, R. (1998). The study of perceived health and behavioral self care of aldorescent pregnant. M.A. Thesis in Mursing. Faculty of Graduate Studies, Mahidol University.

Reading, A.E., et al. (1983). Health beliefs and health care behavior in pregnancy. Obstet-Gynecol Survey. 38, 140-142.

Reeder, S.J., & Martin, L.L. (1991). Essentials of materity nursing: Family centered care. Philadelphia. J.B. Lippincott Company.

Reeder, S.J., & Martin, L.L. (1992). Materrity nursing: Family, newborn and women's health care. (17th ed.). St Louis: J.B. Lippincott Company.

Richardson, P. (1981). Relationships during pregnancy. Journal of Maternal-Child Nursing, (10), 159-174.

Savangtook, S. (1995). Study of health maintenance behaviors in pregnant women with inadequte prenatal care. M.A. Thesis in Nursing, Faculty of Graduate Studies, Mahidol University.

Singhala, K. (1997). Factors associated with preeclampsia in pregnant women admitted at ramathibodi hospital 1994-1995. M.A. Thesis in Human Reproduction and Population Planning, Faculty of Graduate Studies, Mahidol University.

Sublun, A., & Patjarn, R. (1997). Statistics of Public Health 1996. Bangkok.

Subpavat, S. (1995). The study of selected factors and lifestyle during pregnant in mothers of low birth weight fant. M.A. Thesis in Nursing, Faculty of Graduate Studies, Mahidol University.

Sutacha, S. (1987). The relationship between selected factor and self-care behavior in pregnant women with pregnancy-induce hypertension. M.A. Thesis in Nursing, Faculty of Graduate Studies, Mahidol University.

Svangvongsin, S. (1998). The application of protection motivation theory and group process of iron deficiency anemia prevention behaviors among pregnant women attending natal care service at Pranugklao Hospital in Nonthaburi province. M.A. Thesis in Health Education and Behavioral Science, Faculty of Graduate Studies, Mahidol University.

Therakulchai, J. (1993). Effects of supportive – educative nursing system on self care agency and pregnancy induced hypertension prevalance in mothers at risk. M.A. Thesis in Nursing, Faculty of Graduate Studies, Mahidol University.

Vayahead, S. (1993). The relationship between self concept, social support and self care behavior in addescent pregnant women. M.A. Thesis in Nursing, Faculty of Graduate Studies, Mahidol University.

Willis, S.E. (1982). Hypertension in Pregnancy. American Journal of Nursing: (May), 791-822.

World Health Organization Geneva. (1995). Complication of abortion: techincal and mangerial guidelnes for prevention and treatment. England: Macmillan.

เฉลิมพล ตันสกุล. (2541). พฤติกรรมศาสตร์สาธารณสุข. กรุงเทพมหานคร : สหประชาพาณิชย์. (Tansakul, C.)

บุญศรี จันทร์รัชกูล (บรรณาธิการ). (2542). สูติศาสตร์ร่วมสมัย. กรุงเทพมหานคร : สำนักพิมพ์ข้าวฟ่าง. (Chanratchakul, B.).

ประทักษ์ โอประเสริฐสวัสดิ์ วินิต พัวประดิษฐ์ และสุรศักดิ์ ฐานีพานิชกุล (บรรณาธิการ). (2539). สูติศาสตร์รามาธิบดี 1. (ฉบับนิพนธ์ครั้งที่ 2). กรุงเทพมหานคร : โฮลิสติกพับลิชชิ่ง. (Ooprasertsward, P., Poupradit, V. & thaneepanichkul,S.)

ประภาเพ็ญ สุวรรณ และสวิง สุวรรณ. 2534). พฤติกรรมศาสตร์ พฤติกรรมสุขภาพและสุขศึกษา. กรุงเทพมหานคร : เจ้าพระยาการพิมพ์. (Suwan, P. & Suwan, S.).

ประภาเพ็ญ สุวรรณ. (2537). การวัดสถานะทางสุขภาพ : การสร้างมาตราส่วนประมาณค่า และแบบสอบถาม. กรุงเทพมหานคร : ภาพพิมพ์. (Suwan, P.).

พิชัย เจริญพานิช. (2531). แก่นแท้ของสูติศาสตร์ ปัญหาและแนวทางแก้ไข. กรุงเทพมหานคร : พี. เอ. จีพริ้ง. (Chalernpanit, P.).

พิมพรรณ ศิลปสุวรรณ (บรรณาธิการ). (2537). วิจัยในงานสาธารณสุข. ม.ป.ท. (Silpasuwan, P.)

วราวุธ สุมาวงศ์. (2539). คู่มือการปกครองและการคลอด. (พิมพ์ครั้งที่ 12). ม.ป.ท. (Sumawong, V.)

วสันต์ ศิลปสุวรรณ และพิมพรรณ ศิลปสุวรรณ. (2541). การวางแผนและประเมินผลโครงการส่งเสริมสุขภาพทฤษฎีและการปฏิบัติ. ม.ป.ท. (Silpasuwan, V. & Silpasuwan, P.)

สมเกียรติ ศรีสุพรรณดิษฐ์. (2534). สูติศาสตร์พื้นฐาน รามาธิบดี. กรุงเทพมหานคร : สำนักพิมพ์ข้าวฟ่าง. (Srisupandit, S.).

สมโภชน์ เอี่ยมสุภาษิต. (2539). ทฤษฎีและเทคนิคการปรับพฤติกรรม. กรุงเทพมหานคร : จุฬาลงกรณ์มหาวิทยาลัย. (Aemsupasit, S.).

สุจิต เผ่าสวัสดิ์, ศุภวัฒน์ ชุติวงศ์, ดำรง เหรียญประยูร และสุทัศน์ กลกิจ (บรรณาธิการ). (2525). สูติศาสตร์ ภาควิชาสูติศาสตร์-นรีเวชวิทยา คณะแพทย์ศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย. (Ponsward, S., Chutiwong, S., Learnprayur, D. Kunkit, S.)

สุรีย์ จันทรโมลี. กลวิธีการทางสุขภาพ. (2543) (พิมพ์ครั้งที่ 2). กรุงเทพมหานคร : ม.ป.ท. (Chantramolee, S.).

อรพิน ทรัพย์ล้น, รพีพร ปัจจารุและเจ้าหน้าที่กลุ่มวิเคราะห์สถิติและประยุกต์. (2540). สถิติสาธารณสุข พ.ศ. 2539. กรุงเทพมหานคร : องค์การทหารผ่านศึก. (Charploun, O., et al.)

สุรชัย อินทรประเสริฐ, สุภาวดี หาญเมธี อุทัยวรรณ วิสุทธากุล (บรรณาธิการ). (2537). การปฏิบัติตนระหว่างตั้งภรรค์. ม.ป.ท. (Intrarapasert, S., Heanmeathee & Visuthakul, U.)

Thadapipat, S. (1995). Effect of supportive-educative nursing system on self-cave agency and pregnancy outcome in pregnant adolesconts. M.A. Thesis in Nursing Science (Maternity and Newborn Nursing), Facuty of Gradnate Studies, Mahidol University.

Srijangwang, U. (1996). An applecation of protection motivation Theory to improve health pregnant women at siriraj hospital. M.A. Thesis in Health Education, Faeuty of Graduate Studies, Mahidol University.

Suesat, J. (1994). The relationship between perception of disease, spousal support and therapeutic compliance behovior in pregnancy induced hypertension. M.A. Thesis in Nursing Science (Maternal and child Nursing), Facuty of Gradnate Studies, Mahidol University.

Diloksambandh, C. (1995). Effectiveness of the health education program on AIDS preventive risk behavior with specific to sexual Transmission among female undergradnate student in Bangkok. Dr.P.H. thesis in Health Education, Facuty of Gradnate Studies, Mahidol University.

APPENDIX

Questionnaire

The effectiveness of health education program on complication of pregnancy among pregnant women attending antenatal care clinic at Ratchaburi hospital.

This questionnaire has objectives to know about general characteristics of the sample, perceived severity, vulnerability, self-efficacy, response efficacy and health behavior of the pregnant women. Data was keep secret, no bad effect and no effect of attending ANC for the sample. Thus, I am hope fully, that yours answers are the most of fact for the benefit in planing and finding methods in changing the health behavior for health education program on complication of pregnancy. The questionnaire is 6 part as follow:

Part 1 General characteristic of the sample

Part 2 Perceived severity of the complication in pregnancy

Part 3 Perceived vulnerability of the complication in pregnancy

Part 4 Self-efficacy in changing the health behaviors.

Part 5 Response efficacy in changing the health behaviors.

Part 6 Health behaviors of the pregnant women.

Thank full for co-operation in answers the questionnaire

Vitchuorn Punneang

A student of the degree of science (Public health)

Major in Health Education and Behavioral Sciences

Faculty of Granduate Studies

Mahidol University

Number .....

Part 1 General charateristric of the sample

1. Name ..... Surname .....

2. Number house .....

Street ..... Tumbol .....

Amper ..... Province .....

Telephone number .....

3. Ages ..... (year)

4. Education

( ) Primary school

( ) Secondary school

( ) Professional Certificates

( ) Diploma / higher Professional Certificates

( ) Bachelor degree of higher

5. Occupation

( ) Housewives

( ) Merchants

( ) Agriculture

( ) Daily wage-workers

( ) Civil Servants

( ) Other

6. Family income (bath)

( ) Low than 5,000

( ) 5,000 – 10,000

( ) Over than 10,000

Part 2 Perceived severity of the complication in pregnancy.

Please tick mark (✓) the answer that you can select.

Perceived severity	Agree	Uncertain	Disagree
1. The hypertensive disorder in pregnancy could be able to make the blood line in brain is broken.	.....	.....	.....
2. If I have the hypertensive disorder in pregnancy, I may be kidneys disease easier than the normal pregnant women.	.....	.....	.....
3. The hypertensive disorder in pregnancy may cause pulmonary edema.	.....	.....	.....
4. If I have the hypertensive disorder in pregnancy, I may have the convulsion as well.	.....	.....	.....
5. The hypertensive disorder in pregnancy may cause heart failure.	.....	.....	.....
6. If I have the hypertensive disorder in pregnancy, I may have the convulsion and die.	.....	.....	.....
7. If I have the hypertensive disorder in pregnancy, I may be premature.	.....	.....	.....
8. If I have the hypertensive disorder in pregnancy, my baby may be small or have low birth weight.	.....	.....	.....
9. If I have the hypertensive disorder in pregnancy, my baby may have congenital anomaly.	.....	.....	.....
10. If I have the hypertensive disorder in pregnancy, it shows I may be the risk of life.	.....	.....	.....

Part 3 Perceived vulnerability of the complication in pregnancy.

Please tick mark (✓) the answer that you can select.

Perceived vulnerability	Agree	Uncertain	Disagree
1. Not enough sleep in pregnancy may cause the hypertensive disorder in pregnancy.	.....	.....	.....
2. If I usually have fermented food, I may have the hypertensive disorder in pregnancy.	.....	.....	.....
3. If I couldn't eat the five main types of food, I may have the hypertensive disorder in pregnancy.	.....	.....	.....
4. If I often drink tea and coffee, I may have the hypertensive disorder in pregnancy.	.....	.....	.....
5. If I am usually stressed, it may cause the hypertensive disorder in pregnancy.	.....	.....	.....
6. If I am usually anxious, it may cause the hypertensive disorder in pregnancy.	.....	.....	.....
7. If I am usually angry or furious, it may cause the hypertensive disorder in pregnancy.	.....	.....	.....
8. The first gestation may have the hypertensive disorder in pregnancy.	.....	.....	.....
9. The young pregnant women may have the hypertensive disorder in pregnancy.	.....	.....	.....
10. If I could not come to the antenatal care unit on time, it is a risk of the hypertensive disorder in pregnancy.	.....	.....	.....

Part 4 Self-efficacy in changing health behavior.

Please tick mark (✓) the answer that you can select.

Self-efficacy	Very sure	Slightly	Not sure
1. I can have meat every day.	.....	.....	.....
2. I can have entrails at least once a week.	.....	.....	.....
3. I can have food cooked from the green vegetables every day.	.....	.....	.....
4. I can drink at least 6-8 glasses of water.	.....	.....	.....
5. I can omit to have fat food.	.....	.....	.....
6. I can have fruit every day.	.....	.....	.....
7. I can have fresh vegetables every day.	.....	.....	.....
8. I can omit to have fermented food in pregnancy.	.....	.....	.....
9. I can take pills of ioru by prescription.	.....	.....	.....
10. I can omit salty food.	.....	.....	.....
11. I can exercise by walk about 15-30 minutes a day.	.....	.....	.....
12. I can enjoy myself and make myself happy.	.....	.....	.....
13. When I am furious or angry, I can be in control.	.....	.....	.....
14. I can observe signs and symptoms.	.....	.....	.....
15. I can weigh every week.	.....	.....	.....

Part 5 Response efficacy in changing health behavior.

Please tick mark (✓) the answer that you can select.

Self-efficacy	Agree	Uncertain	Disagree
1. To follow doctors and nurses' advices can protect the hypertensive disorder in pregnancy.	.....	.....	.....
2. To eat the five main types of food every day, it will make my baby healthy.	.....	.....	.....
3. If I walk 15-30 minutes a day, my baby and I will be healthy.	.....	.....	.....
4. To have enough sleep every day, it will decrease the complications in pregnancy.	.....	.....	.....
5. To relief tension or anxiety will decrease the complications in pregnancy.	.....	.....	.....
6. To do a housework or daily work which no need to work hard will save my baby and myself.	.....	.....	.....
7. To urine and protect constipation will decrease the complications in pregnancy.	.....	.....	.....
8. To come to the antenatal care unit by appointment will protect the complications in pregnancy.	.....	.....	.....
9. To hurry for a doctor when something goes wrong, e.g. edema, heavier weight, will protect the hypertensive disorder in pregnancy.	.....	.....	.....
10. To observe the heavier weight will protect my baby and myself.	.....	.....	.....

Part 6 Health behaviors for pregnant women.

Please tick mark (✓) the answer that you can select.

Health behaviors	Regular	Sometimes	Never
1. I have meat, e.g. chicken, fish, beef, pork, at least 10 spoonfuls a day.	.....	.....	.....
2. I have entrails at least once a week.	.....	.....	.....
3. I have an egg every day.	.....	.....	.....
4. I have rice and noodles one dish a meal.	.....	.....	.....
5. I have from cooked from the green vegetables, e.g. a morning glory, a gourd, a tree probably of the genus Terminalia grown in Southern china, and so on, at least 2 cupfuls a day.	.....	.....	.....
6. I drink two bottles of soft drink a day at least.	.....	.....	.....
7. I drink one glass of milk or soybean milk every day.	.....	.....	.....
8. I drink 6-8 glasses of water a day at least.	.....	.....	.....
9. I have fat food, e.g. a soup with coconut milk, meat with fat.	.....	.....	.....
10. I drink a cup of tea or coffee a day.	.....	.....	.....
11. I have fruit every day.	.....	.....	.....
12. I have fresh vegetables every day.	.....	.....	.....
13. I have fermented food and fermented fruit in pregnancy.	.....	.....	.....
14. I have very salty food.	.....	.....	.....
15. I take pills of iorn by doctor's prescription.	.....	.....	.....
16. I drink alchohols, e.g. liquor, beer.	.....	.....	.....

Health behaviors	Regular	Sometimes	Never
17. I usually hold my urine.	.....	.....	.....
18. I excrete from my body once a day at least.	.....	.....	.....
19. I walk 15-30 minutes a day.	.....	.....	.....
20. I sleep 8 hours a night at least.	.....	.....	.....
21. I sleep on left or right side.	.....	.....	.....
22. I tend to sleep during the daytime for 1-2 hours a day.	.....	.....	.....
23. I relief my tension and am happy with my hobbies, e.g. listening to the radio, watching TV, or making concentration.	.....	.....	.....
24. When I am furious or angry, I try to control myself, then I think about the solution.	.....	.....	.....
25. When I am anxious, I usually consult someone who I rely on.	.....	.....	.....
26. I come to the antenatal care unit by appointment.	.....	.....	.....
27. I observe my edema, e.g. feet or legs, every day.	.....	.....	.....
28. I observe fetal movement every day.	.....	.....	.....

Number .....

Antenatal care record for the sample

1. Name ..... Surname ..... H.N.

2. First ANC (gratetational age) ..... (weeks)

3. LMP .....

4. EDC .....

5. First date on the study .....

Data of health status of pregnant women on the study period.

Step.	Gratetational ages	Blood pressure	Body weitht (kg)	Proteinuria	Sugar in urine	Edema	Conclusion of pregnant status	
							Normal	Abnormal
1	.....	.....	.....	.....	.....	.....	.....	.....
2	.....	.....	.....	.....	.....	.....	.....	.....
3	.....	.....	.....	.....	.....	.....	.....	.....
4	.....	.....	.....	.....	.....	.....	.....	.....

6. Date of birth .....

7. Characteristic of delivery ( ) Normol

( ) Abnormol .....

Table 18 Percentage distribution of the perceived severity of the complications in pregnancy of the experimental group and comparison group at pretest and posttest.

Perceived severity	Experimental group (n = 50)						Comparison group (n = 53)					
	Pretest			Posttest			Pretest			Posttest		
	Agree	Uncertain	Disagree	Agree	Uncertain	Disagree	Agree	Uncertain	Disagree	Agree	Uncertain	Disagree
1. The Pregnancy Induce Hypertension could be cerebral hemorrhage.	48.0	44.0	8.0	96.0	2.0	2.0	35.8	60.4	3.8	49.1	49.0	1.9
2. If I have PIH, I may be Glomeruloendotheliosis.	32.0	56.0	12.0	76.0	24.0	0.0	24.6	52.8	22.6	30.2	54.7	15.1
3. The PIH may cause Plumonary edema.	8.0	54.0	38.0	66.0	32.0	2.0	18.8	60.4	20.8	20.8	64.2	15.0
4. If I have PIH, I may have the convulsion as well.	56.0	30.0	14.0	88.0	12.0	0.0	64.2	26.4	9.4	66.1	26.4	7.5
5. The PIH may cause heart failure.	44.0	46.0	10.0	82.0	18.0	0.0	58.5	32.1	9.4	49.1	41.5	9.4
6. If I have PIH, I may have the convulsion and die.	40.0	46.0	14.0	90.0	10.0	0.0	39.6	47.2	13.2	51.0	37.7	11.3
7. If I have PIH, I may be premature labor.	34.0	60.0	6.0	86.0	14.0	0.0	39.6	52.8	7.6	34.0	52.8	13.2
8. If I have PIH, may baby may have low birth weight.	56.0	34.0	10.0	92.0	8.0	0.0	56.6	24.5	18.9	50.9	34.0	15.1
9. If I have PIH, my baby may have congenital anomaly.	36.0	48.0	16.0	74.0	26.0	0.0	39.6	43.4	17.0	45.3	45.3	9.4
10. If I have PIH, it shows I may be the risk of life.	38.0	48.0	14.0	98.0	2.0	0.0	64.2	26.4	9.4	54.7	32.1	13.2

Table 19 Percentage distribution of the perceived vulnerability of the complications in pregnancy of the experimental group and comparison group at pretest and posttest.

Perceived vulnerability	Experimental group (n = 50)						Comparison group (n = 53)					
	Pretest			Posttest			Pretest			Posttest		
	Agree	Uncertain	Disagree	Agree	Uncertain	Disagree	Agree	Uncertain	Disagree	Agree	Uncertain	Disagree
1. Not enough sleep in pregnancy may cause the PIH.	38.0	56.0	6.0	78.0	22.0	0.0	50.9	26.5	22.6	50.9	30.2	18.9
2. If I usually have fermented food, I may have the PIH	20.0	60.0	20.0	60.0	40.0	0.0	17.0	60.4	22.6	26.4	49.1	24.5
3. If I couldn't eat the five essential food, I may have the PIH	44.0	40.0	16.0	70.0	28.0	2.0	41.5	37.7	20.8	49.1	24.5	26.4
4. If I often drink tea and coffee, I may have the PIH.	64.0	34.0	2.0	88.0	12.0	0.0	75.5	17.0	7.5	60.4	28.3	11.3
5. If I am usually stressed, it may cause the PIH.	68.0	30.0	2.0	88.0	10.0	2.0	73.6	24.5	1.9	67.9	26.4	5.7
6. If I am usually anxious, it may cause the PIH.	36.0	50.0	14.0	76.0	22.0	2.0	52.8	43.4	3.8	58.5	35.8	5.7
7. If I am usually angry or furious, it may cause the PIH.	26.0	64.0	10.0	70.0	28.0	2.0	60.4	24.5	15.1	52.8	35.8	11.3
8. The primigravida may have the PIH.	18.0	70.0	12.0	70.0	30.0	0.0	17.0	66.0	17.0	30.2	56.6	13.2
9. The adolescent pregnancy may have the PIH.	16.0	58.0	26.0	68.0	32.0	0.0	15.1	49.1	35.8	24.5	54.7	20.8
10. If I could not come to the antenatal care clinic on time, it is a risk of the PIH.	86.0	12.0	2.0	96.0	4.0	0.0	77.4	20.8	1.9	75.5	20.8	3.8

Table 20 Percentage distribution of the self-efficacy in changing health behavior of the experimental group and comparison group at pretest and posttest.

Self-efficacy	Experimental group (n = 50)						Comparison group (n = 53)					
	Pretest			Posttest			Pretest			Posttest		
	Very sure	Slightly	Not sure	Very sure	Slightly	Not sure	Very sure	Slightly	Not sure	Very sure	Slightly	Not sure
1. I can have meat every day.	50.0	40.0	10.0	88.0	12.0	0.0	71.7	24.5	3.8	49.1	43.4	7.5
2. I can have entrails at least once a week.	18.0	54.0	28.0	68.0	32.0	0.0	34.0	34.0	32.0	49.1	37.7	13.2
3. I can have food cooked from the green vegetables every day.	74.0	24.0	2.0	94.0	6.0	0.0	81.1	13.2	5.7	47.2	49.0	3.8
4. I can drink at least 6-8 glasses of water.	10.0	36.0	54.0	86.0	14.0	0.0	60.4	32.1	7.5	64.1	34.0	1.9
5. I can omit to have fat food.	38.0	46.0	16.0	72.0	58.0	0.0	41.5	37.7	20.8	49.1	43.4	7.5
6. I can have fruit every day.	82.0	14.0	4.0	94.0	6.0	0.0	81.2	11.3	7.5	41.5	43.4	15.1
7. I can have fresh vegetables every day.	74.0	25.0	1.0	90.0	10.0	0.0	73.5	20.8	5.7	75.5	22.6	1.9
8. I can omit to have fermented food.	40.0	54.0	6.0	76.0	24.0	0.0	43.4	41.5	15.1	62.3	28.3	9.4
9. I can take pill of ions by prescription.	74.0	22.0	4.0	80.0	20.0	0.0	81.2	11.3	7.5	83.0	15.1	1.9
10. I can omit salty food.	62.0	26.0	12.0	86.0	14.0	0.0	52.8	32.1	15.1	35.9	28.4	37.7
11. I can exercise by walk....	52.0	38.0	10.0	96.0	4.0	0.0	58.5	30.2	11.3	71.7	24.5	3.8
12. I can enjoy myself and....	52.0	26.0	12.0	90.0	10.0	0.0	64.1	30.2	5.7	67.9	30.2	1.9
13. When I am furious or angry, I can be control.	32.0	54.0	14.0	78.0	22.0	0.0	35.8	47.2	17.0	47.2	43.4	9.4
14. I can observe signs and symptoms....	46.0	38.0	16.0	84.0	16.0	0.0	56.6	30.2	13.2	66.0	32.1	1.9
15. I can weigh every week.	30.0	40.0	30.0	78.0	22.0	0.0	34.0	34.0	32.0	34.0	47.1	18.9

Table 21 Percentage distribution of the response efficacy in changing health behavior of the experimental group and comparison group at pretest and posttest.

Response efficacy	Experimental group (n = 50)						Comparison group (n = 53)					
	Pretest			Posttest			Pretest			Posttest		
	Agree	Uncertain	Disagree	Agree	Uncertain	Disagree	Agree	Uncertain	Disagree	Agree	Uncertain	Disagree
1. To follow doctors and nurses' advices can prevent the PIH.	72.0	10.0	18.0	96.0	4.0	0.0	79.2	5.7	15.1	62.3	13.2	24.5
2. To eat the five essential food everyday, I will make my baby healthy.	82.0	18.0	0.0	96.0	4.0	0.0	73.6	18.9	7.5	98.1	1.9	0.0
3. If I walk 15-30 minutes a day, my baby and I will be healthy.	52.0	26.0	22.0	92.0	8.0	0.0	92.5	5.7	1.8	58.5	3.8	37.7
4. To have enough sleep every day, it will decrease the complication....	62.0	38.0	0.0	88.0	12.0	0.0	64.1	30.2	5.7	79.2	18.9	1.9
5. To relief tension or anxiety will decrease the complication....	60.0	36.0	4.0	94.0	6.0	0.0	50.9	28.3	20.8	47.1	18.9	34.0
6. To do a housework or daily work which no need to work hard....	68.0	14.0	18.0	96.0	4.0	0.0	50.9	18.9	30.2	86.8	13.2	0.0
7. To urine and prevent suffer from constipation will decrease the complication....	48.0	50.0	2.0	92.0	8.0	0.0	60.4	35.8	3.8	47.2	11.3	41.5
8. To come to antenatal care clinic by appointment will prevent the complication....	84.0	15.0	1.0	96.0	4.0	0.0	66.1	22.6	11.3	94.3	5.7	0.0
9. To hurry for a doctor when have sings and symptom....	54.0	18.0	28.0	100.0	0.0	0.0	79.2	18.9	1.9	45.3	13.2	41.5
10. To observe the heavier weight....	58.0	40.0	2.0	90.0	10.0	0.0	66.0	18.9	15.1	75.5	22.6	1.9

Table 22 Percentage distribution of the health behavior of pregnant women of the experimental group and comparison group at pretest and posttest.

Health behavior of pregnant women	Experimental group (n = 50)						Comparison group (n = 53)					
	Pretest			Posttest			Pretest			Posttest		
	Regular	Some times	Never	Regular	Some times	Never	Regular	Some times	Never	Regular	Some times	Never
1. I have meat....	44.0	56.0	0.0	76.0	24.0	0.0	49.1	22.6	28.3	49.1	15.1	35.8
2. I have entrails....	22.0	62.0	16.0	52.0	46.0	2.0	28.3	58.5	13.2	43.4	50.9	5.7
3. I have an egg....	64.0	36.0	1.0	78.0	22.0	0.0	69.8	30.2	0.0	49.1	15.1	35.8
4. I have rice or noodle....	44.0	50.0	6.0	72.0	28.0	0.0	64.2	11.3	24.5	67.9	30.2	1.9
5. I have cooked from the green vegetables....	50.0	48.0	2.0	72.0	28.0	0.0	60.4	15.1	24.5	62.3	11.3	26.4
6. I drink two bottles of soft drink....	48.0	50.0	2.0	80.0	18.0	2.0	54.7	45.3	0.0	34.0	37.7	28.3
7. I drink one glass of milk or....	66.0	32.0	2.0	86.0	14.0	0.0	58.5	15.1	26.4	77.4	22.6	0.0
8. I drink 6-8 glasses of water....	72.0	24.0	4.0	96.0	4.0	0.0	67.9	28.3	3.8	73.6	26.4	0.0
9. I have fat food....	28.0	70.0	2.0	60.0	40.0	0.0	43.4	22.6	34.0	17.0	37.7	45.3
10. I drink a cup of tea....	60.0	40.0	0.0	88.0	12.0	0.0	71.7	15.1	13.2	60.4	9.4	30.2
11. I have fruit every day....	74.0	26.0	0.0	84.0	16.0	0.0	84.9	15.1	0.0	83.0	17.0	0.0
12. I have fresh vegetable....	72.0	28.0	0.0	86.0	14.0	0.0	66.0	13.2	20.8	81.1	18.9	0.0
13. I have fermented food....	42.0	58.0	0.0	76.0	22.0	2.0	41.5	32.1	26.4	43.4	52.8	3.8
14. I have salty food....	60.0	40.0	0.0	78.0	22.0	0.0	66.0	32.1	1.9	64.1	34.0	1.9
15. I take pill of iron....	62.0	36.0	2.0	90.0	10.0	0.0	79.2	18.9	1.9	71.7	5.7	22.6
16. I drink alcohols....	90.0	10.0	0.0	92.0	8.0	0.0	86.8	11.3	1.9	98.1	1.9	0.0
17. I usually hold my urine....	40.0	58.0	2.0	76.0	24.0	0.0	96.8	24.5	5.7	56.6	39.6	3.8
18. I excrete from my body....	72.0	26.0	2.0	92.0	8.0	0.0	73.6	22.6	3.8	64.1	9.4	26.4
19. I walk 15-30 minutes....	56.0	44.0	0.0	84.0	16.0	0.0	66.0	13.2	20.8	77.4	22.6	0.0
20. I sleep 8 hours a night....	68.0	28.0	4.0	100.0	0.0	0.0	86.8	13.2	0.0	64.2	1.9	34.0
21. I sleep on left or right side.	88.0	12.0	0.0	96.0	4.0	0.0	84.9	13.2	1.9	94.3	5.7	0.0
22. I tend to sleep during the daytime....	54.0	38.0	8.0	86.0	14.0	0.0	73.5	5.7	20.8	73.6	26.4	0.0
23. I relief my tension and am happy....	54.0	46.0	0.0	78.0	22.0	0.0	100.0	64.2	35.8	79.2	20.8	0.0
24. When I am furious or angry....	36.0	60.0	4.0	74.0	26.0	0.0	62.3	35.8	1.9	47.2	52.8	0.0
25. When I am anxious, I usually....	66.0	30.0	4.0	74.0	26.0	0.0	54.7	43.4	1.9	64.1	34.0	1.9
26. I come to the antenatal care unit....	90.0	8.0	2.0	96.0	4.0	0.0	77.4	17.0	5.6	94.3	5.7	0.0
27. I observe signs and symptom....	62.0	26.0	12.0	88.0	10.0	2.0	73.6	22.6	3.8	69.8	26.4	3.8
28. I observe movement of baby....	78.0	20.0	2.0	100.0	0.0	0.0	81.1	18.9	0.0	94.3	5.7	0.0

BIOGRAPHY

NAME	Miss. Vitchuorn Punneang
DATE OF BIRTH	17 October 1968
PLACE OF BIRTH	Ratchaburi, Thailand
INSTITUTIONS ATTENDED	Ratchaburi Nursing Colledge, 1989-1992
POSITION & OFFICE	1992-Present, Banpong Hospital Department of Emergency Room. Ratchaburi, Thailand Position : Nurse