THE RELATIONSHIPS BETWEEN PERSONAL FACTORS, SELF-ESTEEM, SOCIAL SUPPORT AND STRESS DURING ANTEPARTUM HOSPITALIZATION IN HIGH-RISK PREGNANT WOMEN

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ABSTRACT

Stress during antepartum hospitalization in high-risk pregnant women is represented in the physiological adaptive mode. Its outcome depends on contextual stimuli. This descriptive research was guided by the Roy Adaptation Model and aimed to study stress during antepartum hospitalization in high-risk pregnant women, and investigate factors that might be potential contextual stimuli, i.e. personal factors (maternal age, family income, education, experience of perinatal or child loss and perception of disease severity), self-esteem and social support, including their predictability for stress during antepartum hospitalization in high-risk pregnant women. Purposive sampling was used to select 120 high-risk pregnant women who were admitted to the High-risk Ward at Ramathibodi Hospital, Bangkok, Thailand from June to August 2000. Self-reported questionnaires were used to collect data, namely the Demographic Data Form, Rosenberg's Self-esteem Scale (Supannee Soomlek, B.E.2538), Social Support Questionnaire (Pannee Chunpradub, B.E.2538), Antepartum Hospital Stressors Inventory (Duanghathai Songtrirat, B.E.2540). All data were analysed using SPSS/FW version 10.0.

The results revealed that the subjects had rather high scores for self-esteem (M = 31.39, S.D. = 5.57), a rather high score of social support (M = 87.97, S.D. = 13.82), and a moderate score for stress (M = 53.97, S.D. = 27.97). Perception of disease severity, social support and maternal age were three factors that correlated with stress during antepartum hospitalization in high-risk pregnant women ($r = .328, -.319, -.246$, $p < .01$, respectively). Such factors could explain 25.7% of variance in stress in high-risk pregnant women during antepartum hospitalization ($p < .001$).

According to the results, the researcher suggests that nursing intervention to decrease stress should focus on investigating the perception of disease severity, social support and maternal age of hospitalized high-risk pregnant women.

KEY WORDS: SELF-ESTEEM / SOCIAL SUPPORT / STRESS DURING ANTEPARTUM HOSPITALIZATION / HIGH-RISK PREGNANT WOMEN

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ความสัมพันธ์ระหว่างปัจจัยด้านบุคคล ความรู้สึกมีคุณค่าในตนเอง การสนับสนุนทางสังคม และความเครียดในสตรีตั้งครรภ์ที่มีภาวะเสี่ยงสูงซึ่งเข้าพักรับการรักษาในโรงพยาบาลก่อนกำหนดคลอด

(THE RELATIONSHIPS BETWEEN PERSONAL FACTORS, SELF-ESTEEM, SOCIAL SUPPORT AND STRESS DURING ANTEPARTUM HOSPITALIZATION IN HIGH-RISK PREGNANT WOMEN)

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บทคัดย่อ

ความเครียดในสตรีตั้งครรภ์ที่มีภาวะเสี่ยงสูงขณะเข้าพักรับการรักษาในโรงพยาบาลก่อนกำหนดคลอดนั้นเป็นปัญหาการปรับตัวด้านร่างกาย ซึ่งสตรีตั้งครรภ์ต้องเผชิญกับสิ่งเร้าร่วมที่มากระทบระบบบุคคล การวิจัยเชิงบรรยายโดยใช้ทฤษฎีการปรับตัวของรอยนี้มีวัตถุประสงค์เพื่อศึกษาความสัมพันธ์ระหว่างความเครียดในสตรีตั้งครรภ์ที่มีภาวะเสี่ยงสูงซึ่งเข้าพักรับการรักษาในโรงพยาบาลก่อนกำหนดคลอด และปัจจัยบางประการที่อาจเป็นสิ่งเร้าร่วมที่สำคัญ ได้แก่ ปัจจัยด้านบุคคล (อายุ, รายได้, การศึกษา, ประสบการณ์การสูญเสียบุตร และการรับรู้ความรุนแรงของโรค) ความรู้สึกมีคุณค่าในตนเองและการสนับสนุนทางสังคม รวมทั้งความสามารถในการทำนายของปัจจัยดังกล่าวต่อความเครียดในสตรีตั้งครรภ์ กลุ่มตัวอย่างเป็นสตรีตั้งครรภ์ที่มีภาวะเสี่ยงสูงมีอายุครรภ์ 12–38 สัปดาห์ ซึ่งเข้าพักรับการรักษาในโรงพยาบาลก่อนกำหนดคลอด ที่หอผู้ป่วยสูติกรรม 3 โรงพยาบาลรามาธิบดี กรุงเทพมหานคร ประเทศไทย ระหว่างเดือนมิถุนายน ถึงเดือนสิงหาคม พ.ศ. 2543 จำนวน 120 คน เลือกกลุ่มตัวอย่างตามคุณสมบัติที่กำหนด เก็บข้อมูลโดยแบบสอบถาม วิเคราะห์ข้อมูลด้วยโปรแกรมสำเร็จรูป SPSS / FW version 10.0

ผลการวิจัยพบว่าสตรีตั้งครรภ์ที่มีภาวะเสี่ยงสูงซึ่งเข้าพักรับการรักษาในโรงพยาบาลก่อนกำหนดคลอดนั้นมีคะแนนรวมของความรู้สึกมีคุณค่าในตนเองในระดับค่อนข้างสูง (M = 31.39, S.D. = 5.57) การสนับสนุนทางสังคมในระดับค่อนข้างมาก (M = 87.97, S.D. = 13.82) และ ความเครียดในระดับปานกลาง (M = 53.97, S.D. = 27.97) ความเครียดของสตรีตั้งครรภ์ที่มีภาวะเสี่ยงสูงมีความสัมพันธ์กับการรับรู้ความรุนแรงของโรค ($r = .328$, $p < .01$) การสนับสนุนทางสังคม ($r = -.319$, $p < .01$) และอายุ ($r = -.246$, $p < .01$) อย่างมีนัยสำคัญทางสถิติ โดยทั้งสามปัจจัยสามารถร่วมกันทำนายความเครียดได้ร้อยละ 25.7

จากผลการศึกษาครั้งนี้ ผู้วิจัยขอเสนอแนะว่าในการพยาบาลเพื่อลดความเครียดของสตรีตั้งครรภ์ที่มีภาวะเสี่ยงสูงซึ่งต้องเข้าพักรับการรักษาในโรงพยาบาลก่อนกำหนดคลอดนั้น พยาบาลควรประเมินการรับรู้ความรุนแรงของโรค การสนับสนุนทางสังคม และอายุของสตรีตั้งครรภ์เหล่านี้ รวมทั้งจัดนโยบายเวลาเข้าเยี่ยมให้สอดคล้องกับสถานการณ์ปัจจุบันเพื่อส่งเสริมการสนับสนุนทางสังคม

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CONTENTS

CONTENTS (cont.)

LIST OF TABLES

LIST OF FIGURES

CHAPTER I
INTRODUCTION

Background and Rationale

Pregnancy is a time of physical and psychological change when specific maternal tasks are completed (Rubin, 1975: 143). A woman needs to feel loved and secure throughout the pregnancy, and positive feedback and support by a significant other reinforces these feelings (Richardson, 1983; Yoshioka, 1971 cited by Loos & Julius, 1989: 52). Any series of events or conditions that is perceived by the mother as threatening, depleting, or potentially harmful to either the child or herself (or both), may seriously compromise the mother's capacity to make the several adaptive steps that characterize the model pregnancy (Cohen, 1979: 15). Pregnancy is a challenging process under optimum conditions but may become stressful when the pregnancy is labeled "high-risk" (Kemp & Page, 1987: 195). A high-risk pregnancy is one in which the woman has a problem or condition, either physiological, social, or emotional, that threatens maternal or fetal health and produces an increased chance of morbidity or mortality (Heaman, 1998: 626). These high-risk women are not prepared for development of a complication and often react with feelings of anger, disbelief, fear, and anxiety (Carty *et al*., 1992 cited by Heaman, 1998: 626). Feelings of blame, guilt, or failure can disrupt family equilibrium, and make the pregnancy even more difficult (Jones, In Johnson, 1986: 117). In addition, the clinical diagnosis of high-risk status may result in variable degrees of stress to the pregnant woman, depending on the nature of the risk and her perception of the threat to the pregnancy (Kemp & Page, 1986: 234).

Increasing numbers of antepartum women are being hospitalized for assessment and therapy as advances in at-risk antenatal care continue. These women are subject to the dual stresses of pregnancy and hospitalization (Budd, 1977; Merkatz, 1976; Rosen, 1975 cited by White & Ritchie, 1984: 47). Antepartum hospitalization for the physiological stabilization of the pregnancy has been found to result in stress for the pregnant woman due to separation from home, partner and

family to stay with different roommates, changes in environment, lack of privacy to do activities, maybe bed rest or absolute bed rest, changes in family circumstances, health concerns, difficult to communication with health professionals, changing self-image, concern over health care bills, fear of loss of job, include changes in emotion (White & Ritchie, 1984: 47–50; Kemp & Page, 1986: 233; Sherwen, Scoloveno, & Weingarten, 1991: 972–973).

High levels of stress in the high-risk pregnant women can result in the development of abnormal fetal organs (Penpilia, 1983 cited by Aumporn Otrakul, *et al*., B.E.2533: 30). Ascher (1978 cited by White & Ritchie, 1984: 54) found the higher incidences of fetal asphyxia, congenital anomalies, stillbirths, and neonatal deaths reported among infants of women who experienced high levels of stress during pregnancy. While pregnant women are in labour, the stress has a strengtening effect on the progression of labour because suffering during in labour is focused on emotion and thinking, more than physical constitution. Stress during labour occures prolonged labour, the sympathetic nerve responds severity to the high level of stress and this response can interupt uterine contraction and decrease blood flow, resulting in less oxygen for the fetus (Siriporn Chutpothong, B.E.2536: 131–132). Delayed attachment to the baby may occur because the woman who has a high-risk pregnancy often stops planning for the baby and the mother may withdraw emotionally to protect herself from pain and loss if the outcome is poor (Eleanor, 1995: 117).

Stress in the high-risk pregnant women during antepartum hospitalization can be very stressful for pregnant women and their families. The nurse needs to organize assessment and intervention techniques to provide complete care to the high-risk pregnancies and to their families. According to Pannee Chunpradub (B.E.2538) found that high-risk pregnant women who had high self-esteem, received greater social support, and with a high family income, could cope with stress effectively. In addition, Piyanate Kanchanacharoen (B.E.2541) reported that maternal age was significantly negatively correlated with stress of high-risk women during hospitalization. Three evidences supported that the subjects responded to the Antepartum Hospital Stressors (ASHI) with some stress and very little stress (White & Ritchie, 1984: 51; Duanghathai Songtrirat, B.E.2540: 60; Piyanate Kanchanacharoen, B.E.2541: 59). From the review of the literature it was found that there were few studies of stress in

hospitalized antepartum women. Limited nursing knowledge can hamper nursing interventions that might promote adaptation, reducing the effects of psychological stress. Although the relationship between selected characteristics and AHSI scores were analyzed, there was not sufficient evidence to suggest a group of specific characteristics that tended to be associated with increased levels of stress experienced by a pregnant woman in hospital (White, 1981 cited by White & Ritchie, 1984: 51). Only three Thai studies were found about hospitalized antepartum women. Piyanate Kanchanacharoen (B.E.2541) studied the relationships between personal factors (age, education, income, ordinal position of pregnancy, gestational age, planned pregnancy, experience of illness) and stress in hospitalized antepartum women. Duanghathai Songtrirat (B.E.2540) studied self-concept, anxiety and prenatal attachment of high-risk women during antepartum hospitalization. Pannee Chunpradub (B.E.2538) studied the relationships between self-esteem, social support and coping behavior in high-risk pregnant women. There have been no studies of the relationship between self-esteem, social support and stress in this group. Thus, the researcher focused on further investigation of the relationships between personal factors, self-esteem, social support and stress in high-risk pregnant women during antepartum hospitalization.

Conceptual Framework

The Roy Adaptation Model (Roy & Andrews, 1999) was used to guide this study. According to Roy's Adaptation Theory, a person is conceptualized as an adaptive system that is able to adapt oneself to a changing environment and constantly does. The adaptational system consists of inputs, control processes, outputs, and feedback.

Inputs are identified as stimuli and adaptation levels. The stimuli are classified into three classes, namely focal, contextual, and residual stimuli, which may device externally from the environment or internally from the self. The focal stimulus is the stimulus that attracts one's attention or that most immediately confronts the person. The contextual stimuli are all other stimuli existing in a situation that contribute to the effect of the focal stimulus. The residual stimuli are the stimuli that may affect behavior but whose effects are not validated or are unclear. Since the environment is changing constantly and the significance of any one stimulus is changing, these certain

stimuli may change rapidly (Roy & Andrews, 1999: 38–40). The pooled effect of these stimuli determines the person's adaptation level – a changing point that represents one's ability to positively respond in a situtation – which is classified into 3 levels: integrated, compensatory, and compromised life processes. Based on this level, the person deals with environmental changes through coping mechanisms (Roy & Andrews, 1999 : 36–37).

The coping mechanisms, called control processes, are defined as innate or acquired ways of interacting with (responding to, and influencing) the changing environment in order to maintain the human system's balance, including physiologic, psychic and spiritual, social, and relational integrity. These innate and acquired coping mechanisms are categorized into 2 major subsystems, namely regulator and cognator subsystems. The former responds automatically through neural, chemical, and endocrine coping processes, whereas the latter responds through perceptual/information processing learning, judgment, and emotion (Roy & Andrews, 1999: 46–47). After processing the input stimuli and one's adaptation level through the regulator and cognator mechanisms in 4 adaptive modes (physiologic, self-concept, role function, and interdependence), the person makes responses to the environmental changes (Roy & Andrews, 1999: 48–51, 99–144).

Outputs of the system are responses or the person's behaviors that can be observed, measured, or self-reported. The responses may be either adaptive, which promote the integrity of the human adaptive system in terms of the goals of survival, growth, reproduction, mastery, and personal and environmental transformation, or ineffective, which disrupt or do not contribute to this integrity (Roy & Andrews, 1999: 67). Both adaptive and ineffective responses act as feedback or further input to the system, allowing people to decide whether to increase or decrease efforts to cope with the stimuli (Roy & Andrews, 1999: 37).

Regarding the Roy Adaptation Model, the high-risk pregnancy and the hospitalization are the focal stimulus, which are the internal and external stimuli, respectively. In addition, personal factors, i.e. age, family income, education, experience of perinatal or child loss and perception of disease severity, including self-esteem and social support existing in the situation, are the contextual stimuli. These stimuli, together activate coping processes, then produce responses or adaptations in a

relation to four adaptive modes to keep system balance. Thus, stress is represented in physiologic adaptive involving endocrine function. Endocrine activity plays a significant role in the stress response and is also part of regulator coping (Howard & Valentine, 1984; Roy & Andrews, 1991 cited by Roy & Andrews, 1999: 103). Stress was defined by Roy and McLeod (1981 cited by Roy & Andrews, 1999: 367) as the transaction between the environmental demands requiring adaptation and the individual's cognator and regulator coping process. The stress response is the process that results from any physical or psychological stimulus disturbing the adaptive state (Andrews & Roy, 1986 cited by Roy & Andrews, 1999: 367). The conceptual framework and the relationships between the studied variables are clearly illustrated in Figure 1 and Figure 2.

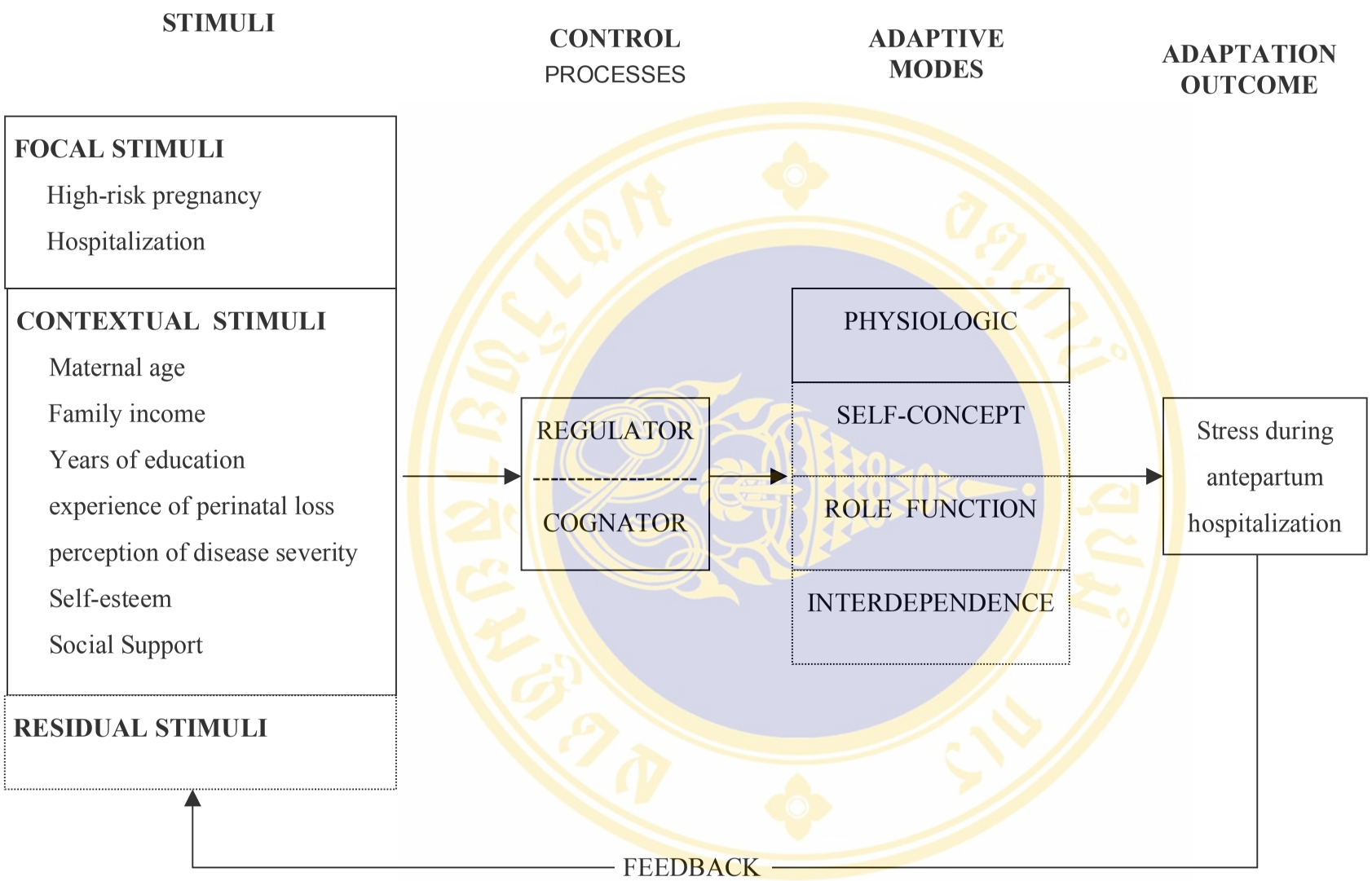

Figure 1: Conceptual Framework

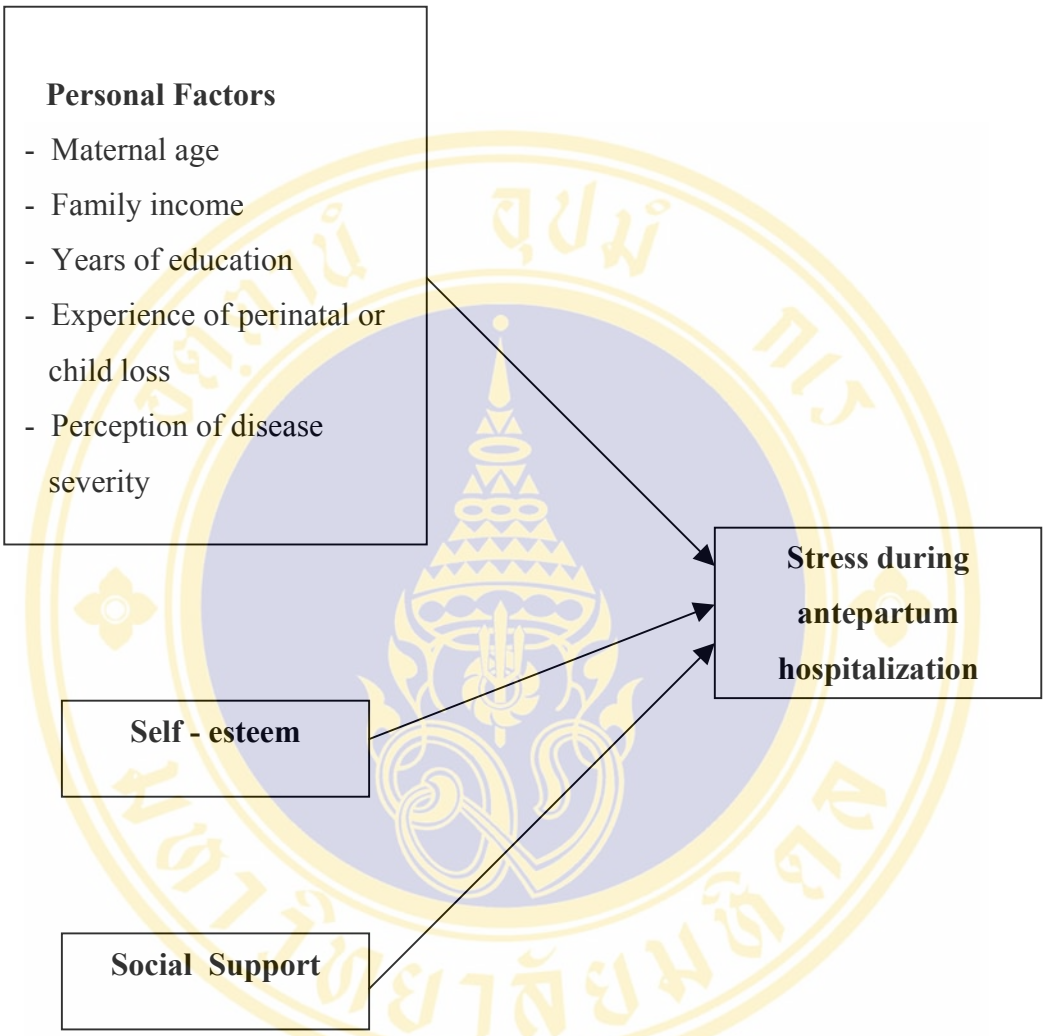

Figure 2: Relationships between the studied variables

Research Questions

1. What are the features of the personal factors (maternal age, family income, years of education, experience of perinatal or child loss, perception of disease severity), self-esteem, social support and stress during antepartum hospitalization in high-risk pregnant women?

2. How is stress during antepartum hospitalization in high-risk pregnant women correlated with personal factors, self-esteem and social support?

3. Can stress during antepartum hospitalization in high-risk pregnant women be predicted from personal factors, self-esteem and social support?

Objectives of the Study

1. To describe the characteristics of personal factors (maternal age, family income, years of education, experience of perinatal or child loss, perception of disease severity), self-esteem, social support and stress during antepartum hospitalization in high-risk pregnant women.

2. To investigate the correlation of personal factors, self-esteem and social support with stress during antepartum hospitalization in high-risk pregnant women.

3. To investigate the predictability of personal factors, self-esteem and social support on stress during antepartum hospitalization in high-risk pregnant women.

Hypotheses of the Study

1. Personal factors, self-esteem and social support are correlated with stress during antepartum hospitalization in high-risk pregnant women.

2. Stress during antepartum hospitalization in high-risk pregnant women can be predicted from personal factors, self-esteem and social support.

Scope of the Study

The aim of this study was to investigate the relationships between personal factors, self-esteem, social support with stress during antepartum hospitalization in high-risk pregnant women. The sample consisted of 120 high-risk pregnant women who were hospitalized during June to August 2000, in the High-risk Ward of

Ramathibodi Hospital. All of the subjects responded to the questionnaire and interview only once.

Benefit of the study

The research findings may be useful as guidelines for nursing practice, nursing administration, nursing education and nursing research with the aim of promoting maternal adaptation to decrease stress during antepartum hospitalization in high-risk pregnant women.

Definition of Terms

Personal factors refer to maternal age, family income, years of education, experience of perinatal or child loss and perception of disease severity.

Maternal age refers to full years of chronological age of the subject counting from the date of birth to the date of data collection, excluding the number of months amounting to less than one year.

Family income refers to an average monthly income, of the subject and her spouse, at the time of data collection.

Years of education refer to the period of school-time, in years, that the subject took in order to achieve her highest educational qualification.

Experience of perinatal or child loss refers to previous perinatal or child loss by high-risk pregnant women, ever or never, such as abortion, stillbirth, neonatal death or death of a child at any age.

Perception of disease severity refers to perception by the subject about her disease severity. This variable was measured by a visual analogue scale. High scores indicated high severity, and low scores indicated less severity.

Self-esteem refers to the perception of self-value of high-risk pregnant women, either satisfactory or unsatisfactory, towards herself. This is assessed by the Rosenberg's Self-Esteem Scale in which high scores indicated high self-esteem and low scores indicated low self-esteem.

Social support refers to the perception of receiving emotional, instrumental, informational, and appraisal support by the high-risk pregnant women from their network during antepartum hospilization. This was assessed by the Social Support

Questionnaire of Pannee Chunpradub (B.E.2538) which is based on House's (1981) concept of social support. High scores indicated more social support and low scores indicated less social support.

Stress during antepartum hospitalization refers to the perception of a threatening event during antepartum hospitalization by the high-risk pregnant women. This was assessed by the Antepartum Hospital Stressors Inventory or AHSI (White, 1981 cited by White & Ritchie, 1984: 47–56) which was translated into Thai and modified in a group of high-risk women during antepartum hospitalization by Duanghathai Songtrairat (B.E.2540). High scores indicated a high level of stress, while low scores indicated a low level of stress.

CHAPTER II
LITERATURE REVIEW

The aim of this study was to identify the relationships between personal factors, self-esteem, social support and stress during antepartum hospitalization in high-risk pregnant women. Several items from the literatures, articles, and three topics related to the study were reviewed, as follows: (1) stress during antepartum hospitalization in high-risk pregnant women; (2) factors related to stress (regarding the Roy Adaptation Model; focal stimulus and contextual stimulus); (3) relationships between studied variables and stress during antepartum hospitalization in high-risk pregnant women, and the predictability of stress by these variables.

Stress during antepartum hospitalization in high-risk pregnant women

Pregnancy is a period of happiness but this brings both psychological and physiological changes to the woman and her partner. This means that pregnancy tends to increase stresses for them, as a maturational crisis, because it is a time of significant change and growth. According to DeVore (In Buckley & Kulb, Eds., 1993: 16), the many stresses of the perinatal period can be classified in this manner. A few of these normal concerns are as follows:

1. Physical stresses
    a. Hormonal changes
    b. Fatigue, exhaustion, sleep deprivation
    c. Pain
2. Psychological stresses
    a. Fear of pain, disability, disfigurement, death
    b. Fear of labor and delivery
    c. Ambivalence about pregnancy and life changes
3. Socioeconomic stresses
    a. Financial concerns

b. Social isolation

c. Alterations in family responsibilities and relationships

In an uncomplicated pregnancy, the list of potential stress factors is endless but the effect is cumulative when a pregnancy is designated “high-risk”, the stresses can further multiply and intensify. In a high-risk population, fear of labor and delivery, fear of a damaged baby, or fear of death is much intensified, beyond such anxieties in a normal group. Stress in a high-risk pregnancy does not only occur from physical stresses, but also from psychological and socioeconomic stresses.

The physical stresses of a high-risk pregnancy may also include obstetrical or medical problems and medicinal effects (DeVore, In Buckley & Kulb, Eds., 1993: 16 ; Cropley, 1983: 14). Moreover, hospitalization for complications during pregnancy has become an accepted strategy in some countries for preserving fetal and maternal well-being (Loos & Julius, 1989: 52). Physical effects increase while the problems are more serious since being hospitalized. Today, nearly every obstetric textbook recommends the use of bed rest for the woman at risk of preterm delivery. Since all complications of pregnancy have the potential to increase the risk of preterm delivery, bed rest has become routine in high-risk pregnancies. Several studies have reported the physical effects of activity restriction in pregnancy, which affect all body systems, such as increasing the risk of thromboembolic disease, skeletal muscle atrophy, bone demineralization, weight loss, calcium depletion, muscle dysfunction, increased heart rate and blood coagulation, heartburn and reflux, constipation, decreased cardiac output and stroke volume, glucose intolerance, and insulin resistance in skeletal muscle (Maloni, 1993: 197–198 ; Gupton, Heaman & Ashcroft, 1997: 424 ; Schroder, 1998: 46–47).

Psychological stresses of high-risk pregnancy, fear of labor and delivery, fear of a damaged baby, or fear of death are much intensified, beyond those in a normal group. In addition, a major psychological stress during this period is the impaired self-image frequently found in women with high-risk pregnancies. The inability to conceive, carry and deliver a normal infant successfully may result in a feeling of inadequacy as a woman. Moreover, enforced dependency, requiring bed rest, may conflict with a woman’s need to be self-sufficient. Anxiety and resentment may then emerge (DeVore, In Buckley & Kulb, Eds., 1993: 16–17). In addition, the emotional

effects of bed rest and immobilization include sleep disturbances, neurologic changes, increased emotional lability, fatigue, decrements in motivation and cognitive performance, feeling like a prisoner, lack of control, sensory disturbances, depression, anxiety, hostility, inability to concentrate, and fatigue (Maloni, 1993: 198 ; Gupton, Heaman & Ashcroft, 1997: 424–425 ; Schroder, 1998: 47). Other feelings include loneliness, boredom, a sense of powerlessness (Loos & Julius, 1989: 54), fear, guilt, signs of grieving and lowered self-esteem (Pilitteri, 1981: 519–522).

The socioeconomic stresses of a high-risk pregnancy include financial concerns, social isolation, and alterations in family responsibilities and relationships. Financial concerns may include both loss of income (the high-risk problem may preclude a woman's continuing usual work, her salary may not be paid if she cannot work for an extended period) and additional costs for the mother, the baby, and the family (DeVore, In Buckley & Kulb, Eds., 1993: 17; Eleaner, 1995: 117, Schroeder, 1998: 47). Social isolation becomes a stress when the high-risk problem dictates a retreat from usual activity and cloistering in the home or hospital. Boredom, as well as loss of the ongoing support of family, friends and community, may lead to increased anxiety (DeVore, In Buckley & Kulb, Eds., 1993: 17). Finally, a high-risk pregnancy may cause severe strain on the family unit. As the mother is confined to bed or moved to the hospital, her usual roles in the family, in addition to their own obligations and the family relationship with the partners' children, which were manifested by altered (DeVore, In Buckley & Kulb, Eds., 1993: 17 ; Eleaner, 1995: 117, Gupton , Heaman & Ashcroft, 1997: 427).

In summary, if pregnant women are labeled as being at risk for poor outcome and antepartum hospitalization, bed rest or activity restriction has become routine in high-risk pregnancy, but the result is increased stress. The woman with a complicated pregnancy has stressors beyond those of the normal pregnancy, including stressors associated with antepartum hospitalization and activity restriction.

Level of stress (Frain & Valiga, In Sutterley & Donnelly, Eds., 1981: 61–68)

The psychophysiological stress phenomenon can be examined in detail using a "level" framework. In this model, an individual reacts to stressors in a variety of degrees, from extremely mild to extremely severe.

Level I

In day-to day life, most people encounter events and situation that are considered non-threatening because they are part of the usual routine. In routine day-to-day situations, the individual relies on self-regulating and maintaining devices as well as problem solving to accept and adapt to stress.

Level II

This is a mild state of stress, caused by new or less-routine events that each individual experiences. These events can be perceived as threatening. In such instances, the alarm-resistance cycle is more obvious to the individual but not prolonged.

Level III

A moderate degree of stress which occurs when an individual encounters a persistently stressful event which previous adaptations have not resolved, and which is perceived by the individual as potentially threatening. The individual's perception of danger precipitates emergency behaviors wherein there is a conscious or unconscious redistribution of resources within the human system in an effort to sustain stability

Level IV

A severe degree of stress, resulting in the exhaustion stage, during which events and situations are perceived as very dangerous. If individuals have made efforts to stabilize themselves and have not been successful, their reserves usually become exhausted or the efforts used have been inadequate. "Burnout" is the word commonly used to describe this stage.

Types of assistance required (Frain & Valiga, In Sutterley & Donnelly, Eds., 1981: 61–68)

Level I

Generally, individuals experiencing the routine stresses of day-to-day living require no assistance from sources outside themselves. They have adapted successfully, being able to anticipate potential crisis situations and use their own strengths to respond effectively.

Level II

Those individuals experiencing the mild degree of stress that accompanies a new event may require some assistance. In most cases these persons have resources to deal with the stressful situation effectively, but they may require assistance in delineating a specific sequence of interventions through which previous stress adaptation has occurred in others.

Level III

When individuals experience a moderate degree of stress and potential inability to function, assistance from a professional helper is usually required. The assistance required may take one or several of the following forms:

- helping persons identify the stressors and the strengths they have for dealing with them;
- supporting, guiding, observing and monitoring;
- teaching;
- doing for;
- providing an environment that facilitates coping, growth and continued development.

By using multiple system resources and the support and/or observation of significant others or a health professional, the individual is able to cope.

Level IV

Individuals experiencing the most severe degree of stress require the assistance of competent professionals over a prolonged period of time. This assistance may take any of the forms previously mentioned and often requires relatively constant intervention, using a broad range of modalities.

In White and Ritchie's (1984: 49–50) study, stressors identified among hospitalized antepartum women were classified into 7 major categories. Definitions of the stressor categories and examples of the potential stressors assigned to each follow:

1. Separation: the change in a woman's relationships and activities outside of hospital that occur while she is hospitalized. The seven potential stressors assigned to this category were: being away from my home; being away from my partner; being

away from my family; being away from my work; being away from my usual activities; being isolated from my friends; sleeping alone.

2. Environment: the experiences resulting from being in a hospital milieu due to an at-risk pregnancy. There were nine potential stressors in this category: being bored from lack of activities; having hospital-prepared meals; lacking privacy; hearing heart beats on monitors; hearing hospital noises; hearing the staff being noisy; sleeping in a strange bed; sharing a room with another patient; depending on staff to keep my room clean.

3. Health status: the circumstances, experiences and concerns from increased medical intervention in a hospital setting during pregnancy. The nine potential stressors listed in this category were; wondering how long I'll be in the hospital; thinking about other patients' health; thinking about my health; thinking about my baby's health; taking medications; having tests done; thinking about the results of tests; having nurses check my baby's heart rate; needing a special diet.

4. Communications with health professionals: the experiences in relating with health professionals involved in the care of a pregnant woman in hospital. The six potential stressors listed in this category were: noticing staff are hurrying with my care; trying to understand medical terms; understanding explanations for tests; telling unfamiliar staff about myself; being given too much information about my condition; being given too little information about my condition.

5. Self-image: the changes in perceptions and evaluations of self which occur when a pregnant woman is hospitalized. There were eight potential stressors assigned to this category, as follows: being dependent on others; thinking about being a mother; being dressed for bed all the time; being asked about myself by other patients and their visitors; wanting to be home to get ready for the baby; thinking about giving birth; being less active than usual; missing prenatal classes.

6. Emotions: those feelings experienced by a pregnant woman in hospital which may be disturbing to her. The five potential stressors listed in this category were: feeling lonely; feeling depressed; feeling worried; feeling scared; feeling angry.

7. Family status: the family circumstances resulting from a hospitalized pregnant woman's absence from her home. The three potential stressors listed in this

category were: thinking about extra expenses while I'm in the hospital; thinking about my partner doing my work; thinking about the care of my children at home.

In conclusion, stress in high-risk pregnancy results from both internal and external factors. This study investigated factors associated with stress as internal stimuli (age, education, experience of perinatal or child loss, perception of disease severity, and self-esteem), and external stimuli (family income, and social support). According to Roy's Adaptation Model, these are defined as contextual stimuli, involved in this study and will be subsequent mentioned, and residual stimuli, which are not involved.

Factors related to stress

High-risk pregnancy and antepartum hospitalization are factors associated with stress in pregnant women, or, according to Roy's Adaptation Model, as focal stimuli, which are the internal or external stimuli most immediately confronting the human system. In addition, personal factors (age, family income, education, experience of perinatal or child loss and perception of disease severity), including self-esteem and social support that existing in the situation are contextual stimuli.

Focal stimuli

High-risk pregnancy and antepartum hospitalization

Several educators have defined high-risk pregnancy as follows:

Kemp and Page (1986: 232) defined high-risk as a label applied to a pregnancy in which physiological and/or psychological factors exist in the mother or neonate that imply a threat to the health of the mother-infant unit. Sherwen, Scoloveno, and Weingarten (1991: 965) defined high-risk clients as those whose physical, emotional, or social situations present some threat to their health, well-being, or development. Heaman (1998: 626) suggested that a high-risk pregnancy is one in which the woman has a problem or condition, either physiological, social, or emotional, that threatens maternal or fetal health and produces an increased chance of morbidity or mortality.

To summarize, a high-risk pregnancy is a pregnancy in which complications due to physiological, psychological, and socioeconomic factors increase the chance of morbidity or mortality in either the pregnant woman or the fetus.

The occurrence of high-risk pregnancy varies with location, depending on demographic, socioeconomic characteristics and especially consideration of the risk-approach to use. Risk approaches for maternal and child health care, which are well known and popular follow: (WHO, 1978 cited by Winit Phuapradit, B.E.2537: 2)

1) Biological
   - Age <15 yrs. or >35 yrs.
   - Birth order > 4
   - Height < 144 cms.
   - Weight at delivery < 44 kgs.
   - or Weight gain < 7 kgs.
2) Sociological
   - Low education
3) Complication and health status
   - History of abnormal pregnancy or labour such as postpartal hemorrhage, cesarean section, preterm labour, difficult labour, death fetus in utero or perinatal death.
   - History of hypertension, diabetes mellitus, heart disease, chronic renal failure, or anemia (before or during pregnancy).
   - History of obstetric complications, such as pre-eclampsia, antepartal hemorrhage, twins or breech presentation.

Murphy and Robbins (In Knuppel, R., & Drukker, J., 1993: 247) described two major types of high-risk pregnant women:

1) Those who have chronic conditions that predispose them to problems in pregnancy, and
2) Those who become pregnant and only subsequently develop conditions that demand special care, which may include hospitalization

Contextual stimuli

Maternal age

Andrews and Roy (Andrews & Roy, 1991: 274, Roy & Andrews, 1999: 390) stated that age affects self-concept as abilities change and control of bodily function changes. Based primarily on the development stages and tasks identified by Erikson (1963 cited by Roy & Andrews, 1999: 75), it is known that factors such as age, gender, and heredity influence individual behavior, especially relating to the role function mode. So various ages affect the individual's cognator and regulator coping processes

Family income

Family income affects stress and coping because sufficient income can sustain and support life's basic needs (Palmore & Luikart, 1973: 75).

Sato (1984) discussed culture, family, and developmental stage as primary considerations for stimuli affecting human adaptation. Culture is described as involving socioeconomic status, ethnicity, and belief systems. Socioeconomic status provides an indication of style of living and the material resources upon which the human adaptive system has to draw. Different stimuli are evident in situations of different socioeconomic status (Sato, 1984 cited by Roy & Andrews, 1999: 75). If a family is considered to be in the upper quartile with respect to income level, it may believe that it is able to bear the additional financial burden (Roy & Andrews, 1999: 116). Financial concerns of hospitalized pregnant women may include both loss of income and additional costs for the mother, the baby, and the family.

Years of education

Education helps to develop thinking, knowledge, and human abilities (Supattra Suparb, B.E.2515: 128), so educational level has proved to be a salient variable affecting coping (Jalowiec & Powers, 1981: 10). Inherent in the stimulus of coping processes are the knowledge, perceptions, and skills to assist in coping with environmental stimuli, or the cognator subsystem cannot perform effectively. Thus, lack of knowledge is a stimulus affecting adaptation level (Roy & Andrews, 1999: 76).

Experience of perinatal or child loss

In this study, experience of perinatal or child loss is previous loss due to miscarriage, fetal demise, neonatal death or child death. Roy's Adaptation Model (Roy & Andrews, 1999: 413) described the focal stimulus for anxious behaviors as the perceived threat. Common stimuli include experiences of loss, actual or anticipated. A high-risk pregnancy has its own list of psychological stresses. When the woman has had a poor reproductive history, such as spontaneous abortion, premature labor, congenital anomaly, stillbirth, or neonatal death, her anxiety may be quite high for fear of repeat poor outcomes. (DeVore, In Buckley & Kulb, Eds., 1993: 27). Similarly, anxiety and fear for the baby are the most common phenomena in a pregnancy that occurs subsequent to a perinatal loss (Middleton & Quirk, In Buckley & Kulb, Eds., 1993: 27)

Perception of disease severity

A perception of self results from the individual's interpretation of all the various interactions with others and the environment. According to Coombs and Snygg (1959 cited by Roy & Andrews, 1999: 393) a core or inner cell of self-concept is formed of perceptions about self, which are the most vital fundamental aspects of the individual. Anxiety is the result of anything that threatens a person's sense of self-consistency. In addition, the focal stimulus for anxious behaviors is the perceived threat. Common stimuli include disease (Roy & Andrews, 1999: 412–413) in which anxiety is the most prominent symptom involved in stress reactions and psychosomatic disorders (Lachman, 1983: 37). Women with complicated pregnancies may appraise their pregnancy risk differently from their health care providers. In summary, if high-risk pregnant women perceive a high severity of disease, they might be subject to a high level of stress.

Self-esteem

Self-esteem is a psychosocial factor concerned with the quality of life or intervening influences on health promoting behaviors, including self-concept. Some of the concepts are demonstrated as follows:

Coppersmith (1981: 5) indicated that self-respect and self-value were one's attitude towards oneself that one was valuable, respectable and acceptable as being important and capable of achieving goals. Rosenberg (1989: 30) defined self-esteem as the perception of self-value, which is either satisfactory or unsatisfactory, towards oneself. Driever (1976 cited by Roy & Andrews, 1999: 399) defined self-esteem as that pervasive aspect of the personal self component that relates to the worth or value the person holds about the self.

Buck (1991 cited by Andrews & Roy, 1991: 318) described high self-esteem as indicated by active involvement in the world, a balance between participating and listening, eagerness to express one's opinions regardless of the possibility of disagreement, ability to listen to criticism without becoming overly defensive or hurt, having confidence that efforts will be successful, ability to handle anxiety effectively, success in work and social settings, expectations of being received well by others, and infrequent psychosomatic difficulties.

Driever (1976 cited by Roy & Andrews, 1999: 399) defined low self-esteem as a negative feeling of self-worth that handicaps a person's ability to adapt to the environment, including the following: withdrawal from others; decrease in spontaneous behavior; appearance of sadness, anxiety, or discouragement; feelings of isolation; inability to express or defend oneself; avoidance of situations of self-disclosure or notice; sensitivity to criticism; self-deprecation; denial of success or accomplishments; rumination about problems; and seeing the self as a burden to others.

Level of self-esteem

Self-esteem has two quite different connotations. One connotation of high self-esteem is that the person thinks he is "very good"; a very different connotation is that he thinks he is "good enough". It is thus possible for a person to consider himself superior to most others but to feel inadequate in some ways (Rosenberg, 1989: 30).

Rosenberg (1989: 325–327) proposed classifying levels of self-esteem into four categories, as follows:

High self-esteem is indicated by active involvement in the world, a balance between participating and listening, eagerness to express one's opinions regardless of

the possibility of disagreement, ability to listen to criticism without becoming overly defensive of hurt, having confidence that efforts will be successful, an ability to handle anxiety effectively, be successful in work and social settings, have expectations of being received well by others, and infrequent psychosomatic difficulties.

Moderate self-esteem is indicated by agreement and social respect, but not confidently.

Low self-esteem shows feelings of insecurity, self-doubt, lack in confidence and self-criticism.

Ego phobia, which is another problem, is indicated by a pattern of discouragement and depression, feelings of isolation and unworthiness, extreme difficulty in expressing or defending oneself, feelings of helplessness, lack of the ability to change, and fear of angering others.

Social support

The concept of social support has received considerable attention in the social and behavioral sciences. A central emerging theme is that an individual's "human climate" plays a significant role in the maintenance of health and in responses to life stressors (Brandt & Weinert, 1981: 277). Some of these concepts are follow:

Cobb (1976: 300) defined social support as information leading someone to believe that he/she is cared for and loved, esteemed, and a member of a mutually obliged network. Kahn (1979: 85) defined social support as an interpersonal transaction that includes the expression of positive affect by one person toward another. House (1981: 39) defined social support as an interpersonal transaction involving emotional concern, instrumental aid, environmental information and/or information relevant to self-evaluation. Shumaker and Brownell (1984: 11) described social support as an exchange of resources between at least two individuals. Tilden (1985: 199) defined social support as psychosocial, material helping, which one receives from one's social network. Furthermore, Pender (1987: 396) defined social support as concerning a person's general perception or belief that people in their social network would provide assistance in times of need, on the other hand, received or enacted support.

Social support has been defined in the literature as not only the assistance and protection given to others, especially to individuals, but also it is hypothesized to be reciprocal. Consistently with Roy and Andrews (1999: 476–477) social support is stated in terms of interdependent relationships involving the willingness and ability to give to and accept from other aspects of all that one has to offer: love, respect, value, nurturing, knowledge, skills, commitments, material possessions, time, and talents. Interdependent relationships, whether they be with significant others (such as the family) or with support systems (relations, friends, clubs, associations, work groups, or components of larger social service systems) can be viewed in terms of an interdependence model.

Types of Social Support

According to Cobb's definition (1976: 300–301), social support is divided into the following 3 classes:

1. Information that leads a person to believe that he/she is cared for and loved, which is often called emotional support.
2. Information that leads a person to believe that he/she is esteemed and valued, which may be called esteem support.
3. Information that leads a person to believe that he/she belongs to a network of communication and mutual obligation.

According to House (1981 cited by Brown, 1986a: 5) social support is classified into four broad classes of supportive behavior or acts, as follows:

1. Emotional support – esteem, affection, concern and listening;
2. Appraisal support – affirmation, feedback, and social comparison;
3. Informational support – advice, suggestions, directions and information; and,
4. Instrumental support – aid in kind, money, labor, time, and environmental modification.

Cronenwett (1985a: 95; 1985b: 348) also categorized social support into 4 types, in accordance with House's conceptualization (1981), with instrumental support relabeled "material support", and appraisal support relabeled "comparison support" in

an effort to increase the clarity of meaning of both terms for lay participants. These four types of support are:

1. Emotional support – love, caring, trust, and concern:

2. Comparison support – help in learning oneself by sharing ideas and feelings in the same situation or with similar experiences;

3. Informational support – information given to a person as he/she needs to know it, help in problem-solving by sharing information or finding out things for; and,

4. Material support – gifts of money, assistance with household chores, assistance with work, and so on.

Furthermore, findings from social support conceptual analysis suggested four of the most frequently used defining attributes of social support were emotional, instrumental, informational, and appraisal (Langford, et al., 1997: 95).

In summary, social support has been described in various ways. Stress-adaptation theory and human and animal studies suggest that social support buffers stress and reduces the risk of illness (Cassell, 1974a; Kaplan, Cassell, & Gore, 1977; Nuckholls, Cassell, & Kaplan, 1972 cited by Brandt & Weinert, 1981: 277).

According to this review of the social support literature, House's conceptualization (1981), which considers fours classes, reaches the basic needs of persons. Therefore, this research was guided by this concept to study social support in hospitalized high-risk pregnancies.

Relationships between personal factors, self-esteem and social support with stress during antepartum hospitalization in high-risk pregnant women, and the predictability of stress by these variables

Maternal age

According to Andrews and Roy (Andrews & Roy, 1991: 274; Roy & Andrews, 1999: 390) stated age affects self-concept as abilities change and control of bodily function change. So age affects the level of stress. A previous study revealed that maternal age had a statistically significant negative correlation with stress among 150

high-risk pregnancies during antepartum hospitalization ($r = -.23$, $p < .01$) (Piyanate Kanjanacharoen, B.E.2541: 63). In the low-risk group, anxiety was negatively correlated with age but showed no significant correlation in the high-risk group (Kemp & Hatmaker, 1989: 331). Other studies supported the proposition that age had a statistically significant negative correlation with stress in parents while babies hospitalized in an infant unit (Pornsiri Jaisom, B.E.2536: 78) and with hypertensive patients (Jalowiec & Powers, 1981: 12). However, there was insufficient evidence to suggest whether any group of specific characteristics tended to be associated with increased levels of stress experienced by a pregnant woman in hospital (White, 1981 cited by White & Ritchie, 1984: 51).

Family income

Financial concerns may include both loss of income (the high-risk problem may preclude the woman's continuing her usual work) and additional costs for the mother (special tests, increased hospitalization, medication), for the baby (prolonged hospitalization, often with the high cost of a special care nursery), and for the family (transportation to the hospital, assistance with housework, or care of the other children) (DeVore, In Buckley & Kulb, Eds., 1993: 17). Thus, economic problems may increase the stresses of a high-risk pregnancy. Income-sufficient families may experience less stress than income-insufficient families. Sakul Kongpan (B.E.2533: 32) found that family income had a statistically significant positive correlation with family problem-solving confidence. This was consistent with two further studies, by Pannee Chunpradub (B.E.2538: 77) and Jalowiec & Powers (1980: 12), which found that family income had a statistically significant positive correlation with coping behavior in high-risk pregnant women ($r = .293$, $p < .001$) and in hypertensive patients ($r = .55$, $p < .01$).

Years of education

Educational level proved to be a salient variable affecting coping (Jalowiec & Powers, 1981: 10). Education enhances cognitive development and selected strategies for coping with stress. Stantly, Soul and Copans (1979: 22) found that educational level had a statistically significant positive correlation with anxiety in pregnancy. This

was consistent with the study of Suparb Are-ue (B.E.2540: 60) which found that the number of years of education had a statistically significant positive correlation with stress in elderly women with knee osteoarthrosis. Likewise, the person's knowledge level was a factor that exerted an influence, both in situations of compromised process and in adaptive situations (Roy & Andrews, 1999: 365).

Experience of perinatal or child loss

Roy's Adaptation Model (Andrews & Roy, 1991: 319; Roy & Andrews, 1999: 413) described the focal stimulus for anxious behaviors as the perceived threat. Common stimuli include experiences of loss (actual or anticipated). Arsenault and Mahlangu's study (1999: 274) found pregnancy after perinatal loss was characterized by guarded emotions and anxiety about pregnancy. In a prospective quantitative study of pregnancy after loss, a group of parents in their eighth month of pregnancy with a history of perinatal loss was compared with a group of first-time parents in their eighth month of pregnancy and no history of perinatal loss using a pregnancy outcome questionnaire. This study concluded that the 21 couples who had experienced perinatal loss differed significantly; heightened anxiety in pregnancy after loss is specific to concerns about the pregnancy, not general anxiety (Theut, et al., 1988: 289–292). This was consistent with the study of Cote-Armstrong and Hutti (1998: 183), using the same questionnaire, in which 16 women in the latter half of their pregnancies, subsequent to late pregnancy losses, were compared with 15 primiparae of a similar gestational age. Statistically significant differences were found in pregnancy-specific anxiety. The mothers who had experienced perinatal loss were found to have higher anxiety and lower prenatal attachment than the mothers in the comparison group. Likewise, two further studies that found patients who had experienced a pregnancy loss had heightened anxiety, specifically about their pregnancy, during a subsequent pregnancy (Davis, et al., 1989 cited by Coti-Armstrong & Hutti, 1998: 184; Estok & Lehman, 1983 cited by Brost & Kenney, 1992: 460).

Perception of disease severity

Roy (Roy & Andrews, 1999: 259) defined perception as the interpretation of a sensory stimulus and the conscious appreciation of it. In addition, the focal stimulus

for anxious behaviors is the perceived threat. A common stimulus included disease (Roy & Andrews, 1999: 413). This was consistent with the study of Leung and colleague (1997: 107) who found that depression and low self image were associated with a greater perception of illness severity among adolescents.

Moreover, women with complicated pregnancies perceived their overall risk and risk for specific pregnancy outcomes as significantly higher than women with uncomplicated pregnancies. State anxiety and biomedical risk were positively correlated with perception of risk, but there was no relationship between stress, self-esteem, or social support and perception of risk (Gupton, Heaman, & Cheung, 2001: 192). This was consistent with the study of Heaman, Beaton, Gupton, and Sloan (1992 cited by Gupton, Heaman & Cheung, 2001: 194), in which 75 pregnant women at high risk were asked to rate the degree to which their pregnancy was at risk on a scale from 0 to 10. There was no relationship between self-rating of pregnancy risk and biomedical prenatal risk score. Self-rating of pregnancy risk was positively related to anxiety, whereas the biomedical risk score showed no significant relationship to anxiety. Furthermore, Kolker and Burke (1993 cited by Gupton, Heaman & Cheung, 2001: 194) found that decisions about prenatal diagnosis were socially constructed, and perceptions of risk were influenced by the woman's demographic characteristics and by the salience and severity of the prospect of pregnancy loss or abnormality. However, there was only one study about the relationship between perception of risk and stress in high-risk pregnancies, for which more information is needed.

Self-esteem

According to Roy's Adaptation Model (Roy & Andrews, 1999: 483), self-esteem is a basic contextual factor when interdependent circumstances in life change, and the level of self-esteem influences the person's ability to adapt in such situations. Motherhood, as a primary social expectation for many women, may positively or negatively affect a woman's self-esteem (Bardwick, 1971 cited by Kemp & Page, 1987: 196). Furthermore, the woman experiencing a high-risk pregnancy may lose her sense of self-worth if she believes that the outcome of the pregnancy may not be perfect (Jones, In Johnson, 1986: 120). Cox and Smith (1982: 313) compared the self-

esteem of women who had experienced vaginal deliveries with women who had experienced cesarean deliveries. Their results indicated that the women with cesarean birth experiences had a significantly lower level of self-esteem than women with vaginal deliveries. Kemp and Page (1987: 202) compared the self-esteem of women experiencing a high-risk pregnancy and women experiencing a normal pregnancy. Their results demonstrated that women experiencing a high-risk pregnancy had significantly lower self-esteem than women experiencing a normal pregnancy. Role expectations may be altered when the pregnancy is labeled as high-risk. If a woman feels herself incapable of performing the mothering role, the mother-infant relationship can be negatively affected (Curry, 1982: 77).

Similarly, the results of a longitudinal study of women experiencing high-risk pregnancy and birth showed that women with high self-esteem who experienced intimacy with spouse and friends were likely to feel well supported and coped well with this stress (Hobfoll, et al., 1986 cited by Mandeville & Troiono, Eds 1992: 43).

In addition, other studies in Thailand reported self-esteem had a statistically significant positive correlation and predicted coping behavior in high-risk pregnant women (Pannee Chunpradub, B.E.2538: 81–82). There was a significantly positive correlation with transition to motherhood and a significantly negative correlation with postpartum anxiety and depression ($r = -.23$, $r = -.036$, $p < .001$) (Pornthip Wongvisetsirikul, B.E.2540: 97).

From these findings, it maybe inferred that high-risk pregnant women who had high or moderate self-esteem, they might have low levels of stress. Because they would be believe in the outcome of pregnancy, and with the addition of high social support would have high self-esteem and potentially less stress.

Social support

Social support has been identified by numerous researchers as an important variable affecting the health of pregnant women (Kemp & Hatmaker, 1989: 332). For hospitalized high-risk pregnancies, social support has been found to buffer or mediate the effects of stressful life events on complications of pregnancies during hospitalization.

In addition, Caplan (1974 cited by Tilden, 1985: 200) noted that those persons who coped most adaptively with stress where those for whom the environment provided consistent feedback about behavior and performance, as well as information about assistance and help with tasks. Thus, social support facilitated individuals' mastery of their environments. Moreover, the effect of social support depended on many factors, such as amount, types, and sources of support, and the structure of its network (Thoits, 1982: 147).

Social support has been defined in various ways and investigated across a variety of stressful situations. Both main and interactive associations between social support, stress, and illness outcomes have been demonstrated as follows (Hamburg & Killilea, 1979 cited by Diamond & Jones, 1983: 241–242):

1) Social support has a direct effect on health; it is the presence or absence of social support that is crucial.

2) Social support provides a buffer against the effects of high stress; it is in the interaction between stressors and social support that is important.

3) Social support has a mediating effect that stimulates the development of coping strategies and promotes mastery. Social competence may account for the absence of ill health.

4) Lack of social support exacerbates the impact of stressful life events.

In summary, social support has been proposed as an important factor that affects health through the adaptation to stressful life events (Ford & Hodnett, 1990: 38), as many researchers have studied:

Barrera (1981 cited by Heaman, 1992: 25) studied the role of social support in the adjustment of 86 pregnant adolescents. Support needs and negative life events were positively correlated with depression and anxiety, while satisfaction with social support bore a significant negative correlation with depression and anxiety. Total network size was the only support variable to have a stress-buffering effect, and accounted for 4% of the variance in depression.

Tilden's study (1983: 171) of 141 medically normal pregnant women in the second trimester of pregnancy found significant and separate effects of life stress and social support on emotional disequilibrium during pregnancy. Life stress accounted for 29.71% and social support for 3.11% of the variance in emotional disequilibrium.

The interaction of the effects of life stress and social support on emotional disequilibrium was not significant.

A similar study was conducted by Norbeck and Tilden (1983: 30), who examined the effects of life stress, social support and emotional disequilibrium on complications of pregnancy in a sample of 117 normal pregnant women. Life stress was measured using a negative life events score. High life stress and low social support were significantly related to high emotional disequilibrium, but the interaction between life stress and social support was not significant. High life stress from the prior year was significantly related to overall complications. The interaction of life stress during pregnancy and the tangible support factor was a significant predictor of gestational and infant complications, with subjects in the high stress/low support quadrant having the highest rate of complications.

In a longitudinal study of 20 hospitalized women with pregnancies complicated by chronic illness, Corbin (1987 cited by Ford & Hodnett, 1990: 38) described the management strategies employed by this group of women to deal with imposed situational stressors. The findings indicated that the adequacy of informational support greatly influenced the ability of participants to manage and control their high-risk situations successfully. Adequate emotional support was associated with decreased emotional conflict in making decisions about the pregnancies.

Few studies have investigated the effect of stressful life events and social support on psychological distress in both high-risk and low-risk pregnant women. Mercer and Ferketich (1988: 26–39) studied 153 high-risk (hospitalized) pregnant women and 218 low-risk (non-hospitalized) pregnant women between the 24th to 34th weeks of gestation. The high-risk pregnant women reported greater negative life events (stress) and higher anxiety and depression than the low-risk pregnant women. Perceived social support was not a significant predictor of anxiety or depression in the high-risk group, but it was a significant predictor of anxiety and depression in low-risk women. Neither received support, nor network size, entered the regression models for either group. Contrary to the hypothesis, high-risk women received more support than low-risk women but this support did not affect their anxiety status.

Kemp and Hatmaker (1989: 334) studied the relationships of stress, social support, and risk in 19 high-risk and 20 low-risk women. In the high-risk group, norepinephrine level and satisfaction with partner social support subscale were negatively correlated. There were no significant correlations among other variables (state anxiety scores, epinephrine, and other's support). In the low-risk group, the epinephrine level was positively correlated with norepinephrine level and age; state anxiety scores were negatively correlated with satisfaction with partner support and age.

Ford and Hodnett (1990: 44) studied perceived stress, social support and adaptive responses in 27 hospitalized antepartum women. A positive relationship was found between social support and adaptation, but no significant relationship was found between perceived stress and adaptation. Multiple regression analysis revealed that social support, length of hospitalization and risk status were significant predictors of adaptation; social support accounted for 17% of the variance in adaptation. However, these results should be interpreted with caution because of limited testing of the reliability and validity of the instruments, and because of the small sample size.

Heaman (1992: 30–32) examined stressful life events, social support, and mood disturbance in hospitalized and non-hospitalized women with pregnancy-induced hypertension. It was found the hospitalized subjects had higher total mood disturbance scores than either the home care subjects or the low-risk subjects. Stress was positively correlated with mood disturbance. Social support was ineffective in buffering the effect of stress upon mood disturbance.

The above studies provide conflicting results about the effectiveness of social support in reducing the impact of stressors on pregnant women. Only one study in Thailand examined the relationship between self-esteem, social support and coping behavior in 200 high-risk pregnant women (69 non-hospitalized and 131 hospitalized), and found a positive correlation between social support and coping behavior in the high-risk pregnant women. Multiple regression analysis revealed that self-esteem, social support and income were significant predictors of coping behavior; social support accounted for 7.37% of variance in coping behavior (Pannee Chunpradub, B.E.2538: 73).

In summary, the published literature indicated that many potential factors may be associated with, and affect, stress in hospitalized high-risk pregnancies. These include maternal age, family income, years of education, experience of perinatal or child loss, perception of disease severity, self-esteem, and social support. Furthermore, no studies were found that examined the relationships between these personal factors, self-esteem, social support and stress in high-risk pregnancies during antepartum hospitalization and their predictive power on stress in this group. One finding from this study, under the framework of Roy's Adaptation Model, will be useful guidelines in the areas of nursing practice, nursing administration, nursing education and nursing research, with the aim of promoting maternal adaptation to decrease stress in the high-risk pregnancy group.

CHAPTER III
MATERIALS AND METHODS

This descriptive research aimed to study the relationships between personal factors, self-esteem, social support and stress during antepartum hospitalization in high-risk pregnant women, including the predictability of these variables on stress during antepartum hospitalization in high-risk pregnant women. The population and sample, instruments, data collection, and data analysis are presented in this chapter.

Population and sample

The target population for this study was high-risk pregnant women, gestational age 12–38 weeks, who were admitted to the High-risk Ward at Ramathibodi Hospital, from June to August, 2000.

A sample group was purposively selected from high-risk pregnant women meeting the following criteria:

(a) They had been diagnosed as high-risk pregnancies due to complications with pregnancy, medical, surgical or gynecological.

(b) They were hospitalized for more than 24 hours.

(c) They were literate in Thai, and,

(d) They agreed to participate in the study.

Exclusion criteria:

Pregnant women who had incomplete abortion, missed abortion, dead fetus in utero, and HIV-positive during pregnancy, who were admitted for termination of pregnancy.

Sample size was calculated according to Thorndike's rule of thumb, which was equal to 10 samples per independent variable plus 50 samples in the last step (Thorndike, 1978 cited by Wilson, 1989: 561). There were 7 independent variables in this study, so the sample size should be at least (7 x 10) +50 = 120 cases.

Setting of the study

The study took place in the High-risk Ward of Ramathibodi Hospital. This is a government hospital and university of medicine run by Mahidol University. The high-risk ward contained 21 beds and one single isolated room (2 beds) for a wide variety of high-risk pregnant women with medical, surgical, gynecological, or pregnancy complications. Children, family members, and friends were permitted to visit during the hours 11.00 a.m.–1.00 p.m. and 4.00 p.m.–7.00 p.m. Most of the patients stayed in hospital at least 2–3 days.

Instruments

The questionnaires used in this study were in 4 parts: (1) Demographic Data Form, (2) Rosenberg's Self-esteem Scale, (3) Social Support Questionnaire, and (4) Antepartum Hospital Stressors Inventory (AHSI).

1. Demographic Data Form

This data form was developed by the researcher to collect the following items:

(a) Maternal age

(b) Family income

(c) Years of education

(d) Experience of perinatal or child loss

(e) Perception of disease severity, measured by visual analogue scale (VAS) for pregnant women at high risk to rate the degree to which their pregnancy was at risk, on a scale. The VAS is a straight line labeled "no severity" on left end and "highest severity" on the other. It consisted of a 100 millimeter (mm) horizontal line to measure perception of pregnancy severity. Subjects respond to the VAS by placing a mark through the line at a position which best represents their current perception and the researcher applied a ruler to the continuous VAS line to obtain a score. This measurement was validated for language used and content by five high-risk pregnant women whose criteria were similar to the study sample at Ramathibodi Hospital. Their highest education level

achieved varied. High scores indicated high severity and low scores indicated low severity. Criteria for interpretation were as follows:

Possible scores	Interpretation
6.00–10.00	high severity
4.00– 5.99	moderate severity
> 0– 3.99	low severity
0	no severity

2. Rosenberg's Self-esteem Scale (RSES)

This part of the questionnaire was developed by Rosenberg (1989: 325–327), then translated into Thai and modified by Supannee Soomlek (B.E.2538). It consisted of ten items, including five positive items (nos.1,2,4,6 and 7) and five negative items (nos.3,5,8,9 and 10) . The questionnaire was a Likert rating scale from "does not apply to me" (1) to "all the time "(4) for positive items; negative items were reversed to positive scores. The possible scores ranged from 10 to 40. High scores indicated high self-esteem and low scores indicated low self-esteem. Criteria for interpretation, calculated from percentage of mean, were as follows:

Percentage of mean	Interpretation
80.00–100.00	High self-esteem
60.00– 79.99	Rather high self-esteem
40.00– 59.99	Rather low self-esteem
20.00– 39.99	Low self-esteem

Validity and Reliability of RSES

The Rosenberg's Self-esteem Scale is widely used in sociological research, with Cronbach's alpha coefficients of .84 to .87 (Rosenberg, 1979 cited by Mercer & Ferketich, 1988: 30) and .84 to .90 in high-risk pregnant women, and .87 to .90 in low-risk pregnant women (Mercer & Ferketich, 1994: 38–43). This represented good internal consistency of measurement.

The modified RSES of Supannee Soomlek (B.E.2538) was validated for language used and content by six maternity and newborn experts. After editing and testing among 30 primiparous postpartum mothers, the Cronbach ‘s alpha coefficient was .75 and .80 when used with 205 primiparous postpartum mothers.

In this study, the modified version of Supannee Soomlek was further modified by the researcher and validated for language used and content by five high-risk pregnant women whose criteria were similar to the study sample at Ramathibodi Hospital. Their highest education level achieved varied. This instrument was tested among 30 high-risk pregnant women whose criteria were similar to the study sample at Ramathibodi Hospital and the Cronbach’s alpha coefficiency was .78. After use with the study sample of 120 high-risk pregnant women, the coefficient was .83.

3. Social Support Questionnaire

The Social Support Questionnaire was developed by Pannee Chunpradub (B.E. 2538: 55–57), based on House’s (1981) concept of social support, with 4 subscales of emotional support (7 items, no. 1–7); appraisal support (5 items, no. 8–12); informational support (5 items, no. 13–17); and instrumental support (6 items, no. 18–23). This 23- item questionnaire was a 5- Likert self-reported scale with scores ranging from 5 (extremely true) to 1 (not true at all). The possible scores for the total scale ranged from 23 to 115. High scores indicated high social support whereas low scores indicated low social support. Criteria for interpretation, calculated from percentage of mean, were as follows:

Percentage of mean	Interpretation
80.00–100.00	High social support
60.00– 79.99	Rather high social support
40.00– 59.99	Moderate social support
20.00– 39.99	Low social support

Validity and Reliability

This questionnaire was content-validated by 5 experts. After editing and testing, a Cronbach’s alpha coefficiency of .89 was obtained among 30 high-risk pregnant women

and a Cronbach's alpha coefficiency of .93 was obtained among 200 high-risk pregnant women (Pannee Chunpradub, B.E.2538: 55–57)

In this study, the instrument was tested among 30 high-risk pregnant women whose criteria were similar to the study sample at Ramathibodi Hospital. Cronbach's alpha coefficiency was .91. After use with the study sample of 120 high-risk pregnant women, the Cronbach's alpha coefficiency was .92.

4. Antepartum Hospital Stressors Inventory (AHSI)

The AHSI, was first developed by White (1981 cited by White & Ritchie, 1984: 47–56), was then translated into Thai and modified by Duanghathai Songtrirat (B.E.2540). The AHSI was first developed from the investigator's clinical experience, verbal reports from antepartum nurses and from the literature. The AHSI provided a self-report method of identifying stressors. Subjects were able to react to each potential stressor on the list by assigning a degree of stress on a Likert-type scale. The AHSI consisted of 47 potential stressors assigned to seven major categories: Separation (7 items, no.1–7), Environment (9 items, no.8–16), Health status (9 Items, no.17–25), Communications with health professionals (6 items, no.26–31), Self-image (8 items, no.32–39), Family status (3 items, no.40–42), and Emotions (5 items, no.43–47). This 47-item questionnaire is a 5- Likert scale that ranged from "no stress" (0) to "a great deal of stress" (4). The option "does not apply to me" was also available in 0. Possible scores for the total scale was between 0 and 188. High scores indicated high stress while low scores indicated low stress. Criteria for interpretation, calculated from percentage of mean, were as follows:

Percentage of mean	Interpretation
75.00–100.00	High stress
50.00– 74.99	Rather high stress
25.00– 49.99	Moderate stress
>0– 24.99	Low stress
0	No stress

Validity and Reliability of AHSI

Content validity of the AHSI was performed by a panel of maternity nursing experts and mothers who had been at-risk maternity patients. Concurrent validity was demonstrated through positive correlation of the AHSI result and interview responses ($p = .001$). Reliability in terms of internal consistency was demonstrated by a modified split-half coefficient alpha of .91 (White & Ritchie, 1984: 50). Content validity of the modified AHSI by Duanghathai Songtrirat (B.E.2540: 52) was performed by five nursing experts. After editing and tryout among 20 high-risk pregnancies, the Cronbach's alpa coefficient for the total scale was .93. When it was conducted in a sample of 100 high-risk pregnancies, the coefficient was .92.

In this study, the modified AHSI of Duanghathai Songtriratana was modified by the researcher, validated for language used and content by five high-risk pregnant women with similar criteria to the study sample at Ramathibodi Hospital, their highest education levels achieved varied. The instrument was tried out with 30 high-risk pregnant women and the Cronbach's alpha coefficient was .94. When it was used with the study sample of 120 high-risk pregnant women, the coefficient was .95.

Protection of Human rights

The human rights of the subjects were respected (Appendix A and B). Eligible subjects were individually approached to participate in this study. The study objectives, data collecting processes, expected research outcomes, the subject rights, the type of questionnaires, and the right to refuse to participate in this study were explained. The subjects who agreed to participate were assured that the data would be kept confidential and reported as group data. Verbal explanations were given when they were questions about the study.

Data Collection

The procedures of data collection were as follows:

1. Submission of a formal letter from the Faculty of Graduate Studies, the researcher contacted the Dean of the Faculty of Medicine, Ramathibodi Hospital to ask

for permission, then contacted the Head Nurse of the High-risk Ward to ask for her cooperation.

2. The researcher selected eligible samples according to the inclusion criteria from medical records. Data were collected every day, not except weekend, between 8.00 a.m. to 4.00 p.m.

3. All eligible subjects were contacted and screen purpose of the study, the human rights were explained. If they agreed to participate in the study, they were asked to sign consent forms. How to complete the 4-part questionnaire, Demographic Data Form, Rosenberg's Self- esteem, Social Support, and AHSI, provided with a series of fixed parts, was explained. Then, the researcher collected the first part from medical record and interviewed the participants, who were allowed to complete the three remaining parts by themselves over a period of 30 minutes, during which the researcher stayed nearly to answer any questions.

4. The questionnaires were proofed for completion when they were returned to the researcher. If some items were not completed, the participants were asked to complete these according to their willingness to do so. The researcher thanked them for their cooperation afterwards.

5. All data were analyzed using SPSS for Windows version 10.0.

Data Analysis

SPSS for Windows (version 10.0) was used for data analysis. The steps of analysis were as follows:

1. The demographic data (age, average family income, years of education, and perception of disease severity) were analyzed using frequency, percentage, mean, range and standard deviation.

2. The demographic data (family income, and experiences of perinatal or child loss) were analyzed using frequency and percentage.

3. The sum of self-esteem scores, of social support, and of the antepartum hospital stressors scores, including their subscales were analyzed using range, mean, standard deviation, and percentage of mean.

4.The correlations between the studied factors and stress were investigated using Pearson Product Moment Correlation Coefficient.

5.The predictors and their predictive power for stress were investigated using Stepwise Multiple Regression.

CHAPTER IV
RESULTS

This descriptive research study was conducted to describe the relationships between personal factors, self esteem, social support, and stress during antepartum hospitalization in high-risk pregnant women. After analyzing the data, the findings relevant to the aim of the study and the research hypotheses, are presented in this chapter.

The Features of the personal factors

The total number of samples in this study was 120 high-risk pregnant women during antepartum hospitalization, with maternal ages ranging from 19 to 44 years old; the mean age was 31.83 years (S.D. = 5.73). More than half were aged 20 to 34 years (59.2%) and 40% were in the age range 35–44 years. Most of the subjects (69.2%) had sufficient income. Their family income per month ranged from 2,500 to 300,000 baht (M = 26,608.90, S.D. = 31,625.98, mode = 15,000, median = 20,000). Income between 10,001 to 15,000 baht per month was the largest group (26.7%). Years of education ranged from 2 to 18 years; the mean was 12.59 years (S.D. = 3.65). More than half (51.7%) had 13 to 16 years of education, comparable with Diploma and Bachelor's degree, and most of the subjects (86.7%; range 7–18 years) had higher than compulsory education in Thailand. More than half of them (60%) did not have experience of perinatal or child loss. Regarding their perception of disease severity, the sample scores ranged from 0 to 10, mean of 4.75 (S.D. = 2.63). Moderate severity was the largest group (38.3%). In addition, hours of admission while the data were being collected ranged from 24 to 252 hours (M = 47.37) (Table 1).

Table 1. Characteristics of the samples: number, percent, range, mean, and standard deviation of the subjects (n = 120).

Characteristics	Number	Percent
Maternal age (years)		
19	1	0.8
20 – 34	71	59.2
35 – 44	48	40.0
Range = 19–44, Mean = 31.83, S.D. = 5.73		
Family income		
Sufficient	83	69.2
Insufficient	37	30.8
Average family income per month (baht, n = 118)		
2,500 – 5,000	3	2.5
5,001 – 10,000	14	11.7
10,001 – 15,000	32	26.7
15,001 – 20,000	18	15.0
20,001 – 25,000	11	9.2
25,001 – 30,000	16	13.3
> 30,000	24	20.0
Range = 2,500–300,000, M = 26,608.90, S.D. = 31,625.98, Mode = 15,000, Median = 20,000		

Table 1. Characteristics of the samples: number, percent, range, mean, and standard deviation of the subjects (n = 120) (continued).

Characteristics	Number	Percent
Years of education (years)		
Junior primary school (< 4)	4	3.3
Senior primary school (5–6)	12	10.0
Junior high school (7–9)	10	8.3
Senior high school (10–12)	31	25.8
Diploma/Bachelor's degree (13–16)	62	51.7
Master's degree (> 16)	1	0.8
Range = 2–18, Mean = 12.59, S.D. = 3.65		
Experience of perinatal or child loss		
Yes	48	40.0
No	72	60.0
Perception of disease severity		
No severity (0)	4	3.3
Low severity (>0–3.99)	37	30.8
Moderate severity (4.00–6.00)	46	38.3
High severity (6.01–10.00)	33	27.5
Range = 0–10, Mean = 4.75, S.D. = 2.63		

Self-esteem during antepartum hospitalization

The possible range of self-esteem was 10 to 40. The total score of the sample was rather high self-esteem (% of mean = 78.45), ranging from 19 to 40 with a mean

of 31.39 (S.D. = 5.57). The three highest mean score items were "I have a good attitude about myself" (M = 3.41), "In summary I am satisfied with myself" (M = 3.34) and "I often feel I am not a good person" (M = 3.20). The three lowest mean score items were "I want more respect for myself" (M = 2.79), "I have tended to feel I am a failure" (M = 3.07) and "I feel I have nothing to be proud of about myself" (M = 3.07). The details of these data are shown in Table 2.

Table 2. Range, mean, and standard deviation of self-esteem classified by overall and the three highest and lowest mean score items (n = 120).

Self-esteem	Possible range	Actual range	Mean	S.D.	% of mean
Overall	10–40	19–40	31.39	5.57	78.45
Highest items					
1. I have a good attitude about myself.	1–4	2–4	3.41	0.65	85.25
2. In summary I am satisfied with myself.	1–4	1–4	3.34	0.74	83.50
3. I often feel I am not a good person.*	1–4	1–4	3.20	1.03	80.00
Lowest items					
1. I want more respect for myself.*	1–4	1–4	2.79	0.92	69.75
2. I have tended to feel I am a failure.*	1–4	1–4	3.07	1.07	76.75
3. I feel I have nothing to be proud of abo myself.*	1–4	1–4	3.07	1.07	76.75

Remark: * = reversed items

Social support during antepartum hospitalization

The possible range of overall social support scores was 23 to 115. Total score of the sample was in the range of rather more social support (% of mean =

76.50). Social support of the subjects ranged from 50 to 113, with a mean of 87.97 (S.D. = 13.82). The rank of subscales from highest to lowest percentages of mean were emotional support (% of M = 82.29), instrumental support (% of M = 78.63), informational support (% of M = 72.40), and appraisal support (% of M = 69.92), indicating that appraisal support got rather more social support while emotional support obtained more social support.

The highest mean score item for emotional support was "In this pregnancy, I receive love and care from close persons" (M = 4.37) and the lowest was "Close persons make me feel safe from symptoms of disease" (M = 3.89). The highest mean score item for appraisal support was "Close persons make me feel I will be a good mother" (M = 3.96) and the lowest was "Doctor/nurse praises me when I correctly follow their advice" (M = 2.98). The highest mean score item for informational support was "Doctor/nurse advises me about appropriate practice" (M = 4.17) and the lowest was "Friend advises me about my disease" (M = 2.50). The highest mean score item for instrumental support was "Close persons help me keep house while I go to or stay in hospital" (M = 4.11) and the lowest was "In this pregnancy, family or relatives take more time for me" (M = 3.76). Details of these data are shown in Table 3.

Table 3. Range, mean, and standard deviation of social support classified by overall, subscales and highest and lowest mean scores item ranks (n = 120).

Social support	Possible range	Actual range	Mean	S.D.	% of mean
Overall	23–115	50–113	87.97	13.82	76.50
Subscale					
1. Emotional support (item 1–7)	7–35	16–35	28.80	4.27	82.29
1.1 In this pregnancy, I receive love and care from close persons.	1–5	2–5	4.37	0.74	87.40
1.2 Close persons make me feel safe from symptoms of disease.	1–5	2–5	3.89	0.83	77.80

Table 3. Range, mean, and standard deviation of social support classified by overall, subscales and highest and lowest mean scores item ranks (n = 120) (continued).

Social support	Possible range	Actual range	Mean	S.D.	% of mean
Subscale					
2. Appraisal support (item 8–12)	5–25	7–25	17.48	4.00	69.92
2.1 Close persons make me feel I will be a good mother.	1–5	1–5	3.96	0.94	79.20
2.2 Doctor/nurse praises me when I correctly follow their advice.	1–5	1–5	2.98	1.10	59.60
3. Informational support (item 13–17)	5–25	7–25	18.10	3.66	72.40
3.1 Doctor/nurse advises me about appropriate practice.	1–5	1–5	4.17	0.87	83.40
3.2 Friend advises me about my disease.	1–5	1–5	2.50	1.09	50.00
4. Instrumental support (item 18–23)	6–30	7–30	23.59	5.48	78.63
4.1 Close persons help me keep house while I go to or stay in hospital.	1–5	1–5	4.11	1.11	82.20
4.2 In this pregnancy, family or relatives take more time for me.	1–5	1–5	3.76	1.14	75.20

Stress during antepartum hospitalization

The possible range of overall scores for stress during antepartum hospitalization was 0 to 188. The total score of the sample was in the moderate stress range (% of mean = 28.71). Stress of the subjects during antepartum hospitalization ranged from 3 to 128, with a mean of 53.97 (SD = 27.97). The rank of subscales from highest to lowest percentage of mean were stress in relation to health status (% of M = 36.03), stress in relation to separation (% of M = 32.32), stress in relation to self-image (% of M = 29.44), stress in relation to family status (% of M = 27.75), stress in relation to emotions (% of M = 26.40), stress in relation to communications with health professionals (% of M = 26.13), and stress in relation to environment (% of M = 21.22), indicating that stress in relation to environment was low while stress in other relations was moderate.

The highest mean score item for stress in relation to separation was “being away from my home” (M = 1.67) and the lowest was “being isolated from my friends” (M = 0.58). The highest mean score item for stress in relation to environment was “being bored from lack of activities” (M = 1.48) and the lowest was “hearing heart beats on monitors” (M = 0.42). The highest mean score item for stress in relation to health status was “thinking about my baby’s health” (M = 2.72) and the lowest was “having nurses check my baby’s heart rate” (M = 0.48). The highest mean score item for stress in relation to communications with health professionals was “being given too little information about my condition” (M = 1.66) and the lowest was “telling unfamiliar staff about myself” (M = 0.71). The highest mean score item for stress in relation to self-image was “thinking about giving birth” (M = 2.09) and the lowest was “missing prenatal classes” (M = 0.67). The highest mean score item for stress in relation to family status was “thinking about extra expenses while I’m in hospital” (M = 1.21) and the lowest was “thinking about the care of my children at home” (M = 1.06). The highest mean score item for stress in relation to emotions was “feeling worried” (M = 1.64) and the lowest was “feeling angry” (M = 0.53). Details of these data are shown in Table 4.

Table 4. Range, mean, and standard deviation of stress during antepartum hospitalization classified by overall, subscales and highest and lowest mean scores item ranks (n = 120).

Stress	Possible range	Actual range	Mean	S.D.	% of mean
Overall	0–188	3–128	53.97	27.97	28.71
Subscale					
1. Separation (item 1–7)	0–28	0–23	9.05	5.62	32.32
1.1 being away from my home.	0–4	0–4	1.67	1.17	41.75
1.2 being isolated from my friends.	0–4	0–3	0.58	0.75	14.50
2. Environment (item 8–16)	0–36	0–27	7.64	5.57	21.22
2.1 being bored from lack of activities.	0–4	0–4	1.48	1.14	37.00
2.2 hearing heart beats on monitors.	0–4	0–4	0.42	0.87	10.50
3. Health status (item 17–25)	0–36	0–30	12.97	6.57	36.03
3.1 thinking about my baby's health.	0–4	0–4	2.72	1.20	68.00
3.2 having nurses check my baby's heart rate.	0–4	0–4	0.48	0.87	12.00
4. Communication (item 26–31)	0–24	0–22	6.27	4.55	26.13
4.1 being given too little information about my condition.	0–4	0–4	1.66	1.18	41.50
4.2 telling unfamiliar staff about myself.	0–4	0–4	0.71	0.96	17.75

Table 4. Range, mean, and standard deviation of stress during antepartum hospitalization classified by overall, subscales and highest and lowest mean scores item ranks (n = 120) (continued).

Stress	Possible range	Actual range	Mean	S.D.	% of mean
5. Self-image (item 32–39)	0–32	0–24	9.42	5.34	29.44
5.1 thinking about giving birth.	0–4	0–4	2.09	1.23	52.25
5.2 missing prenatal classes.	0–4	0–3	0.67	0.81	16.75
6. Family status (item 40–42)	0–12	0–12	3.33	2.84	27.75
6.1 thinking about extra expenses while I'm in hospital.	0–4	0–4	1.21	1.28	30.25
6.2 thinking about the care of my children at home.	0–4	0–4	1.06	1.32	26.50
7. Emotions (item 43–47)	0–20	0–18	5.28	4.19	26.40
7.1 feeling worried	0–4	0–4	1.64	1.23	41.00
7.2 feeling angry.	0–4	0–4	0.53	0.84	13.25

Hypotheses testing 1: Personal factors, self-esteem and social support are correlated with stress during antepartum hospitalization in high-risk pregnant women.

The result of Pearson's product moment correlation revealed that perception of disease severity had a statistically significant positive correlation with stress in hospitalized high–risk pregnant women ($r = .328$, $p < .01$). Age and social support showed a statistically significant negative correlation with stress in hospitalized high–risk pregnant women, ($r = -.246$, $r = -.319$, $p < .01$). However, there were no statistically significant correlations between family income, years

of education, experience of perinatal or child loss, and self-esteem, with stress in hospitalized high–risk pregnant women (r = −.158, −.127, −.031, .076, p > .05 respectively). These results are shown in Table 5.

Table 5. Pearson product-moment correlation coefficients among the studied variables in correlation matrix (n = 120).

	1	2	3	4	5	6	7	8
1. Age	1.00							
2. Income	.249*	1.00						
3. Education	.172	.352*	1.00					
4. Experience of perinatal loss	.128	-.007	.012	1.00				
5. Perception of disease severity	.-.014	-.079	.034	-.036	1.00			
6. Self-esteem	.103	.073	.175	.132	.058	1.00		
7. Social support	.025	.082	.064	.012	-.037	.239*	1.00	
8. Stress	-.246*	-.158	.076	-.031	.328*	-.127	-.319*	1.00

Remark: Experience of perinatal or child loss 0 = No, 1 = Yes

*p< .01

Hypotheses testing 2: Stress during antepartum hospitalization in high-risk pregnant women can be predicted from personal factors, self-esteem and social support.

Analysis by stepwise multiple regression (Table 6) indicated that three variables be selected into a predictive equation. These were: perception of disease severity, social support, and maternal age. Together, these three variables could explain 25.7% of variance in stress during antepartum

hospitalization of high-risk pregnant women ($F_{3, 116} = 13.337$, $p < .001$). The first variable, perception of disease severity, accounted for 10.8% of variance explaining stress in hospitalized high-risk pregnancy (ß = .314, t = 3.914, $p < .001$). The second variable, social support, accounted for 9.4% of variance explaining stress scores in hospitalized high-risk pregnant women (ß = -.301, t = -3.76, $p < .001$). The last variable was age, which could explain 5.5% of variance in stress scores in hospitalized high-risk pregnant women, significantly (ß = -.234, t = -2.922, $p < .01$).

Stepwise multiple regression analysis was used to identify the predictability of personal factors, self-esteem, and social support on stress during antepartum hospitalization in high-risk pregnant women. The assumptions of stepwise multiple regression were tested. The histogram, normal probability plot and Komogorov-Smirnov test indicated that maternal age, family income, education, experience of perinatal or child loss, perception of disease severity, self-esteem, social support, and stress during antepartum hospitalization had normal distribution. The result of the Durbin-Watson test was 1.96, close to 2.00. This finding indicated that there was no autocorrelation of the error. The residual scatter plot showing all variables had linear correlation. The correlation among independent variables to remain under r = .239 to r = .352 ($p < .01$), which meant that these was no multicolinearity among the independent variables (greater than .65 as an indication of multicolinearity) (Burn & Grove, 1993: 532; Ganlaya Wanichbancha, B.E.2543: 424–469).

Table 6. Stepwise multiple regression analysis of the studied variables (n = 120)

Variables	RSQ	RSQ change	F change	ß	t	p
Perception of disease severity	.108	.108	14.234	.314	3.914	.000
Social support	.202	.094	13.791	.-.301	-3.760	.001
Age	.257	.055	8.539	-.234	-2.922	.004

Constant (a) = 128.183 Overall $F_{3, 116} = 13.337$, p = < .001

CHAPTER V
DISCUSSION

The discussion of the findings relevant to the research questions and hypotheses, in terms of personal factors of the sample, self-esteem, social support, stress, relationships, and their predictability for stress during antepartum hospitalization in high-risk pregnant women, are presented in this chapter as follows:

Personal factors of the sample

The samples were 120 high-risk pregnant women during antepartum hospitalization, with an average age of 31.83 years. More than half (59.2%) were aged 20–34 years and 40% were aged 35 years or more. They were similar to risk approach for maternal and child health care (WHO, 1978 cited by Winit Phuapradit, B.E.2537: 2). These findings, a range from 19–44 years (mean 31.83 years), were consistent with previous research conducted at Ramathibodi and Siriraj Hospital, Thailand (Piyanate Kanchanacharoen, B.E.2541: 50). Moreover, the current study found most (99.2%) in the age range 20–44 years, and it could be assumed all subjects were adult.

The educational level of the samples ranged from 2-18 years; one of the sample had only two years' education but she was literate in Thai, (mean 12.59). This was similar to the study of Piyanate Kanchanacharoen (B.E.2541: 50). In addition, the current study found more than half (51.7%) had 13−16 years' education, which was rather high and most of the subjects (86.7%; ranged 7−18 years) had higher than compulsory education in Thailand.

Women with complicated pregnancies had perception of disease severity scores ranging from 0−10 (mean 4.75), which indicated that the subjects perceived moderate severity, whereas in the study of the Gupton, Heaman and Cheung (2001: 196), it was found that complicated pregnancies had high perception of risk scores. The difference may be because that study used different instrument and samples. The subjects of this study had rather high education, and educational level enhances

cognitive development. Education influences on both situation of compromised process and in adaptive situation, and proved a salient variable affecting coping (Jalowiec & Powers, 1981: 10; Roy & Andrews, 1999: 365). The majority of the subjects (69.20%) had sufficient family income, so as to avoid major financial difficulties. Educational level and socioeconomic status tended to be related.

In addition, it was found that more than half of the subjects (60%) had no experience of perinatal or child loss. The current finding was similar to the study of Piyanate Kanchanacharoen (B.E.2541: 52) conducted at Ramathibodi Hospital and Siriraj Hospital, in Thailand.

Self-esteem

In this study, self-esteem was measured by Rosenberg Self-esteem Scale (Rosenberg, 1989: 325−327). The subjects attained self-esteem scores ranging from 19 to 40 (mean 31.39 with possible range 10−40 and percentage of mean 78.48%) revealing that the sample had rather high perceptions of self-esteem.

This finding was similar to Pannee Chunpradub's study (B.E.2538: 65,78), using the different instrument, which was conducted among 200 high-risk pregnant women, studied during their attendance at both in-patient and out-patient departments of Siriraj, Rajavithi, and Chulalongkorn Hospitals. It might be explained from the fact that the subjects were rather high self-esteem. It meant that the subjects of this study believed that they were capable, significant, successful, and worthy (Coopersmith, 1967: 7).

Social support

It was revealed that the sample had rather more social support, actual range from 50−113, with mean 87.97 (percentage of mean 76.50) (Table 3). Percentages of means for emotional support, instrumental support, informational support, and appraisal support were 82.29, 78.63, 72.40, and 69.92, respectively, indicating that the subjects received higher levels of emotional support than other supports. The reason of emotional support being highest was that almost of the subjects (99.2%) in this study,

from interview, were married and lived with their spouses, so that those high-risk women might get support from their spouses. It has been documented that the spouse is the most important person to provide social support to his wife (Primomo, Yates, & Wood, 1990: 153). These result was congruent with a prior finding, with the same instrument, which was conducted among 200 high-risk pregnant women, studied during their attendance at both in-patient and out-patient departments of Siriraj, Rajavithi, and Chulalongkorn Hospitals (Pannee Chunpradub, B.E.2538: 65).

Stress

The current findings indicated that the subjects had moderate stress during hospitalization, with actual scores ranging from 3 to 128, and a mean score of 53.97 (percentage of mean = 28.71%). Percentages of means of stressors relating to health concerns, separation from home and family, changing self-image, changing family circumstances, disturbing emotions, communications with health professional, and the hospital environment were 36.03, 32.32, 29.44, 27.75, 26.40, 26.13, and 21.22, respectively. They indicated that the subjects who responded to the Antepartum Hospital Stressors Inventory (AHSI) reported moderate scores overall for the seven stressor categories (indicating moderate stress), while stress in relation to environment was low, and stress in other relations was moderate.

With these results, the moderate scores overall were similar to three previous studies with the same instrument, that studied 61 women admitted as antepartum patients at urban maternity hospital (White & Ritchie, 1984: 50–51), 100 high-risk pregnant women hospitalized in the Obstetric-gynecology Department of Suratthani Hospital, Thailand (Duanghathai Songtrairat, B.E.2540: 60, 67), and 150 high-risk pregnant women hospitalized in the Obstetric Departments of Ramathibodi Hospital and Siriraj Hospital, Thailand (Piyanate Kanchanacharoen, B.E.2541: 55, 59). It might be explained that the subjects of the current study were responsive to the focal stimulus, having high-risk pregnancy and hospitalization, with adaptation that promoted the integrity of the human adaptive system in terms of the goals of survival, growth, reproduction, mastery, and person and environment transformation (Roy & Andrews, 1999: 67).

In addition, the subjects' AHSI scores provided evidence that stressors relating to health concerns /status ranked the highest, with "some stress" as the average response, similar to the study of Piyanate Kanchanacharoen (B.E.2541: 55, 59) which was conducted in 2 hospitals of Mahidol University, Ramathibodi Hospital and Siriraj Hospital, whereas the setting of the current study was Ramathibodi Hospital only. It may be interpreted that the characteristics of the samples in both studies were similar. In the current study, most of the subjects did not have serious complications of pregnancy, because they were referred for care in the labour unit if their complications were serious. So, the circumstances, experiences and concerns from increased medical intervention in a hospital setting during pregnancy, health status, had less effect on subjects who spent a short time in hospital while the data were being collected, some special test, or health professionals described before and after the test or check.

In this study, the subjects' AHSI scores provided evidence that stressors relation to environment, experiences resulting from being in a hospital milieu due to an at-risk pregnancy, ranked the lowest, between "very little stress" and "no stress" as the average response, similar to the studies of White and Ritchie (1984: 50–51), Duanghathai Songtrairat (B.E.2540: 60,67), and Piyanate Kanchanacharoen (B.E.2541: 55,59). It might be explained that the majority of the subjects were hospitalized for partial bed rest, for a short time while collecting data (average 47.37 hours), delicious hospital meals, they rarely heard heart beats on monitors, the hospital and staff were seldom noisy, and sharing a room with another patient resulting in development of a relationship.

Hypotheses testing

Hypotheses: Personal factors, self-esteem and social support are correlated with stress and can predict stress during antepartum hospitalization in high-risk pregnant women.

The results of stepwise multiple regression indicated that three studied variables could predict stress in hospitalized high-risk pregnant women. These predictors were perception of disease severity, social support, and maternal age. All

three variables could explain 25.7% of variance in stress in hospitalized high-risk pregnant women with statistical significance (Overall $F_{3, 116} = 13.337$, $p < .001$). Thus, these hypotheses were partially accepted. Discussion of these results follows:

Perception of disease severity was one of three variables that had a statistically significant low positive correlation with stress in high-risk pregnancies during antepartum hospitalization ($r = .328$, $p < .01$). Moreover, perception of disease severity was the first predictor that could explain the variance in stress in hospitalized high-risk pregnant women, accounting for 10.8% ($p < .001$). It meant that high-risk pregnant women who perceived high disease severity would have higher stress than those who perceived low disease severity. This might be explained by the possibility that higher stress in hospitalized high-risk pregnant women could reflect an appraisal of risk that is independent of the risk status determined by health care practitioners.

This finding was similar to the study by Heaman, Beaton, Gupton, and Sloan's study (1992 cited by Gupton, Heaman, & Cheung, 2001: 194), which asked 75 pregnant women at high risk to rate the degree to which their pregnancy was at-risk on a scale from 0 to 10. Self-rating of pregnancy risk was positively related to anxiety. There was no relationship between self-rating of pregnancy risk and the biomedical prenatal risk score. In addition, in the study of Gupton, Heaman, and Cheung (2001: 192–201), the investigators developed the Perception of Pregnancy Risk Questionnaire (PPRQ) and used a series of 11 visual analog scales (VAS) consisting of a 100-mm. line to measure perception of pregnancy risk, among 105 complicated pregnancies (hospitalized) and 103 uncomplicated pregnancies (not hospitalized). A significant positive correlation was found between the perception of risk score and the state anxiety score in the total sample. Consistent with Roy and Andrews (1999: 413), the focal stimulus for anxious behaviors is the perceived threat, and common stimuli include disease. Thus, hospitalized high-risk pregnant women would experience stress if they appraised or perceived their complications were severe. However, the predictability of perception of disease severity was not evidenced in the previous study.

Social support was the second variable that showed a statistically significant low negative correlation with stress in hospitalized high-risk pregnant women ($r = –.319$, $p < .01$) and it was the second predictor that could explain 9.4% of variance in stress in high-risk pregnant women during antepartum hospitalization. This meant that the hospitalized high-risk pregnant woman who received higher support from her network would have lower stress during at-risk hospitalization. Similarly, the hospitalized high-risk pregnant woman who received lower support from her network would have higher stress. Social support has been found to buffer or mediate the effect of stressful life events on complications of pregnancies and hospitalization. According to the result of this study, it was found that the subjects received higher levels of emotional support than other support. This meant that the most significant other who provided valuable support to high-risk pregnant woman during hospitalization was the spouse. It was documented that the spouse was the most important person to provide social support to his wife (Primomo, Yates, & Wood, 1990: 153). This study was similar to previous studies (Nuckolls, Cassel, & Kaplan, 1972: 431; Hamburg & Killilia, 1979 cited by Weinert & Brandt, 1987: 589; Barrera, 1981 cited by Heaman, 1992: 25; Corbin, 1987 cited by Ford & Hodnett, 1990: 38; Ford & Hodnett, 1990: 44). In Thailand, a previous study found a positive correlation between social support and coping behavior and it could predict coping behavior in high-risk pregnant women (Pannee Chunpradub, B.E.2538: 73,77).

Maternal age was the last variable that showed a statistically significant low negative correlation with stress in hospitalized high-risk pregnancy ($r = −.246$, $p < .01$) and could explain 5.5% of variance of stress in hospitalized high-risk pregnant women, with significance ($p<0.01$). It meant that maternal age could differentiate stress in hospitalized high-risk pregnant women; the older subjects had lower stress levels than the younger. The result of the current study showed that the maternal age of the overall subjects, 99.2% with range from 20–44 years, could be assumed to be adult. It could be interpreted that adult samples had low stress during high-risk hospitalization. Age affects self-concept, as abilities change and control of bodily function change (Andrews & Roy, 1991: 274; Roy & Andrews, 1999: 390).

So, variations in age affect the levels of stress, as found in a previous study in Thailand, that it had a significant negative correlation with stress among 150 hospitalized high-risk pregnant women (Piyanate Kanchanacharoen, B.E.2541: 63). A study in another country found a negative correlation between anxiety and age in low-risk pregnant women, but no significant correlation in the high-risk group (Kemp & Hatmaker, 1989: 331). Furthermore, age had a significantly negative correlation with stress in different groups (Jalowiec & Powers, 1980: 12; Pornsiri Jaisom, B.E.2536: 78), but the predictability by maternal age was not evidenced in any previous study.

Other variables that were not correlated with stress in high-risk pregnant women during antepartum hospitalization, were family income, self-esteem, experiences of perinatal or child loss, and years of education ($r = -.158, -.127, -.031, .076$, $p > .05$, respectively). Discussion of these variables is presented as follows:

Family income

Family income was not correlated with stress during antepartum hospitalization in high-risk pregnant women ($r = -.158$, $p > .05$). This meant that the family income was not relevant to stress in these subjects. It might be explained by the fact that most of the subjects had sufficient income (69.2%). In addition, it might be that high-risk pregnant women would not have financial concerns because they might be excluded, from both loss of income and additional costs for the mother, for the baby, and for the family because of the short time of hospitalization, the low cost in this setting and there being no severe case for complex treatment. This result was similar to a previous study in the same setting (Piyanate Kanchanacharoen, B.E.2541: 64). Moreover, Pannee Chunpradub (B.E.2538) found that high-risk pregnant women with a high family income could cope with stress effectively.

Self-esteem

The result of this study showed that self-esteem was not correlated with stress during antepartum hospitalization in high-risk pregnant women ($r = -.127$, $p > .05$). This meant that self-esteem was not associated with increased levels of stress, which might be explained by the finding that the subjects had rather high self-esteem (% of

mean = 78.45). In addition, it might be that the subjects would perceive their self-value or self-worth as a mother and that the outcome of the pregnancy may be perfect. On the other hand, it might be maternal age being adult, and high social support for these subjects. Moreover, Pannee Chunpradub (B.E.2538) found that high-risk pregnant women with a high family income could cope with stress effectively.

Experience of perinatal or child loss

The result of this study revealed that experience of perinatal or child loss was not correlated with stress during antepartum hospitalization in high-risk pregnant women ($r = -.031$, $p > .05$). This meant that experience of perinatal or child loss was not associated with an increased level of stress. It might be explained by the finding, that the greater proportion of the subjects (60%) had not experienced perinatal or child loss. In addition, it might be that the high-risk pregnant women who experienced previous perinatal or child loss would be confident that they would maintain this pregnancy because they were not in a serious condition, and they had rather high self-esteem (% of mean = 78.45).

Years of education

The result of this study showed that years of education was not correlated with stress during antepartum hospitalization in high-risk pregnant women ($r = .076$, $p > .05$). This meant that years of education were not associated with increased levels of stress. It might be explained that most of the subjects (86.7%) had higher level of education than compulsory education in Thailand (Pratom 6). Moreover, it might be explained from the fact that all subjects were literate. They might find some information of high-risk from some reading materials. Consistent with Roy and Andrews (1999: 76) who stated that inherent in the stimulus of coping processes are the knowledge, perception, and skill to assist in coping. The result of this current study was similar to a previous study (Piyanate Kanchanacharoen, B.E.2541: 63).

In summary, these research findings supported Roy's Adaptation Model, which stated that a person is an adaptive system. Likewise, for the pregnant women confronted with the focal stimuli as high-risk pregnancy and hospitalization, several

contextual stimuli that existed in the situation together, activated the coping processes. Then, the pregnant women produced responses in relation to four adaptive modes to balance the system. In the physiological mode, involving the endocrine function, it was found that perception of disease severity, social support, and maternal age were the potential contextual stimuli that could explain 25.7% of variance of stress in high-risk pregnant women during antepartum hospitalization. Whereas the remaining variables of the study, family income, years of education, experience of perinatal or child loss, and self-esteem, could not explain the residual (74.3%) variance. However, stress in hospitalized high-risk pregnant women might be affected by other stimuli not investigated in this study.

Limitation

The limitation of the current study identified is as follows:

1. Because dummy was used with the experience of perinatal or child loss for data analysis, it might result in no statistically significant correlation with stress in hospitalized high-risk pregnant women.

CHAPTER VI
CONCLUSION

In this chapter, the conclusion and recommendations are presented in terms of research conclusion, implications for nursing, and recommendations for further study, as follows:

Research Conclusion

This descriptive research aimed to study the features of personal factors (maternal age, family income, years of education, experience of perinatal or child loss, perception of disease severity), self-esteem, social support, and stress during antepartum hospitalization in high-risk pregnant women, including the relationship and predictability of these factors on stress in this group. The research framework was guided by the Roy Adaptation Model and literature review. The sample was 120 high-risk pregnant women, 12–38 weeks of gestation, who were admitted to the High-risk Ward at Ramathibodi Hospital, Thailand, during the period June to August 2000. The sample group was purposively selected from high-risk pregnant women who met the inclusion criteria, i.e. had been diagnosed as high-risk due to either medical, surgical, gynecological, or pregnancy complications, hospitalized for more than 24 hours, literate in Thai, and agreed to participate in the study.

After the researcher explained the objective of the study and the subjects signed the consent form, the instrument was given to the subjects for self-report. It consisted of a 4-part questionnaire, with the Demographic Data Form which was developed by the researcher, the Rosenberg's Self-esteem Scale which was developed by Rosenberg (1989) and translated into Thai by Supannee Soomlek (B.E.2538), the Social Support Questionnaire, which was developed by Pannee Chunpradub (B.E.2538) based on House's (1981) concept of social support, and the Antepartum Hospital Stressors Inventory which was developed by White (1981) and translated into Thai by Duanghathai Songtrairat (B.E.2540). The reliabilities of the Rosenberg's Self-

esteem Scale, the Social Support Questionnaire, and the Antepartum Hospital Stressors Inventory, using Cronbach's alpha coefficient, were .83, .92, and .95, respectively, when administered to the overall sample. All data were analyzed by using the SPSS/FW version 10.0. The research findings are summarized as follows:

1. Nearly half (40%) were in the age range 35–44 years; 51.7% had 13–16 years of education, and 69.2% had sufficient family income.

2. The samples had moderate disease severity (mean 4.75; ranged 0–10) and more than half (60%) did not have experiences of perinatal or child loss.

3. The samples had rather high self-esteem (percentage of mean = 78.48) and had rather more social support (percentage of mean = 76.50). Percentages of means for emotional support, instrumental support, informational support, and appraisal support were 82.29, 78.63, 72.40, and 69.92, respectively.

4. The samples had low levels of stress (percentage of mean = 28.71) with percentages of means for stressors relating to health status, separation from home and family, changing self-image, changing family circumstances, disturbing emotions, communications with health professionals, and the hospital environment being 36.03, 32.32, 29.44, 27.75, 26.40, 26.13, and 21.22, respectively.

5. Perception of disease severity had statistically significant positive correlation with stress ($r = .328$, $p < .01$), whereas, social support and maternal age had statistically significant negative correlations with stress ($r = -.319, -.246$, $p < .01$, respectively).

6. Perception of disease severity, social support, and maternal age could explain 25.7% of variance in stress at a significant level ($F_{3, 116} = 13.337$, $p < .001$).

Implications for Nursing

The research findings can be used as a guideline for nursing practice, nursing administration, nursing education, and nursing research. It will be able to be implicated as follows.

Nursing Practice

The results of this study demonstrates perception of disease severity, social support, and maternal age are correlated with stress and could predict 25.7% of variance in the stress of high-risk pregnant women. Nurses should assess the stress response from having a high-risk pregnancy and hospitalization as a basis for care, especially for the high-risk pregnant woman who has high perceived severity of disease, lower levels of social support, and who are younger. Nursing intervention should focus on investigating the pregnant woman's perception of disease severity and promote social support (e.g. the nurse should prepare the patient by explaining about the equipment and procedures and should remind other care providers to do likewise) to decrease stress. In addition, the results showed the highest mean score item for stress in relation to communications with health professionals was "being given too little information about my condition", so health professionals should give more information. Moreover, the results showed the lowest mean score item for appraisal support was "Doctor/nurse praises me when I correctly follow their advice", so health professionals should give more praise.

Nursing administration

The results of this study showed that social support was associated with and could predict stress in high-risk pregnant women; in addition, the subjects received higher levels of emotional support than other support. This meant that support from significant others was the most important, so the nursing administrator should maintain or extend visiting hours for significant others.

Nursing education

The study illustrated that high-risk pregnant women did experience stress during hospitalization. So, nurse educators should emphasize to nursing students that pregnancy is a period of psychological change, and that if the pregnant woman is labeled high-risk and hospitalized, she would experience increased stress. Furthermore, they should be concerned not only about the physiological effects but also about the psychological effects on hospitalized high-risk pregnant women.

Nursing Research

The results of the current study are useful for researchers interested to study stress in high-risk pregnancies during antepartum hospitalization, in the Thai population. The information from this study can be used as a basis for future research in this field. Based on the limitation and the finding of this study, future areas for research include:

1. Limited nursing knowledge of the major stressors experienced by antepartum women in hospital can hamper nursing interventions to decrease the effects of psychological stress. So, this should be studied again using the same instrument (Antepartum Hospital Stressors Inventory).
2. In collecting data time, the sample period should be longer than in this study for perceived stress, or data should be collected a second time, after 2 weeks of hospitalization.
3. A comparative study of high-risk pregnant women who admitted to the high-risk ward (not severe condition) with those admitted to the labour room (severe condition).
4. Other variables that are associated and can predict stress in hospitalized high-risk pregnant women such as spouse support, length of hospitalization, and level of activity restriction, should be studied.
5. The Antepartum Hospital Stressors Inventory (AHSI) which was developed by White (1981), was validated to identify the stressors associated with high-risk pregnancy and antepartum hospitalization. In addition, it was categorized by potential stressors, was easy for participants to understand, and it was easy for researcher to analyze the data. Furthermore, the findings of the current study and previous studies in Thailand (Duanghathai Songtrairat, B.E.2540; Piyanate Kanchanacharoen, B.E.2541) found a congruence level of stress with White and Ritchie's study (1984). Therefore, researchers interested in studying stress in high-risk pregnant women during antepartum hospitalization should use this instrument.

BIBLIOGRAPHY

Affonso, D.D., Mayberry, L.J., Lovett, S.M., & Paul, S. (1994). Cognitive adaptation to stressful events during pregnancy and postpartum: Development and testing of the case instrument. Nursing Research, 43(6), 338–343.

Andrews, H.A., & Roy, C. (1986). Essentials of the Roy adaptation model. Connecticut: Appleton-Century-Crofts.

Andrews, H.A., & Roy, C. (1991). The Roy adaptation model: The definitive statement. Norwalk: Appleton & Lange.

Arsenault, D.C., & Mahlangu, N. (1999). Impact of perinatal loss on the subsequent pregnancy and self: Women's experiences. JOGNN, 28(3), 274–282.

Barbara, C. (1973). Psychological and socioeconomic implication. In Clausen, J.P., Flook, M.H., Ford, B., Green, M.M. & Popiel, E.S. (Eds.) Maternity nursing today. New York: Mc Grawhill.

Barnett, J.W. (1976). Patients' emotional reactions to hospitalization: An exploratory study. Journal of Advanced Nursing, I: 351–358.

Boudreaux, M. (1981). Maternal attachment of high-risk mothers with well newborns. JOGNN, (Sep/Oct), 366–369.

Brandt, P.A., & Weinert, C. (1981). The PRQ-A social support measure. Nursing Research, 30(5), 277–280.

Breytspreak, L.M., & George, L.K. (1979). Measurement of self-concept and self-esteem in older people: State of the art. Experimental Aging Research, 5, 137–148.

Brost, L., & Kenney, J.W. (1992). Pregnancy after perinatal loss: Parental reactions and nursing interventions. JOGNN, 21(6), 457–463.

Brown, M.A. (1986). Social support during pregnancy: A unidimensional or multidimensional construct?. Nursing Research, 35(1), 4–9.

_____ (1996). Social support stress and health: A comparison of expectant mother and father. Nursing Research, 35(march-April), 72–76.

Brundage, D.J. (1980). Nursing management of renal problem. St. Louis: The C.V.Mosby Company.

Buckley, K., & Kulb, N.W.(eds). (1993). High risk maternity nursing manual.2nd ed. Baltimore: Williums &Wilkins.

Burns, N. & Grove, S.K. (1993). Understanding Nursing Research. Philadelphia: W.B. Saunders Company.

Clauson, M.I. (1996). Uncertainty and stress in women hospitalized with high-risk pregnancy. Clinical Nursing Research, 5 (3), 309–325.

Cobb, S. (1976). Social support as a moderator of life stress. Psychosomatic Medicine, 38(Sept-Oct), 300–313.

Cohen, R. (1979). Maladaptation to pregnancy. Seminar Perinatol, 3, 15–24.

Cohen, S., & Will, T.A. (1985). Stress, social support and the buffering hypothesis. Psychological Bulletin, 98 (Feb), 310–353.

Coopersmith, S. (1981). The antecedents of self-esteem. 2nd ed. California: Consulting Psychologists Press, Inc.

Cote-Armstrong, D., & Hutti, M. (1998). Pregnancy after perinatal loss: The relationship between anxiety and prenatal attachment. JOGNN, 27(2), 183–189.

Cox, B.E, & Smith, E.C. (1982). The mother's self esteem after a cesarean delivery. MCN, 7, 309–314.

Cronenwett, L.R. (1985 a). Network structure, social support, and psychological outcomes of pregnancy. Nursing Research, 34(2), 93–99.

_____. (1985 b). Parental network structure and perceived support after birth of first child. Nursing Research, 34(6), 347–352.

Cropley, C. (1983). Assesment of mothering behaviors. In K.W.Vestal & C.A.M Mckenzie (eds.). High-risk perinatal nursing. Philadelphia: W.B. Saunders.

Curry, M.A. (1982). Maternal attachment behavior and the mother's self-concept: The effect of early skin-to-skin contact. Nursing Research, 31, 73–78.

Curry, M.A. (1983). Variables related to adaptation to motherhood in "normal" primiparous woman. JOGNN, (March/April), 115–121.

_____ (1990). Response to "Effects of antepartal stress on health status during early motherhood. Scholarly Inquiry for Nursing Practice, 4(2), 151–154.

Diamond, M., & Jones, S.L. (1983). Chronic illness across the life span. Connecticut: Appleton-Century Crofts.

Eleanor, D.T. (1995). Maternity and pediatric nursing. 2nd ed. Philadelphia: W.B. Saunders.

Ferketich, S.L., & Mercer, R.T. (1990). Effects of antepartal stress on health status during early motherhood. Scholarly Inquiry for Nursing Practice, 4(2), 127–149.

Ford, M., & Hodnett, E. (1990). Predictors of adaptation in women hopitalized during pregnancy. The Canadian Journal of Nursing Research, 22(4), 37–50.

Frain, M., & Valiga, T.M. (1981). The multiple dimensions of stress. In Sutterley, D.C., & Donnelly, G.F. (Eds.). Coping with stress. Rockville: Aspen.

Gaffney, K.F. (1986). Maternal-fetal attachment in relation to self-concept and anxiety. MCN, 15(2), 91–101.

Gillbert, E.S., & Harmon, J.S. (1986). High-risk pregnancy and delivery. St.Louis: The C.V. Mosby Company.

Goldenberg, R.L., et al. (1994). Bed rest in pregnancy. Obstetrics & Gynecology, 84(1), 131–136.

Gupton, A., Heaman, M., & Ashcroft, T. (1997). Bed rest from the perspective of the high-risk pregnant woman. JOGNN, 26 (July/August), 423–430.

Gupton, A., Heaman, M., & Cheung, L.W. (2001). Complicated and uncomplicated pregnancies: Women's perception of risk. JOGNN, 30(2), 192–201.

Hall, L.A., Kotch, J.B., Browne, D., & Rayens, M.K. (1996). Self-esteem as a mediator of the effects of stressors and social resources on depressive symptoms in pospartum mothers. Nursing Research, 45(4), 231–238.

Hatmaker, D.D., & Kemp, V.H. (1998). Perception of threat and subjective well-being in low-risk and high-risk pregnant women. J Perinat Neonat Nurs,12(2), 1–10.

Heaman, M. (1992). Stressful life events, social support, and mood disturbance in hospitalized and non-hospitalized women with pregnancy-induced hypertension. The Canadian Journal of Nursing Research, 24(1), 23–37.

_____ (1998). Psychosocial impact of high-risk pregnancy: Hospital and home care. Clinical Obstetrics and Gynaecology, 41(3), 626–639.

Hotnett, E. (1993). Social support during high-risk pregnancy: Does it help?. Birth, 20 (4), 218–219.

Jalowiec, A., & Powers, M.J. (1981). Stress and coping in hypertensive and emergency room patients. Nursing Research, 30(1), 10–15.

Jones, M.B. (1986). The high-risk pregnancy. In S.H. Johnson (Ed.). Nursing assessment and strategies for the family at risk. 2nd ed. Philadelphia: Lippincott.

Kahn, R.L. (1979). Aging and social support. Aging from birth to death: Interdisciplinary persective. In Riley M.M.(Ed.) Colorado: Westview Press.

Kemp, V.H., & Hatmaker, D.D. (1989). Stress and social support in high-risk pregnancy. Research in Nursing and Health, 12, 331–336.

Kemp, V.H., & Page, C.K. (1986). The psychosocial impact of a high-risk pregnancy on the family. JOGNN, 15(3), 232–236.

_____ (1987). Maternal self-esteem and prenatal attachment in high-risk pregnancy. Maternal-Child Nursing Journal, 16(Fall), 195–206.

Lachman, V.D. (1983) Stress management. Orlando: Grune & Stratton, Inc.

Langford, C.P.H., Bowsher, J., Maloney, J.P., & Lillis, P.P. (1997). Social support: A conceptual analysis. Journal of Advanced Nursing, 25, 95–100.

Leung, S.S., et al. (1997). Chronic illness perception in adolescence: Implications for the doctor-patient relationship. Journal of Pediatric and Child Health, 33(2), 107–112.

Loos, C., & Julius, L. (1989). The client's view of hospitalization during pregnancy. JOGNN, (Jan-Feb), 52–56.

Malioni, J. A., & Kasper, C.E. (1991). Physical and psychosocial effects of antepartum hospital bed rest: A review of the literature. Image: Journal of Nursing Scholarship, 23(3), 187–192.

Maloni, J.A. (1996). Bed rest and high-risk pregnancy. Nursing Clinics of North America, 31(2), 313–325.

Maloni, J.A., et al. (1993). Physical and psychosocial side effect of antepartum hospital bed rest. Nursing Research, 42(4), 197–203.

Maloni, J.A., Kane, J.H., Suen, L.J., & Wang, K.K. (2002). Dysphoria among high-risk pregnant hospitalized women on bed rest. Nursing Research, 51(2), 92–99.

Mandeville, L.K., & Troiano, N.H. (Eds.) (1992). High-risk intrapartum nursing. Philadelphia: J.B. Lippincott.

Martin, T.R., Allen, A.C., & Stinson, D. (1979). Overt diabetes in pregnancy American Journal of Obstetric and Gynaecology, 133(3), 275–280.

May, K. (1994). Impact of maternal activity restriction for preterm labor on the expectant father. JOGNN, 23(3), 246–251.

McCain, G.C., & Deatrick, J.A. (1994). The experience of high-risk pregnancy. JOGNN, 23(5), 421–427.

McNett, S.C. (1987). Social support, threat, and coping responses and effectiveness in the functionally disabled. Nursing Research, (March/ April), 98–103.

Meisenhelder, J.B. (1986). Self-esteem in women: The influence of employment and perception of husband's appraisals. Image: Journal of Nursing Scholarship, 18(Spring), 8–14.

Mercer, R.T., et al. (1988). Effect of stress on family functioning during pregnancy. Nursing Research, 37(5), 268–275.

Mercer, R.T., & Ferketich, S.L. (1988). Stress and social support as predictors of anxiety and depression during pregnancy. Advances in Nursing Science, 10, 26–39.

_____. (1994a). Predictors of maternal role competence by risk status. Nursing Research, 43(1), 38–43.

Mercer, R.T., Ferketich, S.L., & DeJoseph, J.F (1993). Predictors of partner relationship during pregnancy and infancy. Research in Nursing & Health, 16, 45–56.

Mercer, R.T., May, K.A., Ferketich, S., & DeJoseph, J. (1986). Theoretical models for studying the effect of antepartum stress on the family. Nursing Research, 35, (6), 339–346.

Miller, J.F. (1983). Coping with chronic illness overcoming powerlessness. Philadelphia: F.A. Devis Company .

Moore, M.L. (1983). Realities in childbearing. 2nd ed. Philadelphia: W.B. Saunders company.

Murphy, J.M. & Robbins, D. (1993). Psychosocial implications of high-risk pregnancy. In Knuppel, R., & Drukker, J. eds. High-risk pregnancy: A team approach. 2nd ed. Philadelphia: W.B. Saunders company.

Newton, R.W., Webster, P.C., Binu, P.S., Maskrey, N., & Phillips, A.B. (1979). Psychosocial stress in pregnancy and its relation to the onset of premature labour. Health Medical Journal, 2, 411–413.

Norbeck, J.S., & Tilden, V.P. (1983). Life stress, social support, and emotional disequilibrium in complications of pregnancy: A prospective, multivariate study. Journal of Health and Social Behavior, 24(3), 30–46.

Nuckolls, K.B., Cassel, J., & Kaplan, B.H. (1972). Psychosocial assets, life crisis and the prognosis of pregnancy. American Journal of Epidimiology, 95, 431–441.

Palmore, E., & Luikart, C. (1972). Health and social factors related to life satisfaction. Journal of Health & Social Behavior, 13, 68–80.

Pender, N.J. (1987). Health promotion in nursing practice. Norwalk: Appleton & Lange.

Penticuff, J.H. (1982). Psychologic implications in high-risk pregnancy. Nursing Clinics of North America, 17(1), 69–78.

Pilitteri, A. (1981). Maternal-newborn nursing: Care of the growing family. 2nd ed. Boston: Little Brown.

_____ (1995). Maternal and child health nursing. 2nd ed. Boston: Little Brown.

Primomo, J., Yates, B.C., & Wood, N.F. (1990). Social support for women during chronic illness: The relationship among sources and types to adjustment. Research in Nursing and Health, 13, 153–161.

Rosenberg, M. (1979). Conceiving the self. New York: Basic Book.

_____ (1989). Society and the adolescent self-image. Rev. ed. Connecticut: Wesleyan University Press.

Roy, C., & Andrews, H.A. (1999). The Roy adaptation model. 2nd eds. Stamford: Appleton & Lange.

Roy, C. (1976). Introduction to nursing: And adaptation model. New Jersey: Prentice-Hall Inc.

Rubin, R. (1975). Maternal tasks in pregnancy. Maternal-Child Nursing Journal, 4, 143–153.

Schroeder, C.A. (1998). Bed rest in complicated pregnancy. MCN, 23(Jan/Feb), 45–49.

Selye, H. (1956). The stress of life. New York: McGraw-Hill.

_____. (1983). Selye's guide to stress research.Vol 3. New York: Van Norstrand Reinhold Company Inc.

Sherwen, L.N., Scoloveno,M.A., & Weingarten,C.T. (1991). Nursing care of the childbearing family. Norwalk: Appleton & Lange.

Shumaker, S.A., & Brownell, A. (1984). Toward a theory of social support: Closing of conceptual gaps. Journal of Social Issues, 40(4), 11–33.

Stainton, M.C. (1994). Supporting family functioning pregnancy. MCN, 19(Jan /Feb), 24–28.

Stanley, K., Soule, B., & Copans, S.A. (1979). Dimensions of pregnancy anxiety and their influence on pregnancy outcome. American Journal of Obstetric and Gynaecology, 135(1), 22–28.

Stuart, G.W., & Sundeen, S.J. (1995). Principles and practice of psychiatric nursing. 5th ed. Saint Louis: The C.V.Mosby company.

Taft, L.B. (1985). Self-esteem in later life: A nursing perspective. Advances in Nursing Science, 8(Oct), 77–84.

Theut, S.K., Pederson, F.A., Zaslow, M.J., Cain, R.L., & Rabinovich, B.A. (1988). Pregnancy subsequent to perinatal loss: Parental anxiety and depression. Journal of American Academy of Child and Adolescent Psychiatry, 27(3), 289–292.

Thoits, P.A. (1982). Conceptual, methodological and theoretical problems in study social support as a buffer against life stress. Journal of Health and Social Behavior, 23(Oct), 145–149.

Tilden, V.P. (1983). The relation of life stress and social support to emotional disequilibrium during pregnancy. Research in Nursing and Health, 6, 167–174.

_____ (1985). Issues of conceptualization and measurement of social support in the construction of nursing theory. Research in Nursing and Health, 8 (June), 199–206.

Volicer, B.J. (1974). Patients' perceptions of stressful events associated with hospitalization. Nursing Research, 23 (3), 235–238.

Wallace, J.R., Cunningham, T.F., & Monte, V. (1984). Changes in the relationship between self-esteem and locus of control. The Journal of Social Psychology, 124(Dec), 261–262.

Wewers, M.E., & Lowe, N.K. (1990). A critical review of visual analogue scales in the measurement of clinical phenomena. Research in Nursing & Health, 13, 227–236.

White, M., & Ritchie, J. (1984). Psychological stressors in antepartum hospitalization: Reports from pregnant woman. Maternal Child Nursing Journal, 13(4), 47–56.

Williams, F. (1974). The crisis of hospitalization. Nursing Clinics of North America, 9 (1), 37–45.

Williams, M.L. (1986). Long-term hospitalization of women with high-risk pregnancies. JOGNN, (Jan/Feb), 17–21.

Wilson-Barnett, J. (1976). Patients' emotional reactions to hospitalization: An exploratory study. Journal of Advanced Nursing, 1, 351–358.

Wilson, W.S. (1989). Research in nursing. 2nd eds. California: Addison-Wesley.

Zales, M.R. (1985) Stress in health and disease. New York: Brunner/Mazel, Inc.

กนกภรณ์ อ่วมพราหมณ์ (Kanokporn Auampram). (2541). การรับรู้ภาวะสุขภาพ การสนับสนุนทางสังคมและพฤติกรรมส่งเสริมสุขภาพของสตรีวัยหมดประจำเดือน. วิทยานิพนธ์ปริญญาพยาบาลศาสตรมหาบัณฑิต, สาขาการพยาบาลแม่และเด็ก. บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล.

กัลยา วานิชย์บัญชา (Ganlaya Wanichbancha). (2543). การใช้ SPSS for Windows ในการวิเคราะห์ข้อมูล. กรุงเทพฯ: ห้างหุ้นส่วนจำกัด ซี เค แอน เอส โฟโต้สตูดิโอ.

จริยาวัตร คมพยัคฆ์ (Jariya Kompayak). (2531). แรงสนับสนุนทางสังคม: มโนทัศน์และการนำไปใช้. วารสารพยาบาลศาสตร์, 6(เมย.–มิย.), 96–105.

ช่อลดา พันธุเสนา (Chorlada Pantusena). (2530). การพยาบาลจิตสังคมในผู้ป่วยภาวะวิกฤติตามแบบแผนสุขภาพ. กรุงเทพมหานคร: บริษัท อมรินทร์ พริ้นติ้งกรุ๊ฟ จำกัด.

ดวงหทัย สงไตรรัตน์ (Duanghathai Songtrirat). (2540). อัตมโนทัศน์ ความวิตกกังวล และความผูกพันระหว่างมารดาและทารกของสตรีตั้งครรภ์ที่มีภาวะเสี่ยงสูงขณะพักรักษาในโรงพยาบาลก่อนกำหนดคลอด. วิทยานิพนธ์ปริญญาพยาบาลศาสตรมหาบัณฑิต, สาขาการพยาบาลมารดาและทารก. บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล.

ปิยะเนตร กาญจนเจริญ (Piyanate Kanchanacharoen). (2541). ความเครียดและพฤติกรรมเผชิญความเครียดของหญิงตั้งครรภ์ที่มีภาวะเสี่ยงสูงขณะพักรักษาในโรงพยาบาล. วิทยานิพนธ์ปริญญาพยาบาลศาสตรมหาบัณฑิต, สาขาการพยาบาลมารดาและทารก. บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล.

พรทิพย์ วงศ์วิเศษสิริกุล (Pornthip Wongvisetsirikul). (2540). ความสัมพันธ์ระหว่างปัจจัยส่วนบุคคล สัมพันธภาพระหว่างคู่สมรส แรงสนับสนุนทางสังคม ความรู้สึกมีคุณค่าในตนเอง การปรับเปลี่ยนบทบาทการเป็นมารดากับอาการวิตกกังวลและซึมเศร้าภายหลังคลอดในมารดาที่มีบุตรคนแรก. วิทยานิพนธ์ปริญญาพยาบาลศาสตรดุษฎีบัณฑิต. บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล.

พรพรรณ จงปราณี (Pornpan Jongpranee). (2540). ปัจจัยคัดสรร แรงสนับสนุนทางสังคมกับกับความรักใคร่ผูกพันระหว่างมารดาและทารกในมารดาวัยรุ่น. วิทยานิพนธ์ปริญญาพยาบาลศาสตรมหาบัณฑิตสาขาการพยาบาลมารดาและทารก. บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล.

พรรณี ฉุ้นประดับ (Pannee Chunpradub). (2538) . ความสัมพันธ์ระหว่างความรู้สึกมีคุณค่าในตนเอง การสนับสนุนทางสังคมกับพฤติกรรมเผชิญความเครียดในหญิงตั้งครรภ์ที่มีภาวะเสี่ยง. วิทยานิพนธ์ปริญญาพยาบาลศาสตรมหาบัณฑิต, สาขาการพยาบาลแม่และเด็ก. บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล.

พรศิริ ใจสม (Pornsiri Jaisom). (2536). ความเครียดและการเผชิญความเครียดของบิดา-มารดาที่บุตรเข้ารับการรักษาในหออภิบาลผู้ป่วยกุมารเวชกรรม. วิทยานิพนธ์ปริญญาพยาบาลศาสตรมหาบัณฑิต, สาขาการพยาบาลแม่และเด็ก. บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล.

ยุวดี ฤาชา และคนอื่นๆ (Yuwadee Luecha, et al). (2532). วิจัยทางการพยาบาล. พิมพ์ครั้งที่ 3. กรุงเทพฯ: บริษัท วิคตอรี่ เพาเวอร์พอยท์ จำกัด.

วินิต พัวประดิษฐ์, บรรณาธิการ (Winit Phuapradit, Ed). (2537) การบริบาลครรภ์เสี่ยงสูง. กรุงเทพฯ: สำนักพิมพ์หมอชาวบ้าน.

ศากุล คงพันธ์ (Sakul Kongpan). (2533). ความสัมพันธ์ระหว่างวิธีการเผชิญความเครียดกับความผาสุกโดยทั่วไปในมารดาของเด็กที่เข้ารับการรักษาในโรงพยาบาล. วิทยานิพนธ์ปริญญาวิทยาศาสตรมหาบัณฑิต, สาขาการพยาบาลศาสตร์. บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล.

ศิริพร ฉัตรโพธิ์ทอง (Siriporn Chutpothong). (2536). การพยาบาลเพื่อลดความเครียดในหญิงตั้งครรภ์ที่มีภาวะเสี่ยง. วารสารพยาบาล, 42 (2), 131–144.

ศิริวรรณ มั่นสุข (Siriwan Munsuk). (2539). แรงสนับสนุนทางสังคม ความผูกพันระหว่างมารดาและทารกในระยะตั้งครรภ์และการปรับบทบาทมารดาหลังคลอดที่ได้รับการผ่าตัดเอาทารกออกทางหน้าท้อง. วิทยานิพนธ์ปริญญาพยาบาลศาสตรมหาบัณฑิต, สาขาการพยาบาลมารดาและทารก. บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล.

สมเกียรติ ศรีสุพรรณดิษฐ์ (Somkeart Srisupandit). (2534). สูติศาสตร์พื้นฐานรามาธิบดี. กรุงเทพฯ: สำนักพิมพ์ข้าวฟ่าง.

สมจิต หนุเจริญกุล (Somjit Hanujaroenkul). (2534). การดูแลตนเอง: ศาสตร์และศิลปทางการพยาบาล. กรุงเทพฯ: บริษัทวิศิฎสิน จำกัด.

สุจิตรา เหลืองอมรเลิศ (Sujitra Lueng-amornlert). (2537). ทฤษฎีการปรับตัวของรอย: แนวคิดและการนำไปใช้. ภาควิชาการพยาบาลอายุรศาสตร์และศัลยศาสตร์ คณะพยาบาลศาสตร์ มหาวิทยาลัยขอนแก่น.

สุปรียา บุณยเกตุ (Supreya Bunyakate). (2527). ภาวะเครียดในหญิงตั้งครรภ์. วารสารพยาบาล, 33 (2), 152–157.

สุพรรณี สุ่มเล็ก (Suphannee Soomlek). (2538). รูปแบบเชิงสาเหตุของความสามารถในการดำรงบทบาทมารดาเป็นครั้งแรก. วิทยานิพนธ์ปริญญาพยาบาลศาสตรดุษฎีบัณฑิต. บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล.

สุพัตรา สุภาพ (Supattra Suprab). (2515). ปัญหาสังคม. กรุงเทพฯ: ไทยวัฒนาพานิช.

สุภาพ อารีเอื้อ (Suparb Are-ue). (2540). ความเครียด การเผชิญปัญหา และคุณภาพชีวิตของหญิงสูงอายุโรคข้อเสื่อม. วิทยานิพนธ์ปริญญาพยาบาลศาสตรมหาบัณฑิต, สาขาการพยาบาลผู้ใหญ่. บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล.

อัมพร โอตระกูลและคณะ (Aumporn Otrakul, et al). (2533). การสำรวจความเครียดในหญิงตั้งครรภ์. วารสารสาธารณสุขศาสตร์, 20 (1), 29–37.

อุดมพร ยิ่งไพบูลย์สุข (Udomporn Yingpaiboonsuk). (2540). ความสัมพันธ์ระหว่างปัจจัยบางประการ การสนับสนุนทางสังคมกับการปรับตัวของสตรีที่มีบุตรยาก. วิทยานิพนธ์ปริญญาพยาบาลศาสตรมหาบัณฑิต, สาขาการพยาบาลแม่และเด็ก. บัณฑิตวิทยาลัย มหาวิทยาลัยมหิดล.

APPENDIX A

APPENDIX A

Research Consent Form

คำชี้แจงและพิทักษ์สิทธิ์ของผู้เข้าร่วมการวิจัย

"สวัสดีค่ะ ดิฉันชื่อ ฐิติมา ลือประเสริฐ เป็นนักศึกษาพยาบาลปริญญาโท คณะแพทยศาสตร์โรงพยาบาลรามาธิบดี มหาวิทยาลัยมหิดล กำลังทำวิจัยเรื่อง ความสัมพันธ์ระหว่างปัจจัยด้านบุคคล ความรู้สึกมีคุณค่าในตนเอง การสนับสนุนทางสังคมและความเครียดในสตรีตั้งครรภ์ที่มีภาวะเสี่ยงสูงขณะเข้าพักรับการรักษาในโรงพยาบาลก่อนกำหนดคลอด มีวัตถุประสงค์เพื่อนำผลการศึกษาครั้งนี้เป็นแนวทางในการจัดการเรียนการสอนแก่นักศึกษาพยาบาลและวางแผนการพยาบาลแก่สตรีตั้งครรภ์ที่มีภาวะเสี่ยงสูง จึงใคร่ขอความร่วมมือจากท่านในการตอบแบบสอบถาม คำตอบของท่านไม่มีการตัดสินว่าถูกหรือผิด หรือไม่ก่อให้เกิดผลเสียใดๆแก่ท่าน ทั้งในด้านการได้รับบริการ การดูแลรักษา และด้านส่วนตัว ในระหว่างตอบแบบสอบถาม ท่านสามารถขอยกเลิกการเข้าร่วมโครงการวิจัยได้ตามต้องการ โดยไม่มีผลกระทบต่อการรับบริการแต่ประการใด"

หากมีข้อสงสัยโปรดสอบถามผู้วิจัยได้โดยไม่ต้องเกรงใจ คำตอบของท่านมีค่ายิ่งต่อวิทยาการเกี่ยวกับสตรีตั้งครรภ์ที่มีภาวะเสี่ยงสูงตลอดจนการวางแผนการพยาบาลที่เหมาะสมแก่สตรีตั้งครรภ์ที่มีภาวะเสี่ยงสูง คำตอบของท่านถือเป็นความลับและจะนำมาใช้เฉพาะการวิจัยครั้งนี้เท่านั้น หากท่านมีความยินดีที่จะเข้าร่วมการวิจัยนี้ โปรดกรุณาลงชื่อท้ายกระดาษนี้

ขอขอบคุณทุกท่านที่ให้ความร่วมมือ

(ฐิติมา ลือประเสริฐ)
นักศึกษาพยาบาลปริญญาโท

☐ ยินดีเข้าร่วมการวิจัย

☐ ไม่ยินดีเข้าร่วมการวิจัย

ลายเซ็น……..

(……)

..……../……./……

APPENDIX B

APPENDIX B

Questionnaires

<u>คำชี้แจง</u> แบบสอบถามที่ใช้ในการวิจัยครั้งนี้ ประกอบด้วย 4 ตอน ดังนี้

ตอนที่ 1 แบบแบบบันทึกข้อมูลส่วนบุคคลของสตรีตั้งครรภ์ จำนวน 5 ข้อ

ตอนที่ 2 แบบวัดความรู้สึกมีคุณค่าในตนเองของสตรีตั้งครรภ์ จำนวน 10 ข้อ

ตอนที่ 3 แบบสอบถามการสนับสนุนทางสังคมของสตรีตั้งครรภ์ จำนวน 23 ข้อ

ตอนที่ 4 แบบวัดความเครียดของสตรีตั้งครรภ์ขณะพักรักษาในโรงพยาบาล จำนวน 47 ข้อ

ตอนที่ 1 แบบบันทึกข้อมูลส่วนบุคคลของสตรีตั้งครรภ์ที่มีภาวะเสี่ยงสูง

(รวบรวมจากทะเบียนประวัติและสัมภาษณ์สตรีตั้งครรภ์)

เลขที่แบบสอบถาม _____

HN _____

1. อายุ _____ ปี (วัน/เดือน/ปีเกิด_____)
2. รายได้ของครอบครัว_____บาท/เดือน
   ( ) ไม่พอใช้จ่าย ( ) พอใช้จ่าย
3. ระดับการศึกษาสูงสุด _____
4. ท่านเคยมีประสบการณ์การสูญเสียบุตรหรือไม่
   ( ) ไม่เคย
   ( ) เคย _____ ครั้ง ครั้งสุดท้ายเมื่อ_____
5. ท่านมีความรู้สึกว่าโรคหรือภาวะแทรกซ้อนระหว่างตั้งครรภ์ที่เกิดขึ้นกับท่านในขณะนี้มีความรุนแรงมากน้อยเพียงไร [ให้ขีดเส้นตัด (/) ทับตำแหน่งที่ตรงกับความรู้สึกของท่าน]

ไม่รุนแรงเลย รุนแรงมากที่สุด

สำหรับผู้วิจัย

Admitted date _____ Time_____

Studied date _____Time_____

Hours of admission _____ (at study)

Diagnosis_____

Gravida_____ Parity_____ Now living_____(old_____ years) Last para_____

Married history ☐ 1st number of child___ ☐ 2nd number of child___ ☐ 3rd number of child___

Experiences of hospitalization ☐No ☐Yes_____ times_____

Adress_____

_____ Telephone number_____

ตอนที่ 2 แบบวัดความรู้สึกมีคุณค่าในตนเองของสตรีตั้งครรภ์ที่มีภาวะเสี่ยงสูง

<u>คำชี้แจงในการตอบแบบสอบถาม</u>

แบบสอบถามนี้มีวัตถุประสงค์ที่จะถามความรู้สึกหรือความคิดเห็นของท่านที่มีต่อตนเองในขณะตั้งครรภ์ที่มีภาวะเสี่ยงสูงและต้องเข้าพักรับการรักษาในโรงพยาบาลก่อนกำหนดคลอด โปรดอ่านข้อความแต่ละข้อและเขียนเครื่องหมายถูก (✓) ลงในช่องที่ตรงกับความรู้สึกที่แท้จริงของท่านมากที่สุดเพียงคำตอบเดียวในแต่ละข้อ คำตอบที่ได้ไม่มีถูกหรือผิด

<u>การเลือกตอบให้ถือเกณฑ์ดังนี้</u>

ตลอดเวลา หมายถึง เมื่อท่านเห็นว่าข้อความนั้นตรงกับความรู้สึกของท่านตลอดเวลา

บ่อย หมายถึง เมื่อท่านเห็นว่าข้อความนั้นตรงกับความรู้สึกของท่านบ่อยๆ

นานๆครั้ง หมายถึง เมื่อท่านเห็นว่าข้อความนั้นตรงกับความรู้สึกของท่านนานๆครั้ง

ไม่เลย หมายถึง เมื่อท่านเห็นว่าข้อความนั้นไม่ตรงกับความรู้สึกของท่านเลย

<u>ตัวอย่าง</u> ท่านมีความรู้สึกหรือความคิดเห็นตรงกับข้อความต่อไปนี้เพียงไร

ข้อความ	ตลอดเวลา	บ่อย	นานๆครั้ง	ไม่เลย
ฉันรู้สึกว่าฉันเป็นคนร่าเริง		✓		

แบบสอบถามความรู้สึกมีคุณค่าในตนเอง

ข้อความ	ตลอดเวลา	บ่อย	นานๆครั้ง	ไม่เลย
1. ฉันรู้สึกว่า……				
……				
10. หลายครั้งที่ฉัน……				

ตอนที่ 3 แบบสอบถามการสนับสนุนทางสังคมของสตรีตั้งครรภ์ที่มีภาวะเสี่ยงสูง

คำชี้แจงในการตอบแบบสอบถาม

แบบสอบถามชุดนี้ต้องการทราบว่า ในการตั้งครรภ์ครั้งนี้ ท่านได้รับการสนับสนุนจากสังคมมากน้อยเพียงใด โดยอ่านข้อความทางซ้ายมือแล้วพิจารณาว่าบุคคลใกล้ชิดกับท่าน ซึ่งได้แก่ **สามี หรือสมาชิกในครอบครัว หรือเพื่อน หรือแพทย์พยาบาล** ได้ให้การสนับสนุน ช่วยเหลือประคับประคอง ตามข้อความดังกล่าวมากน้อยเพียงใด แล้วทำเครื่องหมายถูก (✓) ในช่องที่ตรงกับความรู้สึกที่แท้จริงของท่านเพียงคำตอบเดียว

การเลือกตอบให้ถือเกณฑ์ดังนี้

ไม่จริงเลย หมายถึง ข้อความไม่ตรงกับความรู้สึกหรือความเป็นจริงที่ท่านได้รับเลย
เป็นจริงเล็กน้อย หมายถึง ข้อความตรงกับความรู้สึกหรือความเป็นจริงที่ท่านได้รับเล็กน้อย
เป็นจริงปานกลาง หมายถึง ข้อความตรงกับความรู้สึกหรือความเป็นจริงที่ท่านได้รับปานกลาง
เป็นจริงส่วนมาก หมายถึง ข้อความตรงกับความรู้สึกหรือความเป็นจริงที่ท่านได้รับเป็นส่วนมาก
เป็นจริงมากที่สุด หมายถึง ข้อความตรงกับความรู้สึกหรือความเป็นจริงที่ท่านได้รับมากที่สุด

ตัวอย่าง

ข้อความ	ไม่จริงเลย	เป็นจริงเล็กน้อย	เป็นจริงปานกลาง	เป็นจริงส่วนมาก	เป็นจริงมากที่สุด
คนใกล้ชิดช่วยให้ฉันมีกำลังใจในการดำเนินชีวิต				✓	

แบบสอบถามการสนับสนุนทางสังคม

ข้อความ	ไม่จริงเลย	เป็นจริงเล็กน้อย	เป็นจริงปานกลาง	เป็นจริงส่วนมาก	เป็นจริงมากที่สุด
1. ในการตั้งครรภ์ครั้งนี้…….					
……..					
23. คนใกล้ชิดทำให้……...					

ตอนที่ 4 แบบวัดความเครียดของสตรีตั้งครรภ์ที่มีภาวะเสี่ยงสูงขณะพักรับการรักษาใน โรงพยาบาล

<u>คำชี้แจงในการตอบแบบสอบถาม</u>

แบบวัดนี้ต้องการทราบว่าขณะที่ท่านได้รับการวินิจฉัยจากแพทย์ว่ามีภาวะเสี่ยงสูงและต้องเข้าพักรับการรักษาในโรงพยาบาลก่อนกำหนดคลอด ทำให้ท่านเกิดความเครียด หรือรู้สึกเครียดในเหตุการณ์หรือสถานการณ์ต่างๆที่เกิดขึ้นมากน้อยเพียงใด

โปรดอ่านข้อความในแต่ละข้อ แล้วทำเครื่องหมายถูก (✓) ลงในช่องที่ตรงกับความรู้สึกที่เป็นจริงของท่านมากที่สุดเพียงคำตอบเดียวในแต่ละข้อ และกรุณาตอบทุกข้อ

<u>การเลือกตอบให้ถือเกณฑ์ดังนี้</u>

ท่านไม่มีความรู้สึกเครียดต่อเหตุการณ์หรือสถานการณ์นั้นเลยหรือไม่มีเหตุการณ์นั้นเกิดขึ้นกับท่านเลย

เครียดเล็กน้อย หมายถึง ท่านเห็นว่าเหตุการณ์หรือสถานการณ์นั้นทำให้ท่านเกิดความรู้สึกเครียดบ้างเล็กน้อย

เครียดปานกลาง หมายถึง ท่านเห็นว่าเหตุการณ์หรือสถานการณ์นั้นทำให้ท่านเกิดความรู้สึก เครียดปานกลางหรือเพียงครึ่งหนึ่ง

เครียดมาก หมายถึง ท่านเห็นว่าเหตุการณ์หรือสถานการณ์นั้นทำให้ท่านเกิดความรู้สึกเครียดมาก

เครียดมากที่สุด หมายถึง ท่านเห็นว่าเหตุการณ์หรือสถานการณ์นั้นทำให้ท่านเกิดความรู้สึกเครียดมากที่สุด

<u>ตัวอย่าง</u> เหตุการณ์หรือสถานการณ์ต่อไปนี้ทำให้ท่านเกิดความรู้สึกเครียดมากน้อยเพียงใด

เหตุการณ์หรือสถานการณ์	เครียดมากที่สุด	เครียดมาก	เครียดปานกลาง	เครียดเล็กน้อย	ไม่มีความเครียด
การที่ต้องนับเด็กดิ้นทุกวัน				✓	

แบบวัดความเครียดของสตรีตั้งครรภ์ที่มีภาวะเสี่ยงสูงขณะพักรับการรักษาในโรงพยาบาล

เหตุการณ์หรือสถานการณ์	เครียดมากที่สุด	เครียดมาก	เครียดปานกลาง	เครียดเล็กน้อย	ไม่มีความเครียด
1. การจากบ้าน……					
……					
47. ฉันรู้สึก……					

BIOGRAPHY

NAME	Ms. Thitima Lueprasert
DATE OF BIRTH	3 Febuary, 1970
PLACE OF BIRTH	Nakhon ratchasrima, Thailand
INSTITUTION ATTEND	St.Louis College, 1987 – 1990: Bachelor of Nursing Mahidol University, 1998 – 2003: Master of Nursing Science (Maternity and newborn Nursing)
POSITION AND OFFICE	1991–1992: St.Louis Hospital, Position: Register nurse 1993–1997: Obstetrics-Gynecology clinic, Position: Clinic's owner 1998–2000: St.Louis College, Position: Obstetrics-Gynecology teacher 2001–present: American International Assurance, Position: Supervisor