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THE EFFECTIVENESS OF A HEALTH EDUCATION PROGRAM WHICH APPLIED THE HEALTH BELIEF MODEL TO PROMOTE SELF CARE AMONG ADOLESCENT PREGNANT WOMEN AT QUEEN SAWANGWATTANA MEMORIAL HOSPITAL, CHOLBURI PROVINCE

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อภินันทนาการ
จาก
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A THESIS SUBMITTED IN PARTIAL FULFILLMENT
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KEY WORDS : HEALTH EDUCATION PROGRAM / ADOLESCENT PREGNANT WOMAN / SELF CARE

SUTHEERA VISUTTHIWAN: THE EFFECTIVENESS OF A HEALTH EDUCATION PROGRAM WHICH APPLIED THE HEALTH BELIEF MODEL TO PROMOTE SELF CARE AMONG ADOLESCENT PREGNANT WOMEN AT QUEEN SAWANGWATTANA MEMORIAL HOSPITAL, CHOLBURI PROVINCE. THESIS ADVISORS: CHANUANTONG TANASUGARN Dr.P.H., NIRAT IMAMEE Ph.D., ROONGROTE POOMRIEW Ph.D. 120 P. ISBN 974-334-818-2

Pregnancy is a natural process which causes change in the physical, mental, emotional and social well being of a pregnant woman. Pregnant women age lower than 20 or adolescent pregnant women have a high risk of complications both prenatal and postnatal that can result in mortality of mother or child. This is due to the incomplete physical development of adolescence for a safe pregnancy of their own physical and pregnancy growth. This quasi-experimental research is mainly focused on self care behavior change of adolescent pregnant women who attended the prenatal clinic at Queen Sawangwattana Memorial Hospital, Cholburi. The program had applied the Health Belief Model as a scope for creating an effective Health Education Program. The program consisted of lectures, slide presentations, a demonstration session, group meetings, and skill development sessions which aimed to arouse the sample group to take care of themselves. They were divided into 41 mothers in the experimental group and 44 mothers in the comparison group. The experimental group received 3 sessions of the Health Education Program in a 4 week period. Data collections were done though a questionnaire and body weight measurement record. Data were collected twice in pretest and posttest.

The results indicated that:

1. The adolescent pregnant women in the experimental group perceived susceptibility and severity of complications in adolescent pregnancy, perceived benefits and barriers in taking expert's advice in practicing self care and self care practice better than those of the pretest with statistical significance at 0.05 confidence level.

2. The adolescent pregnant women in the experimental group perceived susceptibility and severity on complications in adolescent pregnancy, perceived benefits and barriers in taking expert's advice in practicing self care and self care practice better than those of the comparison group with statistical significance at 0.05 confidence level.

3. The adolescent pregnant women in the experimental group had a proportion of standard weight gain higher than that of the comparison group with statistical significance at 0.05 confidence level.

Based on the result, it can be concluded that the Health Education Program which applied the Health Belief Model has effectively promoted adolescent pregnant women to perceive their susceptibility of complications, severity of complications, benefits and barriers in taking expert's advice in practicing self care and self care practice. This program should be applied as a regular service for adolescent pregnant women.

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คำสำคัญ : แบบแผนความเชื่อด้านสุขภาพ / สตรีตั้งครรภ์วัยรุ่น / การดูแลตนเอง

สุธีรา วิสุทธิวรรณ : ประสิทธิผลของโปรแกรมสุขศึกษาโดยประยุกต์แบบแผนความเชื่อด้านสุขภาพในการดูแลตนเองของสตรีตั้งครรภ์วัยรุ่น โรงพยาบาลสมเด็จพระบรมราชเทวี ณ ศรีราชา จังหวัดชลบุรี (THE EFFECTIVENESS OF A HEALTH EDUCATION PROGRAM WHICH APPLIED THE HEALTH BELIEF MODEL TO PROMOTE SELF CARE AMONG ADOLESCENT PREGNANT WOMEN AT QUEEN SAWANGWATTANA MEMORIAL HOSPITAL, CHOLBURI PROVINCE.) คณะกรรมการควบคุมวิทยานิพนธ์ : ชะนวนทอง ธนสุกาญจน์ Dr.P.H., นิรัตน์ อิมามี Ph.D., รุ่งโรจน์ พุ่มริ้ว Ph.D. 120 หน้า ISBN 974-334-818-2

ในกลุ่มสตรีตั้งครรภ์ที่มีอายุต่ำกว่า 20 ปี หรือสตรีตั้งครรภ์วัยรุ่น จะมีการตั้งครรภ์ที่มีภาวะเสี่ยงสูง ในขณะตั้งครรภ์ ระยะคลอด และหลังคลอด ส่งผลให้เกิดการเสียชีวิตของมารดาและทารก เนื่องจากสตรีตั้งครรภ์วัยรุ่นยังมีการเจริญเติบโตของร่างกายร่วมกับภาวะตั้งครรภ์ จุดประสงค์สำคัญของการวิจัยกึ่งทดลองครั้งนี้ เพื่อศึกษาการเปลี่ยนแปลงพฤติกรรมในการดูแลตนเอง ของสตรีตั้งครรภ์วัยรุ่นที่มาฝากครรภ์โรงพยาบาลสมเด็จพระบรมราชเทวี ณ ศรีราชา จังหวัดชลบุรี โดยประยุกต์ใช้แบบแผนความเชื่อด้านสุขภาพ มาเป็นกรอบแนวคิดในการจัดทำโปรแกรมสุขศึกษา กลุ่มตัวอย่างได้แก่ สตรีตั้งครรภ์วัยรุ่นที่มาฝากครรภ์โรงพยาบาลสมเด็จพระบรมราชเทวี ณ ศรีราชา กลุ่มทดลองจำนวน 41 คน กลุ่มเปรียบเทียบจำนวน 44 คน กลุ่มทดลองจะได้รับความรู้จากโปรแกรมสุขศึกษา จำนวน 3 ครั้ง ห่างกัน 4 สัปดาห์ เก็บรวบรวมข้อมูลโดยการใช้แบบสอบถามและการชั่งน้ำหนัก ก่อนการทดลองและหลังการทดลอง

ผลการวิจัยพบว่า ภายหลังการทดลองสตรีตั้งครรภ์วัยรุ่นในกลุ่มทดลองมีการรับรู้โอกาสเสี่ยง การรับรู้ความรุนแรง การรับรู้ผลดีและอุปสรรค และพฤติกรรมการปฏิบัติตนดีขึ้นมากกว่าก่อนการทดลองอย่างมีนัยสำคัญทางสถิติที่ระดับ 0.05 สตรีตั้งครรภ์วัยรุ่นในกลุ่มทดลองมีการรับรู้โอกาสเสี่ยง การรับรู้ความรุนแรง การรับรู้ผลดีและอุปสรรค และพฤติกรรมการปฏิบัติตนของกลุ่มทดลองสูงกว่ากลุ่มเปรียบเทียบอย่างมีนัยสำคัญทางสถิติที่ระดับ 0.05 สตรีตั้งครรภ์วัยรุ่นในกลุ่มทดลองมีสัดส่วนการเพิ่มของน้ำหนักตัวอยู่ในเกณฑ์มาตรฐานมากกว่ากลุ่มเปรียบเทียบอย่างมีนัยสำคัญทางสถิติที่ระดับ 0.05 ทำให้ทราบว่าการจัดโปรแกรมสุขศึกษาโดยประยุกต์แบบแผนความเชื่อด้านสุขภาพ ทำให้สตรีตั้งครรภ์วัยรุ่นมีการเปลี่ยนแปลงการรับรู้ในการดูแลตนเอง และมีพฤติกรรมการดูแลตนเองถูกต้องมากขึ้น จึงควรสนับสนุนให้มีการนำไปใช้กับสตรีตั้งครรภ์วัยรุ่น เพื่อเป็นการส่งเสริมสุขภาพสตรีตั้งครรภ์ให้มีการตั้งครรภ์ที่มีประสิทธิภาพยิ่งขึ้น

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CHAPTER I

INTRODUCTION

Background and the Significant of the Problem.

Conception is a natural process. It causes so much change during pregnancy to the body, mind, emotion and social. Naturally reproductive age for woman to have a child is around 20-30. (Chairat Panturaamporn, 1999:44) Mortality rate for mother and child is the lowest in this age range. (Chatupon Srisomboon, et al., 1995:158) Complications during pregnancy and postpartum among mothers age lower than 20 or adolescent mothers are higher than that of the mother of 20-30 age range. (Aranya Phoungpaka, 1997: i) Even though most adolescent women are physiologically mature enough to become pregnant, their bodies are often not sufficiently developed to safely carry pregnancy. They are at risk of pre-eclampsia, iron deficiency anemia, premature labor with low birth weight. Skeletal growth in women is not fully developed until the age of 18 and the birth canal is not fully developed until approximately 20 to 21 years of age. Incomplete growth increases risk from hemorrhoids, prolonged labor. Physical immaturity increases the risk of hemorrhiods, obstructed labor, which can result in maternal death. (WHO, 1998:98.4) Maternal mortality is estimated to be 3-4 times higher in adolescent woman than in adult. (WHO, 1997) The most common health risks to the infant include low birth weight and prematurity. Babies born to adolescents are two to three times more likely to die in their first year of life than babies born to woman in their twenties. (M. Vernon and

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K.M. Andolsek, 1989:109) From statistics it is found that perinatal death is the highest than mother age between 15-19. (Bethea, 1984:185)

In 1996, statistics showed that out of 1,000,484 pregnant women, there were 11.88 % who are adolescents. Out of these adolescent pregnant women, 13.86 % gave birth to the low birth weight infants.

In 1999, there were 5,643 pregnant women who delivered at the Queen Sawangwattana Hospital, and out of that total number, 875 were adolescents. Therefore, there will be at least 123 born as low birth weight infants if we taking the rate of 13.86 % of that national statistics mentioned above.

To prevent different complications during pregnancy in adolescent mothers in order that mother and infant's health is in normal state, support should be given in forming habit among adolescent pregnant women to look after themselves on the issues of nutrition, taking care of their health and the practice correctly on their daily routine . For nutrition, this includes activities to specify the types of food for mother so that she gets sufficient and useful nutrients for healthy body, growth of fetus with healthy body and good intellect, distribution of vitamins and minerals to develop the health of mother and fetus so that kidney and intestine can perform efficiently and normally. For taking care of her own health, this is to join prenatal care program, observing abnormal symptoms which needs consultation with doctors such as lesser movement of fetus, pain in the uterus and avoid consuming materials that can cause physical handicap to fetus. On daily routine activities such as toilet, work, exercise and rest. This daily routine will help mother to be efficiently receptive to pregnancy. It is the process by which adolescent pregnant women learn to do various activities in

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order to support and prevent health, and are able to analyze illnesses including choosing primary care by themselves.(Krisda Swangdi, 1993:5)

Queen Sawangwattana Memorial Hospital is under the supervision of Thai Red Cross Society. At present, this hospital has 500 beds with over 1000 personnel comprising, 72 medical doctors specialized in various clinic and modern medical equipment. In this hospital, officials in prenatal clinic give two health education sessions for pregnant women. The first session is offered at the first visit and the second session is at the 30th week of gestation or over. Health education activities consist of lecture and video presentation and offer to all pregnant women who attend each clinic.

The researcher had collected qualitative information from focus group discussion regarding the issues on self care from 23 mothers at Queen Sawangwattana Memorial Hospital and found out that half of adolescent pregnant women were not ready for pregnancy on both feeling and social status. The most of them did not take suitable meal during pregnancy. Half of them still had unsuitable works for their pregnancy and did not exercise property. The most of them intended to practice incorrect self-care if complication occurred during pregnancy, do not rest during day time and incorrect sleeping position. Half of them do not intake iron supplement due to forgetfulness, bored, the bad smell, obesity and prolong labour. Most of them were ignorant of complications that could affect themselves and their family. Most of them also wanted to consult official or experienced people when they had problems.

From the above mentioned information, it can be concluded that adolescent pregnant women need additional information. Since they did not have sufficient

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knowledge and valid perceptions therefore they practiced incorrectly on self care and daily routine. Therefore, the researcher wanted to design an intervention by applying Health Belief Model to stimulate adolescent pregnant women into a better self care practice which theoretically speaking, it will decrease complication among adolescent pregnant women.

Research Questions:

Will a Health Education Program which applied Health Belief Model to promote self care among adolescent pregnant women cause changes in the area of perceived susceptibility, perceived severity, perceived benefits and barriers and self care practice among adolescent pregnant women?

Research Objectives:

General Objective:

To study the effectiveness of a Health Education Program which applied Health Belief Model to promote self care among adolescent pregnant women at Queen Sawangwattana Memorial Hospital, Cholburi Province.

Specific Objectives:

1. To examine changes among adolescent pregnant women in the experimental and comparison groups before and after joining Health Education Program on the following topics:

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1.2 Perceived severity of pregnancy and its complications among adolescent pregnant women.

1.3 Perceived benefits and barriers in taking expert's advice in practicing self care among adolescent pregnant women.

1.4 Self care practice among adolescent pregnant women.

2. To compare mean score of perceptions and of self care among the adolescent pregnant women in the experimental and comparison groups before and after joining Health Education Program. Perceptions include:

2.1 Perceived susceptibility of pregnancy and its complications;

2.2 Perceived severity of pregnancy and its complications;

2.3 Perceived benefits and barriers in taking expert's advice;

3. To compare weight gain during pregnancy among adolescent pregnant women of the experimental and comparison groups.

Hypotheses:

1. After the experiment, adolescent pregnant women who received Health Education Program on self care among adolescent pregnant women will change their behavior better than those prior to the intervention in these areas:

1.1 Perceived susceptibility of delivery and complications among adolescent pregnant women.

1.2 Perceived severity of delivery and complications among adolescent pregnant women.

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1.3 Perceived benefits and barriers in taking expert's advice among adolescent pregnant women.

1.4 Self care practice among adolescent pregnant women.

2. After the experiment, adolescent pregnant women from the experimental group change their self care behavior more than that of the comparison group in these areas:

2.1 Perceived susceptibility of delivery and complications among adolescent pregnant women.

2.2 Perceived severity of delivery and complications among adolescent pregnant women.

2.3 Perceived benefit and barriers in taking expert's advice among adolescent pregnant women.

2.4 self care practice among adolescent pregnant women.

3. After the experiment, the number of samples in the experimental group who has weight gain falls in the range of standardize weight gain will be more than those in the comparison group.

Study Variables.

1. Independent variables: Health Education Program which applied Health Belief Model.

2. Dependent variables:

2.1 Perceived susceptibility of delivery and complications among adolescent pregnant women.

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2.2 Perceived severity of delivery and complications among adolescent pregnant women.

2.3 Perceived benefits and barriers in taking expert's advice in order to prevent complications among adolescent pregnant women.

2.4 Self care practice in order to prevent complications among adolescent pregnant women.

2.5 Weight gain during pregnancy.

Scope and Limitation of the Study:

This research focused on the effectiveness of Health Education Program in self care among adolescent pregnant women by the variables of self care which include: nutrition, personal health care and daily routine by studying pregnant women age below 20 who visited prenatal clinic at Queen Sawangwattana Memorial Hospital, Cholburi Province.

Research Assumption:

In this research, the experimental and comparison groups received the same physical examination during pregnancy such as weighing, and care during pregnancy since it was written in the Ministry of Public Health's standard practice guideline.

Operational Definitions :

1. **Health Education Program** refers to three arranged sessions of health education activities. The first session included activities which aimed to cover basic knowledge on self care and complications among adolescent pregnant women by using

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lectures with slide presentations on pregnancy, complications usually met among pregnancy and self care, set up suitable nutrients and calorie for breakfast menu, demonstrating physical exercise during pregnancy and distribute exercise pamphlet. Additional reminding leaflet about taking medicine, abnormal symptoms which should come to the hospital and appointment for next prenatal care was added in the prenatal care manual.

The second session concentrated on changing perception of susceptibility and severity by lecture with slide presentation on complications for adolescent pregnant women and methods of self care, group discussion to exchange view on the perception of complications, severity, the effect on self and family and methods of prevention, subgroups to set up suitable lunch menu , physical exercise, leaflets on how to prevent hypertension, iron deficiency anemia and healthy Thai menu to be further read at home. Finally a reminding leaflet about the types of food that should be avoided, rest and appointment for the next prenatal care was added in the prenatal care manual.

The third session included activities in order to change perceive benefits and barriers on self care. Activities include group discussion about daily routine experience, set up weekly menu with 2,300 calories per day, physical exercise and distribute manual on mother and child's health .

2. Complications among adolescent pregnancy refers to any abnormality which needs to be treated such as hypertension, iron deficiency anemia, premature labor, low birth weight, hemorrhoids, prolong labor, and postpartum hemorrhage.

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3. Perceived susceptibility of complications among adolescent pregnant women refers to adolescent pregnant women feel or believe that they are susceptible to complications during pregnancy if self care is applied incorrectly.

4. Perceived severity of complications among adolescent pregnant women refers to level of understanding and interpretation of the received information on complications in adolescent pregnant women that has intensity in causing hypertension, iron deficiency anemia, premature labor, low birth weight. All of which could harm the body of both mother and fetus.

5. Perceived benefits and barriers in taking expert's advice for self care refers to understanding and interpretation that if self care is done correctly on nutrition, prevention and daily routine then it will result in sufficient level of intake nutrients, protection of complication for both mother and fetus, during pregnancy and delivery.

6. Self care practice refers to correct self care during pregnancy which includes taking suitable additional types of food and stopping taking the types of food that should be stopped, seeing the doctor when abnormal symptoms occur, attending prenatal clinic, avoiding tobacco, alcohol and some drug which are harmful to infant, taking iron supplements, work, rest, exercises in order to prevent complications among adolescent pregnant women.

7. Nutrition intake refers to additional consumption of protein, iron, vitamin C, fiber and stop consuming fatty and sweet food, tea, coffee and cola beverage.

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8. Abnormal symptoms which should consult physician refers to symptoms which need immediate doctor attention to prevent pregnancy and delivery risks in adolescent pregnant women. These include consistent contraction before 37 weeks, bleeding per vagina, premature rupture of membrane, acute and constant headache, edema at the knee/hand/feet and face, blurred vision or spots, weak, constant pain at the lower abdomen.

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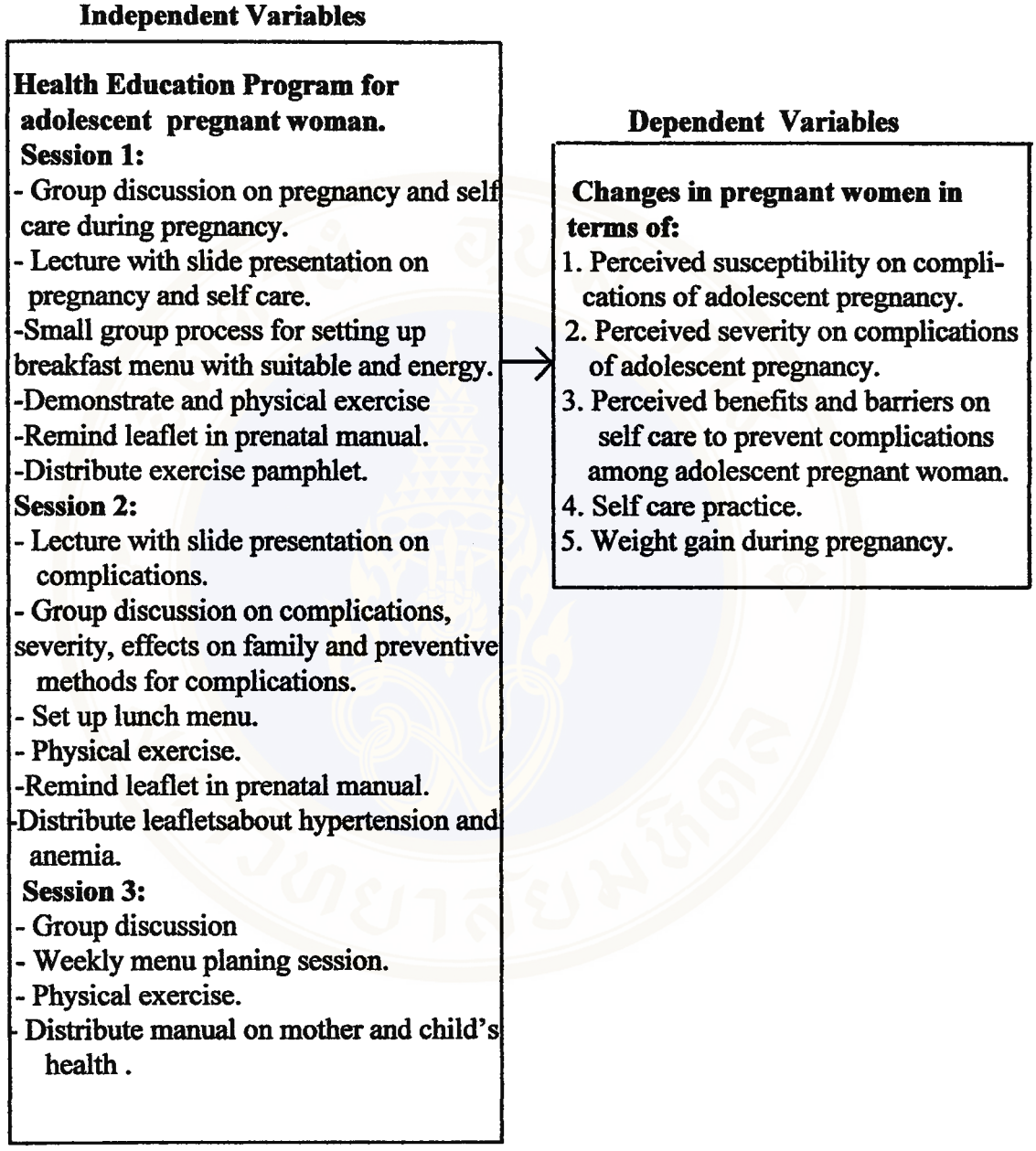
Research Conceptual Framework



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CHAPTER II

LITERATURE REVIEW

Concepts, theories and related studies in Thailand and oversea on the topic of adolescent pregnant woman were reviewed and presented in different parts as follows:

Part 1. Nature of Adolescent Pregnancy.

1.1 Adolescent Development.

1.2 Adolescent Characteristics.

1.3 Adolescent Pregnancy and Risk.

1.4 Self care of Adolescent Pregnant women.

Part 2.Behavioral Sciences Theories.

2.1 Health Belief Model.

2.2 Health Education Methods.

Part 3. Related research review.

3.1 Studies on Adolescent Pregnancy.

3.2 Studies on Health Belief Model.

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Part 1. Nature of Adolescent Pregnancy.

1.1 Adolescent Development.

Adolescence is a period of life between childhood and adulthood which cannot be exactly fixed at such and such age in life. Psychologist usually sub - divides adolescent into 3 periods as (Fuller 1986:399; Saran Damrisuk 1982:1321):

1. Early adolescent ages between 11-14 years old.
2. Middle adolescent ages between 15-17 years old.
3. Late adolescent ages between 18-20 years old.

Development will occur in different fields (Pensri Phijaisanit 1985:140; Saran damrisuk 1982:134-136; Sucha chanaim 1993:142-150):

Physical development. This is an important sign of the beginning of adolescent period. Sex hormone causes fast increase in adolescent height. Adolescent female has breast and hip begin to enlarge, menses begins, pubic hair and hair in the armpit. Beard, pubic hair and hair in the armpit starts to grow in male adolescent. Voice becomes raucous and semen begins to flow. Often problem at this age is obesity because of the increase of the demand on food. Trend to be easily hungry and over consumption occurs. This causes obesity. It can become leanness because adolescent like physical beauty and is over concerned especially about self image. So, adolescents are afraid of obesity hence they reduce food intake and the body can lack nutrient because the body needs more food - protein, calcium, iron and calorie. Female

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adolescent beginning to menses if there is already a problem of iron deficiency couple with diet and menstruation this can cause anemia.

Mental development. During this period, mental develops in good attitude about feeling and sexual. They must develop more understanding on abstract terms. There is a need to create own famous, developing one's philosophy of life, forming one own idea and be responsible in life, planning and hoping in one own future, less dependent on others, need to experiment on various things in order to gain experience in life etc.

Emotional development. Adolescent emotion is rather violent, impulsive and expressed rather straightforward, changeable, sentimental, curious and want to try to do thing which has never been tried before.

Social development. Adolescent needs freedom to be oneself, like to show other that one is self reliant, like to be the center of attraction, like to be independent of family members and give more important to friends.

Intellectual development. Adolescents are energetic, creative, observant of others' feeling, can think reasonably, courageous in expressing one's idea. They have good memory by sometimes can use it in the wrong sense.

From this above mentioned development, we can see that a lot of changes happen in the physical, mental, emotional, social, and intellectual due to change in the level of hormone. This causes adolescent to be changeable and is ready to follow any suggestion. There is nutrition problem from obesity or too lean, emotional instability.

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Violent self expression as named period of storm and stress. Curious and like to try doing things which has never been tried. The cause of adolescent pregnant woman is curiosity and wanting to try sexual intercourse. From the study it is found that percentage of adolescent pregnant mothers not using birth control method is as high as 33% (Keller, et al., 1996:127) This causes unwanted pregnancy which affect study and the quality of love and care which a mother should give to the baby.

1.2 Adolescent Characteristics.

Adolescent is an age of life crisis. Due to a period between childhood and adulthood, adolescent feels confused in his / her role and is not sure about expressing self in society. Adolescent is an age of confusion, mood easily changes, prefer to use force in solving problem. Adolescent gives more important to friends than to family. They usually follow their friends and fashion of the day. (Kandell, 1979 cited by Auvenshine & Enriquer, 1990:826) They cause a lot of problems and need more intimate care in order to adapt and need explanation on important matters.

Pensri Phijaisanit(1985:139) has categorized general characteristics of adolescent into:

1. Ambiguous status, being both child and adult.
2. Period of change ie. physical, emotion and social.
3. Emotional instability due to lack of experience and insecurity.
4. Having a lot of problems both about physical and emotional changes.
5. Period of storm and stress by expressing feeling outwardly.

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Sucha Chanaim (1993:138) classified adolescent general characteristics as:

1. **Period of reconstruction**: period of fast physical growth which slows down towards the end.
2. **Period of transformation**: many changes in physical, mental, social, emotional and intellect.
3. **Period of independence**: Adolescent of this period will always argue with adult and showing violent temper. There is a tendency to response by using force, emotionally unstable and rather sentimental.
4. **Period of problems**: confused about adaptation, impulsive. Adolescent is a period which loves to have new experiences, desire to know and experience things which one has never try, trial and error period of life.

1.3 Adolescent Pregnancy and Risk.

1.3.1 Adolescent Pregnancy.

Adolescent pregnancy is nothing new. During the 18th century it was considered normal for woman to marry at young age which is about 16 years old and would be pregnant with the first baby born at the age of 17.

In this present age, though adolescent marriage is rare and adolescent pregnancy outside marriage is unacceptable, it is found that pregnancy rate among adolescent is getting higher. Elements that support this higher rate of adolescent pregnancy is that girl has menses earlier. Most girls have early menarche when they are 10 years old and since they have ovulation so they can be pregnant at 11 years old.

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Higher rate in sexual intercourse among adolescent and the lack of knowledge and information on birth control among adolescents who practice sexual intercourse results in higher number of adolescent pregnant woman.

When pregnancy happens during adolescent period it affects adolescent pregnant woman on the physical, mental, emotional, and social levels. It can be considered as another crisis apart from the crisis period of adolescent development itself. The effects are:

1. **Physical:** Pregnancy affects the development of adolescent pregnant woman. Although adolescent women are physiologically mature enough to become pregnant, their body are often not sufficiently developed to carry a pregnancy to term safely. Risk occurs due to increase nutrition need causing danger to the development of adolescent pregnant and her baby. What is important is the relation of protein received in the mother and in the fetus can cause intellectual deficiency and low-birth weight infants due to insufficient protein intake during pregnancy and from cephalopelvic disproportion. Skeletal growth in women is not complete until the age of 18 and the birth canal is not mature until approximately 20-21 years of age. (WHO, 1998:2) When pregnancy occurs physical development will slacken. The body will grow less especially in height. This is because during pregnancy more estrogen hormone will be produced causing epiphysis of the bone to stop faster. Adolescent pregnant woman will face many problems such as pregnancy-induced hypertension, iron deficiency anemia, hemorrhage, hemorrhoids, obstructed labor, cervical trauma and premature labor. All these risks affect adolescent pregnant women.

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The maternal death rate is 60% higher for adolescents age 14 or younger and 13% higher for those 15 to 19 years old than for woman in theirs early twenties. (Vernon & Andosek, 1989:109)

2. **Mental and emotional :** Most adolescent pregnancy is not intentional with neither family planning nor marriage after pregnancy When adolescent pregnancy occurs there will be hormonal change due to metabolism especially estrogen and progesterone. It is believed that these cause emotional disturbance to pregnant woman. As it is clear that mental and emotional development in adolescent is not complete when problem of pregnancy arises so solving problem or finding way out is not as good as in adulthood. Along with changes in physical, mental sides during pregnancy adolescent will not be well adapt to the new role and this causes different emotions to rise - irritable, anger, self harm or in some cases suicide is chosen as a way out.

So, in arranging suitable Health Education Program, consideration must be given according to gestation period. This is because there are different changes in emotion such as:

First trimester: During pregnancy an adolescent has clearly physiologic changes such as body weight, skin, breast, uterus and vagina. Changes of the first 3 months after conception are slow. It will be clearer in the second trimester. When adolescent women acknowledge their own pregnancy, there will be confusion and depression.(Brown,1983:242; Jarret, 1982:121) Feeling will jump from keep pregnancy to adopt out.

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Second trimester: The body becomes larger. Adolescent pregnant women will be aware of body image. They will try to keep in shape by taking less food which will affect the health of both mother and baby. Mother can perceive quickening at 20 weeks gestation. Touching the baby at abdomen is new experience to adolescent pregnant women if satisfied, this will create love and care for the baby. On the contrary, if the quickening is not accepted, this will cause dissatisfaction and revulsion. Sometimes the mother will harm herself for adopt out. These acts of revulsion obstruct the development of love and care between mother and baby. Though pregnancy may continue until birth, problem of discarded baby could arise.

Third trimester: Weight increases more during this period. Enlargement of uterus will cause discomfort and urinary frequency. The breast's enlargement, and in some cases, patches can occurs on the face which erode body image and wanting to end pregnancy as soon as possible, but deep down inside there is a fear to end this pregnancy. Adolescent pregnant women will try to find source of help such as from mother or trustful significant others in order to gain security. Rubin (Rubin, 1974 cited by Olds, et al., 1980:216) said that pregnant women in the third trimester feel that they need help on every side. Hence, adolescent pregnant women which lack both maturity and experience need support from people close by for morale and encouragement.

Apart form this, the change of body image in pregnant women will cause emotional changes too. Change of body image in adolescent pregnant woman causes shamefulness or if studying, this will be the end of it. If not accepted or admonished by the family and society the adolescent pregnant women will be worried and have stress. The causes of stress for adolescent pregnant woman are:

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1. Confronting unexpected / unfamiliar situation.
2. Physical and mental changes, no advice, lack of knowledge cause fears and worries.
3. Worry about body changes including bad attitude towards body changes during pregnancy.
4. Economic problem especially problem related to taking care of the baby after delivery.
5. Unwanted baby because of unexpected pregnancy.

Stress from adolescent pregnancy will affect emotional and behavior changes. Adolescent pregnant woman who is able to bear all changes with intelligence, facing problems suitably and with good social support will be able to adapt well to events and environment. Accepting and having good attitude towards pregnancy will make cheerful behavior and pregnancy continue normally. On the contrary, adolescent pregnant woman who cannot face stress well, is immature, and lack social support will not accept pregnancy. Thinking that pregnancy makes her not free will cause a change feeling between gladness and sadness. She will feel unworthiness, anger, sad and not fulfilled. And she may try to solve the problem by going for abortion. At the same time there is a feeling of guilt, sadness and fear that abortion will be harmful to herself or affect future pregnancy. In the cases that allow pregnancy to continue until delivery, they will have dilemma and confusion due to immaturity. They will not understand about changes that occurred, and feel they have to face many problems. At the same time they have to accept the role of mother, plan for future up-bringing or giving the

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baby away. All problems during pregnancy will cause dilemma and confusion to adolescent pregnant woman. This can be considered as a crisis within a crisis of adolescent development period and will much affect adaptation and forming good attitude on pregnancy for the teenagers.

3. **Economic and social:** Pregnancy during adolescent period affects their study. Thai society do not yet accept pregnancy during study which becomes a cause of school drop-out. To continue the study, abortion must be the choice. Both of these choices are problems to society. Yearly Government Budget has to allot big amount of money on health care for adolescent pregnant woman either on abortion or complications after abortion. As for adolescent who decides to continue with pregnancy, some have to be married while both sides are not yet ready which usually followed by divorce. If unmarried, the baby will be born without father or become a child outside marriage. Most adolescent pregnant women have no chance to continue their study. They have to leave school or their job. They have less choice on job opportunity. This become an obstacle for sustenance in life. It in turn causes economic problem. Without job there is no income or is forced to work with low pay which become an economic problem to the family and the public at large. Family life becomes unstable with high rate of divorce.

Apart form this, adolescent pregnant women are shunned by society and peer-group. This may be the result of the loss of education opportunity. The role of pregnant woman also is considered as adult responsibility which peer-group cannot yet understand. So adolescent pregnant women are left with the feeling of loneliness, desolation and not accepted by society.

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The effects from Economic and Social reduce living condition, the hope of further study and the sense of belonging to society. These adolescents have to face the role of a father or a mother prematurely. And it happened before their growth process and development is complete. Having baby during the period of adolescence is not an experience which will lead to adulthood but will cause stress in the life of adolescent.

1.3.2 Risk in Adolescent Pregnancy.

Hypertension

Adolescents are five times more prone to pregnancy-induced hypertension than average woman.

Hypertension: Diagnose from systolic and diastolic pressures rise above 30/15 mm.Hg. over baseline or blood pressure to 140/90 mm.Hg. or above. It can be measured twice after 6 hrs. of rest.

Proteinuria: A result of glomerular vasospasm and glomerular endotheliosis. The amount of proteinuria is associated to disease violence. This is confirmed with proteinuria level of +1 or 300 mg. or more from urine gather within 24 hrs. or 1 gram/liter.

Edema: Early sign is shown by abnormal weight increase such as 2 kg./week. Clear sign of edema is shown by pitting edema at both shins and hands. Patients usually have swollen face in the morning or, in some cases, there is a feeling that the ring is so tight.

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Types of hypertension during pregnancy:

1. Pregnancy-induced hypertension (PIH). Pregnancy affects hypertension at 3 levels:

A. Gestational Hypertension: without edema or proteinuria .

B. Pre-eclampsia: Hypertension with edema and proteinuria.

1. mild pre-eclampsia.

2. severe pre-eclampsia.

C. Eclampsia:

1. Hypertension with proteinuria or edema and convulsions.

2. Chronic Hypertension (CHT) .

3. Pregnancy-aggravated hypertension (PAH).

Preventive measure:

A patient should be advised to attend prenatal care at the beginning of pregnancy in order to receive good and suitable care such as constant prenatal care, good nutrition by taking protein, milk, vegetables, fruits and enough water . Avoid taking salty, fatty and too sweet food and observe weight gain during pregnancy.

The best intervention for reducing an increasing blood pressure during pregnancy is bed rest, preferably in a left-side-lying position.

Iron deficiency anemia.

This means a hemoglobin less than 10 gm/dl. in normal pregnancy.

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What is usually found is that about 80 % of Anemia in pregnant women occurs from inadequate Iron dietary intake or iron stored before pregnancy is deficient. This can also be caused by hook worm.

Iron supplement is important for adolescent pregnancy.

1. Blood volume increases during pregnancy about 45%, red blood cell rises about 35 %.
2. Supply enough iron for the growth of the placenta and fetus.
3. Prepare for blood loss during delivery. Normal labor has blood loss by about 600 ml. Cesarian section and twin delivery have blood loss by about 1000 ml.

The need for iron during pregnancy is about 1 gram. 500 ml. is used for producing blood cell in the mother and 300 ml. is used for the uterus and the fetus and 200 ml. is excreted from the body. Normally the need for iron is 6-7 ml./day.

There is an increased need for Iron even normal pregnant woman can get anemia because normally Iron store for woman is only 300 ml.

Absorption of iron increases during pregnancy by about 10-20 % of iron intake.

Normal meal usually yields about 18-20 ml./day of iron or the equivalent of 3 ml. of iron absorption.

If pregnant women have no problem in anemia, giving iron supplement one tablet per day during two trimesters before birth is adequate to prevent anemia. For prevention, Iron supplement more than one tablet per day can be just a waste because

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the amount of iron beyond need will not be absorbed through the bowel and increased side effect from over-dose of iron supplement.

Deficiency is revealed by chronic fatigue, pale mucus membranes. Iron deficiency anemia is associated with pica, or the ingestion of inedible substances. Cravings for ice cubes or candy bars also may develop because of this.

Anemia causes reduction of immunity in the mother. It can cause hypertension during pregnancy more than in normal pregnancy. If acute hypertension occurs there will be low birth weight, small baby body, premature labor or abortion.

Prevention measure:

1. Iron supplement: All pregnant women need iron supplement. Usually it is suggested to begin iron supplement in the second trimester. If nausea, vomiting from morning sickness occur, iron supplement should be delayed or taking the tablets immediately after meal or by having small but frequent meals. Iron supplement should be about 30 ml./day for adequate absorption.

2. Take sources of iron daily. They are:

   - Meat, fish, poultry- the iron they contain can be absorbed easily in the body.
   - Green leafy vegetables.
   - Vitamin C is needed to enhance absorption of iron from foods by taking fruits or fruit juice during meals.

3. Inhibit tea, coffee and cola beverage since these drink inhibit absorption of iron.

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4. Avoid heavy physical work.

5. Sleep adequately , live in fresh air and stay in shiny places as much as possible.

Premature labor. (Pratak O-Prasertsawat, et al., 1997:95)

Premature labor means the onset of labor before 37 weeks of pregnancy. Premature labor can be divided into 4 kinds:

1. Elective preterm delivery such as intra uterine growth retardation.

2. Complicated emergency preterm such as abruptio placenta.

3. Premature rupture of membrane.

4. Preterm labor.

It is found that mother aging less than 20 years old has high risk of premature labor. Though nutrition factor may not be clearly connected with premature labor but mother weighing less than 50 kg. or with weight increase less than 0.24 kg./week has risk of premature labor.

Prevention measure:

1. Gentle regular exercise. This is believed to reduce risk from premature labor. Heavy exercise during the third trimester has high risk of premature labor.

2. Review with adolescent girls the signs of labor by the 3rd month of pregnancy, so if premature labor begins they will recognize it. Stress that any vaginal bleeding is suspicious until ruled otherwise. Adolescents who recognize labor contractions early on can seek care to have premature labor halted.

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Low birth weight. (Pratak O-Prasertsawat 1997:121)

Low birth weight refer to retardation of baby's growth. Usually considering the weight less than the 10^{th} percentile of the gestation. At present medical circle prefers birth weight as a standard to access the result of pregnancy using the definition set by WHO.- baby weighing less than 2500 grams. This low birth weight baby can be premature labor or intra uterine growth retardation.

For pregnant women with intra uterine growth retardation, the amount of blood flow to nourish the uterus and placenta is reduced to one-fourth of pregnant women with normal baby growth because of pathological state in red blood vessels. Blood flow becomes slow and this reduced passage of oxygen, nutrients to the fetus.

Effects on the baby.

Intra uterine growth retardation has morbidity and mortality during perinatal higher than normal baby. Mortality may be 4 to 8 times higher than normal. Wongkulpath Snitkul N Ayuddha, et al., (1987:14) found that mortality is 5- 100 times higher than normal.

Effects on mother.

Effects on the mothers are: chance of cesarean section, more expenditure including follow up on growth and development of baby.

Causes from the mother are:

1. Nutrition factor. At present there is no clear conclusion on whether deficiency of calorie intake or deficiency on other nutrients such as protein or minerals causes intra uterine growth retardation. Anyhow increase calorie intake can increase

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2. birth weight between 50-225 grams. The best result of increased calorie intake is 400 calorie/day for malnourished pregnant women.

3. Medical diseases which affect fetus growth are hypertension, anemia.

4. Tobacco smoking.

5. Alcohol consumption.

6. Some drugs.

Diagnosis before delivery is done by:

1. Using the first day of the last menstrual period to calculate gestation. For reliability the mother should exactly remember the first day of menstrual, with regular menstrual and no previous bleeding per vagina. Mother must not used hormone contraceptive during 3 months before the last menstrual.

2. Abdominal Examination Leopold's maneuver: It is an easy examination and is widely used. This is the basic body examination of obstetrics and tell average gestation. The accuracy in accessing fetus weight is less than 50 %.

3. Measuring symphyseal-fundal height (SFH). Measurement is done by finding the height of fundus, measure from symphysis pubic to the top of fundus. SFH is measured in centimeter and that is associated with week of gestation especially between 18-30 weeks. If the difference is more than 2-3 centimeters there could be abnormal growth of fetus. Accuracy from using SFH to find out intra uterine growth retardation is about 26-86 % and is specific from 78-83%

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4. Using Ultra-Sound to measure the size of fetus has an important role in finding retarded baby growth.

Hemorrhoids

Many adolescents develop hemorrhoids during pregnancy because the disproportion of their body size to fetus puts extra pressure on pelvic vessels and causes blood to pool in rectal veins.

Prevention measure:

1. Rest with feet elevated for an hour a day and to sleep in a incline downward and a Sims' position at night to allow good rectal vein flow for this extended time.

2. If hemorrhoid is severe, the pregnant woman may need to apply a soothing cream. She should know how to replace protruding hemorrhoid after a bowel movement. (Many adolescents are reluctant to do this for fear of rupturing hemorrhoid.)

3. Assuming a knee-chest position for 15 minutes at the end of the day is often helpful.

4. Take milk, fruit juice, food with high fiber such as half polished rice, vegetables and fruits.

5. Suitable exercises and Kegel's exercises.

6. Daily excretion at the same time.

7. Fluid intake by 6-8 glasses per day or adequate for body needs.

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Cephalopelvic disproportion.

Because the growth of pelvic is not yet complete and if immediate help could not be obtained during delivery there will be complications for both mother and baby. It is necessary to exercise in order to increase the strength of abdominal and pelvic floor muscles. Prenatal care and continued check up are necessary to prevent complications which could occur from pelvic disproportion. Regular examinations can help doctor to diagnose and treat in time. And natural force will push baby to delivery.

Prevention measure:

1. Prenatal check up.

2. Exercises to strengthen abdomen and pelvic floor muscles.

Postpartum Hemorrhage.

Young adolescents are more prone to postpartum hemorrhage than the normal woman; if the girl's uterus is not yet fully developed, it is over distended by pregnancy. An over distended uterus does not contract as readily as a normally distended uterus in the postpartum period. The young adult also may have more frequent or deeper perineal and cervical lacerations because of the size of the infant in relation to her body. On the other hand, young adolescents are generally healthy and have supply body tissue that allows for adequate perineal stretching; if a laceration does occur, it will heal readily without complication.

1.4 Self Care of Adolescent Pregnant Women.

For pregnant women to have good nutrition there should be suitable meal or dieting even before pregnancy and after birth.

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Suitable meal for mother means controlling food intake both qualitatively and quantitatively for 3 reasons:

1. Adequate and useful food intake is necessary to enhance mother's cells and the growth of new fetus tissues into good health and intellect.

2. Vitamins and minerals are necessary to increase energy, freshness in mother and develop the health of fetus.

3. For kidney and bowel which work harder to perform efficiently and are still in good condition.

Taking adequate food quantitatively and qualitatively means taking daily meals and snacks according to suitable menu. It consists of valuable food with not too high or too low calorie.

Complete nutrients which pregnant women receive will help the normal growth and development of fetus . If sick, low weight or adolescent more nutrients are needed. Normally pregnant women should receive 36-38 calorie/kg./day. Pregnant women should not limit calorie intake to the minimum because this can cause ketosis. Fat will be changed into energy and this causes an increase of fatty acid and glycerol in the blood which has a tendency to destroy developing fetus. So fat pregnant women still need weight increase during pregnancy.

Weight before pregnancy and weight increase during pregnancy will be an important factor of birth weight of baby. Women, with low weight - less than 55 kg. before pregnancy and with low weight increase during pregnancy - less than 4500 grams, has higher chance of low birth weight than weightier mother with high weight

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increase during pregnancy. Average weighing pregnant women need 2300-2600 calorie/day for normal weight increase of 11.5-12.5 kg. (25-28 pounds). So mother with less weight, small fetus or twin pregnancy should be urged to increase weight as much as possible. Usually young mother needs more energy than elderly mother.

Weight increase during different period of pregnancy:

First trimester. It is not necessary to increase body weight or increase a little by about 1-2 kg. or weight can reduce by 0.5-1 kg.

During this period most pregnant women will have morning sickness which cause less intake of food and no weight increase. The practice is to take useful food during good condition without morning sickness and should take small but frequent meals.

Second trimester. Pregnant women should increase weight by 250 grams/week or 1-1.2 kg. per month. The increase is due to accumulation of fat, enlarged uterus, breast and blood volume.

Third trimester. Pregnant women should increase weight by 350-450 grams/week or by 2-2.5 kg./month. On the last month of pregnancy weight can be constant or slightly reduced. During this period, weight increase is due to the growth of fetus, placenta including amniotic fluid. Weight increase during this period will not continue to accumulate after child birth.

During the trimester before birth, fetus grows fast both mentally and physically. This is a period when pregnant women take more food. During this period calorie should be increased by 300 per day or increase food intake for each meal.

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The rate of weight increase will help diagnose toxemia. An increase by more than 1814 grams within 1-2 weeks during the 24th - 35th week of pregnancy or more than 0.9 kg./week from the 35th week of pregnancy onwards is an indication that this pregnancy will be toxemia.

Types and daily food intake:

Protein. During pregnancy cells will be created so much protein is needed. The period of fast growth in fetus is the third trimester of pregnancy. The size of fetus during this period enlarges by 100%. This is a period of high of brain cell increase. The size of brain has clearly enlarged so protein is very important for pregnant women especially for low weight gain or woman lower than 18 years old.

Protein includes amino acid contain iron, vitamin B2, B6, B12, phosphorus, Niacin. Protein from beans has lower nutrient than protein from animal. This type of food should be prepared by boiling, streaming or heating more than by frying. Frying increases calorie and also causing discomfort and nausea.

Milk contains protein and much calcium including iron. Calcium is useful for healthy growth of bone and teeth in fetus. Doctor may advice calcium and iron supplement intake. If intake of milk or milk product cannot be done, other type of food such as beans, sesame and bean curd can replace.

Carbohydrate, flour and glucose. Carbohydrates are the main source of energy which must be controlled and consuming not too much or too little. However this food contains Vitamin, minerals and fiber. Carbohydrate is changed into glucose which is absorbed into blood flow. It is used as energy for mother and fetus and is necessary for brain and nerve system. Natural carbohydrate which is valuable to the

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body and should be consumed are: half polished rice or half milled rice which is unpolished. It is more useful to the body than polished rice because there is fiber which prevents constipation, intestinal cancer, stone including control on cholesterol level. Cholesterol will be attached to fiber and excreted with stool. Fiber also prevents heart disease and hypertension. Apart form this, natural carbohydrate and glucose are in nearly all type of fruits including root type vegetables like carrot. Processed carbohydrate should be avoided because it is harmful to health and causes fast weight increase.

Vitamin. Pregnant women should take Vitamin supplement according to doctor's prescription and should never resort to self-medication. Too much of Vitamin supplement intake will end up in placenta and blood flow of fetus. Overdose on some type of Vitamin supplement can cause physical deficiency in fetus like Vitamin C may cause illness during the 1st week after birth.

Vitamins are divided into many groups and are found in different types of food. Most are found in vegetables and fruit especially green and yellow leafy vegetables. They are necessary for body immunity and the development of fetus. Apart from fresh vegetables and fruits, fruit juice can also be taken. Beverage with fruit flavor gives little value.

Fresh vegetables and fruits contain Vitamins which are useful to the body such as:

Vitamin A nourishes sight and can be found in green and yellow leafy vegetables especially carrot.

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Vitamin B is necessary for growth, repairs tissues and especially nourish nerves. It is much found in half milled rice.

Vitamin C nourishes skin and blood. It can be found in fresh fruits such as lemon, orange, pomelo and vegetables such as tomato, chili and green leafy vegetables.

Vitamin D nourishes bone and teeth. It can be found in milk, margarine, and cod liver oil.

Vitamin E has no conclusive result as yet.

Vegetables and fruits apart from having a lot of Vitamins are still food with much fiber. Some storage and methods of preparation destroy Vitamin so, care should be taken:

1. Fruits. Buy enough for 1-2 days consumption and should be taken fresh. Vitamin C will be destroyed when contact air, light or heat. So, canned fruit juice should be consumed after opening. Waxed paper box is better than glass bottle because it prevent light better and should be stored in dark and cool place.

2. Vegetables such as lettuce should not be chopped and left long because of Vitamin lost.

3. Vegetables should not be cooked by boiling, steaming or fried for too long because Vitamin C and fiber will be destroyed. Anyhow closing of lid while cooking will help. Consuming canned vegetables may not be as useful because canned vegetables loose half of Vitamin and may not be clean enough.

Minerals. Fetus needs minerals most during 7-9 months of pregnancy (third trimester). Minerals are:

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Calcium. If calcium intake is inadequate during pregnancy baby bone will not become strong and will also increase risk of osteoporosis. Osteoporosis will cause bone bristle and bone can easily fractured, difficult to heal which can cause risk to weakened spine. So, calcium strengthen bone and is necessary for healthy teeth. Milk has much calcium. If milk intake cannot be done, other milk product such as yogurt will replace milk. Calcium can also be much found in cheese, bean curd, spinach. Beans and sesame has less calcium.

Iron is necessary to the body. Its most important function is building red blood cell to prevent anemia. Doctor will prescribe iron supplement.

Usually women will lose iron with menstrual. During pregnancy accumulated iron is not sufficient. The body needs more iron to increase blood volume for fetus. Especially during the third trimester, iron is transferred from mother to fetus. If iron intake by mother is adequate till delivery, the baby will be delivered with enough accumulation of iron for the first 4 months after birth.

Iron can be found in meat, liver, hearts and green leafy vegetables. Iron from meat, fish, poultry can be easily absorbed and Vitamin C is important to enhance absorption of iron.

Fat is important for repairing cells. Anyhow fat has high calorie. If there is problem of over weight, heart, hypertension consumption should be reduced or avoided and consult doctor on dieting. Food which gives fat are: milk, butter, margarine, cheese and animal oil.

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1.4.1 Health Promotion and Protection during Pregnancy.

Prenatal clinic is preventing and identifying danger that occurs during pregnancy so that there is no danger from illness due directly or indirectly from former illnesses. Follow up must be done from the beginning of pregnancy till delivery..

The aims of prenatal clinic are:

1. To confirm true pregnancy.

2. To give health examination for pregnant women and fetus.

3. To diagnose complications during pregnancy which can harm both mother and fetus such as toxemia, heart disease. This also includes cure, control or prevent these symptoms.

4. To reduce stillbirth rate. Reduce mortality during delivery and perinatal death.

5. To reduce mortality and complications in mother during delivery such as abnormal delivery, infection, hemorrhage and obstetric methods.

6. To teach pregnant women about behaviors during pregnancy, delivery, after birth and child-rearing which will reduce worries among pregnant women.

First prenatal care is the most important of all. The success or failure of prenatal care depends on this beginning because it is meant to build belief and understanding in pregnant women and her relations on the importance of prenatal care. This will result in continual prenatal care participation by pregnant women. On this first prenatal care, examination will identify risk on mother and fetus, check gestation and plan next prenatal care.

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The next prenatal care is to take care and control the normal adaptation of body, diagnosis and cure first pathology before being harmful to mother and fetus and take care for safe delivery.

The aim of second prenatal care is slightly different from the first one in:

1. To prevent complications.

2. To cure and immediately diagnose complications.

3. To plan both the time for delivery or induction and methods of delivery.

Abnormalities which should consult doctor.

1. Bleeding per vagina.

2. Severe and consistent headache.

3. Edema at knee, feet, hand, face area. Little edema at the end of pregnancy tends to be normal.

4. Continued lower stomachache just after excretion.

5. Ruptured membrane.

6. Dizziness, spots or blurred vision.

Avoid harmful matters.

Tobacco is related to birth weight and premature labor. Baby from smoking mother has less birth weight than baby from non smoking mother by about 200 grams. (Wongkulpatt Snitwong N Ayuddha, 1987:32) Abortion from smoking mother usually

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have normal chromosome and occur slower than abortion from abnormal chromosome. Otherwise it is found that smoking pregnant women are prone to:

- Abruptio Placenta.
- Placenta previa.
- Premature rupture of membrane.
- Death or hurt during perinatal.

Alcohol affects growth of fetus directly and indirectly from acetaldehyde which decrease nutrients absorption in bowel, changing liver's role, obstruct amino acids through placenta, disturbing metabolism and endocrine glands in fetus. (Wongkulputt snitwong N ayuddha, 1987:33) Babies from long time drinking mother usually are characterized by growth retardation before and after birth with group symptom of fetal alcohol syndrome showing sign of:

1. Growth retardation before and after birth.
2. Abnormality on the face such as small eyes, flat nose, short nose.
3. Abnormality of central nervous system such as small head, low I.Q.

Drug. Some are very harmful to pregnant women because some drugs could be absorbed through placenta into fetus. Pregnant women should always consult a health worker if she is sick and should never resort to self-medication.

Drug addict is a habit usually related to low economic and social status. Pregnant women addicted to heroine has intra uterine growth retardation by 50%. Drug addict less harmful than heroine such as Marihuana also affects the growth of fetus. (Wongkulputt Snitwong N ayuddha, 1987:33)

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1.4.2 Daily Routine.

Excretion. Pregnant women usually get constipation. It is believed that this is the result of Progesterone. Hemorrhoid due to pressure from uterus around large intestine and rectum. The pressure of uterus on intestine causes reduced intestine movement. Further more, it can happen because of high stress, lesser exercise and the habit of meal intake. This usually happens during gestation of 10^{th} - 40^{th} week.

Practical methods:

1. Consume more water, milk, fruit juice or soup. (about 6-8 glasses daily)
2. Add high fiber food such as half polished rice or half milled rice, vegetables and fruits such as prune, plantain, papaya, cucumber.
3. Try to excrete at the same time and regularly everyday. Not forcing too much during excretion.
4. Suitable exercises.

Rest. It is an important factor in curing intra uterine growth retardation. This is because if the pregnant women sleep lying or left-side-lying position, increase blood flow to the uterus and placenta occurs because inferior vena cava is not pressed. Apart form this obstetric complication such as hypertension during pregnancy which is a cause of intra uterine growth retardation, will not be severe if pregnant women have enough rest.

The mechanism of rest which reduces severe retardation of baby's growth is the increase amount of blood volume flow back to the heart . If pregnant women sleep in lying position, the heart will pressure more blood volume out.

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During the first 2-3 months of pregnancy there may be abnormal feeling of drowsiness. This should not be resisted and should rest immediately. Usually pregnant women should rest one hour during day time and 8-10 hours during night time. The best sleeping posture is left or right-side lying position because it is the posture which help increase blood flow to uterus and placenta. Fetus receives adequate nutrients and oxygen and become healthy. This also reduce hypertension in pregnancy or no increase in blood pressure which reduce other complications.

Work. If pregnant woman is able to work in the first trimester without fatigue and feeling helplessness then, she will be able to continue working in the second trimester and is prone to work till delivery. All these depend on the type of work, mother's health and other necessities. Anyhow, the type of work should not be high risk or too heavy and should have a period of rest during the day which will help reduce tiredness.

Heavy work such as lifting heavy things, hard work without rest is very harmful to mother and fetus. Because working by using force can often cause uterus contraction resulting in reduced blood flow to nourish uterus. (Wongkulputt Snitwong N Ayuddha, 1987:113) Pregnant women should avoid going up and down stairs during late pregnancy and during 1 month after child birth.

Exercises. Take care to keep the body healthy is important during pregnancy. Women who exercise regularly can bear labor pains without affecting fetus. Anyhow there are still many more factors regarding the limit of exercise and the effects on fetus such as reducing blood volume to nourish fetus, increasing mother's temperature or dangers to fetus.

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During exercise, increase blood volume flows to nourish muscle and skin. Level of exercise correlate with reduced blood volume to nourish uterus. At present, suitable heart rate after exercises still cannot be declared due to changes in each individual. Suitable exercise increases blood flow to nourish uterus and fetus. (Wongkulpatt Snitwong N Ayuddha, 1987:119)

As a conclusion, suggestions on exercises during pregnancy are:

1. Pregnant women who are used to average exercise before pregnancy can continue to do so but should reduce level and time for exercise such as reduce both by one third.

2. Be careful not to become too tired.

3. Should not exercise heavily during pregnancy.

4. Those who are used to work sitting should limit to average exercise such as walk or short swimming.

5. Avoid exercising in hot place.

6. Many complications during pregnancy may reduce the ability to exercise such as twin pregnancy.

Part 2. Behavioral Sciences Concepts and Theories in Study.

2.1 Health Belief Model. (HBM)

The HBM was developed in the early 1950s by a group of social psychologists at the U.S. Public Health Service in an attempt to understand "the widespread failure of people to accept disease preventives or screening test for the early detection of

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asymptomatic disease"(Rosenstock, 1974); it was later applied to patients' responses to symptoms,(Kuscht 1974,2:328) and to compliance with prescribed medical regimens (Becker 1974, 2:409-419)

The basic components of the HBM are derived from a well-established body of psychological and behavioral theory whose various models hypothesize that behavior depends mainly upon two variables: (1) the value placed by an individual on a particular goal; and (2) the individual's estimate of the likelihood that a given action will achieve that goal(Maimax, Becker, 1974, 2:336-353) When these variables were conceptualized in the context of health-related behavior, the correspondences were: (1) the desire to avoid illness (or if ill, to get well); and (2) the belief that a specific health action will prevent (or ameliorate) illness (i.e., the individual's estimate of the threat of illness, and of the likelihood of being able, through personal action, to reduce that threat).

Specifically, the HBM consists of the following dimensions. (Rosenstock, 1974,2:328-335)

Perceived susceptibility. Individuals vary widely in their feeling of personal vulnerability to a condition (in the case of medically-established illness, this dimension has been reformulated to include such questions as estimates of resusceptibility, belief in the diagnosis, and susceptibility to illness in general) (Becker, Maimax, 1980, 6:113-135). Thus, this dimension refers to one's subjective perception of the risk of contracting a condition.

Perceived severity. Feeling concerning the seriousness of contracting an illness (or of leaving it untreated) also vary from person to person. This dimension includes evaluations of both medical/clinical consequences (e.g., death, disability, and

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pain) and possible social consequences (e.g., effects of the conditions on work, family life, and social relations).

Perceived benefits. While acceptance of personal susceptibility to a condition also believed to be serious was held to produce a force leading to behavior, it did not define the particular course of action that was likely to be taken; this was hypothesized to depend upon belief regarding the effectiveness of the various actions available in reducing the disease threat. Thus, a "sufficiently-threatened" individual would not be expected to accept the recommended health action unless it was perceived as feasible and efficacious.

Perceived barriers. The potential negative aspect of a particular health action may act as impediments to undertaking the recommended behavior. A kind of cost-benefit analysis is thought to occur wherein the individual weighs the action's effectiveness against perceptions that may be expensive, dangerous (e.g., side effects, iatrogenic outcomes), unpleasant (e.g., painful, difficult, upsetting), inconvenient, time-consuming, and so forth.

Thus, as Rosenstock notes, "The combined levels of susceptibility and severity provided the energy or force to act and the perception of benefits (less barriers) provided a preferred path of action." (Rosenstock, 1974, 2:332) However, it was also felt that some stimulus was necessary to trigger the decision-making process. This so-called "cue to action" might be internal (e.g., symptoms) or external (e.g., mass media communications, interpersonal interactions, or reminder postcards from health care providers) Unfortunately, few HBM studies have attempted to assess the contribution of "cues" to predicting health actions. Finally, it was assumed that diverse demographic,

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socio-psychological, and structural variables might, in any given instance, affect the individual's perception and thus indirectly influence health-related behavior.

2.2 Health Education Methods.

Health Education means a process in changing behavior through correct knowledge, attitude and personal practices. This changes are the result of arranging various experiences for the learners. (Somjit Supannatas, 1983:5)

Health education is a system of well planned processes with aims to enable people, family and community to think and reason by themselves, to make choices and decisions on correct practices, and to have lasting good health.(Boonyong keiwkanka, 1983:379) It is the art and science because health education starts with gathering facts, principles and ideas about human living conditions together. It becomes a branch of Applied Science which applies knowledge from Sociology, Psychology, Science and Behavior combine together. This is done by preparing experiential knowledge and pass on correct and suitable knowledge, facts, ideas, principles about health to experimental group. Correct learning will result in changing from dislike to like, from things that cannot do into practicing themselves in order to promote good health. (Suree Chanthamolee, 1982:2-3)

In giving health Education, if learner is to change behavior, belief, attitude, self practice, it will need different Methods of Health Education, time and using different teaching-aids and media in teaching. (Suree Chanthamolee, 1984:2) Health education must be given often and continuously in order to learn to know, appreciate, and able to really practice (Darunee Junhavat, 1983:20). In this study, the researcher

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tries Methods of Health Education which is suitable to increase perception and correct practice in experimental group. This method of passing on health education is done by giving lectures with slide presentation, group discussion, demonstration, pamphlets, reminding form official in prenatal clinic and relatives so that pregnant women will follow the advice. The details are as follow:

Group discussion method.

Group discussion means a group of people with interest, problem knowledge or responsibility on the same topic come together and discuss and exchange ideas together so as to get a suitable conclusion or knowledge on such a topic. Members in the discussion group can be small with 5-7 members or big group depends on the problem for discussion and method of discussion.

Teaching health education by using group discussion is a method for health education commonly used for a long time with much benefit for learners having similar problem such as different group of patients, student group or people with the same interest on health problem joining together to discuss on that problem with teacher as group leader. It is a teaching method which learn from interactions between the teacher and the taught and among the taught. The center of learning is the taught and not the teacher. This method of teaching helps create learning in the area of thought, belief and suitable practice which can be used on self further on.

Health education by using group discussion can be used in health education with target group of any age, education level and work group with health education service such as Hospital, community school, organization. In health education it is commonly arranged in sub-group so that the teacher can give due attention and all group

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members can voice their opinions. In arranging group for each group of patients, each group should have about 5-12 members such as diabetic group, patients receiving x-ray group, group of patients after changing kidney.

Steps in arranging group discussion.

1. Preparation step. Prepare members for the group. Inform of the aim in joining the group. Make appointment on time and place and method of joining group discussion.

2. Step in leading the discussion. The discussion leader introduces self and let each members introduce themselves so as to create rapport by introducing name, province of residency, disease contacted, duration of the disease or other suitable information. Introduction should be short then, the discussion leader should inform about the aim of joining the group, time for discussion and then start the discussion.

3. Discussion step. The discussion leader gives chance to members to take time for discussion, voicing idea on the issue under discussion. When a member is discussing others members must listen, follow the idea and give suggestion or support as deem fit and in continuity. Everybody must hear the discussion clearly. The discussion leader must control the discussion according to sequence, ask questions to arouse all members' participation in the discussion to the utmost, control the time for each member's discussion suitable to the issue, stop any discussion that use too much time or getting out of the issue, remind the members to discuss on the issue in order to come to a conclusion.

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4. Summarizing the discussion. The leader will summarize and allow the members to add or the members can help each other to summarize and the leader adds up whatever is left out.

5. Evaluating the learning by questioning. Let the learners express their idea and observe behavior and then follow up on application.

Benefits of health education by using group discussion.

1. A learning method which learners are always awake. The learners use former knowledge in discussion, know how to analyze and dare to voice the opinion.

2. Learners learn about the problems of others which are similar to their own, feel the sense of belonging to the group hence, daring to voice the opinion and accept the significance of each member because of their sharing to the group, understand and accept each other.

3. The teacher is closer to the learners, knows the learners better, knows each one's behavior, which behavior need to be improved upon.

4. The learners could consider and solve their own problems by using group's knowledge which are varied, beyond the knowledge given by the teacher and are accepted knowledge and can be applied.

5. Develop learners into becoming more persevering because of group's example.

Limitations.

1. If the discussion leader lack skills in leading the group, learning will be boring, learners will not voice their opinions.

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2. If the place is not suitable the learners will be more interested in the surrounding than the issue under discussion.

3. Sub-group will be beneficial, if the group is too big the learners will loose the significance of each members' role and loose interest on the issue under discussion.

Demonstration.

Demonstrations are play or action with explanation for viewers to see steps in such action. (Kidanant Malithong, 1988: 412)

1.Viewers are explained on what, why and the consequence of such happening.

2. Demonstrate step by step as planned, so viewers can see each step clearly.

3. High-light the importance of new statement, new words or new process and must be explained till viewers understood, then continue the next step.

4. During demonstration emphasis must be made on things to be remembered and practiced. There is no need to demonstrate on things that need not be remembered or practiced.

5. During demonstration, prompting must be done to arouse participation among viewers by ask questions or guessing on what will happen.

6. Observe the reaction of viewers to see whether they understand or are bored so as to adapt the demonstration to suit viewers' interest.

7. Distribute pamphlets related to the demonstration to help viewers follow all the steps.

Benefits of demonstration. (Boonyong Keiwkanka, 1983:412)

1. Viewers see real things with better understanding and lasting memory.

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2. Viewers can use their 5 senses while watching some demonstration which enhance learning process.

3. Attract and arouse interest to follow continuously, resulting in knowledge perceived as planned.

4. Save time for explanation on details which need to be learned.

Limits on Demonstration. (Boonyong Keiwkanka,1983: 412)

1. Some demonstrations need big equipment causing difficulty in transportation and finding suitable place.

2. Cannot be used with abstract subjects or subjects with much details.

3. Cannot thoroughly cater to big group of viewers.

4. Some demonstrations are time consuming and expensive.

The researcher plans demonstration on exercises and skill practice, on choosing each meal menu with adequate energy and nutrition value for adolescent pregnant women.

Reminding.

Remindting (Dimatteo and Dinicola cited by Arissara Suvateerapun, 1993: 33) is a method to arouse desired behavior. It is done by reminding the person to start a behavior. Reminding can be done by self or by other person. This can be reminding by telephone, post-card, or self reminding with short note. Nowadays there are a lot of short notes reminding on correct behaviors either on health or on safety such as "Inflammable. No smoking." It can be short note to remind oneself such as on appointment which can be forgotten. People on diet often writes "More food much fat."

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attached to the refrigerator or cabinet for food storage to remind themselves to avoid consuming too much or too often.

Part 3. Related Research Review.

3.1 Studies Related on Adolescent Pregnancy

Aporn Poopattayakorn (4995:i) studied on correlation between basic factors of adolescent mothers, attitude towards pregnancy, feeling of self worth and relation between mother and fetus. Factors on relationship between mother and fetus (p - value < 0.05) which were: the feeling of self worth, attitude towards pregnancy, planning for pregnancy, pregnancy age when first join prenatal care, level of education and support from husband. Factors predict relationship between mother and fetus in adolescent mother (p – value < 0.05) were about that the feeling of self worth, attitude towards pregnancy, pregnancy age when first join prenatal care, marital status and level of education of adolescent mother which could explain the changes in relation between mother and fetus by 34.04%.

Suwanna Thadapipat (1995: i) studied on supportive care, giving knowledge on self care and the result in adolescent pregnant women by Orem's theory of self care. This theory uses supportive care and imparting knowledge in addition to normal care till delivery term. The study found that the mean of the ability for self care in experimental group after receiving supportive care and knowledge is higher than control group (p – value > 0.05).

Buppar Viriyaratanakul (1996 :i) studied on the effectiveness of home care service in adolescent pregnant women age between 14-20 years old who joined prenatal

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care at Health center Bangkok. This study used King's care theory to plan home care activities for correct practice in pregnancy. After the experiment, adolescent pregnant mothers who received home care had perception on pregnancy, acceptance to maternal self image during pregnancy, self practice on weight gain and daily routine was higher than those before the experiment ($p - value < 0.001$). For receiving vaccine on tetanus and taking a rest, they were higher than that before the experiment ($p - value < 0.001$). For attending prenatal care and diet, they were higher than that before the experiment ($p - value < 0.05$).

Aranya Phoungpaka (1997: iv) compared obstetric outcomes between adolescent pregnant women and pregnant women age 20-30 years old in mother and child health at Pra pok klow hospital, Chantaburi 1994-1996. Comparing the obstetric outcomes that affected maternal and perinatal health, the antepartum and postpartum complications, low birth weight, low Apgar score and perinatal morbidity in adolescent pregnancies were significantly higher than the control group. Operative obstetric in adolescent pregnancies was significant lower than the control group. Intrapatum complications and perinatal mortality were not significantly different in both groups. Conclusion, younger adolescent pregnancies have poor obstetric outcomes compared with pregnancies age 20-30 years. Younger adolescents should become a special target for pregnancy prevention and intervention.

3.2 Studies related to Health Belief Model.

For HBM, There were studies which attempted to evaluate its effectiveness with applied HBM to different behavior, ie using mixed media for the perception of health state and adolescent pregnancy's self care (Jamrat Promsungwong, 1997),

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prevent iron deficiency anemia in pregnant women (Chinawat Chomprasert, 1997) and practice on preventing venereal diseases in pregnant women (Nutjana Supiyaphun, 1997) see studies were designed as quasi-experimental designs. A combination of behavior change activities were applied.

Results indicated that pregnant women who received mixed media score on perceived susceptibility of complications during pregnancy, perceived severity to complications during pregnancy, perceived benefits from self care and adolescent pregnancy's self care had mean score higher than pretest and pregnant women who receive normal knowledge with statistical significance (p- value < 0.001). At post-test perception of susceptibility from complications, perception of severity of complication during pregnancy and perception of benefits on self care correlate positively with self care of pregnant women with statistical significance (p - value < 0.001) (Jamrat Promsungwong, 1997:115).

The experimental group's knowledge on iron deficiency anemia, perceived susceptibility of getting iron deficiency anemia, perceived severity of iron deficiency anemia, perceived benefits and barriers of following advice and practice in preventing iron deficiency anemia in post-test were higher than pretest and the control group with statistical significance (p - value < 0.001). Pregnant women in the experimental group's proportion of standard haematocrit was more than the control group with statistical significance (p - value = 0.007) (Chinawat Chomprasert, 1997: 98-99).

At post-test perception of susceptibility from contacting venereal diseases, perception of severity of venereal diseases, perception of benefits and barriers from

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following expert's advice on preventing venereal diseases and the practice on preventing venereal diseases in the experimental group increased more than the control group with statistical significance (p - value < 0.001) (Nutjana Supiyaphun, 1997: 113-124).

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CHAPTER III

MATERIALS AND METHODS

In this research, the researcher has applied Health Belief Model in the intervention activities. Research steps are planed and can be presented as follows:

1. Research Design.
2. Population and Samples.
3. Research Instrument.
4. Data Collection Steps.
5. Data Analysis.

1. Research Design.

This is a Quasi-Experimental research. Samples are divided into two groups: an experimental group and a comparison group . The experimental group with 40 adolescent pregnant women, they receive information on self care from Health Education Program. The comparison group with 40 adolescent pregnant women, they receive information from officials at the prenatal clinic. Data were collected from adolescent pregnant women in both groups twice: before and after the experiment. The research designs can be presented in the following diagram:

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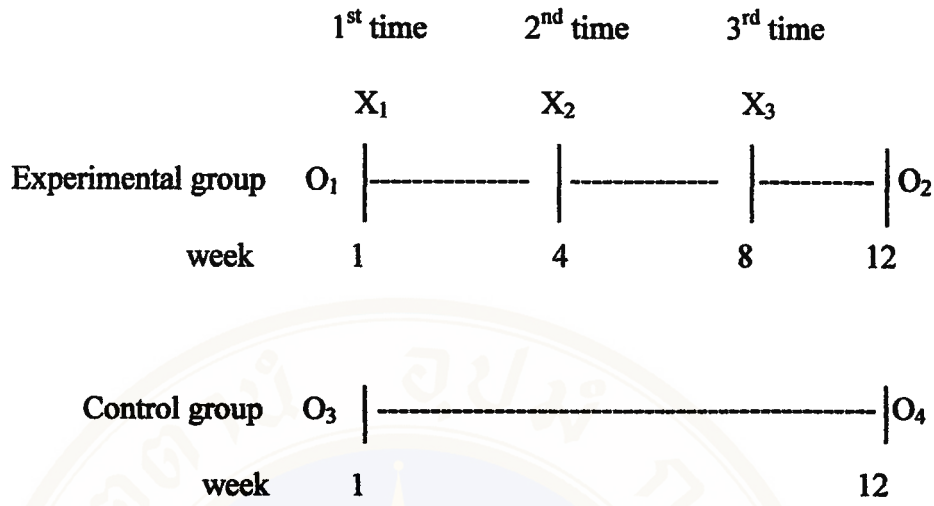

O_1 and O_3 refers to pretest given prior to the intervention.

O_2 andO_4 refers to posttest given after the intervention.

X_1 refers to first Health Education Program focused on knowledge about pregnancy and self care .

X_2 refers to second Health Education Program focused on perception of susceptibility and severity of complications for adolescent pregnancy.

X_3 refers to third Health Education Program focused on perception of benefits and barriers of self care.

2. Population and Samples.

2.1 Population.

Population in this research were adolescent pregnant women who attended the prenatal clinic at Queen Sawangwattana Memorial Hospital, Cholburi. This research was carried out during November 1999 - February 2000. The criteria were as follows:

1. age below 20, has no hearing loss and speaking problem.
2. having primigravida, attend prenatal clinic within 8-24 weeks of gestation.

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3. has normal blood test, no medical diseases such as heart disease, diabetes and no signs of complication during pregnancy such as placenta previa, twins and abnormality on nervous system at the first visit.

2.2 Sampling Method.

The samples were recruited by using probability sampling method. Those who attended on Tuesday and Thursday clinics were assigned to the experimental group, while those who attended on Friday were the comparison group.

3. Research Instrument.

3.1 Instrument preparation.

The following steps are undertaken:

1. Review articles on concepts, theories and related studies.

2. Determine scope and structure of questionnaire covering research objectives.

3. Draft a questionnaire that asked questions in the area of knowledge on self care, perceived susceptibility, perceived severity, perceived benefits and barriers and self care practice.

4. Check content validity by 3 experts. Then rewrite the questionnaire according to experts' advice.

5. Try out the questionnaire by testing with group of people similar to the sample group at Queen Sawangwattana Memorial Hospital, Cholburi. Afterward,the questionnaire was analyzed by using different test ie. reliability, discrimination power. Results are presented below:

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5.1 Reliability: after applying Cronbach's Alpha coeffficient (Chukiat Viwatwongkasem, 1996:298), the results are:

Section	Alpha coefficient
self care knowledge	0.7045
perceived susceptibility	0.5443
perceived severity	0.7110
perceived benefits and barriers	0.7679

5.2 Discrimination power: the pretest data was analysed by applying Student's t-test by item, the value of t-test > 1.75.

The final version of the questionnaire applied in this study was divided into 6 parts:

Part 1 covers on demographic information such as: age, gestation, present weight, level of education, marital status, occupation, family income. This part has 10 questions.

Part 2 covers knowledge on self care during pregnancy and complications among adolescent pregnant women. This part has 20 questions which measured in 3 choices of rating scale:

Correct answer = 1 point. Incorrect answer = 0 point.

In analysing the result, the score will be classified as:

Low level of knowledge: points range lower than 60% of the total score.

Medium level of knowledge: points range in between 60-79% of the total score.

High level of knowledge: points range from 80% and up of the total score.

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Part 3 covers questions assessing perceived susceptibility of complications in adolescent pregnancy. This part has 10 questions which measured in 3 choices of rating scale:

Positive Statement.		Negative Statement.	
Agree	= 3 points.	Agree	= 1 point.
Unsure	= 2 points.	Unsure	= 2 points.
Disagree	= 1 point.	Disagree	= 3 points.

Part 4 covers questions assessing perceived severity of complications among adolescent pregnant women. This part has 15 questions. Score classification is the same as those in the third part .

Part 5 covers questions on perceived benefits and barriers while following the advice on self care of adolescent pregnant women. This part has 20 questions. Score classification is the same as the third part.

Each part of the perception score, the researcher has set up a cutting point (Best, J.W. 1977:174) which derived from the following formula:

$$\frac{\text{highest scores - lowest scores}}{\text{number of levels}} = \frac{3-1}{3} = 0.66$$

Therefore, the perception can be classified as high, medium and low of that individual score falls into the following range:

Score	Perception Level
2.34 - 3.00	high
1.67 - 2.33	medium
1.00 - 1.66	low

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Part 6 covers questions behavior of self care among adolescent pregnant women. This part has 25 questions. Rating scales have 3 choices as follows:

Positive Statement.		Negative Statement.	
Every time	= 2 points.	Every time	= 0 point.
Sometime	= 1 point.	Sometime	= 1 point.
None	= 0 point.	None	= 2 points.

In analyzing the result, the score will be classified using the following criteria:

Score higher than 80% means high level of practice.

Score between 60-80% means medium level of practice.

Score lower than 60% means low level of practice.

3.2 Experimental Instruments.

3.2.1 Slides on self care.

3.2.2 Slides on self care and complications among adolescent pregnant women.

3.2.3 Pamphlets about exercises for adolescent pregnant women.

3.2.4 Meal Menu and calories.

3.2.5 Evaluation questions on the 1st, 2nd, and 3rd health education program.

3.2.6 Manual on healthy Thai food menu.

3.2.7 Leaflet about hypertension during pregnancy.

3.2.8 Leaflet about iron deficiency anemia.

3.2.9 Manual on mother and child hygiene.

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4. Data Collection:

4.1 Preparation steps:

Submitting a letter was asking for permission to conduct research from the University to the Director of Queen Sawangwattana Memorial Hospital to explain steps of research to the doctor and the head nurse of the prenatal clinic. Then, the researcher conducted a meeting with nurses, officials of the prenatal clinic and assistant researchers in order to explain about steps on data collection. Cooperation was asked for arrangement of place, materials and other necessary supports.

4.2 Data collection steps:

4.2.1 Pretest: all samples in both groups were recorded body weight and filled out a questionnaire before implementing the intervention.

4.2.2 Process evaluation: the evaluation questions were distributed to all of the experimental group after each of the three session.

4.2.3 Posttest: all samples in both groups were recorded body weight and filled out a questionnaire after implementing the intervention.

5. Data Analysis.

The data were analyzed by using SPSS for WINDOWS. Level of significant to accept the hypothesis was set at 0.05 significant level.

5.1 Descriptive statistic was applied when analyzing demographic variables ie. age, education, etc.

5.2 Percentage and arithmetic means were applied to the score of knowledge, all of perceptions and self care practice. The mean scores were compared within groups by statistic Paired t-test and between groups by statistic Student's t-test.

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5.2 Individual weight gain was analyzed then compared with the standard value of weight gain during pregnancy. After that, proportion of these individuals who complied with the standard value will be evaluated and compared between groups. Z for proportion test was applied for testing its significance.

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CHAPTER IV

RESULTS

This quasi-experimental research aimed to study the effectiveness of Health Program on adolescent pregnancy's self care. Samples were 92 adolescent pregnant women who were assigned to the experimental and comparison groups. There were 43 and 49 in each group. Health Education Program had been implemented for 12 weeks. There were two samples who dropped out from the experimental group, and 5 were from the comparison group. The total number of sample group was 85. Data were edited before statistical analysis. SPSS for WINDOWS Program were applied and the results of data analysis were presented as follows:

Part 1. Demographic characteristics of the samples.

Part 2. Descriptive analysis on the level of knowledge, perceived susceptibility, perceived severity, perceived benefits and barriers and self care practice in the experimental and comparison groups.

Part 3. Comparative analysis on mean score differences on knowledge about complications in adolescent pregnancy's and self care in the experimental and comparison groups both within and between groups.

Part 4. Comparative analysis on mean score differences on perceived susceptibility, perceived severity, perceived benefits and barriers and self care practice in the experimental and comparison groups both within and between groups.

Part 5. Comparative analysis on the proportion of standard weight gain among adolescent pregnant women of the experimental and comparison groups

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Part 1. Demographic characteristics of the samples.

1.1 Age. The age distribution of adolescent pregnant women in the experimental and comparison groups who are between 15 – 19 years old in this study, most of them were 19 years old (72.9%) followed by 18 years old (15.3%). The experimental group had mean age of 18.59 years old, 0.84 standard deviation. The comparison group had mean age of 18.55 years old, 0.85 standard deviation. (see details in Table I)

1.2 Gestation week. Most of samples in the experimental group fell in the 8 – 11 gestation week (29.3 %), followed by the 12 – 15 week (26.8 %). In the comparison group most of the samples fell in 20 - 23 weeks of gestation (36.4 %), followed by the 16 - 19 weeks (25 %). (see details in Table I)

1.3 Level of education. It was found that most of the samples in the experimental and comparison groups had Secondary education (65.9% and 63.6%), followed by Primary education (22% and 27.3%). (see details in Table I)

1.4 Occupation. Most of the samples in the experimental and comparison groups were wage earners (85.4% and 59.1% respectively) followed by house-wives (7.3% and 18.2% respectively). (see details in Table I)

1.5 Monthly family income. It was found that most of monthly family income in the experimental group was above 10,000 Bht. (39%) followed by between 4,000-6,999 Bht. (31.7%). While most of samples in the comparison group were at 4,000-6,999 Bht. (34.1%) followed by 10,000 Bht. And above (25%). (see details in Table I)

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1.6 Living condition. It was found that most of the samples in the experimental and control groups resided with their partners (85.4% and 68.2%) followed by resided with the relatives (9.8%) in the experimental group and resided with their parents (27.3%) in the comparison group. (see details in Table I)

Table I. Frequency and percentage distribution of sample group characteristics classified by age, gestation week, level of education, occupation, monthly family income, weight, living condition.

Demography	Experimental group		Comparison group		Total	
	f	%	f	%	f	%
Age (yr.)						
15	1	2.4	0	0.0	1	1.18
16	0	0.0	2	4.5	2	2.39
17	3	7.3	4	9.1	7	8.24
18	7	17.1	6	13.6	13	15.3
19	30	73.2	32	72.7	62	72.9
Total	**41**	**100.0**	**44**	**100.0**	**85**	**100.0**
Mean	**18.595**		**18.55**			
SD.	**0.84**		**0.85**			
Gestation week						
8-11	12	29.3	3	6.8	15	17.6
12-15	11	26.8	10	22.7	21	24.7
16-19	6	14.6	11	25.0	17	20.0
20-23	5	12.2	16	36.4	21	24.7
24	7	17.1	4	9.1	11	12.9

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Table I. (cont.) Frequency and percentage distribution of sample group characteristics classified by age, gestation week, level of education, occupation, monthly family income, weight, living condition.

Demography	Experimental group		Comparison group		Total	
	f	%	f	%	f	%
Level of education.						
No education	1	2.4	2	4.5	3	3.5
Primary	9	22.0	12	27.3	21	24.7
Secondary	27	65.9	28	63.6	55	64.7
Vocational	4	9.7	2	4.5	6	7.0
Occupation.						
Labour	35	85.4	26	59.1	61	71.8
Housewife	3	7.3	8	18.2	11	12.9
Seller	1	2.4	1	2.3	2	2.4
Orchard gardening	0	0.0	1	2.3	1	1.2
Student	0	0.0	2	4.5	2	2.4
Unemployed	2	4.9	6	13.6	8	9.4
Monthly Family income (Bht.)						
Under 4,000	1	2.4	4	9.1	5	5.9
4,000-6,999	13	31.4	15	34.1	28	32.9
7,000-9,999	6	14.6	5	11.4	11	12.9
10,000 up	16	39.0	11	25.0	27	31.8
No answer	5	12.2	9	20.5	14	16.5

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Table I. (cont.) Frequency and percentage distribution of sample group characteristics classified by age, gestation week, level of education, occupation, monthly family income, weight, living condition.

Demography	Experimental group		Comparison group		Total	
	f	%	f	%	f	%
Living condition						
Partners	35	85.4	30	68.2	65	76.5
Parents	2	4.9	12	27.3	14	17.6
Relatives	4	9.8	2	4.5	6	7.1

Part 2. Descriptive analysis on the level of knowledge, perceived susceptibility, perceived severity, perceived benefits and barriers and self care practice in the experimental and comparison groups. (see details in Table II)

2.1 Knowledge on self-care among adolescent pregnant women.

At pretest, majority of samples in both groups possessed medium level of knowledge, 78% and 70.5% in the experimental and control groups. Less than 5% in both groups had high level of knowledge. For posttest, 63.4 % of the samples in the experimental group possessed high level of knowledge while the comparison group remained the same, 4.5 %. No one in the experimental group possessed low level of knowledge while the comparison group remained the same.

2.2 Perceived susceptibility.

In the experimental group, pretest result indicated that out of 41, 14 pregnant women had high score on perceived susceptibility (34.1%), 26 had medium score

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(63.4%), 1 had low score (2.4%). Posttest showed that 24 pregnant women had high score on perceived susceptibility (58.5%), 17 had fair score (41.5%).

In the comparison group, pretest results revealed that out of 43 pregnant women, 10 had high score on perceived susceptibility (22.7%), 34 had medium score (77.3%). Posttest result indicated that 11 pregnant women (25%) had high score on perceived susceptibility, 33 (75%) had medium score.

2.3 Perceived severity.

In the experimental group, pretest results showed that out of 41, 11 pregnant women (26.8%) had high score on perceived severity, 29 (70.7%) had medium score, 1 (2.4%) had low score. At posttest results showed that 23 pregnant women (56.1%) had high score on perceived severity, 17 (41.5%) had medium score, 1 (2.4%) had low score.

For comparison group, the pretest results showed that out of 41, 4 (9.1%) had high score on perceived severity, 36 (81.8%) had medium score, 4 (9.1%) had low score. At posttest, result indicated that 8 (18.2%) pregnant women had high score on perceived severity, 34 (77.3%) had medium score, 2 (4.5%) had low score.

2.4 Perceived benefits and barriers.

The experimental group, the pretest results showed that out of 41, 36 pregnant women (87.8%) had high score on perceived benefits and barriers, 5 (12.2%) had medium score. At posttest results revealed that 41 pregnant women (100%) had high score on perceived benefits and barriers.

For comparison group, the pretest results showed that out of 44, 43 pregnant women (97.7%) had high score on perceived benefits and barriers, 1 (2.3%) had

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medium score. The posttest showed that 36 pregnant women (81.8%) had high score on perceived benefits and barriers, 8 (18.2%) had medium score.

2.5 Self care practice.

In the experimental group, pretest results showed that out of 41, 25 pregnant women (61.0%) had high score on self care practice, 16 (39.0%) had medium score. At posttest, results showed that 35 pregnant women (85.4%) had high score on self care practice, 6 (14.6%) had medium score .

For comparison group, the pretest results showed that out of 44, 28 pregnant women (63.6%) had high score on self care practice, 16 (36.4%) had medium score. At posttest, results showed that 30 pregnant women (68.2%) had high score on self care practice, 14 (31.8%) had medium score.

Table II. Frequency and percentage distribution of knowledge, perceived susceptibility, perceived severity, perceived benefits and barriers and self care practice in the experimental and comparison groups shown in the pretest and posttest.

Knowledge/Perception	Experimental group n = 41		Comparison group n = 44	
	f	%	f	%
Knowledge on self-care				
Pretest				
High	2	4.9	2	4.5
Medium	32	78.0	31	70.5
Low	7	17.1	11	25.0

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Table II. (cont.) Frequency and percentage distribution of knowledge, perceived susceptibility, perceived severity, perceived benefits and barriers and self care practice in the experimental and comparison groups shown in the pretest and posttest.

Knowledge/Perception	Experimental group n = 41		Comparison group n = 44	
	f	%	f	%
Posttest				
High	26	63.4	2	4.5
Medium	15	36.6	31	70.5
Low	0	0.0	11	25.0
Perceived susceptibility				
Pretest				
High	14	34.1	10	22.7
Medium	26	63.4	34	77.3
Low	1	2.4	0	0.0
Posttest				
High	24	58.5	11	25.0
Medium	17	41.5	33	75.0
Low	0	0.0	0	0.0
Perceived severity				
Pretest				
High	11	26.8	4	9.1
Medium	29	70.7	36	81.8
Low	1	2.4	4	9.1

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Table II. (cont.) Frequency and percentage distribution of knowledge, perceived susceptibility, perceived severity, perceived benefits and barriers and self care practice in the experimental and comparison groups shown in the pretest and posttest.

Knowledge/Perception	Experimental group n = 41		Comparison group n = 44	
	f	%	f	%
Posttest				
High	23	56.1	8	18.2
Medium	17	41.4	34	77.3
Low	1	2.4	2	4.5
Perceived benefits and barriers				
Pretest				
High	36	87.8	43	97.7
Medium	5	12.2	1	2.3
Posttest				
High	41	100.0	36	81.8
Medium	0	0.0	8	18.2
Self care practice				
Pretest				
High	25	61.0	28	63.6
Medium	16	39.0	16	36.4
Posttest				
High	35	85.4	30	68.2
Medium	6	14.6	14	31.8

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Part 3. Comparative analysis on mean score differences on knowledge about complications in adolescent pregnancy's and self care in the experimental and comparison groups both within and between groups.

3.1 Comparative analysis on the differences of mean score on knowledge about complications and self care among adolescent pregnant women in the experimental and comparison groups both pretest and posttest (see details in Table III)

Pretest results showed that the experimental group's mean score was 13.19 with 1.81 standard deviation. The comparison group's mean score was 12.61 with 1.79 standard deviation. When statistical significant differences test was applied, it revealed that there was no differences between the experimental and comparison groups.

At posttest, the analysis result indicated that the experimental group's mean score was 16.34 with 1.95 standard deviation while the comparison group's mean score was 12.45 with 1.86 standard deviation. When statistical significant differences test was applied, it indicated that there was statistical significant differences between the experimental and comparison groups (p-value < 0.001).

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Table III Comparative analysis of mean score difference on the knowledge of complications and on self care between the experimental and comparison groups at pretest and posttest.

Knowledge and Self-Care	n	$\bar{X}$	S.D.	t	df.	p-value
Pretest						
Experimental group	41	13.19	1.82	1.483	83	0.142
Comparison group	44	12.61	1.79			
Posttest						
Experimental group	41	16.34	1.96	9.385	83	< 0.001
Comparison group	44	12.45	1.86			

3.2 Comparative analysis of mean score differences on knowledge about complications and self care among adolescent pregnant women in the experimental and comparison groups both at pretest and posttest. (see details in Table IV)

The experimental group. Pretest data showed that mean score on knowledge of complications and on self care among adolescent pregnant women was 13.19 with 1.95 standard deviation. When applying the test on statistical differences, it indicated that there was statistically significant differences at p-value < 0.001.

For comparison group, the pretest data showed that mean score on knowledge of complication and on self care among adolescent pregnant women was 12.61 with 1.79 standard deviation. Posttest, data showed that mean score was reduced to 12.45 with 1.86 standard deviation. When applying test for statistical significant differences was made between pretest and posttest data. No difference was found.

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Table IV. Comparative analysis of mean score difference on knowledge about complications and self-care among adolescent pregnancy in the experimental and comparison groups at pretest and posttest.

Knowledge and Self-Care	n	$\bar{X}$	S.D.	t	df.	p-value
Experimental group						
Pretest	41	13.19	1.82	-7.343	40	< 0.001
Posttest	41	16.34	1.96			
Comparison group						
Pretest	44	12.61	1.70	0.478	43	0.635
Posttest	44	12.45	1.86			

Part 4. Comparative Analysis on mean score difference on perceived susceptibility, perceived severity, perceived benefits and barriers and self care practice in the experimental and comparison groups both within and between groups.

4.1 Comparative analysis of mean score differences on perceived susceptibility, perceived severity, perceived benefits and barriers and self care practice among adolescent pregnant women between the experimental and comparison groups both at pretest and posttest.

4.1.1 Comparative analysis of mean score differences on perceived susceptibility of complications among adolescent pregnant women between the experimental and comparison groups at pretest and posttest. (see details in Table V-VI)

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Pretest data showed that the experimental group's mean score on perceived susceptibility of complications among adolescent pregnant women was 22.56 with 2.35 standard deviation. The comparison group's mean score was 21.79 with 2.04 standard deviation. When testing the statistical significant differences between the experimental and comparison groups. It indicated no differences.

Posttest result showed that the experimental group's mean score on the perceived susceptibility of complications among adolescent pregnant women was 23.78 with 2.16 standard deviation. The comparison group's mean score was 22.29 with 1.92 standard deviation. When testing for statistical significant differences between the experimental and comparison groups. Data confirmed that there was statistically significant differences at p-value = 0.001.

4.1.2 Comparative analysis of mean score difference on perceived severity on complications among adolescent pregnant women between the experimental and comparison groups both at pretest and posttest. (see details in Table V-VI)

Pretest analysis showed that the experimental group's mean score on the perceived severity on complications among adolescent pregnant women was 32.36 with 3.92 standard deviation. The comparison group's mean score was 30.95 with 3.83 standard deviation. When testing for statistical significant differences between the experimental and comparison groups. No statistical difference was confirmed.

Posttest analysis showed that the experimental group's mean score on the perceived severity on complications among adolescent pregnant women was 35.85 with 4.78 standard deviation. The comparison group's mean score was 31.81 with 3.79

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standard deviation. When test for statistical differences between the experimental and comparison groups, data indicated that there was statistically significant differences at p-value<0.001.

4.1.3 Comparative analysis of mean score differences on perceived benefits and barriers on self care among adolescent pregnant women between the experimental and comparison groups at pre-test and post-test. (see details in Table V-VI)

Pretest data showed that the experimental group's mean score on perceived benefits and barriers on self care among adolescent pregnant women was 50.43 with 3.05 standard deviation. The comparison group's mean score was 51.27 with 2.62 standard deviation. When testing for statistical significant differences between the experimental and comparison groups. It confirmed no differences.

Posttest analysis indicated that the experimental group's mean score on perceived benefits and barriers on self care among adolescent pregnant women was 54.41 with 2.70 standard deviation. The comparison group's mean score was 50.15 with 5.00 standard deviation. When testing for statistical significant differences between the experimental and comparison groups. It was confirmed statistically significant differences at p-value<0.001.

4.1.4 Comparative analysis of mean score differences on self care practice among adolescent pregnant women between the experimental and comparison groups at pretest and posttest. (See details on Table V-VI)

Pretest data showed that the experimental group's mean score on self care practice among adolescent pregnant women was 60.82 with 4.62 standard deviation. The comparison group's mean score was 60.77 with 5.01 standard deviation. When

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testing for statistical significant difference between the experimental and comparison groups. It revealed no statistical differences.

Posttest data showed that the experimental group's mean score on self care practice among adolescent pregnant women was 63.82 with 4.47 standard deviation. The comparison group's mean score was 61.52 with 5.39 standard deviation. When testing for statistical significant differences between the experimental and comparison groups. Result indicated statistically significant differences at p-value<0.001.

Table V. Comparative analysis of mean score differences on perceived susceptibility, perceived severity, perceived benefits and barriers and self care practice between the experimental and comparison groups at pretest.

Perception/sample group	n	$\bar{X}$	S.D.	t	df.	p-value
Perceived susceptibility						
Experimental group	41	22.56	2.35	1.604	83	0.113
Comparison group	44	21.79	2.04			
Perceived severity						
Experimental group	41	32.36	3.92	1.674	83	0.098
Comparison group	44	30.95	3.83			
Perceived benefits and barriers						
Experimental group	41	50.43	3.05	1.353	83	0.180
Comparison group	44	51.27	2.62			
Self care practice						
Experimental group	41	60.82	4.62	0.054	83	0.957
Comparison group.	44	60.77	5.01			

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Table VI. Comparative analysis of mean score difference on perceived susceptibility, perceived severity, perceived benefits and barriers and on self care practice between the experimental and comparison groups at posttest.

Perception/sample group	n	$\bar{X}$	S.D.	t	df.	p-value
Perceived susceptibility						
Experimental group	41	23.78	2.16	3.350	83	0.001
Comparison group	44	22.29	1.92			
Perceived severity						
Experimental group	41	35.85	4.78	4.325	83	< 0.001
Comparison group	44	31.81	3.79			
Perceived benefits and barriers						
Experimental group	41	54.41	2.70	4.829	83	< 0.001
Comparison group	44	50.15	5.00			
Self care practice						
Experimental group	41	63.82	4.47	3.989	83	< 0.001
Comparison group	44	61.52	5.39			

4.2 Comparative analysis of mean score differences on perceived susceptibility, perceived severity of complications among adolescent pregnant women, perceived benefits and barriers and self care practice among adolescent pregnant women in the experimental and comparison groups at pretest and posttest.

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4.2.1 Comparative analysis of mean score differences on perceived susceptibility of complications among adolescent pregnant women in the experimental and comparison groups at pre-test and post-test. (see details in Table VII)

In the experimental group, pretest result showed that the mean score on perceived susceptibility of complications among adolescent pregnant women was 22.56 with 2.35 standard deviation while the posttest data showed that mean score had increased to 23.78 with 2.16 standard deviation. When testing on statistical significant differences to both pretest and posttest, data indicated statistically significant differences at p-value = 0.025.

For comparison group, pretest result showed that mean score on perceived susceptibility of complications among adolescent pregnant women was 21.79 with 2.04 standard deviation. Posttest showed that mean score was 22.29 with 1.92 standard deviation. Data showed no statistical differences.

4.2.2 Comparative analysis of mean score differences on perceived severity on complications among adolescent pregnant women in the experimental and comparison groups at pre-test and post-test. (see details in Table VII)

In the experimental group, pretest data showed that mean score on perceived severity of complications among adolescent pregnant women was 32.36 with 3.92 standard deviation. Posttest result showed that mean score had increased to 35.85 with 4.78 standard deviation. When testing for statistical significant differences, it was found that there was statistically significant differences at p-value < 0.001.

For comparison group, pretest data showed that mean score on perceived severity of complications among adolescent pregnant women was 30.95 with

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3.83 standard deviation. Posttest result showed that mean score was 31.81 with 3.79 standard deviation. When testing for statistical significant differences, it confirmed no differences.

4.2.3 Comparative analysis of mean score differences on perceived benefits and barriers on self-care among adolescent pregnant women in the experimental and comparison groups at pretest and posttest. (see details in Table VII)

In the experimental group, the pretest data showed that mean score on perceived benefits and barriers among adolescent pregnant women was 50.43 with 3.05 standard deviation. Posttest result showed that mean score had increased to 54.44 with 2.70 standard deviation. When testing for statistical significant differences between pretest and posttest, it confirmed statistically significant differences at p-value < 0.001.

For comparison group, pretest data showed that mean score on perceived benefits and barriers on self-care among adolescent pregnant women was 51.27 with 2.62 standard deviation. Posttest data showed that mean score had increased to 50.15 with 5.00 standard deviation. When pretest and posttest comparisons were made on statistical differences test, it found that there was no differences.

4.2.4 Comparative analysis of mean score difference on self care practice among adolescent pregnant women in the experimental and comparison groups at pretest and posttest. (see details in Table VII)

In the experimental group, pretest data showed that mean score on self care practice was 60.82 with 4.62 standard deviation. Posttest data showed that mean score had increased to 65.8293 with 4.4716 standard deviation. Pretest and posttest

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comparative analysis on statistical differences showed that there was statistically significant difference at p-value < 0.001.

For comparison group the pretest data showed that mean score on self care practice among adolescent pregnant women was 60.77 with 5.01 standard deviation. Posttest data showed that mean score had increased to 61.52 with 5.39 standard deviation. When pretest and posttest comparisons were made by analysis on statistical differences test, it found no differences.

Table VII. Comparative analysis of mean score difference between perceived susceptibility, perceived severity, perceived benefits and barriers and self care practice in the experimental and comparison groups at pretest and posttest.

Perception/sample group	n	$\bar{X}$	S.D.	t	df.	p-value
Perceived susceptibility						
Experimental group						
Pretest	41	22.56	2.35	2.331	40	0.025
Posttest	41	23.78	2.16			
Comparison group						
Pretest	44	21.79	2.04	1.673	43	0.102
Posttest	44	21.29	1.92			
Perceived severity						
Experimental group						
Pretest	41	32.36	3.92	4.125	40	< 0.001
Posttest	41	35.85	4.78			

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Table VII. (cont.) Comparison of mean score difference between perceived susceptibility, perceived severity, perceived benefits and barriers and self care practice in the experimental and comparison groups at pretest and posttest.

Perception/sample group	n	$\bar{X}$	S.D.	t	df.	p-value
Comparison group						
Pretest	44	30.95	3.83	1.119	43	0.269
Posttest	44	31.81	3.79			
Perceived benefits and barriers.						
Experimental group						
Pretest	41	50.43	3.05	6.948	40	< 0.001
Posttest	41	54.41	2.70			
Comparison group						
Pretest	44	51.27	2.62	1.244	43	0.220
Posttest	44	50.05	5.00			
Self care practice.						
Experimental group						
Pretest	41	60.82	4.62	6.749	40	< 0.001
Posttest	41	65.82	4.47			
Comparison group						
Pretest	44	60.77	5.01	1.064	43	0.293
Posttest	44	61.52	5.39			

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Part 5. Comparative analysis on the proportion of standard weight gain among adolescent pregnant women of the experimental and comparison groups. (see details in Table VIII)

Posttest, comparative analysis on the proportion of increased body weight among adolescent pregnant women between the experimental and comparison groups found that the experimental group's proportion of increased body weight was 0.66. The comparison group's proportion of increased body weight was 0.41. When statistically significant differences test was done, it is confirmed that the experimental and comparison groups differed with statistical significance at p-value = 0.014.

Table VIII. Comparative analysis on increased body weight among adolescent pregnancy in the experimental and comparison groups.

Adolescent pregnant women	n	f	proportion	Z	p-value
Experimental group	41	27	0.66	2.192	0.014
Comparison group	44	18	0.41		

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CHAPTER V

DISCUSSION

Based on the data analysis result, each hypothesis can be accepted or respected as follows:

Hypothesis 1. After the experiment, the experimental group will not change their perceptions in susceptibility, severity of complications among adolescent women, and perceived benefits and barriers in taking expert's advice for self care during pregnancy in a more positive way towards healthy pregnancy and delivery than that before the experiment.

Based on the research result, the experimental group has shown statistical significant changes in perceived severity at 0.012 p-value, and in perceived susceptibility, perceived benefits and barriers at 0.001 p-value. Therefore, the research accept this hypothesis.

From the experimental group, item analysis reveals that most of the item score on perceived susceptibility in posttest have increased more than that of the pretest. Especially, the risk from hypertension and premature labor have increased by 40%. On perceived severity, all item scores in posttest are increased more than that of the pretest. Especially the effect of hypertension on mother and fetus and the effect of iron deficiency anemia are increased more than 30%. For perceived benefits and barriers, most of the item scores in posttest have increased more than that of the pretest. Especially the effects of hypertension, iron deficiency anemia and left-lying

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position have increased by 40%. On self-care practice, most of the item scores in posttest have increased more than that of the pretest. Especially for high protein consumption, drinking tea-coffee-cola beverage, left-lying position and Sims' position have increased by 30%.

Reasons for changes in those perceptions may be due to the activities offered in health education sessions which included lectures with slide presentation, group discussions, demonstration, and practice physical exercise. It is confirmed by the data from process evaluation that the samples have asked a lot of questions after viewing the slide presentation regarding pregnancy complications. Moreover, the samples had actively participated in the group discussion regarding symptoms which have occurred to them and ways to minimize those complications. The group members were able to share their feelings and experience fruitfully. Problems such as taking drug to stimulate menstruation, edema, etc were raised and motivated the group members to individualize the risk.

Regarding self care, this study had put the emphasis on not only the individualization of the risk if they did not practice self care but also on how to take care of oneself. Through exercising setting up the menu, planning the weekly menu, and working – out in every session offered at the ANC clinic had enhanced not only their perceptions but also their skills in perceiving benefits and barriers to practice self care during pregnancy.

The result of this study is similar to those conducted by Jamrat Promsungwong(1997:115) and Chinavat Chomprasert (1997: 98-99). Jamrat had tried to apply HBM by using a combination of audio – visual aids as way to change

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perception of pregnant women. Regarding "complication during pregnancy"; while Chinawat had utilized social support as ways to increase perception towards prevention of Iron deficiency anemia in pregnant women. Both studies confirmed that their methods which applied the HBM approach were able to change " Perception" in a better or more positive way among pregnant women.

Hypothesis 2. After the experiment, the experimental group had changed more positively than the comparison group in terms of perceived susceptibility, severity of complications among adolescent women, and perceived benefits and barriers in taking expert's advice for self care during pregnancy.

This study indicated that before the experiment, perceptions of the samples in both groups were similar. After the experiment; those perceptions of the experimental group were statistically higher and more positive changes than those of the comparison group at 0.001 p-value.

This may be due to the educational methods that applied HBM principles and the combination of methods in delivering the information to create learning experience in the experimental group are conductive to the sample's ability to learning. Moreover, this intervention has been applied to the specific age group, adolescent pregnancy, while the intervention in the comparison group did not. Therefore, information and activities can meet not only the ability to learn but also the physical and psychological needs of the samples. This is an important point in conducting behavior change for patient, Chanuantong Tanasugarn (1996:5-6) had started that we need to select a combination of methods which fit with the target's need for learning and ability to learn. We can not only giving them information, but

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also helping then to individualize it as well. This study had applied the slide presentation and group discussion to facilitate the learning.

In demonstrating how to set up meal menu was also useful in increasing the perception of "diet during pregnancy and weight gain", and enhancing their confident in selecting the right diet during pregnancy. It was emphasized by Boonyong Keiwkarnka (1983:135) that demonstration is an effective way in promote learning through all session organs of the target group. In addition, it also will motivate learning through out the session.

Overall changes of the experimental group can be viewed as the confirmation of behavior change philosophy stated by Tanawat Imsomboon (1995:7) who wrote that behavior change is a result of interaction between individual learning and individual conscious towards health.

There were studies which revealed similar outcomes as this study after applying HBM with pregnant women population: Nutjana Supiyaphun (1997:113-124), Chinawat Chomprasert (1997:98 – 99) and Jamrat Promsungwong (1997:115). Nutjana had tried to apply HBM by using group process about venereal diseases of pregnant women; which Chinawat studied on the effectiveness of Health Education Program which applied HBM and Social Support Theory to prevent iron deficiency anemia; which Jamrat studied on the effectiveness of giving knowledge according to HBM by using mixed media for the perceptions of health state and self care of pregnant women at Pratumthani Hospital.

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Hypothesis 3. After experiment, weight gain of the experimental group will not be in line with the standard range of weight gain more than that of the comparison group.

Based on the data analysis result, the proportion of weight gain among pregnant women of the experimental group is statistically in line with the standard range of weight gain than that of the comparison group. This study accepts the Third hypothesis.

Rational for this change may be due to the activities given in the experimental group which emphasize the individual practice in diet, exercise and monitoring weight gain. This emphasis had put the awareness and reinforced the skill of the samples while the comparison group samples did not have. The attempt to monitor normal weight gain by the pregnant women was also tried out by Buppar Viriyaratanakul (1996:193) though application of King's Theory. Result showed also significant change in weight gain proportion of the experimental group.

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CHAPTER VI

CONCLUSION

This is a quasi-experimental research aims to study the effectiveness of created Health Education Program which applied Health Belief Model for self care among adolescent pregnant women.

In this research, samples were adolescent pregnant women who joined in pre-natal clinic at pre-natal section of Queen Sawangwattana Memorial Hospital, Cholburi. The experimental group comprised of 41 adolescent pregnant women joining pre-natal clinic on Tuesday and Thursday. They joined 3 sessions of Health Education Programs 4 weeks apart that created by the researcher. The comparison group comprised of 44 adolescent pregnant women joining pre-natal clinic on Friday. Research was conducted from November 1999 to February 2000.

Data collection were done twice through a self administered questionnaire and measuring weight at pre-test and posttest to assess the effectiveness of Health Education Program. Data from questionnaire and weight gain were then statistically analyzed by ways of percentage, mean score and standard deviation. Scores were compared the mean differences by using Paired t-test, Student's t-test, proportional difference with Z for proportion. The research summery is as follow:

Demographic characteristics of the samples. It is found that both of the experimental and comparison groups are similar in age range from 15-19 years old, gestation period from 8-24 weeks, most of them are 19 years old, finished Secondary schools, family monthly income are mostly in between 4,000-6,999 Bht.

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Knowledge on complications and self care among adolescent pregnant women. Data revealed that the experimental group has higher level of knowledge at the posttest than that of the comparison group with statistically significant difference at p-value < 0.001.

Perception of susceptibility of complications among adolescent pregnant women. Data revealed that at the posttest, the experimental group's perception of susceptibility on complication is statistically higher than that at the pretest with p-value = 0.012 significance level. And the experimental group's perception of susceptibility of complications at posttest is statistically higher than that of the comparison group with p-value < 0.001 significance level.

Perception on severity of complications among adolescent pregnant women. Data indicated that at the posttest, the experimental group's perception on severity is statistically higher than that at the pretest with p-value < 0.001 significance level. And the experimental group's perception on severity at posttest is statistically higher than that of the comparison group with p-value < 0.001 significance level.

Perception of benefits and barriers in taking expert's advice in practicing self care. Data suggested that at the posttest, the experimental group's perception of benefits and barriers is statistically higher than that at the pretest with p-value < 0.001 significance level. And the experimental group's perception of benefits and barriers at the posttest is statistically higher than that of the comparison group with p-value < 0.001 significance level.

Self care practice among adolescent pregnant women. Data revealed that at the posttest, the experimental group's self care practice is statistically higher than

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that at the pretest with p-value < 0.001 significance level. And the experimental group's self care practice at posttest is statistically higher than that of the comparison group with p-value < 0.001 significance level.

Proportion of standard weight gain. According to standard weight gain, the experimental group has proportionally weight gain in line with the normal range more than that of the comparison group with p-value = 0.007 significance level.

Recommendations from the Research.

1. Health Education Program applying Health Belief Model for changing practice on self care among adolescent pregnant women can enhance learning about complication and self care, perceived susceptibility and severity of complications among adolescent pregnant women, perceived benefits and barriers on self care among adolescent pregnant women and self care practice. Hence, this Program should be applied in regular service activities for adolescent pregnant women who attend the pre-natal clinic at Queen Sawangwattana Memorial Hospital, Cholburi.

2. The practice on selecting suitable meal menu for adolescent pregnant women, practice on exercises, group process for sharing on experience, identifying problems and solutions are effective in promoting learning and skill. Therefore, they are recommended for any program that wish to promote self care to arouse adolescent pregnant women on self care practice.

3. For adolescent pregnant women who have low level of education, activities should be given by using simple language in order to promote group discussion and save time.

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Recommendations for Future research.

1. This study should be prolonged till child-birth and postpartum period in order to measure a more significant outcomes such as birth weight and risk of mother and child at delivery.

2. Additional variables such as haematocrit level and blood pressure level of adolescent pregnant women should be added as self care indicator.

3. Health Education Program should be arranged and tested for pregnant women with other risk factors such as pregnant women age more than 35 years old, pregnant women with medical complications in order to enhance better self care of those groups.

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APPENDIX

Table IX. Frequency and percentage distribution on knowledge regarding complications and self care among adolescent pregnant women in the experimental group at pretest and posttest.

Question	pretest		Posttest	
	f	%	F	%
1. "Adolescent pregnancy will have complications on pregnancy more than general pregnancy." Is this statement true or false?	14	34.1	29	70.7
2. How can difficult delivery in adolescent pregnant woman be prevented?	33	80.5	35	85.4
3. Postpartum Haemorrhage can be prevented by different methods?	4	9.8	18	43.9
4. What are symptoms of hypertension during pregnancy?	39	95.1	41	100.0
5. What are the symptoms for premature labor in adolescent pregnant woman?	18	43.9	25	61.0
6. Why hemorrhoid usually occurs with adolescent pregnant woman?	3	7.3	21	51.2
7. Why adolescent pregnant woman needs much food?	23	56.1	26	63.4
8. From beginning of pregnancy to postpartum, how many weight should adolescent pregnant woman have in weight gain?	30	73.2	34	82.9
9. What type of food will help better absorption of iron?	6	14.6	15	36.6
10. What type of food helps better excretion?	39	95.1	41	100.0
11. What type of food should be consumed to increase iron to the body?	35	85.4	37	90.2

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Table IX.(cont.) Frequency and percentage distribution on knowledge about complications and self care among adolescent pregnant women in the experimental group both pretest and posttest.

Question	pretest		Posttest	
	f	%	F	%
12. Iron supplement should not be taken with what type of food?	37	90.2	40	97.6
13. What is the benefit of joining pre-natal clinic?	40	97.6	39	95.1
14. When should pregnant woman join pre-natal clinic?	39	95.1	37	90.2
15. Which of the following items most affects fetus?	39	95.1	36	87.8
16. What is the best sleeping position for pregnant woman?	24	58.5	40	97.6
17. How should adolescent pregnant woman rest during daytime?	35	85.4	40	97.6
18. When should adolescent pregnant woman visit the doctor?	27	65.9	38	92.7
19. How long should adolescent pregnant woman exercise?	16	39.0	37	90.2
20. What benefit does exercise give to adolescent pregnant woman?	40	97.6	41	100.0

Table X. Frequency and percentage distribution on knowledge regarding complications and self care among adolescent pregnant women in the comparison group at pretest and posttest.

Question	pretest		Posttest	
	f	%	F	%
1. "Adolescent pregnancy will have complications on pregnancy more than general pregnancy." Is this statement true or false?	9	20.5	11	25.0
2. How can difficult delivery in adolescent pregnant woman be prevented?	28	63.6	31	70.5

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Table X.(cont.) Frequency and percentage distribution on knowledge regarding complications and self care among adolescent pregnant women in the comparison group at pretest and posttest.

Question	pretest		Posttest	
	f	%	F	%
3. Postpartum Haemorrhage can be prevented by different methods?	4	9.1	6	13.6
4. What are symptoms of hypertension during pregnancy?	44	100.0	40	90.9
5. What are the symptoms for premature labor in adolescent pregnant woman?	17	38.6	18	40.9
6. Why hemorrhoid usually occurs with adolescent pregnant woman?	11	25.0	11	25.0
7. Why adolescent pregnant woman needs much food?	20	45.5	22	50.0
8. From beginning of pregnancy to postpartum, how many weight should adolescent pregnant woman have in weight gain?	25	56.8	29	65.9
9. What type of food will help better absorption of iron?	12	27.3	6	13.6
10. What type of food helps better excretion?	42	95.5	44	100.0
11. What type of food should be consumed to increase iron to the body?	18	63.6	32	72.7
12. Iron supplement should not be taken with what type of food?	39	88.6	38	86.4
13. What is the benefit of joining pre-natal clinic?	43	97.7	39	88.6
14. When should pregnant woman join pre-natal clinic?	44	100.0	37	84.1
15. Which of the following items most affects fetus?	38	86.4	38	86.4
16. What is the best sleeping position for pregnant woman	27	61.4	25	56.8
17. How should adolescent pregnant woman rest during daytime?	34	77.3	36	81.8
18. When should adolescent pregnant woman visit the doctor?	30	68.2	31	70.5

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Table X.(cont.) Frequency and percentage distribution on knowledge regarding complications and self care among adolescent pregnant women in the comparison group at pretest and posttest.

Question	Pretest		Posttest	
	f	%	F	%
19. How long should adolescent pregnant woman exercise?	19	43.2	13	29.5
20. What benefit does exercise give to adolescent pregnant woman?	41	93.2	41	93.2

Table XI. Frequency and percentage distribution on perceived susceptibility of complications among adolescent pregnant women in the experimental group at pretest and posttest.

Question	Disagree		Unsure		Agree	
	f	%	f	%	F	%
1. Hypertension can occur with adolescent pregnant woman more than with other pregnant woman.	9 3	22.0 7.3	22 10	53.7 24.4	10 28	24.4 68.3
2. Edema at face, limbs or headache, blur vision can occur to you.	0 0	0.0 0.0	2 7	4.9 17.1	39 34	95.1 82.9
3. Adolescent pregnant woman can equally have anemia as other pregnant women.	20 27	48.8 65.9	14 12	34.1 29.3	7 2	17.1 4.9
4. Adolescent pregnant woman can have premature labor more than other pregnant woman.	8 2	19.5 4.9	19 9	46.3 22.0	14 30	34.1 73.2
5. Child born from adolescent pregnant woman usually has less birth weight and smaller than child born from other pregnant woman.	19 14	46.3 34.1	14 17	34.1 41.5	8 10	19.5 24.4
6. Adolescent pregnant woman can have difficult delivery less than other pregnant woman because of better health.	10 4	24.4 9.8	15 16	36.6 39.0	16 21	39.0 51.2

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Table XI. (cont.)Frequency and percentage distribution on perceived susceptibility of complications among adolescent pregnant women in the experimental group at pretest and posttest.

Question	Disagree		Unsure		Agree	
	f	%	f	%	F	%
7. Postpartum hemorrhage will not occur in	5	12.2	13	31.7	23	56.1
adolescent pregnant woman.	2	4.9	21	51.2	18	43.9
8. Adolescent pregnant woman with healthy	3	7.3	10	24.4	28	68.3
can also have Postpartum hemorrhage.	0	0.0	14	34.1	27	65.9
9. Adolescent pregnant woman with small	5	12.2	13	31.7	23	56.1
pregnancy can also have prolonged labour.	3	7.3	17	41.5	21	51.2
10. Iron supplement will make adolescent	1	2.4	23	56.1	17	41.5
pregnant woman strong with no problem	2	4.9	18	43.9	21	51.2
during labour.						

Table XII. Frequency and percentage distribution on perceived susceptibility of complications among adolescent pregnant women in the comparison group at pretest and posttest.

Question	Disagree		Unsure		Agree	
	f	%	f	%	F	%
1. Hypertension can occur with adolescent	10	22.7	21	47.7	13	29.5
pregnant woman more than with other pregnant	9	20.5	20	45.5	15	34.1
woman.						
2. Edema at face, limbs or headache, blur	2	4.5	4	9.1	38	86.4
vision can occur to you.	2	4.5	5	11.4	37	84.1
3. Adolescent pregnant woman can equally	23	52.3	17	38.6	4	9.1
have anemia as other pregnant women.	26	59.1	14	31.8	4	9.1
4. Adolescent pregnant woman can have	11	25.0	18	40.9	15	34.1
premature labor more than other pregnant	9	20.5	20	45.5	15	34.1
woman.						

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Table XII. (cont.) Frequency and percentage distribution on perceived susceptibility of complications among adolescent pregnant women in the comparison group at pretest and posttest.

Question	Disagree		Unsure		Agree	
	f	%	f	%	F	%
5. Child born from adolescent pregnant woman usually has less birth weight and smaller than child born from other pregnant woman.	21 22	47.7 50.0	15 12	34.1 27.3	8 10	18.2 22.7
6. Adolescent pregnant woman can have difficult delivery less than other pregnant woman because of better health.	14 6	31.8 13.6	18 29	40.9 65.9	12 9	27.3 20.5
7. Postpartum hemorrhage will not occur in adolescent pregnant woman.	6 2	13.6 4.5	20 23	45.5 52.3	18 19	40.9 43.2
8. Adolescent pregnant woman with healthy can also have Postpartum hemorrhage.	5 3	11.4 6.8	11 11	25.0 25.0	28 30	63.6 68.2
9. Adolescent pregnant woman with small pregnancy can also have prolonged labour.	7 1	15.9 2.3	19 19	43.2 43.2	18 24	40.9 54.5
10. Iron supplement will make adolescent pregnant woman strong with no problem during labour.	0 4	0.0 9.1	20 18	45.5 40.9	24 22	54.5 50.0

Table XIII. Frequency and percentage distribution on perceived severity of complications among adolescent pregnant women in the experimental group at pretest and posttest.

Question	Disagree		Unsure		Agree	
	f	%	f	%	F	%
1. Adolescent pregnant woman with hypertension will cause to infant mortality.	6 6	14.6 14.6	26 8	63.4 19.5	9 27	22.0 65.9
2.Having hypertension during pregnancy can cause mortality to adolescent pregnant woman.	11 3	26.8 7.3	25 15	61.0 36.6	5 23	12.2 56.1

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Table XIII. (cont.)Frequency and percentage distribution on perceived severity of complications among adolescent pregnant women in the experimental group at pretest and posttest.

Question	Disagree		Unsure		Agree	
	f	%	f	%	F	%
3. Adolescent pregnant woman with abnormal weight gain will harm mother and child.	9 3	22.0 7.3	18 16	43.9 39.0	14 22	34.1 53.7
4. Anemia can cause mortality to adolescent pregnant woman.	11 7	26.8 17.1	20 20	48.8 48.8	10 14	24.4 34.1
5. Anemia is not harmful to infant.	10 5	24.4 12.2	19 12	46.3 29.3	12 24	29.3 58.5
6. Adolescent pregnant woman with anemia will have postpartum infection.	5 3	12.2 7.3	30 19	73.2 46.3	6 19	14.6 46.3
7. Paleness and tired easily is the condition that can be taken care of by oneself successfully with no harm.	13 12	31.7 29.3	11 10	26.8 24.4	17 19	41.5 46.3
8. Premature delivery can cause infant mortality	14 5	34.1 12.2	14 12	34.1 29.3	13 24	31.7 58.5
9. Pain at lower abdomen as dysmenorrhea or bleeding per vagina during first 3 months is not harmful to the fetus.	6 14	14.6 34.1	12 6	29.3 14.6	23 21	56.1 51.2
10. Labour pain every 10 minutes can be self cared without any harm	8 7	19.5 17.1	12 6	29.3 14.6	21 28	51.2 68.3
11. Adolescent pregnant woman who eat the same food as that before pregnancy can harm the fetus.	14 9	34.1 22.0	12 12	29.3 29.3	15 20	36.6 48.8
12. Adolescent pregnant woman with weight gain less than 10-12 kgs. throughout pregnancy will not cause harm to the fetus.	10 18	24.4 43.9	24 12	58.5 29.3	15 20	36.6 48.8
13. Infant weighing less than normal can cause infant mortality.	3 4	7.3 9.8	14 10	34.1 24.4	24 27	58.5 65.9

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Table XIII. (cont.)Frequency and percentage distribution on perceived severity of complications among adolescent pregnant women in the experimental group at pretest and posttest.

Question	Disagree		Unsure		Agree	
	f	%	f	%	f	%
14. Adolescent pregnant woman can have severe hemorrhoid.	1	2.4	18	43.9	22	53.7
	1	2.4	11	26.8	29	70.7
15. Adolescent pregnant woman can have prolonged labour which can be harmful to mother and child.	6	14.6	9	22.0	26	63.4
	3	7.3	6	14.6	32	78.0

Table XIV. Frequency and percentage distribution on perceived severity of complications among adolescent pregnant women in the comparison group at pretest and posttest.

Question	Disagree		Unsure		Agree	
	f	%	f	%	f	%
1. Adolescent pregnant woman with hypertension will cause to infant mortality.	8	18.2	25	56.8	11	25.0
	5	11.4	29	65.9	10	22.7
2.Having hypertension during pregnancy can cause mortality to adolescent pregnant woman.	10	22.7	30	63.2	4	9.1
	14	31.8	22	50.0	8	18.2
3. Adolescent pregnant woman with abnormal weight gain will harm mother and child.	18	40.9	18	40.9	8	18.2
	12	27.3	25	56.8	7	15.9
4. Anemia can cause mortality to adolescent pregnant woman.	15	34.1	20	45.5	9	20.5
	7	15.9	30	68.2	7	15.9
5. Anemia is not harmful to infant.	6	13.6	23	52.3	15	34.1
	5	11.4	23	52.3	16	36.4
6. Adolescent pregnant woman with anemia will have postpartum infection.	3	6.8	21	47.7	20	45.5
	2	4.5	23	52.3	19	43.2
7. Paleness and tried is the condition that can be taken care of by oneself successfully with no harm.	15	34.1	17	38.6	12	27.3
	17	38.6	13	29.5	14	31.8

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Table XIV.(cont.) Frequency and percentage distribution on perceived severity of complications among adolescent pregnant women in the comparison group at pretest and posttest.

Question	Disagree		Unsure		Agree	
	f	%	f	%	f	%
8. Premature delivery can cause infant mortality	21	47.7	10	22.7	13	29.5
	16	36.4	12	27.3	16	36.4
9. Pain at lower abdomen as dysmenorrhea or bleeding per vagina during first 3 months is not harmful to the fetus.	5	11.4	17	38.6	22	50.0
	9	20.5	15	34.1	20	45.5
10. Labour pain every 10 minutes can be self cared without any harm	11	25.0	17	38.6	16	36.4
	10	22.7	18	40.9	16	36.4
11. Adolescent pregnant woman who eat the same food as that before pregnancy can harm the fetus.	17	38.6	15	34.1	12	27.3
	16	36.4	12	27.3	16	36.4
12. Adolescent pregnant woman with weight gain less than 10-12 kgs. Throughout pregnancy will not cause harm to the fetus.	18	40.9	22	50.0	4	9.1
	10	22.7	27	61.4	7	15.9
13. Infant weighing less than normal can cause infant mortality.	7	15.9	17	38.6	20	45.5
	7	15.9	20	45.5	17	38.6
14. Adolescent pregnant woman can have severe hemorrhoid.	6	13.6	21	47.7	17	38.6
	2	4.5	20	45.5	22	50.0
15. Adolescent pregnant woman can have prolonged labour which can be harmful to mother and child.	4	9.1	17	38.6	23	52.3
	5	11.4	17	38.6	22	50.0

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Table XV. Frequency and percentage distribution on perceived benefits and barriers among adolescent pregnant women in the experimental group at pretest and posttest.

Question	Disagree		Unsure		Agree	
	f	%	f	%	f	%
1. Adolescent pregnant woman can have problems on herself and fetus if proper self care is not practiced properly during pregnancy	2	4.9	2	4.9	37	90.2
	0	0.0	0	0.0	41	100.0
2. Adolescent pregnant woman with hypertension should sleep more to reduce severity of the disease.	2	4.9	20	48.8	19	46.3
	2	4.9	4	9.8	35	85.4
3. Adolescent pregnant woman who consults the doctor when having edema, headache or blurred vision will be beneficial to herself and infant.	6	14.6	2	4.9	33	80.5
	3	7.3	2	4.9	36	87.8
4. Adolescent pregnant woman who regularly eat animal's inner organs and egg will not have anemia.	3	7.3	14	34.1	24	58.8
	2	4.9	6	14.6	33	80.5
5. Adolescent pregnant woman with anemia should avoid hard work so that sufficient blood can flow to nourish the fetus.	1	2.4	18	43.9	22	53.7
	2	4.9	7	17.1	32	78.0
6. Adolescent pregnant woman with anemia should sleep in left-lying position and a lot of sleep will be beneficial to the fetus.	0	0.0	2	4.9	21	51.2
	1	2.4	1	2.4	39	95.1
7. Adolescent pregnant woman with labour pain or bleeding per vagina can be treated by consulting doctor immediately.	0	0.0	0	0.0	41	100.0
	0	0.0	0	0.0	41	100.0
8. Adolescent pregnant woman who sleep a lot will not help fetus to have good health.	10	24.4	15	36.6	16	39.0
	6	14.6	11	26.8	24	58.5
9. Adolescent pregnant woman exercise by walking or body exercises will not cause better health to herself and her child.	8	19.5	1	2.4	32	78.0
	6	14.6	0	0.0	35	85.4

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Table XV.(cont.) Frequency and percentage distribution on perceived benefits and barriers among adolescent pregnant women in the experimental group at pretest and posttest.

Question	Disagree		Unsure		Agree	
	f	%	f	%	f	%
10. Adolescent pregnant woman who take more meat, egg, vegetables, fruits during pregnancy will not give better health to the mother.	3 2	7.3 4.9	4 1	9.8 2.4	34 38	82.9 92.7
11. Adolescent pregnant woman who increases in taking protein will cause an infant to weigh more than 2,500 grams.	1 4	2.4 9.8	24 15	58.5 36.6	16 22	39.0 53.7
12. Regular attending the pre-natal clinic will prevent and protect health status of fetus but it is hard to practice because of working commitment.	6 4	14.6 9.8	3 3	7.3 7.3	32 34	78.0 82.9
13.Quiting cigarette is not difficult because at present people in the community disapprove of smoking.	7 5	17.1 12.2	2 1	4.9 2.4	32 35	78.0 85.4
14. Often sleep in left-lying position during pregnancy will cause better growth to fetus.	0 0	0.0 0.0	30 2	73.2 4.9	11 39	26.8 95.1
15. Adolescent pregnant woman who have 10-12 kgs. Throughout pregnancy will help fetus to weigh more than 2,500 grams.	3 1	7.3 2.4	21 13	51.2 31.7	17 27	41.5 65.9
16. Sleep by raising feet high for 1 hour every day will prevent contacting hemorrhoid but it is difficult to practice.	3 5	7.3 12.2	27 11	65.9 26.8	11 25	26.8 61.0
17. Adolescent pregnant woman who excretes regularly will not prevent hemorrhoid.	23 27	56.1 65.9	11 6	26.8 14.6	7 8	17.1 19.5
18. Drinking less than 6 glasses of water is beneficial because one needs not urinate often.	0 1	0.0 2.4	8 1	19.5 2.4	33 39	80.5 95.1
19. Adolescent pregnant woman who exercises daily will have an easy delivery.	0 0	0.0 0.0	5 1	12.2 2.4	36 40	87.8 97.6

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Table XV. (cont.)Frequency and percentage distribution on perceived benefits and barriers among adolescent pregnant women in the experimental group at pretest and posttest.

Question	Disagree		Unsure		Agree	
	f	%	f	%	f	%
20. Taking meal with high iron such as animal's inner organs, vegetables is difficult because I do not like them.	1	2.4	2	4.9	38	92.7
	1	2.4	0	0.0	40	97.6

Table XVI. Frequency and percentage distribution on perceived benefits and barriers among adolescent pregnant women in the comparison group at pretest and posttest.

Question	Disagree		Unsure		Agree	
	f	%	f	%	f	%
1. Adolescent pregnant woman can have problems on herself and fetus if proper self care is not practiced properly during pregnancy	0	0.0	3	6.8	41	93.2
	2	4.5	3	6.8	39	88.6
2. Adolescent pregnant woman with hypertension should sleep more to reduce severity of the disease.	0	0.0	16	36.4	28	63.6
	2	4.5	13	29.5	29	65.9
3. Adolescent pregnant woman who consults the doctor when having edema, headache or blurred vision will be beneficial to herself and infant.	3	6.8	1	2.3	40	90.9
	4	9.1	3	6.8	37	84.1
4. Adolescent pregnant woman who regularly eat animal's inner organs and egg will not have anemia.	3	6.8	14	31.8	27	61.4
	2	4.5	18	40.9	25	54.5
5. Adolescent pregnant woman with anemia should avoid hard work so that sufficient blood can flow to nourish the fetus.	2	4.5	16	36.4	26	59.1
	4	9.1	17	38.6	23	52.3
6. Adolescent pregnant woman with anemia should sleep in left-lying position and a lot of sleep will be beneficial to the fetus.	3	6.8	13	29.5	28	63.6
	1	2.3	20	45.5	23	52.3
7. Adolescent pregnant woman with labour pain or bleeding per vagina can be treated by consulting doctor immediately.	0	0.0	1	2.3	43	97.7
	1	2.3	3	6.8	40	90.9

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Table XVI. (cont.) Frequency and percentage distribution on perceived benefits and barriers among adolescent pregnant women in the comparison group at pretest and posttest.

Question	Disagree		Unsure		Agree	
	f	%	f	%	f	%
8. Adolescent pregnant woman who sleep a lot will not help fetus to have good health.	9 8	20.5 18.2	16 14	36.4 31.8	19 22	43.2 50.0
9. Adolescent pregnant woman exercise by walking or body exercises will not cause better health to herself and her child.	11 7	25.0 15.9	4 6	9.1 13.6	29 31	65.9 70.5
10. Adolescent pregnant woman who take more meat, egg, vegetables, fruits during pregnancy will not give better health to the mother.	1 6	2.3 13.6	3 5	6.8 11.4	40 33	90.9 75.0
11. Adolescent pregnant woman who increases in taking protein will cause an infant to weigh more than 2,500 grams.	2 0	4.5 0.0	22 23	50.0 52.3	20 21	45.5 47.7
12. Regular attending the pre-natal clinic will prevent and protect health status of fetus but it is hard to practice because of working commitment.	9 10	20.5 22.7	4 5	9.1 11.4	31 29	70.5 65.9
13.Quiting cigarette is not difficult because at present people in the community disapprove of smoking.	5 10	11.4 22.7	5 4	11.4 9.1	34 30	77.3 68.2
14. Often sleep in left-lying position during pregnancy will cause better growth to fetus.	1 2	2.3 4.5	28 30	63.6 68.2	15 12	34.1 27.3
15. Adolescent pregnant woman who have 10-12 kgs. Throughout pregnancy will help fetus to weigh more than 2,500 grams.	0 0	0.0 0.0	23 21	52.3 47.7	21 23	47.7 52.3
16. Sleep by raising feet high for 1 hour every day will prevent contacting hemorrhoid but it is difficult to practice.	7 7	15.9 15.9	24 23	54.5 52.3	13 14	29.5 31.8

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Table XVI. (cont.) Frequency and percentage distribution on perceived benefits and barriers among adolescent pregnant women in the comparison group at pretest and posttest.

Question	Disagree		Unsure		Agree	
	f	%	f	%	f	%
17. Adolescent pregnant woman who excretes regularly will not prevent hemorrhoid.	22 19	50.0 43.2	12 14	27.3 31.8	10 11	22.7 25.0
18. Drinking less than 6 glasses of water is beneficial because one needs not urinate often.	2 9	4.5 20.5	7 2	15.9 4.5	35 33	79.5 75.0
19. Adolescent pregnant woman who exercises daily will have an easy delivery.	2 1	4.5 2.3	5 5	11.4 11.4	37 38	84.1 86.4
20. Taking meal with high iron such as animal's inner organs, vegetables is difficult because I do not like them.	1 6	2.3 13.6	1 2	2.3 4.5	42 36	95.5 81.8

Table XVII. Frequency and percentage distribution on self care practice among adolescent pregnant women in the experimental group at pretest and posttest.

Question	Every time		Sometime		None	
	f	%	f	%	f	%
1. When constipation occurs you will increased your intake of vegetables and fruits.	0 0	0.0 0.0	17 7	41.5 17.1	24 34	58.5 82.9
2. You often exercise by walking or body exercise at least 3 times a week.	2 0	4.9 0.0	22 21	53.7 51.2	17 20	41.5 48.8
3. You exercise 15-20 minutes a time.	7 0	17.1 0.0	25 32	61.0 78.0	9 9	22.0 22.0
4. During pregnancy you try to observe abnormality such as labor pain, bleeding per vagina, edema, headache.	5 0	12.2 0.0	11 6	26.8 14.6	25 35	61.0 85.4
5. You drink cleaned or boiled water 6-8 glasses daily.	3 0	7.3 0.0	17 15	41.5 36.6	21 26	51.2 63.4

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Table XVII. (cont.) Frequency and percentage distribution on self care practice among adolescent pregnant women in the experimental group at pretest and posttest.

Question	Every time		Sometime		None	
	f	%	f	%	f	%
6. You take high protein such as meat, fish, egg everyday	0	0.0	22	53.7	19	46.3
	0	0.0	10	24.4	31	75.6
7. During pregnancy, you take vegetables, fruits everyday.	0	0.0	9	22.0	32	78.0
	0	0.0	6	14.6	35	85.4
8. You quit drinking tea, coffee, cola beverage or stimulant soft drink during pregnancy.	10	24.4	7	17.1	24	58.5
	2	4.9	3	7.3	36	87.8
9. You take iron supplement as prescribed.	2	4.9	11	26.8	28	68.3
	2	4.9	8	19.5	31	75.6
10. When you forget taking iron supplement you immediately take on the next meal.	9	22.0	10	24.4	22	53.7
	3	7.3	12	29.3	26	63.4
11. Each day you reduce taking fat and sweets.	2	4.9	28	68.3	11	26.8
	1	2.4	30	73.2	10	24.4
12. You take fresh fruits every meal such as guava, papaya, orange or orange juice.	0	0.0	18	43.9	23	56.1
	0	0.0	12	29.3	29	70.7
13. You eat at least 3 meals daily.	2	4.9	7	17.1	32	78.0
	0	0.0	2	4.9	39	95.1
14. Each day, you avoid hard or accident prone work .	6	14.6	8	19.5	27	65.9
	3	7.3	4	9.8	34	82.9
15. You work by standing or sitting more than 2 hrs. everyday.	14	34.1	19	46.3	8	19.5
	14	34.1	24	58.5	3	7.3
16. you try to record weight gain every time you come to prenatal clinic.	1	2.4	5	12.2	35	85.4
	0	0.0	0	0.0	41	100.0
17. You quit smoking or avoid staying near smokers.	6	14.6	4	9.8	31	75.6
	0	0.0	3	7.3	38	92.7

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Table XVII. (cont.) Frequency and percentage distribution on self care practice among adolescent pregnant women in the experimental group at pretest and posttest.

Question	Every time		Sometime		None	
	f	%	f	%	f	%
18. You drink whisky, herb soaked whisky or alcoholic	4	9.8	2	4.9	35	85.4
every day.	10	24.4	0	0.0	31	75.6
19. When you get fever or feeling unwell you will	3	7.3	10	24.4	28	68.3
consult doctor.	2	4.9	9	22.0	30	73.2
20. You sleep at least 8 hrs. / night.	0	0.0	11	26.8	30	73.2
	0	0.0	3	7.3	38	92.7
21. You rest or sleep during daytime at least a half to	1	2.4	17	41.5	23	56.1
an hour daily.	1	2.4	18	43.9	22	53.6
22. You usually sleep in left-lying position every day.	0	0.0	24	58.5	17	41.5
	1	2.4	10	24.4	30	73.2
23. You lie lifting legs high for 1 hr. daily	20	48.8	18	43.9	3	7.3
	1	2.4	27	65.9	13	31.7
24. You lie in sims' position every night.	11	26.8	22	53.7	8	19.5
	3	7.3	16	39.0	22	53.7
25. You drink milk at least 2 glasses or packs daily.	3	7.3	15	36.6	23	56.1
	0	0.0	12	29.3	29	70.7

Table XVIII. Frequency and percentage distribution on self care practice among adolescent pregnant women in the comparison group at pretest and posttest.

Question	Every time		Sometime		None	
	f	%	f	%	f	%
1. When constipation occurs you will increased your	1	2.3	22	50.0	21	47.7
intake of vegetables and fruits.	2	4.5	19	43.2	23	52.3

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Table XVIII. (cont.) Frequency and percentage distribution on self care practice among adolescent pregnant women in the comparison group at pretest and posttest.

Question	Every time		Sometime		None	
	f	%	f	%	f	%
2. You often exercise by walking or body exercise at least 3 times a week.	0	0.0	26	59.1	18	40.9
	2	4.5	18	40.9	24	54.5
3. You exercise 15-20 minutes a time.	3	6.8	32	72.7	9	20.5
	3	6.8	24	54.5	17	38.6
4. During pregnancy you try to observe abnormality such as labor pain, bleeding per vagina, edema, headache.	3	6.8	13	29.5	28	63.6
	3	6.8	8	18.2	33	75.0
5. You drink cleaned or boiled water 6-8 glasses daily.	6	13.6	11	25.0	27	61.4
	1	2.3	19	43.2	24	54.5
6. You take high protein such as meat, fish, egg everyday	1	2.3	22	50.0	21	47.7
	0	0.0	17	38.6	27	61.4
7. During pregnancy, you take vegetables, fruits everyday.	0	0.0	20	45.5	24	54.5
	1	2.3	15	34.1	28	63.6
8. You quit drinking tea, coffee, cola beverage or stimulant soft drink during pregnancy.	13	29.5	5	11.4	26	59.1
	13	29.5	5	11.4	26	59.1
9. You take iron supplement as prescribed.	1	2.3	10	22.7	33	75.0
	2	4.5	13	29.5	29	65.9
10. When you forget taking iron supplement you immediately take on the next meal.	9	20.5	15	34.1	20	45.5
	9	20.5	12	27.3	23	52.3
11. Each day you reduce taking fat and sweets.	5	11.4	37	84.1	2	4.5
	6	13.6	34	77.3	4	9.1
12. You take fresh fruits every meal such as guava, papaya, orange or orange juice.	2	4.5	25	56.8	17	38.6
	2	4.5	23	52.3	19	43.2
13. You eat at least 3 meals daily.	0	0.0	7	15.9	37	84.1
	1	2.3	5	11.4	38	86.4

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Table XVIII. (cont.) Frequency and percentage distribution on self care practice among adolescent pregnant women in the comparison group at pretest and posttest.

Question	Every time		Sometime		None	
	f	%	f	%	f	%
14. Each day, you avoid hard or accident prone work .	2	4.5	16	36.4	26	59.1
	6	13.6	11	25.0	27	61.4
15. You work by standing or sitting more than 2 hrs. everyday.	10	22.7	22	50.0	12	27.3
	12	27.3	21	47.7	11	25.0
16. you try to record weight gain every time you come to prenatal clinic.	2	4.5	4	9.1	38	86.4
	1	2.3	4	9.1	39	88.6
17. You quit smoking or avoid staying near smokers.	2	4.5	6	13.6	36	81.8
	6	13.6	8	18.2	30	68.2
18. You drink whisky, herb soaked whisky or alcoholic every day.	5	11.4	0	0.0	39	88.6
	7	15.9	2	4.5	35	79.5
19. When you get fever or feeling unwell you will consult doctor.	6	13.6	7	15.9	31	70.5
	3	6.8	9	20.5	32	72.7
20. You sleep at least 8 hrs. / night.	0	0.0	9	20.5	35	79.5
	1	2.3	10	22.7	33	75.0
21. You rest or sleep during daytime at least a half to an hour daily.	1	2.3	19	43.2	24	54.5
	1	2.3	21	47.7	22	50.0
22. You usually sleep in left-lying position every day.	0	0.0	25	56.8	19	43.2
	0	0.0	21	47.7	23	52.3
23. You lie lifting legs high for 1 hr. daily	21	47.7	23	52.3	0	0.0
	11	25.0	27	61.4	6	13.6
24. You lie in sims' position every night.	10	22.7	26	59.1	8	18.2
	9	20.5	28	63.6	7	15.9
25. You drink milk at least 2 glasses or packs daily.	1	2.3	16	36.4	27	61.4
	2	4.5	11	25.0	31	70.5

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