A STRUCTURAL EQUATION MODEL OF MATERNAL ROLE ATTAINMENT AMONG WORKING PRIMIPAROUS MOTHERS

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Maternal role attainment is a complex and difficult development process encountered by pregnant women. This role attainment is especially more complicated among primiparous mothers. Incorporating maternity and the working role entails psychological integrity that involves the well being of the mother, infant, and the family. Thus, an understanding of the mechanism of factors that affect the maternal role attainment process is needed to enhance the potential of the maternal role and the quality of family life at large. The knowledge gained from the study could shed some light on the formulation of new nursing concepts as well.

This study aimed to test the causal model derived from Mercer's maternal role attainment theory, which illustrated the causal relationships among 6 variables. These include working conditions, marital relationship, social support, self-esteem, infant's characteristics, and maternal role attainment. For the purposes of the study, 390 hospitalized working primiparous mothers were drawn from government hospitals located in Bangkok metropolitan area. Two consecutive questionnaires were used to facilitate data gathering within a 5 month period after delivery. The first set of questionnaires was administered during the first 2-3 days after the delivery of the samples to collect the data on working conditions, marital relationship, and social support. Four months later, the second set of questionnaires was mailed to the participants in order to determine their self-esteem, infant's characteristics, and maternal role attainment. The LISREL program version 8.30 was employed to facilitate the data analysis.

The finding of this study revealed that the factors directly affecting maternal role attainment are self-esteem ($\beta = 1.89$, $p < .05$) and infant's characteristics ($\beta = .81$, $p < .05$). Factors that directly affecting infant's characteristics are working conditions ($\beta = .95$, $p < .05$), marital relationship ($\beta = .18$, $p < .05$) and social support ($\beta = .80$, $p < .05$). Marital relationship and social support have direct positive effect on self-esteem ($\beta = .17$, $p < .05$, and $\beta = .81$, $p < .05$, respectively). The model accounts for a 58 % of variance on maternal role attainment.

The study indicated that further testing of nursing strategies through experimental research for supporting maternal role attainment should be implemented in the future.

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ศรีสมร ภูมนสกุล : รูปแบบเชิงโครงสร้างของการดำรงบทบาทมารดา ในมารดาครรภ์แรกที่ทำงาน (A STRUCTURAL EQUATION MODEL OF MATERNAL ROLE ATTAINMENT AMONG WORKING PRIMIPAROUS MOTHERS) คณะกรรมการควบคุมวิทยานิพนธ์ : กอบกุล พันธ์เจริญวรกุล, Ph.D., รุจา ภู่ไพบูลย์, RN. DNS., ธวัชชัย วรพงศธร, Ph.D., 213 หน้า. ISBN 974-663-961-7

การดำรงบทบาทมารดาเป็นกระบวนการที่ยุ่งยากและซับซ้อนที่ผู้หญิงต้องเผชิญ ซึ่งความยุ่งยากและซับซ้อนดังกล่าวจะยิ่งมีมากขึ้นหากเป็นการตั้งครรภ์ครั้งแรก การที่สามารถปรับบทบาทการเป็นมารดาร่วมไปกับบทบาทการทำงาน จะนำมาซึ่งความเข้มแข็งทางด้านจิตใจ อันเป็นผลให้เกิดความผาสุกของมารดา, บุตร และครอบครัว ดังนั้นการทำความเข้าใจถึงกระบวนการที่ปัจจัยต่าง ๆ ส่งอิทธิพลต่อการดำรงบทบาทมารดา จึงมีความจำเป็นในการส่งเสริมศักยภาพของการปฏิบัติบทบาทมารดา และคุณภาพชีวิตครอบครัวโดยรวม นอกจากนี้ความรู้ที่ได้จากการศึกษาครั้งนี้ยังจะช่วยทำให้แนวคิดทางการพยาบาลมีความชัดเจนยิ่งขึ้น

การศึกษาครั้งนี้มีวัตถุประสงค์เพื่อทดสอบความสัมพันธ์เชิงสาเหตุและผล ระหว่างตัวแปร 6 ตัว ที่พัฒนามาจากทฤษฎีการดำรงบทบาทมารดาของเมอร์เซอร์ อันได้แก่ ลักษณะงาน, สัมพันธภาพสมรส, การสนับสนุนทางสังคม, ความรู้สึกมีคุณค่าในตนเอง, คุณลักษณะบุตร, และการดำรงบทบาทมารดา กลุ่มตัวอย่างเป็นมารดาครรภ์แรกจำนวน 390 ราย ที่พักรักษาตัวอยู่ในโรงพยาบาลของรัฐในเขตกรุงเทพมหานคร เก็บข้อมูลภายใน 5 เดือนหลังคลอด แบบสอบถามชุดแรก ประกอบด้วย ลักษณะงาน, สัมพันธภาพสมรส, และการสนับสนุนทางสังคา จะให้มารดาประเมินด้วยตนเองในระยะ 2-3 วันหลังคลอด แบบสอบชุดที่สองจะถูกส่งไปยังกลุ่มตัวอย่างโดยทางไปรษณีย์ เพื่อประเมินความรู้สึกมีคุณค่าในตนเอง, คุณลักษณะบุตร และการดำรงบทบาทมารดาในอีก 4 เดือนต่อมา การวิเคราะห์ข้อมูลใช้โปรแกรมลิสเรล เวอร์ชั่น 8.30

ผลของการศึกษาพบว่าปัจจัยที่มีอิทธิพลโดยตรงต่อการดำรงบทบาทมารดาได้แก่ ความรู้สึกมีคุณค่าในตนเอง (β = 1.89, $p < .05$) และคุณลักษณะบุตร (β = .81, $p < .05$) ส่วนปัจจัยที่มีอิทธิพลโดยตรงต่อคุณลักษณะบุตรก็คือ ลักษณะงาน (β = .95, $p < .05$), สัมพันธภาพสมรส (β = .18, $p < .05$) และ การสนับสนุนทางสังคม (β = .80, $p < .05$) นอกจากนี้ สัมพันธภาพสมรส และการสนับสนุนทางสังคมก็ยังมีอิทธิพลโดยตรงในทางบวกต่อความรู้สึกมีคุณค่าในตนเอง (β = .17, $p < .05$ และ β = .81, $p < .05$ ตามลำดับ) และโมเดลดังกล่าวสามารถอธิบายความแปรปรวนของการดำรงบทบาทมารดาได้ร้อยละ 58

ข้อเสนอแนะจากการศึกษาครั้งนี้ก็คือ ควรจะมีการทดสอบกระบวนการทางการพยาบาลเพื่อส่งเสริมการดำรงบทบาทมารดา โดยวิธีการวิจัยเชิงทดลองในอนาคต

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CHAPTER I

INTRODUCTION

Background and Significance of the Study

The transition to the maternal role is acknowledged as a period of reorganization in a woman's life that involves the addition of the mothering role to an established set of roles that vary according to the particular stage of life. A passage into motherhood is a developmental process that also involves transition to adulthood (Breen, 1975; Leifer, 1977; Shereshefdky & Yarrow, 1973; Mercer, 1985: 198). Acquiring the maternal role is a complicated process especially at the first time of motherhood. Mothers must learn and adjust continuously to fulfill their expected role by interaction with their infants in accordance with the social context (Hardy & Conway, 1988: 66; Rubin, 1967a: 237-245, 1967b: 342-346). Psychoanalysts believed that acquisition of the new role in the postpartum period is a critical transition. A mother will use a magnitude of her own potentials and abilities to alter her physical, psychological and social entities to attain the maternal role and integrate into the role set as maternal identity (Koniak-Griffin, 1993: 258; Mercer, 1981: 74; Pridham, et al., 1991: 21; Walker, et al., 1986a: 69; Zabielski, 1994: 12).

Maternal role adaptation activities under a social context is essential to the infant's well being and psychological development in the first year of life (Walker, et al., 1986b: 352). Maternal role attainment and the attachment process between infant and mother will be gradually developed (Rubin, 1967a). Likewise, disruption or

incompletion of the maternal role attainment process can endanger the attachment process that affects psychological and emotional development as well as the well being of the mother and infant (Flagler, 1988: 27). Inappropriate nourishing, child abuse, and neglect of the child are usually found as its consequence (Traus & Kramer, 1986: 459).

Nowadays, there has been a drastic change in Thai society as a result of the successful implementation of the national economic and social plans during the past three decades in Thailand which increased the demand for the labor force (TDRI, 1990). However, a decrease in the fertility rate has lead to a shortage of human resources for the market. There are an increasing number of women who are working outside the home (Prachabmoh, 1991: 102). The national labor report indicated that 67.4 percent of women had participated in the labor force, 59.9 percent of whom were in urban areas which had increased from 51.7 and 56.2 percent in the years 1985 and 1988 respectively (Wongboonsin, et al., 1992; Thomson & Pongvate, 1995: 49). Moreover, with the advent of the nuclear family there was also a decrease in family size, so increasing women's family burdens. Therefore, mothers not only had responsibility for economic matters, but also for house keeping and caring for their children. This indicated the importance of the working factor over the maternal role attainment.

Under these pressurized conditions, mother would be exposed to maternal role stress and the absence of an original maternal role model – her own mother. The maternal role model is then transferred from her mother to other sources such as peers or mass media. Therefore, the transition to motherhood under these conditions would be more difficult and sophisticated. Unless the mother could adjust well, she would

likely encounter inappropriate role adaptation and role stress, that would result in health deterioration (Hall, et al., 1992: 445-457; Meleis, et al., 1989: 355-364).

In Thailand, data gleaned from twenty-five government and private organizations (35 institutes) revealed that inappropriate practices of the maternal role have aggravated the problem of neglected children in Thailand. The number of neglected young infants rose from 723 cases in 1990 to 873 cases in 1994 and child abuse cases have increased as well from 61 to 273 cases during the same period. Social changes that forced mothers to work outside home conflicted with the expected maternal role and lead to poor performance of the mother (The research committee of the right of the child protection, 1996:1, 7). Moreover, the Department of Public Welfare, Ministry of Labour and Social Welfare revealed that the number of users of the reception home for babies (Pak Kred & Phayathai) radically increased from 466 to 1,155 cases from 1995 to 1998, while the overall country statistics increased from 3,086 to 6,260 cases during the same period. The national social welfare budget was also increased from 1,305 million bahts in 1995 to 2,530 million baht in 1998. Unless the problems of neglected children and child abuse are appropriately concentrated and handled, the situation is likely to persist or become worse. Among strategies invented to solve this social problem, promotion of maternal role attainment is an efficient strategy in dealing with the problem.

Mothers who work outside the home will attain their maternal role, which required many factors. Mercer proposed her theory of factors that affect maternal role attainment for the description of this phenomenon. She defined the process of maternal role attainment is as a dynamic cognitive-affective process alternated by time change,

and estimated from components that indicate the quality of acquisition, that is, 1) maternal-infant attachment, 2) maternal role competence, and 3) maternal role satisfaction (Koniak-Griffin, 1993: 258; Mercer, 1985: 198-204). It is associated with many factors classified into 4 groups (Mercer, 1991 cited in Bee, et al., 1994: 390-405). First, maternal factors or role acting including self-concept, body image, self-esteem, empathy, role strain/conflict, health, and caregiver skill. Second, infant factors or role partner including temperament, characteristics, responsiveness, and health. Next, interpersonal relationship factors including marital relationship, social support, and family functioning. And last, situational or environmental factors including work, social, and cultural factors.

All these factors influence each other and are related to the maternal role attainment process, for example, there have been reports that the most prominent maternal factor that affects the maternal role attainment is maternal self-esteem (Mercer and Ferketich 1990, 1994b, 1995; Soomlek, 1996). The infant's factors such as happiness and fussiness were the two foremost sources of maternal confidence and uncertainty in problem solving of infant care at 30 and 90 days postpartum (Bullock & Pridham, 1998; Zahr, 1991). On the contrary, Walker (1989a: 339-343) found that infant difficulties did not contribute significantly to the prediction of maternal identity at 6 months. Although, there is a study which reveals that infant health status explains the variance on maternal competence at the early postpartum period, it is a small effect value and it cannot explain variance at over 1 month postpartum (Mercer & Ferketich, 1995: 333-343). Thus, infant's health status tends to have an insignificant effect on maternal role attainment over one month postpartum.

Regarding prominent interrelationship factors such as social support and marital relationship, Pridham, et al. (1991: 21-31) found social support, in tandem with preparation for birthing and stress during labor and delivery, explained the variance of transition markers of role attainment as 7 percent of evaluation of parenting, and 12 percent of care capability. In Thailand, social support alone could explain the variance of maternal adaptation of high-risk mothers for 8 percent and account for 39 percent when linked with stress levels (Kamsiengsai, 1996: 63). A study on the causal model of maternal role mastery (Soomlek, 1996:62-63), indicated that social support had no direct effect on the mother's sense of competence and neonatal perception, but it had a direct effect on self-esteem. In the study, the factor of marital relationship had a direct effect on social support and self-esteem.

There are studies of situational-environmental factors that affect the maternal role attainment process of mothers who take more responsibility in working functions which always leads to role conflict (Holahan & Gilbert, 1979: 89-90; John & Johnson, 1980: 143-161; Majewski, 1986: 10-14), and leads to deterioration in maternal physical health because of changes in life patterns (Brooten, et al., 1988: 213; Sheehan, 1981: 19). Not only does the life style change, but also the maternal stress influences infant growth, psychological, emotional, and social development, which is important for the development of behavioral patterns and characteristics in adulthood. It is associated with an adaptation problem in preschool children (Preski & Walker, 1977: 107-117), unacceptability in peer groups (Dodge, et al., 1990:1289-1309), inefficiency in learning and socialization (Achenbach, et al., 1987: 629-653), and it created antisocial behaviors subsequently (Fergusson & Horwood, 1996: 205-221).

On the other hand, some studies indicate that working outside the home was useful for psychological health because of an increase in social networks, which would influence the transition to a new maternal role attainment (Barnett, 1993: 427-445; Barnett & Baruch, 1985: 135-145; Thoits, 1983: 174-187). In Thailand, 57 percent of working mothers had moderate occupational role conflict (Boontananta, 1991: 77). However, a study of the working conditions, which affects maternal role attainment was not found in any publication.

Though there are correlative studies of the factors related to maternal role attainment in Thailand and other countries, the results revealed an inconsistency in the results. Moreover, all of the studies focus on the relationships instead of the causal factors and, in addition they were examined only in some component of maternal role attainment. Furthermore, the theoretical framework that most studies are mainly based on is the Maternal Role Attainment theory of Mercer (1981, 1985), which focused substantively on correlative studies among factors and was not a causal model. Thus, it was restricted to an understanding of the structural process that all factors had an influence on maternal role attainment, which would be more useful in promoting maternal role adaptation and health that is the responsibility of nurses responding to national health policy. Accordingly, the researcher was interested in studying a causal model to illustrate the mechanism of maternal role attainment in working primiparous mothers based on Mercer's theory. This is a theoretical testing study, whose purpose was to predict the maternal role attainment process of working mothers, which is very important because of their increasing numbers and is in association with national human resource development. Hence, if this theory is tested, it will enhance nursing practice,

the development of nursing science, and become foundational data that may guide maternal-child health and women's health policy in the future.

Research Questions

Do self-esteem and infant's characteristics act as the mediators in the maternal role attainment process, in which working conditions, social support, and marital relationship will predict the maternal role attainment indirectly, through self-esteem and infant's characteristics?

Purpose of the study

The purpose of the study is to generate and test causal relationships among the variables of working conditions, social support, marital relationship, infant's characteristics, self-esteem, and maternal role attainment.

Theoretical Framework

This study used the theoretical framework of Mercer's Maternal Role Attainment Theory (Mercer, 1981, 1984, and 1995). As well as testing theory, theory analysis and some concepts have been reorganized to develop a causal relationship among variables.

The Mercer's Maternal Role Attainment Theory was originated from Rubin's Maternal Role Attainment concept. Rubin and Mercer believed that maternal behavior

is a dynamic process derived from an extensive knowledge base of each child, which continues to evolve through experience with and feedback from the child (Rubin, 1984; Mercer, 1995: 11). Therefore maternal role attainment does not exist only during first time pregnancy, but exists in every pregnancy in which cognitive work would create a unique mother-child relationship.

However, Rubin's Maternal Role Attainment process occurs in pregnancy and ends with maternal role identity at 1-2 weeks postpartum, but after the birth of the infant, an identification of the child will occur in reality. Then, Mercer (1981, 1985, and 1995) extended Rubin's concept of the Maternal Role Attainment process to 1 year postpartum because the build up of an infant's identification would be met at that time. She adopted the stages in the process of role identity achievement from role theorists, Thornton & Nardi (1975), to the maternal role; that is, the anticipatory, formal, informal, and personal or identity stages.

The *anticipatory stage* begins during pregnancy as the woman begins psychosocial adjustment to the role; she fantasizes about the role, relates to her fetus in utero, and begins some role-play. The *formal / role-taking stage* begins with actual activities at the birth of child. Mothers will act by following the rules and directions of others. In the *informal / role-making stage*, the mother progresses from adhering rigidly to the rules and directions of others and adapts and evolves her own role behaviors. The movement to the *personal / identity stage* in which the mother experiences a sense of harmony, confidence, and competence in how she performs the role is the endpoint of maternal role attainment. Accordingly, Mercer defined Maternal Role Attainment as a process in which the mother achieves competence in the role and

integrates the mothering behaviors into her established role set, so that she is comfortable with her identity as a mother which is influenced by the environment system (Mercer, 1981: 74). Moreover, Mercer's model of Maternal Role Attainment is placed within Bronfenbrenner's (1979) nested circles of the complex environmental system as follows (Mercer cited in Bee, et al., 1994: 396):

1.) The *microsystem* is the immediate environment in which the maternal role attainment occurs. It includes the family, and factors such as family functioning, mother-father relationship, social support, and stress. The variables contained within the microsystem interact with one or more of the other variables in affecting maternal role.

2.) The *Exosystem* encompasses, influences, and delimits the microsystem. The mother-infant unit is not contained within the exosystem, but the exosystem may determine in part what happens to the developing maternal role and the child.

3.) The *macrosystem* refers to the general prototypes existing in a particular culture or transmitted cultural consistencies.

The correlation among variables affecting Maternal Role Attainment is shown as a model in figure 1.

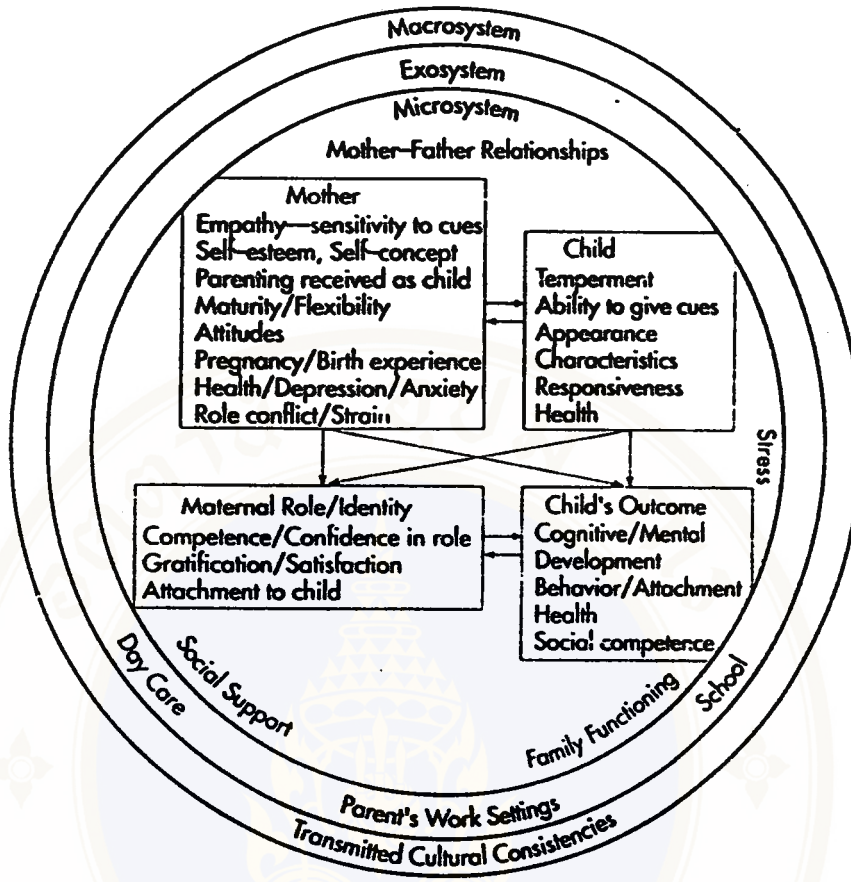

Figure 1 **Model of Maternal Role Attainment** (Mercer, 1991)

When theory is analyzed in the phenomena of mothers working outside the home, antecedent variables can be reorganized into four groups as follows:

1.) Role taking or maternal factors in which cognitive work and role enactment are determined by the core self, consisting of ideal self, self-image, and body image. Self-esteem is treated as an outcome of self-evaluation. In addition, the previous studies supported the theory that self-esteem has a direct effect on the mother's sense of competence (Soomlek, 1996) in which the magnitude of prediction will increase when the infant grows up (Mercer & Ferketich, 1990, 1994b, 1995)

2.) Role partner or infant factors in which the response and feedback from the infant brings about the evaluation of mothering role behaviors. This factor consists of many variables. By analyzing the concept of the child's characteristics, which refer to temperament, appearance and health status (Mercer, 1981) considered for reasons of parsimony, they represent many dimensions of the infant. But for health status, its ability to predict maternal role competence is small in variance (3-4 %) at postpartum period and it cannot predict maternal role competence when the infant's age is over 1 month (Mercer & Ferketich, 1995). On the contrary, the infant's moods (happiness and contentment) and infant's response to care are major sources of maternal role confidence, but only the infant's response to care can predict maternal role confidence (Bullock & Pridham, 1988). Similarly, Zahr (1991) found that the infant's characteristics of being fussy/difficult, unadaptable and unpredictable are correlated with maternal role confidence. These imply that the emotional and behavioral characteristics (temperament) are imminent variables affecting the maternal role attainment through maternal self-confidence, which can create maternal identity.

3.) Interpersonal relationship factors are those which are associated with other relationships beside the maternal and child relationships, such as the marital relationship and social support. Previous studies reveal that these two variables correlate with maternal role attainment indicators (competence, satisfaction, and attachment) (Koniak-Griffin, 1988; Pridham, 1991, Kamsiengsai, 1996; Rujiraprasert; 1996, Soomlek, 1996). By studying cause and effect, the previous studies reveal that they do not have direct effects on maternal role attainment, but have indirect effects on maternal role attainment indicators (competence), via self-esteem (Soomlek, 1996).

4.) Situational and environmental factors include maternal work, social and cultural factors. There are many studies which support the idea that maternal working conditions are the major variables influencing maternal role attainment (Lennon & Rosenfield, 1992; Rodenfield, 1992, 1989; Ross & Mirowsky, 1988; Pridham & Chang, 1992)

Moreover, major assumptions such as a relatively stable "core self," acquired through lifelong socialization, determines how a mother defines and practices events; her perceptions of her infant's and others' responses to her mothering, along with her life situation, are the real world to which she responds. Additionally, the mother's role partner, her infant, will reflect the mother's competence in the mothering role via growth and development. According to these major assumptions, the important part of the cognitive-affective process is the "core self" especially the perception of self as a mother, and the one who feeds back the mothering role by responding to cues to her enactment is the infant. Then, to attain the maternal role, mothers must be sensitive and interpret infant cues in a corrective way. In summary, the cognitive-affective process is dependent on mothers' perception of self and infant characteristics.

However, the core self consists of 3 components (Rubin, 1984), for instance; *Ideal self*, which refers to the person's creation of desired attributes that are incorporated into the cognitive structure as a guide for behavior, so when elements of the ideal self are achieved, there is pleasure and gratification. *Self-image*, which refers to the known or actual self, arises from actions in, and interaction with, the physical and social world out of the spheres of the ideal and body selves. *Body image* plays a central role in the structure and function of the self-image, delineating and orienting the self as

part of the environment. The interaction among these 3 components delivers the outcome of self-esteem, which is the solution of the mother to perceive herself as a mother. From these reasons, we can estimate self-esteem, the integral part of core self or self-perception, and perceive that infant characteristics act as mediators of the maternal role attainment process in the cognitive-affective part. Then the situational-environmental factor and interpersonal relationship factor take the antecedent factor role of the process. For instance, the structural hierarchy of nursing knowledge (Fawcett, 1993:2, 21, 23) and the formulation of a structural equation model of Maternal Role Attainment which were previously conceptualized are illustrated in figure 2 and figure 3, respectively.

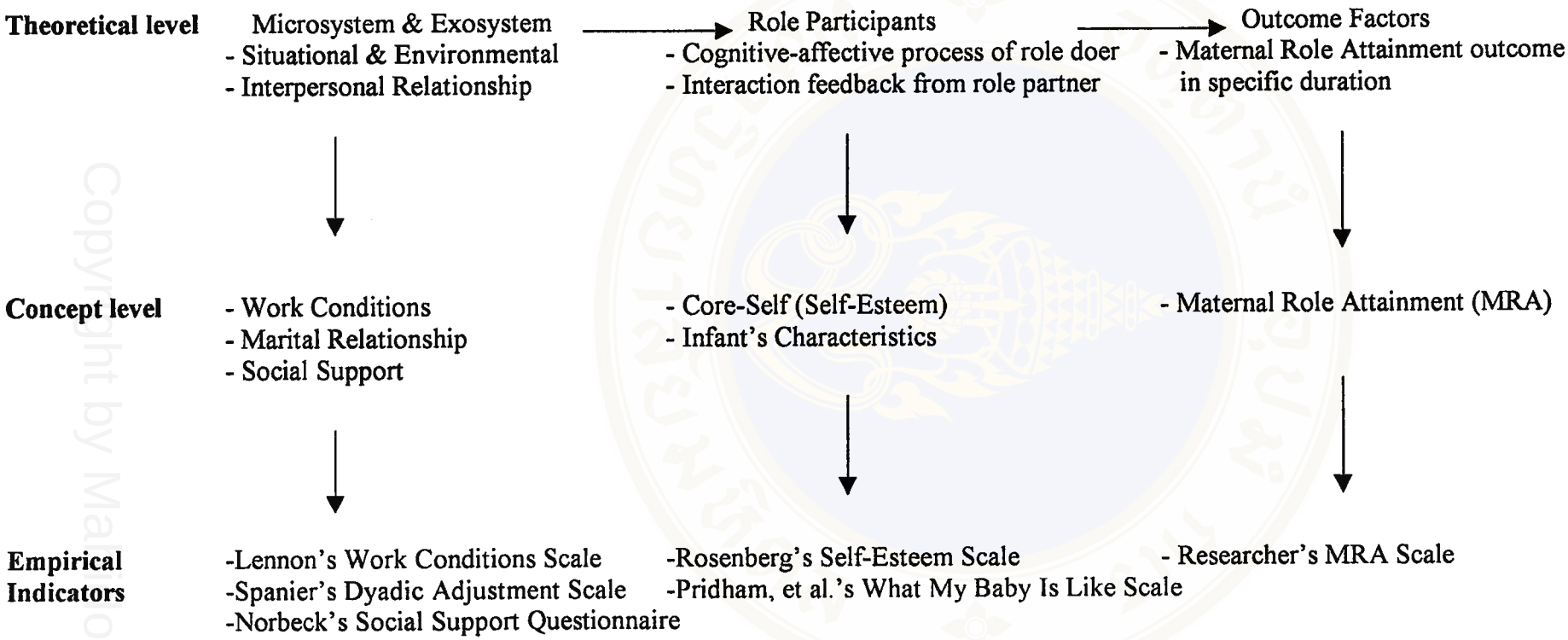

Figure 2. Hierarchy of Middle-Range Theoretical Deduction (Fawcett, 1993: 2, 21, 23)

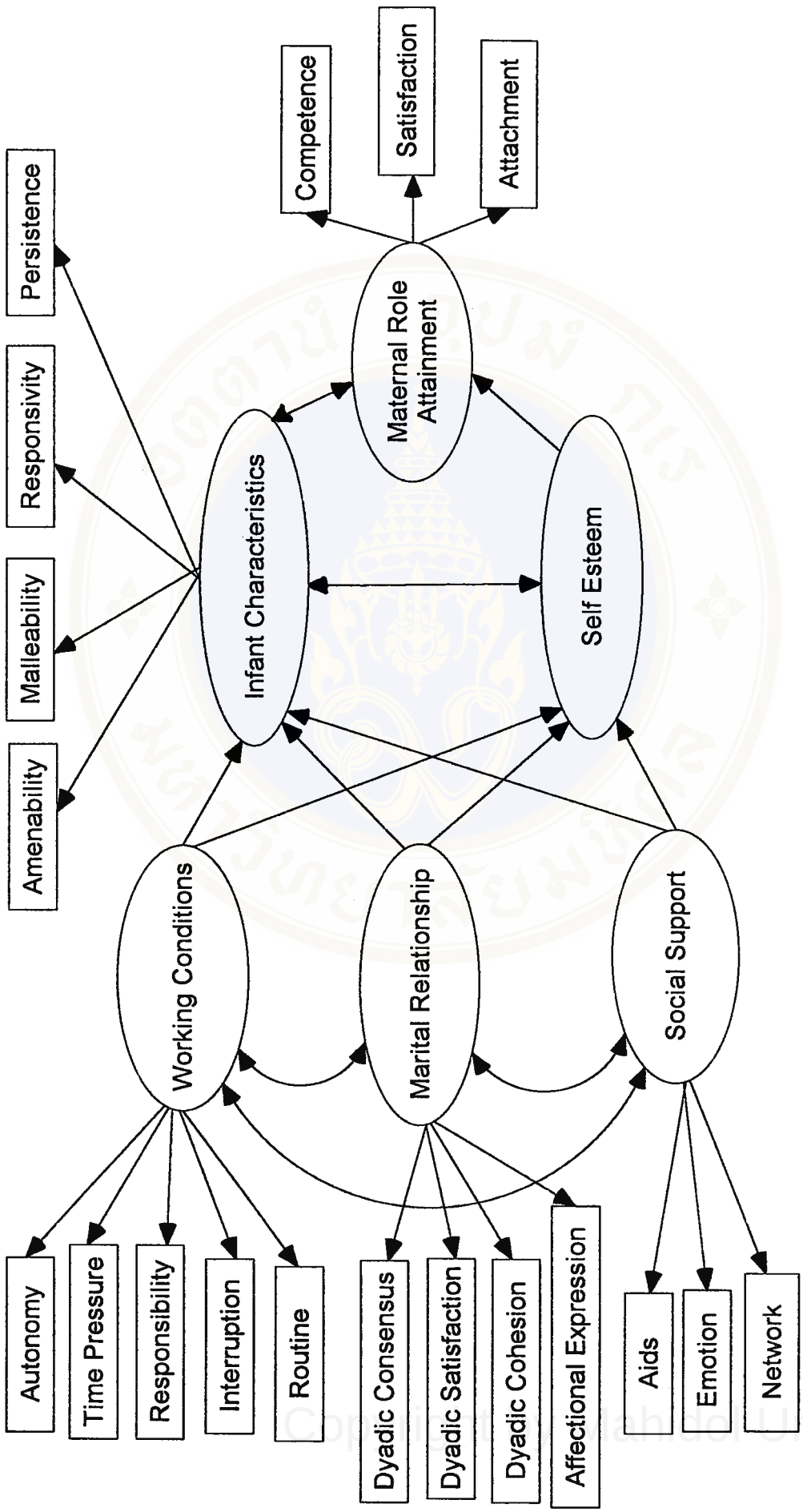

Figure 3: A Structural Equation Model of Maternal Role Attainment

Hypotheses

1. Working conditions, social support and marital relationship have a positive direct effect on self-esteem and infants' characteristics.

2. Working conditions, social support, and marital relationship have an indirect effect on maternal role attainment via self-esteem and infants' characteristics.

3. Infants' characteristics and self-esteem have a positive direct effect on maternal role attainment.

Scope of the Study

This study is a prospective study to generate and test the causal model of maternal role attainment among working primiparous mothers, who delivered normal babies at Ramathibodi, Rajvithi, Bhumibol, Vajira, and Police hospital for the period of four to five months after delivery.

Definitions of Terms

Working Conditions are the job characteristics classified into 5 dimensions; that is, autonomy, time pressure, responsibility, interruption, and routine. The working conditions are evaluated by Lennon's Measures of Job Conditions (Lennon, 1994), which consists of 17 items and has a range of scores between 17-68. The greater the

score on autonomy, time pressure, responsibility, and interruption component, and the lower the score on routine component the greater is the control over work activities enjoyed by mothers.

Social Support is the positive effects of one person's support toward a mother, including affirmation or endorsement of behaviors, giving of symbolic or material aid to the mother and the social network with regard to quantity and quality. Social support is evaluated by the Norbeck Social Support Questionnaire (Norbeck, et al., 1983), which consists of 8 items, the scores are ranged between 0 to 34, the greater the score, the greater the support the mother has received.

Marital Relationship is the quality of the relationship between the mother and her husband, which consists of dyadic consensus, dyadic satisfaction, dyadic cohesion, and affectional expression components. The marital relationship is evaluated by the Dyadic Adjustment Scale (Spanier, 1976), which consists of 28 items and has a 28-140 range of scores. The greater the score, the greater the positive marital relationship.

Infant's Characteristics are the infant's emotional and behavioral characteristics, evaluated by the measurement of "What My Baby Is Like: WBL" (Pridham, et al., 1994). WBL is a 9-point rating scale, which assesses 4 dimensions of infant's characteristics, malleability, amenability, responsivity to stimuli, and persistence. This instrument consists of 16 items and has a 16-144 range of scores. The greater the score, the greater the positive maternal perception of infant's characteristics.

Self-esteem is the sense of significance, competence, virtue, and power that are developed from self-evaluation of being loved, accepted, and satisfied by another

person. Self-esteem is evaluated by Rosenberg's Self-esteem Scale (Rosenberg, 1989), which consists of 10 items and has a 10-40 range of scores. The greater the score, the greater self-esteem.

Maternal Role Attainment is the process in which the mother achieves competence in the role and integrates the mothering behaviors into her established role set, so that she is comfortable with her identity as a mother. It is evaluated by the Maternal Role Attainment Scale (MRAS) developed by the researcher. MRAS is a 5-point rating scale consisting of 52 items of the 3 indexes, maternal role competence, maternal role satisfaction, and maternal-infant attachment. The range of score was 52 – 260, and the higher the score, the higher the perception of success in the mothering role experience.

CHAPTER II

LITERATURE REVIEW

This review of the literature includes three sections addressing the major variables in this study and their relationships to maternal role attainment. The first section addresses the concept of maternal role attainment and its components. The second section presents the mediators of maternal role attainment and their relationships. The third section focuses on the antecedent of maternal role attainment.

Maternal Role Attainment

Role is a set of manifest behaviors originating from the 2 approaches, structural functional and symbolic interaction (Hardy & Conway, 1988: 64-68). In the structural functionalist view, role is social, determined by social status and has an accurate expectation of behaviors. From this approach, the opportunity to adjust role (social structure) is hardly done. In the symbolic interactionist view, role is an outcome of a person's interpretation of symbolic acts through interaction between role actor and role partner.

Maternal role attainment in Rubin's conceptualization, the first nurse to clearly delineate development of maternal role, is the process of establishing a new role set in which behaviors and actions of a role are acquired, conditioned, learning is reinforced

and are culturally determined (Rubin, 1967a: 237). She believes that all behavior, manifest or latent originates in the mind, in the cognitive processing of subjective experience. The most striking characteristic of maternal behavior is the openness to new and additional learning, the silent organization in thought, and the high value placed on knowing (Rubin, 1984: 3). From this view point, maternal role attainment is neither instinctive nor learned, like child play with dolls; rather, maternal behavior is a dynamic process derived from an extensive knowledge base of each child, which continues to evolve through experience with, and feedback from, the child (Koniak-Griffin, 1993: 257; Mercer, 1995: 11). Therefore, a mother's perceptions of her intimate interpersonal experience with her baby and her self-concept both influence maternal behaviors.

Rubin, (1967a: 243) first defined maternal identity as the end point.or goal in maternal role attainment, when mothers " had a sense of being in their roles, a sense of comfort about where they had been and where they were going." From this conceptualization, Mercer (1985: 198) developed the definitions of maternal role attainment as "*a process in which the mother achieves competence in the role and integrates the mothering behaviors into her established role set, so that she is comfortable with her identity as a mother.*"

According to the interactionist approach, a woman defines her maternal role performance in interaction with her infant and responds according to the situational context, her experience, and her values (Mercer, 1985: 198). Since, the three spheres of the self that influence any change in the person's identity are the cognitive processes, they reflect the maternal values of her self as a mother. The threes spheres of self are,

the ideal self, self-image, and body image. *Ideal self* is the person's creation of desired attributes that are incorporated into the cognitive structure as a guide for behavior. *Self-image*, the known or actual self, arises from actions in and interaction with the physical and social world out of the spheres of the ideal and body selves. *Body image*, the sphere of body imagery plays a central and fundamental role in the structure and function of the self-image. It is body imagery that delineates and orients the self as an entity in a world (Rubin, 1984: 12-24; Mercer, 1985: 198; 1995: 4-6), in which self-esteem is taken as an integral part of the three spheres of self. Therefore, the "self system" or relatively stable "core self" take a major part in regulating maternal role attainment and identity in the cognitive process as psychological state and a personality trait of the mother.

Although the maternal role is culturally defined with specified normative structure and prescribed behaviors that could be studied from a structural functional approach, the interactionist approach has more meaning in addressing the problem of this research, as this research is based on Mercer's conceptualization of maternal role attainment which believes that maternal role attainment is acquired through reciprocal interaction between the mother and her children.

Beside the core self factors, the other factors that influencing maternal role attainment which mentioned by Mercer's study research and another researchers are organized in maternal characteristics, infant and health related variables, and environment variables (Mercer, 1981; Koniak-Griffin, 1993). Examples of significant maternal characteristics include, age, marital status, parenting confidence, perceptions of the birth experience, presence/absence of depression, role conflict and role strain.

For infant and health related variables that may impact maternal role attainment include, temperament, infant health status. Two major environmental variables that may affect maternal role attainment are social support and stress. According to these variables the researcher select some of significant variable use in this study

Maternal Role Attainment Components

Mercer (1985, 1995) indicates that the maternal role attainment components are maternal competence, satisfaction in maternal role and the maternal attachment with her baby. This brings about the use of these three components as an index to study maternal role attainment. Some researchers study all indexes and assess by many instruments (Mercer, 1985, Zabielski, 1994), some researchers study only some of the indexes, such as maternal role competence (Rutledge & Pridham, 1987; Simone & Gotlieb, 1987; Pridham, Chang, & Hansen, 1987; Flagler, 1988, 1989; Bullock & Pridham, 1988; Zahr, 1991; Mercer & Ferketich, 1994b, 1995), maternal role satisfaction (Majewski, 1986; Ohashi, 1992), maternal attachment (Mercer & Ferketich, 1990, 1994a), maternal identity (Walker, Crain, & Thomson, 1986; Zabielski, 1994). Other researchers created their own instrument to assess the perception of self as a mother (Pridham & Chang, 1985; Grace, 1993; Pridham, Chang, & Chiu, 1994). However, there was no assessment of the maternal role attainment in one instrument, in short, there was no instrument to assess maternal role attainment particularly. In understanding the concept of maternal role attainment, it is necessary to clarify these three components.

Maternal Role Competence was used in many aspects, such as the degree of adequacy a woman experiences in mothering (Flagler, 1988: 277), the ability to read her infant's behavioral cues (Sender, 1962), the skills involved in tasks related to feeding, elimination, comfort, skin care, activity and health (Gottlieb, 1978) and the problem solving skills related to infant nurturing (Pridhfam, Chang, & Hansen, 1987). Some authors used all of them. Similarly, the mother's ability to assess her infant's needs and her skill in performing activities in the areas of feeding, sleeping, crying, elimination, clothing, play, safety, and illness was utilized (Chao, 1979; Roberts, 1983). That is, the sense of competence that mothers perceive themselves to have is an outcome of coping responses made to a range of issues over a period of time and a summation of how well they think they dealt with issues (Wrubel, Benner, & Lazarus, 1981: 61-99).

Maternal role competence then seems to be related to the ability and quality of expected behaviors, function or performance of the mother (fostering physical, social and psychological development of her children), which is the result of social reciprocal interaction between the mother and her baby. From this view, maternal role competence seems to have two attributes, ability and reciprocity. Ability is a twofold dimension; 1) refers to being able to do maternal behaviors, 2) refers to efficiency in maternal behaviors (quality). Reciprocity refers to the process by which mother elicits the infant's needs cues, and on the other hand the infant gives mother a feedback response to evaluate maternal behaviors.

Maternal Role Satisfaction will clarify when role expectations are delineated. Role expectations are simply expectations held by particularized or generalized others

for the appropriate behaviors that ought to be exhibited by the person or persons holding a given role (Shaw & Cortenzo, 1985: 298). When expectations are met, a feeling of satisfaction results, expectations are beliefs or anticipation, based on past experience, that a particular event or events will occur in the future (Ohashi, 1992: 136-137). When maternal role is a given role, then, maternal role satisfaction will occur if maternal role expectations are met even in experience of the act or in anticipation. Mercer (1995: 208) defined maternal role satisfaction as gratification in the maternal role, bringing about the feelings of satisfaction, enjoyment, reward, and pleasure that the woman experiences in interactions with her infant and in fulfilling the tasks of the role (Mercer, 1995: 208).

From the above, maternal role satisfaction seems to have many aspects such as the act of satisfaction - gratification, fulfillment, achievement, the state or feeling of being satisfied - comfort, pleasure, joy, happiness, something that satisfies - prize, reward, prosperity. Therefore, maternal role satisfaction could consist of the attributes of fulfilling, enjoying, and rewarding. Fulfilling refers to how women can complete maternal behaviors, foster the infant's physical, social and psychological well being, and meets the infant's needs. Enjoying refers to the happiness and pleasure woman experience by participating in the mothering role. Rewarding refers to outcomes that serve as a reward when woman meets, or has competence in her expected maternal role.

Maternal-Infant Attachment was defined in terms of the process, conceptualized in terms of maternal statements that "reflected a developing growth of positive feelings on the part of the mother toward her infant, and included such

dimensions as wanting to process, to prolong, or to seek contact, and to be proud of and to love her infant" (Gottlieb, 1978: 40; Rubin, 1984: 51; Mercer, 1990: 24-25). In terms of physical, emotional proximity and commitment to love and care for an infant, maternal attachment may be thought of as the extent to which a mother feels that her infant occupies an essential position in her life (Schroeder, 1977: 37 cited in Walker, 1992: 278), or as an affectional tie formed between a mother and her child, which endures through time and is manifested by specific maternal behaviors (Avant, 1981: 416; Klaus & Kennell, 1982: 2). Brousard (1986) state that attachment implies a stable and permanent relationship in which the mother feels responsible for and committed to her infant, as well as being available both physically and emotionally (Brourassa, et al., 1986 cited in Goulet, Bell, Tribble, et al., 1998: 1075). In terms of a reciprocal process, attachment is viewed as a process in which an enduring affectional and emotional commitment to an individual is formed; and is facilitated by positive feedback between partners through a mutually satisfying experience (Mercer, 1990:14, 24, 25; Gay, 1981: 441; Carson & Virden, 1984: 356, Cranley, 1981: 282; Izard, Haynes, Chisholm, & Baak, 1991: 907).

Maternal-infant attachment is a process which follows a progressive or developmental course involving change over time. It is instantaneous, but the changes, both affective or emotional and cognitive, occur gradually within each partner of the attaching dyad. Even if the maternal attachment is defined, the attributes that are revealed in those definitions are proximity, reciprocity, and centrality. Proximity refers to the physical and psychological experience of a mother being close to her infant. This attribute comprises three dimensions, contact, emotional state, and individualization.

Reciprocity is the process by which capabilities and behavioral characteristics of mother and infant elicit each other's responses. Centrality refers to the enduring nature of the attachment relationship, which has the dimension of commitment, the mother places the infant at the center of her life and family, she acknowledges her responsibility for the infant's well-being and promote his/her safety, growth, and development.

In summary, Mercer's maternal role attainment could be assessed through maternal role competence, maternal role satisfaction, and maternal attachment. However, nobody has developed an instrument to assess all three components in a single measure.

The Mode of Maternal Role Attainment

Maternal role attainment has internal and external components: identity is the internalized view of self (the recognized maternal identity), and role is the external, behavioral component (Mercer, 1995: 14). Therefore, maternal role attainment can be assessed in two modes, the internalization or cognitive-affective mode and the behavioral mode.

Internalization / cognitive-affective mode is a process in which persons recover either real or fantasized regulatory, gratifying interactions with others by transforming significant facets of the interactions into enduring parts of themselves, their functions, and their characteristics (Behrends & Blatt, 1985: 12, Mercer, 1995: 20). The period of time required for role internalization varies among women. Mercer (1986c) reported

that approximately 85 percent of the sample experienced role internalization by nine-months postpartum.

There is a report of how new mothers have used the three modes of cognitive operations in forming concepts about "baby" and "self as a mother" during early maternal role enactment (Chao, 1979: 211-268). First, *orienting* – attempting to ascertain a tentative idea, expectation or hypothesis about the baby or self as mother by collecting information before actually assuming care-taking or interaction with the child. Second, *evaluating* – attempting to make value judgments after measuring or examining the accuracy, validity or fulfillment of one's expectations for the baby or self as mother. Third, *delineating* – attempting to develop a differentiated image of the baby or self as mother by comparing the difference or similarity between the actual person and imagined model. The aspects of the baby that mothers most frequently delineate are appearance, bodily function and physical state (Koniak-Griffin, 1993: 258)

Behavioral mode is the maternal behaviors include the blend of nurturing, caring, teaching, guiding, protecting, and loving that enhances the infant's physical, emotional, social, and cognitive development to adulthood (Mercer, 1995: 1). In which, during the first 3 months, most maternal behaviors are responses to infant's physical needs and comfort (Adams, 1963; Sender, 1969; Bull, 1981; Jansen & Bobak, 1985). The mother's nurturing behavior is a response to infant's biological regulation and involves tasks related to feeding, elimination, comfort, skin care, activity and health (Simone & Gottlieb, 1987: 20).

From this aspect of maternal role attainment, it would appear that to assess maternal role attainment, it is essential to evaluate using the two modes, internalized / cognitive-affective mode and behavioral mode.

The Process of Maternal Role Attainment

Maternal role is a complex cognitive and social process, which is learned, reciprocal and interactive (Rubin, 1967a, 1967b, Koniak-Griffin, 1993). To attain the maternal role can occur through 2 processes, 1) Intentional instruction, the culture carriers in any society attempt to teach prescribed acts, 2) Incidental learning, adopting the ways of others in one's environment from childhood life.

These internalized processes of maternal role attainment are an incorporation of the maternal identity into the self-system by way of the idealized image of self as mother of the child. They begin with pregnancy and end up at 1-2 week postpartum and have 3 stages (Rubin, 1984: 39-51). The first is *Replication* consisting of mimicry – actively imitating the behaviors of others in the maternal role, or role-play – "acting out" of particular role behaviors. The second is *Fantasy* – internalizing and elaborating the self-role. The third is *Dedifferentiation*, the mother's introjection – projection – rejection – matching one's behavior as a mother with behavior models, testing the behaviors against one's values and style, and either rejecting or accepting the behavioral role. In which, Grief-work, letting go of a former identity, can occur through the process.

The stages in the process of role identity achievement of Thornton and Nardi (1975) were adapted to delineate the maternal role attainment process: anticipatory, formal, informal, and personal or identity stages (Mercer, 1981, 1985, 1986c, 1995). The *anticipatory stage*, prior to role incumbency (pregnancy), is a time of initial social and psychological adjustment, when expectations of the role are learned by seeking information from those in the role and visualizing self in the role. This behavior is congruent with Rubin's cognitive operations of replication and fantasy. The *formal / role-taking stage* begins with actual movement into the role (birth of child); early role-taking behaviors are guided largely by directives from professionals and others in the mother's social system. The behaviors of this stage are largely replicative as described by Rubin. The *informal / role-making stage:* the woman structures the maternal role to fit herself according to her past experiences and future goals. Much cognitive structuring occurs as she learns her infant's cues and begins to develop her unique style of dealing with the role during this creative role making. Thronton and Nardi's description of behaviors of this stage reflect dedifferentiation behaviors described by Rubin as immediately preceding achievement of the maternal identity. The *personal role / identity stage* is reached when the mother has integrated the role into her self-system with a congruence of self and other roles. In the end, mother is secure in her identity as mother, is emotionally committed to her infant, and feels a sense of harmony, satisfaction, and competence in the role.

There is a study of the process of maternal role attainment over the first year (Mercer, 1985) which compares feelings about the baby (attachment), gratification in role (satisfaction), and maternal competency behavior among 294 mothers in three age

groups, 15-49 years, 20-29 years, and 30-42 years at 1, 4, 8, and 12 month intervals. The results show that there was a variation in the patterns of the three maternal role attainment behaviors over time. At 4 months all women felt more positive about their infants than they did at any of the other test periods. Age groups did not differ significantly at any of the test periods. All three age groups experienced an increase in gratification in maternal role and maternal competency behavior at 4 months with minimal decrease at 8 months of gratification, and a significant difference in the diminishing of maternal competency. In short, 4 months was the most prominent period of the maternal role attainment indexes.

From these aspects of maternal role attainment, we can imply that to assess maternal role attainment it is essential to measure in 3 components; maternal role competence, maternal role satisfaction, and maternal attachment and 4 months is an appropriate time to measure maternal role attainment.

The Mediators of Maternal Role Attainment

Maternal role attainment is a reciprocal interaction and cognitive-affective process, in which mother will perceive herself as a mother, thus, the self-system or core-self of the role actor is an important part that mediates an affect of factors affecting maternal role attainment. Moreover, to take the role, the role doer and role partner must interact with each other, then self-esteem – an evaluated part of the self-system, and maternal perception of infant characteristics - feedback from the role partner acts as a mediated variable in the maternal role attainment process.

Self-Esteem

The concept of self-esteem is of interest to many researchers because self-esteem forms the foundation of psychosocial health and provides a measure for the quality of life (Taft, 1985: 77) and is significantly associated with personal satisfaction and effective functioning (Coopersmith, 1981: 3), and a central factor in good social-emotional adjustment (Pope, McHale, & Craighead, 1988:4). Self-esteem is the result of an individual who believes himself to be capable, significant, successful, and worthy (Coopersmith, 1981: 5, 35-44; Rosenberg, 1989: 5). Self-esteem arises from the discrepancy between the perceived self, or self-concept and ideal self. To understand the meaning of self-esteem, it is important to recognize its relationship to the concept of self.

The Relationship between Self-Esteem and Self-Concept and its Historical Development

Many theorists (Coopersmith, 1981: 20, Driver, 1976; Ebstein, 1973, 1979) view self-concept as an abstraction that an individual develops about the attributes, capacities, objects, and activities which one possesses and pursues at a given time, formed from perceptions, particularly of others' reactions, and directing one's behaviors. The self-concept is how individuals see themselves, and consists of many components that are different in each approach, whereas self-esteem is how individuals feel about what they see within the components of their self-concept and acts as the

effective quality that individuals associate with their self-concept (Tafe, 1985: 78 - 79). It brings about the difference in definition and is a source of self-esteem (Bednar, Wells, & Perterson, 1989: 18-52; Coopersmith, 1981: 28-44; Rosenberg, 1989: 3-5).

William James (1980), the first psychologist to propose the theory of self-concept, states that the self psychologically encompasses all attributes the individual would refer to as "part of me" – one's body, abilities, and reputation; even one's children, home, and possessions. If any of those component parts is diminished or enhanced, people respond as though they themselves were diminished or enhanced because they have indeed defined the part as the self. Thus, each person is based on the successes and failures of their choices, with the truest self being that in which the chosen attribute refers to pretensions, then self-esteem implies that it is equal to successes divided by pretensions (self-esteem = success / pretensions) (James, 1980: 296).

According to James, there are three major constituents of the self from which pretensions are chosen. First, the material self refers to objects and possessions considered being one's personal property or with which one identifies. Second, the social self is equated with a person's reputation or share of recognition. The last, the spiritual self is the inner or subjective being, the individual's recognition that he or she thinks about things and that those thoughts have a continuity over time. From James conceptualization, self-esteem arises from people choosing and meeting their goals and people are therefore capable of modifying their self-esteem.

Cooley (1902) argues that the self has several aspects, but the most importunate or pressing part of which is the social self. This social self, he says, arises from the

individual's observations of how others respond to the self. That is, people learn to define themselves by their perceptions of the way others define them, the "looking-glass self". Thus, the social self is not only demanding, it is also the vehicle by which the internal sense of self develops and is redefined.

There are three steps in the momentary process by which the social self gathers its delightful or bitter food from the minds of others. First, the individual's perception of how he or she must appear to the other person. Second, the individual's interpretation of how the other person evaluates him or her on the basis of that interpreted perception. And third, the individual's personal experience affective response to the perceived judgment. From Cooley, it may be assumed that maturity brings greater self-control to monitor and helps direct one's own response, making one less vulnerable to the effects of other's opinions.

Mead (1934) views the development of the self as most pertinent to the process of the individual's becoming an integrated part of a social group. Language and society are essential elements in the development of the self because it is through interaction that individuals come to see themselves the way others see them. Significant others in the individual's life have a determining influence on self-esteem.

Allport's (1961) view is that the growth of the awareness of self, proceeds along developmental learning lines. According to Allport, recognition of what is me and not me is set in the first year of life, a sense of continuity of identity over time in the second year, to self-esteem in the beginning of the third year, the child gradually adds parts to the sense of self.

Adler, (1979) did not mention the concept of self-esteem, but positioned the goals of cooperation (social interest) in work, community, and marriage as being central to the individual's mental health. His belief of "creative self" is each person constructs his or her unique view of reality which is the motivation named "striving for superiority" (self-actualization of self-fulfillment). Thus, self-esteem became a self-absorbing goal, which entails a person's acceptance of the right to belong to humanity and willingness to contribute to the social interest of the group.

In summary, the early theorists conceptualized self-esteem with regard to the issues of how a person develops high self-esteem. That is, the person chooses an identity, a self and successfully matches accomplishment to hopes. Self-esteem is dependent upon outcomes-setting goals and reaching them, winning approbation from significant others, accepting the imperfectness and still striving to complete the goals of a chosen style of life. However, practical use of the self-esteem concept will apply in the value term, high and low self-esteem, thus it is important to understand the construct of self-esteem.

The Construct of Self-Esteem

The behavioral manifestations of high self-esteem have been described by such terms as dominance and assertiveness. The subjective state is described by such terms as self-confidence (Coopersmith, 1981: 25-28). Positive self-esteem has been associated with such other terms as self-respect, superiority, pride, self-acceptance, and self-love (narcissism). Whereas negative self-appraisal, or low self-esteem, is often

equated with inferiority, timidity, self-hatred, lack of personal acceptance, and submissiveness (Wylie, 1961). However, there are some studies which found an incongruent level of self-esteem and manifest behaviors, as they found so many apparently successful people privately experiencing negative self-esteem (Badnar, et al., 1989:39; Coopersmith, 1981). Thus, contemporary theorists try to explain the construct of self-esteem, which may be categorized as follows:

Disparity Approach: Many authors (Rosenberg, 1979, 1989; Higgins, 1983; Higgins, Klein, & Strauman, 1985) have suggested the disparity in explaining negative self-esteem in successful people. Higgins (1983) hypothesized three classes of self-conceptions: the "actual" self (the doer or former of tasks), the "ideal self" (representing the attributes that in fantasy the person would like to possess as an ideal conception), and the "ought" self (representing characteristics that the person reasonably expects to achieve). Discrepancy between classes of self produces discomfort. Thus, Higgins et al. (1985) found that depression was correlated with disparities between the actual and ideal selves, while anxiety was more likely to be associated with disparities between the actual and ought self. It is assumed that chronic disparities of either kind yield a pervasive sense of negative self-esteem.

Rosenberg, (1979) posits a similar classification of selves: the extent self (as one privately views oneself), the desired self (as one would like to be), and the presenting sent (the self, one attempts to disclose to others). Like Higgins, Rosenberg views negative self-esteem as caused by discrepancy between the classes of self. However, it does not arises from the individual, rather from others, because Rosenberg (1989: 14) believes that no one evaluates himself in the abstract; evaluation is always with

reference to certain criteria, but the criteria of excellence will derive from the particular historical conditions of the society and the characteristic emphases of the group. That is, people will interprets one's self from other's response.

Dual Characteristic Approach: This approach believes in the balance of two characteristics, situated identities versus generalized identity and trait self-esteem versus state self-esteem. Schlenker (1985) views a central activity of the self to be the identification of self's characteristics and abilities. Comprehending one's identity is integral to self-regulation, making self-judgments about potential success or failure in endeavors, or evaluating accomplishment. Schlenker defines the individual's identity as one's comprehensive theory of oneself, identical to the self-concept. However, there are frequently times when a person may be placed in a social circumstance wherein environmental pressures force a "situated identity", an identity of the moment. This identity may or may not match the characteristics of the generalized identity. Discrepancies between the situated identity and generalized identity may occur when the individual attempts to construe information about the self in what is perceived as a more acceptable image or when others influence the person to adopt a distorted identity that meets their desires. This conflict causes low self-esteem.

Leary, Terdal, Tambor, & Downs (1995) classify self-esteem in 2 kinds, trait self-esteem – some average level of self-esteem over situations and time, state self-esteem – inevitable fluctuations of self-esteem as people move about their daily lives. Although, it is not summarized that high or low self esteem arises from a change in types of self-esteem, their 5 research findings show that state self-esteem appears to function as a subjective marker that reflects, in summary fashion, the individual's social

standing in a particular social setting and thus serves to apprise the individual of changes in his or her inclusionary status.

Self Theory Approach: Epstein (1973, 1979), another contemporary theorist, focuses on the hypothesized activities of the executive ego, *I*. He proposes that one can gain a meaningful understanding of the self-concept by conceiving of it as a self-theory. It is necessary to clarify the two elements when referring to the self here for more understanding. The portion that is the *me*, the actor, the doer, the performer part of the self; and the *I*, which is the seat of consciousness, the sense of continuity as an individual over time, and the observer and evaluator of the *me* (Bednar, Wells, & Peterson, 1989: 20). The *I* attempts to make sense of the *me'* s abilities and interests as it interfaces with its' world to achieve certain ends. From Epstein, the maintenance of self-esteem is a central function of the self's activities. Having confidence in predicting and then meeting one's expectations of the self is the source of high self-esteem. Low self-esteem results from inaccurate or distorted perceptions, which create confusion and distrust of one's capabilities.

In summary, self-esteem is the attitude that a person perceives of oneself as a result of self-evaluation. Because one can not evaluate oneself without criteria, then self-esteem is dependent on the historical conditions of the society and the characteristic emphases of the group. That is, there are two sources of self-esteem, outer self-esteem – the reflected appraisals of significant others in the form of social approval and inner self-esteem – the individual's feeling of efficacy and competence derived from his own perception of the effects he has on his environment. High or low self-esteem arises from the balance of the components of self-concept, which are

related to the situation in the society. Therefore, it could be said that self-esteem is societal derived and social forced.

Self-Esteem and Maternal Role Attainment

There are many researches about the relationship of self-esteem and maternal role attainment, but they study only some component of maternal role attainment (Robert, 1983; Mercer & Ferketich, 1990, 1994a, 1994b, 1995), and there is one study in which self-esteem is not related to maternal-fetal attachment (Koniak-Griffin, 1988).

Robert's (1983: 213-217) examined the transition to parenthood among 64 couples who attended Lamaze prenatal class. The first data collection was taken on the third trimester of pregnancy, in the second data collection, the instruments were mailed to them to be completed at four weeks post delivery. Prenatal and postnatal self-esteem was measured by the Rosenberg's Self-Esteem Scale (Rosenberg, 1965) for general self-esteem. Ease of transition to parenthood was evaluated by Hobb's Crisis Checklist (Hobbs, 1965) with the highest number representing the greatest sense of comfort. The results showed that for mothers, prenatal and postnatal self-esteem were highly positively correlated ($r = .90$, $p < .001$), and only postnatal self-esteem was positively correlated with ease of transition to parenthood ($r = .36$, $p < .001$). That is, the results of the study may imply that postnatal self-esteem was correlated with satisfaction in the maternal role, since satisfaction was initiated by the sense of comfort.

Koniak-Griffin (1988) investigated the relationship between self-esteem and maternal-fetal attachment in 90 pregnant adolescents between 14-19 years of age when

they attended prenatal class. In order to evaluate the adolescent's subjective judgment of her own worth, the School Form of Coopersmith's SEI (Coopersmith, 1967) was administered. The Maternal-Fetal Attachment Scales (MAFAS) (Cranley, 1981) was used to evaluated the degree to which the adolescent engaged in behaviors that represented attachment to her unborn child. The results of study revealed that though the adolescent pregnant women rated self-esteem at the medium level, there was no significant relationship between self-esteem and the overall level of maternal-fetal attachment. To test the power of predictor variables with multiple regression analysis, self-esteem was also not engaged into the regression equation. From these report findings, the former study that the prenatal self-esteem is not related to maternal role attainment is supported, and, we assume that among adolescent mothers, prenatal self-esteem is not correlated with maternal role attainment.

Mercer and Ferketich (1990, 1994a, 1994b, 1995) studied the components of maternal role attainment, maternal attachment (1990, 1994a) and maternal competence (1994b, 1995). Except for maternal-infant attachment, most studies used the same instrument to measure variables. Self-esteem, the extent of self-acceptance or the value placed on self was measured by Rosenberg's Self-Esteem Scale (1979). Sense of mastery was measured by Pearlin et al.'s (1981) scale which tabs the extent that the subjects feels life's chances are under personal control in contrast to being ruled by fate. Parental competence was measured by Gibaud-Wallston & Wansersman's (1978) scale. Maternal attachment was measured by Leifert's (1977) Scale in the 1990 and the 1994a study, but in the 1994b study Cranley's (1981) Fetal Attachment Scale was used.

In the 1990 study, the predictors of parental attachment during early parenthood were investigated (first week postpartum and at 8 months) in 121 high-risk women (HRW), 182 low-risk women (LRW), and both sets of partners (61 for high-risk partners and 117 for low-risk partners). This study also examined the sense of mastery, which may imply some dimension of maternal and parental competence. At first week postpartum, for HRW and LRW, there was no explanation of any variance in maternal-infant attachment of self-esteem, but for LRW, they found that mastery (45%) and maternal competence (28%) were explained by self-esteem and health status. At 8 months, it was found that self-esteem explained the variance on maternal competence at 33 % for HRW and 32 % for LRW, and explained 34 % of the variance on mastery in HRW. However, self-esteem failed to explain any variance on maternal-infant attachment in the two groups. That is, from this study, self-esteem seems related to maternal competence rather maternal-infant attachment.

The study of the effects of self-esteem on maternal competence among HRW and LRW groups was repeated in the 1994b study, but the period of time was extended to the first week, 1 month, 4 months, and 8 months post delivery. This helped in the understanding of the effect pattern of self-esteem on maternal competence, or maternal role attainment in other words. The results of the 1994b study revealed that the strength of the relationship between self-esteem and maternal competence gradually increased to a peak at 4 months among LRW ($r = .28, .34, .31$ at 1 week, 4, and 8 months respectively), but fluctuated over time among HRW ($r = .36, .33, .30, .59$ at 1 week, 1, 4, and 8 months respectively).

In the 1994a study, the effects of maternal-infant attachment among variables in 136 experienced (one or more previous child) and 166 inexperienced (first-time) mothers during the postpartum hospitalization and at 1, 4, and 8 months were investigated. The results revealed that only in the experienced group did self-esteem explain the variance on maternal-infant attachment, and only at 4 and 8 months (R^2 = .16 and .26, $p < .0001$).

They examined the effects of self-esteem on maternal-role competence in the same sample (1995 study). The results revealed a gradually increased effect of self-esteem on maternal competence among experienced mothers (R^2 = .08, .28, .31, .34 at PP, 1, 4, and 8 months respectively), but in the inexperienced group there were no changes in the effect (R^2 = .099, .108, .088 at PP, 4, and 8 months respectively).

In Thailand, Sooklavanawat (1998) examined the relationship between self-esteem and maternal role performance in 150 adolescent mothers at 4-6 weeks postpartum. The results revealed that self-esteem, evaluated by Rosenberg's Self-esteem Scale, is not significantly correlated with, and does not account for the variance of maternal role performance in this sample. For a causal relationship, Soomlek (1996) investigated the causal relationship between self-esteem and maternal role mastery in 205 first time mothers at 6 weeks postpartum. The results show that self-esteem has a direct effect on mother's sense of competence (β = .27, $p < .05$) and explains 5 % of the variance.

In summary, of first time mothers, only postnatal self-esteem is correlated to the maternal competence component and maternal satisfaction component but not the maternal-infant attachment component of maternal role attainment. The maternal-infant

attachment will affect by self-esteem just in experienced mother. The appropriate time to investigate this effect should be at over 4 months post delivery, especially in first-time, low-risk mothers. Although an effect of self-esteem on maternal role attainment component was found, it was at a small correlation coefficient, which indicates that there were other factors, which should be included in predictive equations.

Infant's Characteristics

Maternal perception of infant's characteristics reflects the efficiency of maternal and child interaction which influence the efficiency of maternal behaviors in nurturing her baby and their attachment (Roberts, 1983; Perry, 1983). In the infant period, the infant needs a caregiver for survival, then the infant's abilities to give cues is done to receive appropriate care, which leads to the infant's growth and development (Turley, 1985; Mercer, 1986a, 1986b). At the same time mother wants the infant for the reasons of love, attachment and family establishment rather than economic reasons (Grewell & Urschel, 1993). That is, perceptions of an infant's characteristics are not only perceptions of infant's behaviors but also the mother's perceptions of herself as a mother.

By reciprocating, the infant will give feedback while the mother must interpret his/her behavior in the form of an appropriate response (Anderson, 1981). In theory, there is a belief that the perceptions of infant's characteristics are the mediators of maternal self-perceptions which influence maternal behaviors (Rubin, 1967a). However, there are other infant's innate characteristics such as sex, temperament, irritability,

weight, illness, or birth which influence maternal-infant interaction (Mercer, 1981, 1986a, 1986b; Koniak-Griffin, 1993; Pridham, Chang, Chiu, 1994; Crockenberg & Smith, 1982).

Sex differences in infants leads to different maternal responses, such as when mothers were more responsive to the crying of female infants they perceived as highly irritable than they were to male infants with the same temperament characteristic (Crockenberg & Smith, 1982: 105-119). Although, the infant's innate characteristics, besides sex, would be changed by development. But the innate characteristics would not change in a positive way if they do not have effective maternal-infant interaction (Sherwen, Scoloveno, & Weingarten, 1991: 914). That is, the innate infant characteristics - sex, weight, health, illness and so forth decreased as important predictors of maternal role attainment when the infant grew up (Mercer & Ferketich, 1994a, 1995; Pridham, Chang, & Chiu, 1994), whereas the infant's emotional and behavioral characteristics such as temperament and irritability increased in importance (Perry, 1983; Rober, 1983; Turley, 1985; Mercer, 1981, 1986a, 1986b; Jones & Park, 1983; Bullock & Pridham, 1988; Gross, Conrad, Fogg, & Wothke, 1994).

Infant Temperament and Maternal Perception of Infant's Characteristics

From the symbolic interaction approach, infant behavior has symbolic meaning for mothers. For instance, crying may be interpreted as a signal for care, as rejection of mother, or as a willful demand. The importance of the meaning of infant behavior for

the transition to motherhood lies in its impact on the self-concept of the mother as "mother" (Roberts, 1983: 214). Some researchers pay attention to infant behaviors, which are related to maternal perception as a factor regulating the transition to motherhood (Roberts, 1983; Perry, 1983). However, there is empirical support that infant behaviors alone could not explain the variance of maternal perception of infant's characteristics. But along with the labor and delivery experience, the caring experience, planned pregnancy, wanted baby, and changed life-style, is able to predict maternal perceptions range from 23 % to 38 % at hospitalized postpartum, 1 week, and 1 month (Perry, 1983: 208-212). The other empirical support that infant's emotions, even in maternal expectations, was related to maternal perception (Roberts, 1983). that is, the concept of temperament, was of interest to this study since it includes all emotional and behavioral characteristics.

Temperament was defined in many aspects, depending on theorists' perspectives, and whether it originates from heredity or is influenced by environment (McClowry, 1992:391-325), as per; Rothbart (Rothbart & Derryberry, 1981), who placed her emphasis on the biological expression of temperament that has a constitutional basis. She defined temperament as the relative, stable, individual differences that are demonstrated through reactivity and self-regulation. Reactivity is demonstrated through motor activity and affects autonomic and endocrine response, while self-regulation is the neural and behavioral processes that modulates reactivity in areas such as attention, approach, withdrawal, self-soothing, and so on.

Strelua (1989) emphasizes that within the central nervous system, there are two temperament traits – reactivity and activity – both of which are responses to

environmental stimulation. Reactivity refers to the magnitude of reactions and the strength of the nervous system in response to stimulation, activity is the goal-directed behavior of the individual to approach or avoid stimulation.

Goldsmith (1983) credited genetics as the underlying mechanism in the expression of primary emotions. He proposed that temperament is the initial expression of the primary emotions and arousal that predicts later developing personality traits. From this perspective, although some dimensions of temperament are discernible at birth, others emerge later and once apparent, temperament traits are relatively stable.

Buss and Plomin (1975, 1984) defined temperament as early developing personality traits that are biological in origin and appear in the first year of life. Limiting temperament to three traits, emotionality (distress), activity (tempo and vigor), and sociability.

Chess and Thomas (1984) defined temperament as not a static trait or set of traits, but a particular reaction style that is constantly changing and modifying, as well as being modified by the environment.

Although, a universally accepted definition of temperament is unavailable, most theorists would agree that temperament has a biological underpinning and that it "is a rubric for a group of related traits and not a trait itself" (Goldsmith et al., 1987 cited in McClowry, 1992: 319). However, temperament theorists agree that temperament refers to a predisposition to behavioral response patterns that generally remain consistent over time, but they vary in the degree of importance that they place on the environment and its' influence on the expression of temperament.

Chess (1977, cited in Garrison & Earls, 1987: 34) identified nine dimensions of temperament, which are broadly accepted as the following:

Activity level: the child's typical motor activity within an array of daily activities, including eating, dressing, play, and bathing.

Intensity of reaction: the overall level of energy in the child's response.

Rhythmicity: the regularity of sleep or waking patterns, bowel movements, and hunger.

Adaptability: the child's response to novel or changed situations or events, including the duration of the initial response.

Threshold of responsiveness: the level of stimulation necessary to evoke a response from the child.

Persistence and attention span: the length of time the child will continue to pursue an activity or persist despite obstacles.

Distractibility: the degree to which environment stimuli can change or redirect the current activity of the child.

Quality of *mood*: Pleasant, joyful behavior versus unpleasant, crying or complaint behavior.

Approach/Withdrawal: Positive versus negative responsivity to new stimuli, including objects, situations, and persons.

Formerly, measuring temperament was difficult, with expert and specific instrument required. Chess's (1977) instrument overcame this problem and is accepted and widely used, expertise is not necessary, and mothers can assess their infant's temperament. However, Chess's instrument had a large number of items (more than

90), The parsimonious instrument, Pridham's Perceived Infant Temperament is an alternative tool used in Maternal and Child Nursing, compared to Chess's, the 19-item Pridham instrument has four dimensions. First, *malleability* – the infant's approach to or acceptance of new things, adaptability in general and in feeding and sleeping, equated to Chess's *adaptability*. Second, *amenability* – soothability, positivity of mood, ease of diversion from crying, and regularity of feeding and sleeping equated to Chess's *rhythmicity* and *mood*. The *responsivity to stimuli* – sensitivity to sounds and environment events, activity level during bathing and diapering, and intensity of expression of self and feelings, equated to Chess's *threshold of responsiveness, activity level, intensity of reaction,* and *approach / withdrawal*. Last, *persistence,* representing a young infant's engagement with the world, equated to Chess's *persistence/attention span* and *distractibility*. Since it offers parsimony and coverage of all infant temperament dimensions, Pridham's perceived infant temperament instrument is used in this research study.

The Relationship between Infant's Characteristics and Maternal Role Attainment

There are many studies about the relationship between infant's characteristics and maternal role attainment, but most of these researches were taken on each component of maternal role attainment.

For the relationship of infant's characteristic to maternal identity, Walker, Crain, & Thompson (1986: 68-71) investigated stability and change in maternal identity

and maternal role attainment in 64 medically normal, middle class primiparous and 58 multiparous women. Using two semantic scales, "Myself as Mother" and "My Baby", for maternal identity and the Pharis Self-Confidence (1978) Scale for role attainment, subjects were tested at 1 to 3 days and 4 to 6 weeks postpartum. The results revealed that maternal perceptions of infant's characteristics were significantly correlated with Myself as Mother in both periods ($r = .37, .27, p < .05$ at 1-3 days and 4-6 weeks respectively). Furthermore, maternal perceptions of infant's characteristics were significantly correlated with maternal self-confidence in both periods ($r = .25, .24, p < .05$ respectively).

For the relationship of infant's characteristics to maternal role competence, Pridham, Chang, and Hansen (1987) examined the relationship of mothers' appraisal of the importance of and need for action around infant-related issues to maternal experience, use of help, and perceived problem-solving competence. The samples, 38 primiparae and 24 multiparae, were asked to complete a daily log about their infant's issues, which related to their perceived problem-solving competence for 90 days postpartum. They found that temperament was not significantly correlated with problem-solving competence ($r = –0.03, p > .05$), but illness and infant's behaviors have a significant correlation ($r = - 0.34, p < .05, r = - 0.37, p < .01$, respectively). However, it was a study involving a small sample which needs further study in a large sample size to be more useful.

Bullock & Pridham (1988) investigated the sources of a mother's perception of her competence in problem-solving issues of infant care in 49 mothers during 30 and 90 days postpartum. They found that for maternal confidence the properties of the infant

such as response to care, growth & development achievements were significantly correlated ($r = 0.27, -0.27, p < .05$, respectively) at 30 days postpartum, but there were no properties of the infants correlated with maternal confidence at 90 days.

Teti & Gelfand (1991) investigated behavioral competence among mothers (48 clinically depressed and 38 non depressed) of infants in the first years (3 – 13 months old). They found that the infant characteristic of difficulty was significantly correlated with maternal competence ($r = - .30, p < .01$), maternal self-efficacy ($r = -.50, p < .001$), and maternal depression ($r = .39, p < .001$).

Pridham, Chang, and Chiu (1994) examined 117 mothers at 1 and 3 months postpartum as to how a mother's perception of her infant's temperament contributes to her appraisal of her parenting and of her problem-solving competence during the first 3 months postpartum. They found that at 1 month only infant's temperament characteristics of malleability and amenability were significantly correlated with maternal problem-solving competence ($r = 0. 27$ and $0.42, p < .05$). At 3 months all the infant temperament characteristics were significantly correlated, ranging from 0.25 to 0.37 ($p < .05$).

Zahr (1991) investigated the relationship between maternal confidence and mother-infant behaviors in premature infants of 49 mothers at 4 and 8 months postpartum. The results show that at 4 months the infant characteristics of fussy / difficult, unadaptable, and unpredictable were significantly correlated with maternal confidence ($r = -0.38, -0.32$, and $-0.39, p < .05$, respectively). But, at 8 months, only unadaptable and unpredictable remained significantly correlated with maternal confidence ($r = -0.36$ and $-0.34, p < .05$).

For maternal-infant attachment, Mercer & Ferketich (1994a) studied the differences between maternal-infant attachment and the variables affecting attachment for 136 experienced (one or more previous children) mothers and 166 inexperienced (firs-time) mothers during postpartal hospitalization and at 1, 4, and 8 months. They found that among experienced mothers the infant characteristics of birth-weight and birth-health account for 5 %, 3 %, 0 %, and 6 % of the variance on attachment during early postpartum at 1, 4, and 8 months respectively. Among inexperienced mothers, these infant characteristics accounted for 4 %, 3 %, 0 %, and 0 % of the variance of attachment during early postpartum, at 1, 4, and 8 months respectively. From these results, it seems that the infant characteristics of weight and health did not affect attachment among first-time mothers when the infant's age was over 4 months.

For maternal behaviors, Mercer (1986a) found that the infant characteristic of temperament, from Chess's dimensions, was correlated with the desired maternal behaviors with correlation coefficients ranging from 0.18 to 0.54 ($p < .05$ and $p < .001$) among first-time, three groups (15-19 years, 20-29 years, 30-42 years) of mothers at 8 months postpartum.

In Thailand, it was found that the correlation between maternal perception of newborn behaviors and maternal role performance ($r = 0.357$, $p < .001$) accounts for 5.7 % of the variance in prediction of maternal role performance among adolescent mothers during 4-6 weeks postpartum (Sookkavanawat, 1998). Furthermore, the health complications after birth of premature infants was significantly correlated with maternal role performance ($r = - 0.22$, $p < .05$) and accounted for 4 % of the variance in prediction of maternal role performance at the discharge day of hospitalization

(Rujiraprasert, 1996). For a causal model, neonatal perception had direct small effects on maternal role mastery ($\beta = 0.14$, $p < .05$) (Soomlek, 1996).

In summary, all studies show that there were relationships between infant characteristics and maternal role attainment's components, except for maternal satisfaction. However in first-time mothers, the innate characteristics such as birth-weight and health tended to decrease in their relationship when the infant is aged over 4 months, but the infant characteristics of temperament tend to increase in importance in affecting maternal role attainment over the first year of the infant's life.

The Antecedence of Maternal Role Attainment

Mercer (1981, 1985) proposed factors that impact on the maternal role which are classified in situational–environmental factors such as maternal work, social support, marital relationship and so forth. However, her assumption of the mother's "core self" affecting the way she defines situations (Mercer, 1981: 76) leads to the conceptualization that all situational-environmental factors will affect and account for variance in maternal role attainment by passing through the maternal self-system when we consider a causal relationship. That is, in working mothers, the variables that are expected to affect the maternal role attainment by passing through the maternal self-system, self-esteem, and maternal perception of infant's characteristics, are working conditions, social support, and marital relationship.

Working Conditions

A number of researches on multiple roles and their effects have focused largely on psychological workload, health, and women's well-being, in which there are negative effects (Lennon, 1994; Pugliesi, 1988; Rosengield, 1980) and positive effects (Barnett & Baruch, 1985; Cleary & Mechanic, 1983; Lennon & Rosenfield, 1992). Many studies explore the relationship between the number of roles women occupy and the underlying idea is the expectation that roles drain energy; hence, the more roles a woman occupies the less energy she will have, the more conflict she will experience, and the more negatively her well-being will be affected. But some of these studies found that the more a woman occupies multiple roles, the more she gains usefulness from these roles.

The finding of multiple relationships, brings about two hypotheses, which are used to explain the effect of work on maternal well being among women who occupy multiple roles (Barnett, 1993: 428-459). First, the scarcity hypothesis rests on two premises: (1) that individuals have a limited amount of energy, and (2) that social organizations are greedy and demand all of an individual's allegiance. According to the scarcity model, people do not have enough energy to fulfill their role obligations; thus, role strain is normal and compromises are required. Therefore, the more roles one accumulates, the greater the probability of exhausting one's supply of time and energy and confronting conflicting obligations; role strain and psychological distress are the result. Second, the expansion hypothesis focuses on the net positive gains to be had from multiple roles. It argues that such rewards as self-esteem, recognition, prestige,

and financial remuneration more than offset the costs of adding on roles. More recent research supports the expansion theories such as, Thoits (1983) who reports a positive association between the number of roles a person (woman and man) occupies and psychological well being, Verbrugge (1982) concludes that multiple role involvement is associated with better health.

The Relationship between Working Conditions and Self-Esteem

Research studies on the relationship of maternal work to self-esteem indicate that it is not the number of roles one occupies, but one's working conditions which affect self-esteem (Lennon, 1994; Bird & Ross, 1993). Based on the belief that sources of self-esteem come from the evaluation of significant other's and self-regulation (Coopersmith, 1981), then working conditions which increase maternal perception of higher self-regulation will increase maternal self-esteem. Working conditions that initiate a sense of reward, whether financial or in terms of admiration, work that gives a sense of control over work activities–autonomy, and less routine are incremental for health, well-being, and self-esteem (Lennon & Rosenfield, 1992; Karasek, et al., 1988, cited in Lennon, 1994: 236). However, more routine work is expected to increase more control over one's work in this study.

When comparing maternal housework with work outside the home, housework is considered as having no reward, more routine and is interrupted more than occupational work, but housework has no time pressures and more autonomy than occupational work. However, housework is recognized as less important than

occupational work, and it is usually found that mothers who work outside the home have more self-esteem than mothers who work only in the home (Bardwick, 1970, 1971, 1979, cited in Meisenhelder, 1986: 8-13). Working mothers who have high self-esteem will have a positive view of self, high self-competence evaluation, and high self-confidence (Kessler & McRae, 1982). That is, mothers who work outside home are expected to have more self-esteem than mothers who take only the housewife role (Baruch, Barnett, & Rivers, 1983; Meisenhelder, 1984; Lennon, 1994). However, working mothers whose family place an excessive demand on the mother, including undesirable working conditions, will have a negative influence on the psychological well being too (Lennon, Wesserman, & Allen, 1991; Ross & Mirowsky, 1988, Lennon & Rosenfield, 1992).

Bird & Ross (1993: 913-925) explored qualities of work and effects on personal control of housework and paid work among 2,031 adults, aged 18 – 90. They found that unpaid domestic work is more routine and provides less intrinsic gratification and fewer extrinsic symbolic rewards than paid work. All three of these dimensions decrease the sense of control; consequently house workers report a lower sense of control than do paid workers. However, house workers report more work autonomy than paid workers do, which increases the sense of control. Although house workers are thanked for their work more than male paid workers, being thanked did not affect the sense of control. That is, paid work tends to initiate more self-esteem than housework, since personal control was a part of self-esteem.

Pistrang (1984) examined women's work involvement and the experience of new motherhood by interviewing 63 non working and 42 working mothers who had a

first baby aged 5 to 9 months. The relationship between previous work involvement – the importance of work in women's lives prior to pregnancy – and the experience of first-time motherhood was examined. The results showed that for the non working mothers, work involvement was positively correlated with irritability ($r = .34$, $p < .01$), costs of motherhood – psychological costs, or personal sacrifices, of the maternal role ($r = .39$, $p < .01$), and depression ($r = .50$, $p < .001$) and negatively correlated with marital intimacy ($r = -.41$, $p < .001$) and self-esteem ($r = -.45$, $p < .001$). That is, among the non working mothers, high-work-involved (HWI) women tend to feel more irritable and depressed, to have lower self-esteem and to report greater costs of motherhood and more negative changes in their marriages than low-work-involved (LWI) women. For working mothers, however, there was no significant relationship between work involvement and any of these outcome variables, failing to support the hypothesis for women who did work, as previous work involvement was expected to be positively related to the quality of motherhood experience. The findings suggest that paid employment has psychological importance for many mothers of infants and that work involvement should be considered as an individual difference variable in research on new motherhood.

Meisenhelder (1986) investigated the influence of employment and the perception of husband's appraisals on self-esteem in women among 95 employed mothers and 68 homemaker mothers, aged 25 to 45. The results showed that among employed mothers, employment was significantly correlated with self-esteem ($r = .22$, $p < .01$). That is, mothers in full time employment had significantly higher self-esteem than did mothers in part-time employment.

In summary, mothers who work outside home tend to have higher self-esteem than full-time homemakers, and the working conditions that enhance self-esteem in transition process to became motherhood among working mothers are tend to be more characteristics of a high control work. That is, there are characteristics of low in responsibility, time-pressure, interruption, and physical effort use, but high in autonomy and routine work.

The Relationship between Working Conditions and Infant's Characteristics

For working mothers, the working variable should considered along with the maternal role, since multiple roles require more maternal time and energy to acquire each role simultaneously. These may influence maternal-infant interaction and maternal perception of infant's characteristics. Repetti (1989) suggested that when people experience stress at work, their patience, sensitivity and responsiveness toward family members might be reduced. Similarly, Bolger, et al. (1989, cited in MacEwen & Barling, 1991: 637) found that the greater the overload experienced at work during the day, the more likely women were to decrease their involvement in household tasks. Some mother's impatience of infant negative behaviors or attempts to control punishing behavior led to them avoiding interaction with the child (Jouriles, Murphy & O'Leary, 1989). Possibly, mothers who are dissatisfied with the role of employed mother or who are experiencing high inter role conflict may adopt less effective parenting styles, because they do not have the concentration to do otherwise. .

The experience of this inter role conflict is demonstrated by Pridham & Chang (1992: 204-216) who examined the transition to first-time motherhood at 3 months postpartum in 62 mothers. They found that the number of days on which mothers had to work did not significantly correlate with maternal perception of infant's characteristic in the maternal problem-solving process, even regarding perceptions of infant's behaviors or infant's caring ($r = .16, .10, p > .05$).

Rogers, Parcel, & Menaghan (1991: 145-464) examined the effects of maternal working conditions and mastery on child behavior problems among 521 mothers of 4-6 year old children. They found that maternal working conditions of hourly pay ($\beta = -.08$, $p < .05$) and hours employed/week ($\beta = .08$, $p < .05$) had an impact on children's behavior problems. That is, the higher the pay, the lower the perception of children's behavior as a problem and the longer the work hours, the more mother perceives children's behavior as a problem.

Majewsky (1986: 10-14) investigated role conflicts, satisfactions, and attitudes during the transition to the first-time maternal role at 5 and 18 months among 45 working mothers and 41 non working mothers. The results showed that mothers with careers had more role conflict between worker versus self, and worker versus spouse than mothers without jobs ($t = 3.18$, $p < .001$, $t = 2.06$, $p < .01$, respectively). These role conflicts were associated with the transition to the maternal role, in which the greater the extent of perceived conflicts of spouse versus parent role, spouse versus self, and parent versus self, the greater the difficulty in making the transition to the maternal role ($r = .34$, $p < .001$; $r = .26$, $p < .05$; and $r = .42$, $p < .001$). Moreover, the greater the extent of perceived marital satisfaction, the greater the ease in making the

transition to the maternal role ($r = -.21$, $p < .05$). That is the more role conflict, the greater the difficulty in the perceived infant's behaviors – maternal role.

From the results of the studies mentioned above, it is indicated that quantity of work and number of working days or hours were not sufficient to explain the maternal perception of infant's characteristic or maternal role attainment. That is there were others aspect of work which could be expected to associate with the maternal perception of infant's characteristics, as the following studies suggest:

Riech (1984: 295-230) explored occupational commitment at 34 weeks gestation and the quality of maternal infant interaction at 3 days and 6 weeks postpartum of 50 college –educated women and their healthy infants. In the study, occupational commitment was defined as the degree to which one is involved and dedicated to one's work, and measured by the Job Satisfaction Index - JSI (Brayfield & Rothe, 1951). The quality of maternal-Infant interaction was assessed by the assessment of mother-infant sensitivity scale (AMIS) and the Brazelton Neonatal Behavioral Assessment Scale was used to document contributions the infants made to the interaction. The results of study revealed that there was a moderately strong positive correlation between income and occupational commitment, that is, high income was correlated with high occupational commitment ($r = .337$, $p < .025$). Maternal occupational commitment was significantly correlated with the quality of maternal sensitivity to infant behaviors ($r = .409$, $p < .001$) and the quality of dyadic interaction ($r = .321$, $p < .05$), but was not significantly correlated with the quality of infant interaction ($r = .212$, $p > .05$) at 3 days. Moreover, maternal occupational commitment accounted for 16 % of the explained variance on maternal sensitivity to infant

behaviors. At 6 weeks postpartum, however, no statistically significant correlation was found between occupational commitment and the quality of maternal-infant interaction.

MacEwen & Barling (1991: 635-644) examined the effects of maternal employment experience on children's behavior via mood, cognitive difficulties, and parenting behavior among 147 mothers. The results showed that, inter role conflict was significantly positively correlated with maternal behaviors of punishing ($r = .22$, $p < .01$) and rejecting ($r = .45$, $p < .01$). Working satisfaction was significantly negatively correlated with cognitive difficulties ($r = -.23$, $p < .01$), maternal negative mood ($r = -.38$, $p < .01$), and rejection of children ($r = -.25$, $p < .01$). That is, mothers who are not satisfied at work tend to have cognitive difficulty and negative moods which result in rejection of their children.

In summary, the results of all the studies mentioned indicate that the maternal perceptions of working conditions influence maternal-infant interaction and the maternal perception of infant's characteristics simultaneously.

Social Support

There are many definitions of social support found in the literature, although terminology is used in many of them, the definitions possess common characteristics. All of the definitions imply some type of positive interaction or helpful behavior provided to a person in need of support (Hupcey, 1998: 1232). It appeared that no single definition is completely agreed upon by theorists in this field, however the area of most agreement is that social support can be summarized into four areas (Weiss, 1974;

Cobb, 1976; Mitchell, 1969; Shumaker & Brownell, 1984; Caplan, 1974; House, 1981; Kahn, 1979; Schaefer, Coyne, & Lazarus, 1981; Dimond & Jones, 1983). First, *communication of positive affect*, in a supportive relationship the principals have a sense of warmth, of caring, of expressed concern; they know that others believe in them and respect them; there is feedback that encourages self-esteem and affirms or endorses one's behavior or one's attributes. Second, *social integration*, it is supportive to belong, to have membership of groups, to have opportunities for exchange with others, to share common experience, to know that there are others who will come to one's aid in time of need. Third, *instrumental support*, the provision of material or tangible aid as a component of support. Finally, *reciprocity*, the directness in interactions is conceptualized as a factor in the continuance of supportive interactions and in the mutual satisfaction of such transactions. The likelihood that human needs will be met has been suggested to be related to both structure and function of social networks (size, density, homogeneity, intensity, dispersion, and strength of the ties) (Cohen & Syme, 1985: 83-108).

Regardless of how social support is defined, it is generally agreed that it functions to buffer or protect individuals from the effects of many kinds of life stresses. Early studies of social support functions focused on major psychological factors related to stress and well being by the two process (Cohen & Will, 1985: 310-312, Shumaker & Brownell, 1984: 23-24). First, the main effect, a generalized beneficial effect of social support could occur because large social networks provide persons with regular positive experiences and a set of stable, socially rewarding roles in the community. This kind of support could be related to overall well being because it provides positive

effects, a sense of predictability and stability in one's life situation, and a recognition of self-worth. Second, the buffering effect, support can attenuate or prevent a stress appraisal response, that is, first the perception that others can and will provide necessary resources may redefine the potential for harm posed by a situation and/or bolster one's perceived ability to cope with imposed demands and hence prevent a particular situation from being appraised as highly stressful. Second, support may alleviate the impact of stress appraisal by providing a solution to the problem, by reducing the perceived importance of the problem, by tranquilizing the neuroendocrine system so that people are less reactive to perceived stress, or by facilitating healthful behaviors.

Becoming a first-time mother while working outside the home was an important transitional point for women, because there were a number of decisions to make about societal roles, in which mothers require evaluation and affirmation from significant persons to promote self-esteem and interaction with their infants. The most significant persons who confirm maternal behavior in first time, working mothers to view themselves as congruent with the real world are their husband and their mother (Elman & Gilbert, 1984; Moore, 1983; Jordan, 1984; Meisenhelder, 1985, 1986). These two sources of support are also give them information, emotional, material and financial support and may even diminish housework (Brown, 1986: 72-76; Norbeck & Anderson, 1989: 281-287; Cronenwett, 1985: 93-99; Thoits, 1982: 148). However, in a working situation, friends and work colleagues may become the sources of support, which increases in importance since the maternal perception of significant sources of support is transited due to the changing situation (Norbeck, 1982: 23, Dimond &

Jones, 1983: 239). That is, a network structure that may assure effective social support in one situation may not be effective in all situations. Supports from any network will have meaning and usefulness for mothers to cope with the problems depending on the level of the relationship, the timing, nature of the situation, and type of support (Weiss, 1982: 148-162; Ritter, 1988: 149-161; Cohen & Syme, 1985, Dimond & Jones, 1983).

The Relationship between Social Support and Self-Esteem

Koniak-Griffin (1988) examined the relationship between social support, self-esteem, and maternal-fetal attachment in 90 adolescent mothers aged 14 – 19. Social support was measured with Norbeck's Social Support Questionnaire (NSSQ), self-esteem was measured with Coopersmith's Self-Esteem Inventory (SEI), and maternal-fetal attachment was measured with Cranley's Maternal-Fetal Attachment Scale (MFAS). The results of the study revealed that social support in the aspect of total functional support and total network were significantly correlated with self-esteem in aspects of general, social, home, school, and total self-esteem with a correlation coefficient ranging from 0.17 to 0.42. This indicates that adolescent mothers who have strong support and a good network will have a strong sense of self-esteem in family life.

Similarly, McGrath (1988) investigated the determinant of maternal self-esteem in the neonatal period among 77 mothers. The results of the study showed that spouse support is the most important to maternal self-esteem, follows by maternal perception of infant's behaviors. However, for first-time mothers aged over 35, social support

from spouse, family and friends lends them positive self-evaluation and mediates for maternal role competence and satisfaction (Reece, 1989: 91-98). Hall, Kotch, Browne, & Rayens (1996: 231-238) examined self-esteem as a mediator of the effects of stressors and social resources on depressive symptoms in 738 mothers, aged 12-42 at 1-2 months postpartum. In contrast, their results revealed that the quantity of social network ties was not significantly correlated with maternal self-esteem ($\beta = .06$, $p > .05$), but the quality of the primary relationship – spouse support – was significantly correlated with maternal self-esteem ($\beta = .27$, $p < .0001$).

In Thailand, Soomlek (1996) studied a causal model of maternal role mastery among 250 first-time mothers living in Khon Kaen province. The results of the study showed that social support had a direct positive effect on self-esteem ($\beta = .37$, $p < .01$) and had indirect effects on maternal role competence via self-esteem ($\beta = .11$, $p < .05$).

In short, social support is correlated with self-esteem. The quality of support is significant to maternal self-esteem, although for adult mothers the quantity of networks is not significantly related to self-esteem, however support from spouse, friends, and family are also significantly correlated with self-evaluation. That is, to measure social support, social networks need to be measured simultaneously.

The Relationship between Social Support and Infant's Characteristics

Maternal perception of infant's characteristics, comes in part from the mother's experience, the rest is acquired later through many forms of social interaction. There is

a study by Cronenwett (1985b) which supports this as it found that emotional support has an effect on the maternal perception of infant's caring behavior and satisfaction in the maternal role. Moreover, there are other forms of social support that enhance maternal perception of infant's characteristics, which are presented in the following studies.

Anderson (1981) compared the effect of special nursing care on the quality of maternal-infant reciprocal interaction after birth among first-time mothers. This special nursing care consisted of giving information about 1) newborn behaviors, 2) newborn behaviors plus demonstration of behaviors, and 3) practice of newborn care. The results of the study showed that teaching about newborn behaviors could significantly enhance the quality of maternal-infant reciprocal interaction and adjustment in the mothering role.

Brouse (1988) conducted an intervention study to determine if a nursing intervention designed to teach primiparas about their infant's behaviors and abilities would ease their transition to the maternal role. Data was collected at 3 days and 3 weeks postpartum from a relatively homogeneous sample of 16 control mothers and 15 experimental mothers. The teaching interventions the information provided included: infant states – deep sleep, light sleep, drowsy, quiet alert, active alert, and crying; behavioral abilities – visual and auditory abilities, cuddliness, and consolability; defensive abilities – crying, yawning, sneezing, gagging, and blinking; reflex abilities – startle, grasp, rooting, sucking, stepping, and hiccuping. The study results showed that, the experimental mothers did not significantly differ from the control group in anxiety, maternal concern about infant care and maternal lifestyle adjustment at all during the

time of the experiment. That is, information support about newborn characteristics tends to be unnecessary at 3 days and 3 weeks.

Although there was a significant relationship between social support and maternal perception of infant's characteristics in Thai mothers ($r = .22$, $p < .01$), there was no causal directed effect of social support on maternal perception of infant's characteristics ($\beta = .086$, $p > .05$) (Supanee Soomlek, 1996). There may therefore be other variables congruent with social support to predict maternal perception of infant's characteristics. However, Pridham presented a report regarding mothers seeking information at 3 months about their infant' s feeding, rashes, development and behavior from their spouse, doctor, mother/father and nurse practitioner (Pridham, 1997: 65-70).

Marital Relationship

Marital relationship refers to the relationship between two persons in which they have special intimacy and a desire to live together voluntarily, ready to face any situation, accept the importance of each other and not desert the other. The quality of this kind of relationship emerges from the couples love and attachment, satisfaction, and sexual compatibility with each other (Burr, 1970: 29; Stenett & Walters, 1984: 47; Jourard, 1963: 40; Yurick, et al., 1984: 287). Furthermore, interpersonal communication, an egalitarian relationship and positive appraisals of the partner and marriage are factors, which enhance marital satisfaction (Moore, 1983: 73 - 79). These relationships change over time, depending on the person's developmental process and family situation (Lenz, et al., 1985).

Marital relationships are the reflection of personal dyadic adjustment on the relationship and husband – wife roles. Thus, marital or dyadic adjustment may be viewed as a dynamic process as well as a qualitative evaluation of a state (Spanier, 1976: 16). That is, in studying marital relationship, the assessment of adjustment may assume that there exists a continuum of adjustment in which a "snapshot" of the continuum is taken at one point in time. This definition acknowledges a process, but studies dyadic adjustment by looking at the process only at specific points on the continuum.

The birth of a first child forces the married couple to adjust their adult-centered view to a child-focused triad. This transition requires balancing individual needs and new parent-child relationships with the continuing needs of the marital relationship. A number of studies have found significant decreases in marital satisfaction over the first 6 to 9 months following birth (LeMastes, 1957; Dyer, 1963; Hobbs, 1965 cited in Waldron & Routh, 1981: 758-788; Mercer, et al., 1993: 45-56). However, there is a study which found the first child did not have a negative effect on the marital relationship if the couple had a good level of adaptability in their relationship (Harriman, 1986: 233-239). Moreover, the change in marital relationships depends on several initial factors which are embedded before the birth of the child such as, husband's age, years of marriage and previous maternal self-esteem, but especially, family income which if sufficient, influences the post birth relationship between a couple by decreasing maternal conflict for 3 years after child birth (Belsky & Rovine: 1990: 5-19). As the definition of marital quality is a general term indicating an overall evaluation of the functioning of the marriage, the qualitative outcome of the adjustment

process at any point in time is determined by the degree of dyadic satisfaction, dyadic cohesion, affectional expression and consensus regarding matters of importance to dyadic functioning (Spanier, et al., 1978). It is potentially influenced by the degree and direction of change in the relationship that is perceived to have occurred previously (Lenz, Soeken, Rankin, and Fischman, 1985: 50). It can be stated here then that if the married couple have a good relationship prior to the arrival of a child, then they will continue to have a good relationship regardless of any life change.

The Relationship between Marital Relationship and Self-Esteem

First-time motherhood in working mothers requires an adaptation to multiple roles in which they need love and to share feelings, and have behavior affirmation and acceptance from their partner. Partners, who have mutual congruence in roles and fulfill role expectations, will satisfy in the parenting role, which result in a satisfying marital relationship and promotes maternal self-esteem (Cowan, et al., 1978: Belsky, 1985). Thus, spouse support takes an important role in maternal psychological well being after the birth of a child, as is demonstrated by O'Hara's (1986), report on lack of spouse support or a decrease in marital satisfaction which is related to postpartum maternal depression (Gotlieb, Whiffen, Wallace, & Mount, 1991). This influences maternal emotions and results in life stress and spouse conflict (Bolger, et al., 1989). A lack of intimacy, negative interaction, and lack of support in a closed relationship cause negative effects to later maternal self-esteem (Brown & Harris, 1978; Miller, et al., 1989).

Hall, Kotch, Browne, & Rayens (1996: 231-238) follow this idea and explored self-esteem as a mediator of the effects of stressors and social resources on depressive symptoms in 738 mothers at 1 to 2 months postpartum. The majority of samples were first time parents, and one third of the samples were employed. They found that among factors affecting self-esteem - everyday stressors, life events, quality of relationship, and quantity of ties – only quality of relationship had a significantly positive direct effect on maternal self-esteem ($\beta = .27$, $p < .001$).

Schafer & Keith (1991: 5-9) examined the convergence of the self-esteem of marriage partners over four marital life stages. 336 married couples were randomly selected and divided into four life stage groups: younger couples with a child (or children) under age 6; couples with children in school: empty nest couples, in which the wife is in the age range of 45-59 years; and retired couples. The findings demonstrated a convergence of the partners' self-esteem across life changes. That is, the partner's evaluation initiated an increase in each spouse's self-esteem. Although in the first three life stages there was no significant effect of marital relationship on self-esteem, in the last life stage marital relationship was significantly correlated with self-esteem ($r = .28$, $p < .01$). However, marital relationship and self-esteem, evaluated by the partner, tend to increase in correlation over the four stages of life ($r = .28.$, $p < .01$; $r = .36, .41, .53$, $p < .001$, respectively).

Soomlek (1996) examined the relationship between marital relationship and self-esteem among 205 first-time mothers at 2 to 3 days postpartum. She found that marital relationship was significantly positively correlated with self-esteem ($r = .50$, $p < .001$). In terms of causal relationships, marital relationship also had a positive direct

effect on self-esteem (β = .29, $p < .001$). This finding congruence with the study of Wongvisetsirikul (1997) who examined the relationship among marital relationship, social support, self-esteem, transition to motherhood, and postpartum anxiety and depression in 200 first-time mothers, in which the findings showed that marital relationship was significant positively correlated with self-esteem ($r = .29$, $p < .001$).

The study results as mentioned above indicate that, regardless of age, life stage, or risk status, the correlation between marital relationship and self-esteem remains among married people.

The Relationship between Marital Relationship and Infant's Characteristics

Broom (1994) examined the impact of marital quality and psychological well-being on parental sensitivity. The purpose of this study was to determine the extent to which marital quality influences psychological well-being, thereby contributing to parental sensitivity to infant cues. Data were collected from seventy-one married couples with healthy, first-born 3-month-old infants. The findings revealed that among first-time mothers perceived marital quality accounted for 13 % ($R^2 = .13$, $p < .05$) of the variance in predicting maternal sensitivity to infant cues.

Bond & McMahon (1984: 348-351) investigated the relationships between marital distress and child behavior problems, maternal personal adjustment, maternal personality, and maternal parenting behavior in 40 mothers. The results showed that, mothers who had marital distress experience more anxiety ($t = 3.39$, $p < .005$) and

depression ($t = 5.01$, $p < .0001$) than non-marital distress mothers. And, among marital distress mothers, there are more severe problems in personal adjustment ($F_{(2, 37)} = 13.17$, $p < .00005$) and perceived child behavior as a problem ($F_{(6, 33)} = 3.57$, $p < .008$) than in non-marital distress mothers.

Harrison & Magill-Evan (1996: 451-459) explored mother and father interactions over the first year with term and pre-term infants at 3 months and 1 year. The samples were 49 couples with pre-term infants, and 54 couples with term infants. The findings revealed that, the pre-term couples had less interaction in terms of infant characteristics guidance, caring response, clarifying cues, than term couples ($F_{(1, 100)} = 7.05$, $p < .01$), which was statistically significantly differently over time ($F_{(1, 100)} = 16.55$, $p < .001$).

In a causal relationship study, Soomlek (1996) found that the marital relationship at 3 days postpartum had a positively direct effect on maternal perception of infant's behaviors at 4 – 6 weeks postpartum ($\beta = .17$, $p < .05$) among 205 first-time mothers.

In short, marital relationship has an effect on maternal psychological well being and adjustment, which enhances the effective perception of infant's cues or characteristics.

Summary

This chapter has presented a review of the literature addressing the major variables in this study and their relationships to maternal role attainment. There are

summarized that the maternal role attainment (MRA) is a process in which the mother achieves competence in the role and integrates the mothering behaviors into her established role set, so that she is comfortable with her identity as a mother. MRA has three components index - maternal role competence, maternal role satisfaction, and maternal-infant attachment, and two modes - cognitive-affective and behavioral. In addition, acquiring maternal role over the first year, the most prominent period of maternal role attainment process is four month of infant's age.

However, there was no research study which established as a causal model of MRA from the past until present. Only the relationship among factors that affecting MRA was study in relation to the some component of MRA. Then understanding the MRA as a process is not clearly delineated. So, the researcher hypothesized that self-esteem, or self-system evaluation in other word, and maternal perception of infant's characteristics during reciprocal interaction, a feedback from role partner, act as mediators of the MRA process through which, another variable will influence the MRA. Furthermore, previous studies always perform in separate component of MRA or only some component was studied. To fill the gap of consideration MRA as dispersion, the researcher then established the instrument to assess MRA in one measure for the overall of theoretical concept of MRA.

There are reports of only postnatal self-esteem is correlated to the maternal role components and infant's innate characteristics and health status are decrease as important predictor of maternal role attainment, whereas the emotional and behavioral of infant's characteristics increased in importance when infant grew up. Therefore, only

emotional and behavioral infant's characteristics and self-esteem are selected to study in a causal model of maternal role attainment.

The antecedent factors, such as work condition, social support, and marital relationship are expected to affect maternal role attainment through mediating factors, self-esteem and infant's characteristics. The working conditions that give the more control over one's work activities, such as the work which has a conditions of high autonomy, responsibility, interruption, and time pressure, but low routine characteristics are hypothesized to have an effect on maternal role attainment. Although, the quantity of social network is not significantly related to self-esteem in many study reports, however support from many sources are also significantly to self-evaluation. Then for social support, either functional support or quality and quantity of network is considered simultaneously in this study for an affect on maternal role attainment. Marital relationship has an effect on maternal self-esteem regardless of age life stage, or risk status and enhances the perception of infant's characteristics among the mothers.

CHAPTER III

METHODOLOGY

A structural equation model was used in this prospective research to investigate causal relationships among antecedent factors; which are, working conditions, marital relationship and social support that have an effect on maternal role attainment in which self-esteem and infant's characteristics play the mediating role. Data were gathered prospectively. Sources of data were working primiparous mothers.

Research Design

The prospective study was used as the study design. At first, the data about personal information and antecedent factors were gathered by self-evaluation questionnaires at two to three days post delivery. A period of about four months was then allowed for mothers to integrate the new maternal behaviors into their role set, and then, the final data about dependent factors were gathered by mailing questionnaires.

Population and Sampling

Population

The population of the study was working primiparous mothers who delivered at government hospitals in the Bangkok metropolitan area and were hospitalized in postpartum wards during April 1999 to July 1999. They were scheduled to be sent a questionnaire four months later.

Sample

The samples of working primiparous mothers who were invited to participate in the study had the following criteria for eligibility to be the samples:

1.) aged more than 19 years old

2.) first-time mother

3.) had employment besides housewife after delivery leave

4.) had given birth to a healthy normal full-term baby, infant's weight over 2,500 grams

5.) had no abnormalities and no major complications among infants and mothers

6.) the mothers can read and write in the Thai language

7.) the mothers were willing to participate in the research study.

Sampling Technique and Sample Size

Because of the unknown population of this study, the variance of maternal role acquisition from a pilot study is equal to $(14.08)^2$ and was used to calculate the sample sizes in the formula of:

$$n = \frac{Z^2_{\alpha/2}\sigma^2_x}{d^2}$$ (Cochran, 1977, 76-78)

Where,

n = Sample size

Z = Standard estimate under normal curve at $\alpha = .05$, $\alpha/2 = .025$, $Z = 1.96$

σ_x^2 = Variance of maternal role attainment from the pilot study was equal to $14.08^2 = 198.28$

d = The accepted error estimate of the means of maternal role attainment = $.1\sigma = 1.408$

Calculation as formula; that is,

$$n = \frac{(1.96)2x(14.08)2}{(1.408)2}$$

$$n = \frac{3.8416x198.2766}{1.9828}$$

$$= 384.16$$

To estimate the loss of samples of about 50 % were equal to 192, then the total samples of this research study were 576 persons.

The general service hospitals, which had OB&GYN service in the Bangkok metropolitan area, were randomly sampled. Only one hospital corresponded to the office of government determined by the survey of Alpha Research (1997: 177, 302-319) and was selected to be representative of all hospitals. The random sampling of hospitals is presented below.

Office of Government	**Randomly Sampled Hospital**
Department of Medical Service, Ministry of Public Health	
Nopparat Hospital	
Rajvithi Hospital	Rajvithi Hospital
Lerdsin Hospital	
Ministry of Defense	
Bangkok Navy Hospital	
King Mongkut Hospital	Bhumibol Adulyadej Hospital
Bhumibol Adulyadej Hospital	
Somdejphrapinklao Hospital	
Ministry of Interior	
Central Penitentiary Hospital	Police Hospital
Police Hospital	

Bangkok Metropolitan Administration

Central Hospital

Charoen Krung Pracharak Hospital Vajira Hospital

Taksin Hospital

Vajira Hospital

Ministry of University Affairs

Ramathibodi Hospital Ramathibodi Hospital

Siriraj Hospital

The total samples of 576 were divided to be collected from five hospitals, Rajvithi, Bhumipol, Police, Vajira, and Ramathibodi hospital. The distribution of samples is presented in Table 1.

Table 1 Number and Percentage of Return-Rate of the Samples (n = 390)

Source	Number of Sample (%)	Number Working (%)
Ramathibodi Hospital	228 (33.53)	125 (32.05)
Police Hospital	110 (16.18)	61 (15.64)
Rajavithi Hospital	115 (16.91)	65 (16.67)
Bhumipol Hospital	120 (17.65)	83 (21.28)
Vajira Hospital	107 (15.73)	56 (14.36)
Total	680 (100.00)	390 (100.00)

The sample in first phase of this study comprised of six hundreds and eighty working mothers drawn from the postpartum ward in five government hospitals in Bangkok. To facilitate data gathering, questionnaires were mailed to these samples and four hundreds and forty five (65.44 %) questionnaires were returned. Of these, three hundreds and ninety mothers (57.35 %) returned to work after delivery. Most of the samples were from Ramathibodi hospital (32 %) followed by the sample from Bhumibol hospital (21 %). Therefore, only 390 working mothers were eligible for the study according to the inclusion criteria.

Instruments and Psychometric Characteristics

The instruments used in this study include: (a) Personal Information Questionnaire, (b) Dyadic Adjustment Scale (Spanier, 1976), (c) The Norbeck Social Support Questionnaire (NSSQ) (Norbeck, Lindsey & Carrieri, 1981, 1983), (d) Working Conditions (Lennon, 1994), (e) What My Baby Is Like (WBL) (Pridham, Chang & Chiu, 1994), (f) Self-Esteem Scale (Rosenberg, 1965) and (g) Maternal Role Attainment Scale (MRAS).

Validity and Reliability Testing

The trial study to test construct validity and reliability was conducted with Thai subjects before using the instrument in the real study. These trial cases consisted of 306 working primiparous mothers divided into three groups. The first group was recruited

from 159 mothers who had delivered their babies and were hospitalized at postpartum wards in Ramathibodi hospital during October 1998. The second group was 86 mothers who delivered their babies during the year 1998 but before October, and they were sent the questionnaires with stamped addressed envelope for the return of the completed questionnaires. The third group was 61 mothers who received services at a postpartum clinic when they come back to follow up the investigation after 6 weeks post delivery during February 1999.

The first group of 159 working primiparous mothers participated in the validity and reliability testing of the Norbeck Social Support Questionnaire and Self-Esteem Scale. In addition, the second group, 245 mothers participated in validity and reliability testing of Working Conditions and What My Baby Is Like Scale. All of the three groups of 306 working primiparous mothers participated in the validity and reliability testing of Dyadic Adjustment Scale. A description of the study instruments is presented below.

Personal Information Questionnaire

The Personal Information Questionnaire asks questions about demographic data such as maternal age, career, education, religion, information about delivery, infant, maternal leave, and so on (Appendix A).

Dyadic Adjustment Scale

The Dyadic Adjustment Scale was initially developed and tested by Spanier (1976) for assessing the quality of marriage and other similar dyads. The Thai version of the Dyadic Adjustment Scale was translated and tested by Gasemgitvatana (1994). It includes 32 items used to assess 4 dimensions, (a) dyadic consensus consists of a 15-item six-point scale range from always disagree (coded 0) to always agree (coded 5), (b) dyadic satisfaction consists of a 7-item six-point scale ranging from all the time (coded 0) to never (coded 5), (c) dyadic cohesion consists of a 6-item six-point scale ranging from never (coded 0) to every day (coded 5), and (d) affectional expression consists of 4 items in which item 29 and 30 are dichotomous items (yes or no), item 31 is a 7-point scale ranging from extremely unhappy (coded 0) to perfect (coded 6), and item 32 is a 6-point scale ranging from 0 to 6 to estimate the future relationship. The possible total scores range from 0-153, the more the score, the better the quality of the relationship.

Soomlek, (1996) modified the Thai version of the Dyadic Adjustment Scale (Appendix B) by cutting off 4 items. Two of which were omitted following the suggestion of a linguistic expert; they were questions about philosophy of life and kissing, because they are difficult to answer and are incongruent with Thai culture. The other two were omitted because of redundancy as suggested by the trial samples of 30-postpartum mothers. One was the question of making major decisions which is redundant to career decisions, the other was a question regarding the participant and their partner agreeing to engage in outside leisure interests together as it was felt this

was redundant to satisfaction. In addition the scoring was modified to a 5-point scale, 1 = never, 2 = sometimes, 3 = often, 4 = more often, and 5 = most often. In summary, the Thai version of the Dyadic Adjustment Scale became a 28-item, 5-point scale with possible scores ranging from 28 to 140. Higher scores indicate a better relationship. The items in each component are presented below:

1.) Dyadic consensus consists of the items 1, 2, 3, 5, 7, 8, 9, 10, 11, 12

2.) Dyadic satisfaction consists of the items 13, 14, 15, 16, 17, 18, 19, 27, 28 (reverse scores were used in the items 13, 14, 17, 18, 19)

3.) Dyadic cohesion consists of the items 20, 21, 22, 23, 24

4.) Affectional expression consists of the items 4, 6, 25, 26 (reverse scores were performed in the items 25, 26).

Validity

The content validity of the Dyadic Adjustment Scale was provided by three experts and criterion-related validity was tested by administering the scale to sample of 218 married people and 94 divorced people. When testing for the differences of 32 items between the two groups using the t-test for each item, it was found that the divorced sample differed significantly from the married sample ($p < .001$).

Construct validity was tested by calculating the correlation with the other well-accepted, previously used marital adjustment scale, the Locke-Wallace Marital Adjustment Scale (1959). The correlation between these scales was .86 among married respondents and .88 among divorced respondents ($p < .001$). Construct validity was

further established through factor analysis of the 32-item scale. The factors were loaded into 4 interrelated components as previously mentioned, three of which (dyadic satisfaction, dyadic cohesion, and dyadic consensus) were hypothesized as components of adjustment, and were found to exist (Spanier, 1976).

In this study, the final 28-item Thai version was tested for construct validity by factor analysis in trial cases of 306 working primiparous mothers before use in the research study. The results showed that 56.1 % of the variance was explained by the total items represented by six factor components. The three components remaining, in which; dyadic consensus accounted for 29.24 %, dyadic satisfaction accounted for 9.13 %, and dyadic cohesion accounted for 5.04 % of the explained variance on marital relationship (Appendix C).

In the actual study, the result of construct validity testing of the Dyadic Adjustment Scale among 390 respondents revealed that with the six components, 53.93 % of variance were explained by the total items. When factors were fixed to four as a theoretical substantive, the component of dyadic cohesion accounted for 29.23 %, dyadic consensus accounted for 7.99 %, dyadic satisfaction accounted for 5.06 % and affectional expression accounted for 4.24 % of variance on marital relationship.

Reliability

Spanier, (1976) evaluated internal consistency reliability by using Cronbach's Coefficient Alpha. The reliability coefficient for the dyadic consensus sub-scale was .90,

dyadic satisfaction sub-scale was .94, dyadic cohesion sub-scale was .86, affectional expression sub-scale was .73, and the total scale was .96.

For the Thai version, Gasemgitvatana, (1994) evaluated the test-retest reliability of this 32-item scale with 10 respondents who were the wives of chronically ill patients and the reliability coefficient was .76. She tested for reliability in 104 samples and the Cronbach's Coefficient Alpha of the total scales was .97.

Soomlek, (1996) tested the final revised 28-item scale for reliability with 205 primiparous mothers and found the Alpha Cronbach's Coefficient was equal to .82.

In this research study, the revised 28-item scale was tested for reliability among 306 working primiparous mothers in a trial study before being used in the real research study and the Alpha Cronbach's Coefficient was .90.

In the actual study, the reliability testing of this instrument, which applied among 390 respondents yielded the Alpha Cronbach's Coefficient of .90.

The Norbeck Social Support Questionnaire (NSSQ)

The Norbeck Social Support Questionnaire was developed by Norbeck, Lindsey & Carrieri (1981, 1983) and was modified slightly by the addition of one item of recent losses of important relationships which modified the scoring technique as to the current version of NSSQ (1995). The current version of NSSQ is a 9-item self-report questionnaire designed to measure multiple dimensions of social support based on Kahn's (1979) definition of social support. The functional components measured are affection (2 items), affirmation (2 items), and aid (2 items). Kahn's concept of convoy,

the vehicle through which social support is provided, is measured through three network properties: number in the network (list of network), duration of relationships (1 item), and frequency of contact with network over time (1 item), and the added item of recent losses of network.

Scores for the three functional components and network properties are derived from ratings made by the subject for each person in a personal network as follows: the functional components of affection, affirmation and aid scores ranging from 0-"not at all" to 4 "a great deal", the network properties component of duration of relationships has scores ranging from 1 "less than 6 months" to 5 "more than 5 years", and the component of frequency of contact scores range from 1 "once a year or less" to 5 "daily". Calculation can be made for the network as a whole and for specific sub-scales and variables.

To use the NSSQ in this study, the researcher translated it into the Thai language (Appendix D) and modified it by omitting the item on recent losses of network in order to measure the real support the respondents received. Scoring was done by the mean of each item, which was recruited from all the samples' network. Corresponding to the result of construct validity testing in Thai working mothers, the components of social support were assigned into emotions, aid, and network to represent the construct of social support in the model

Validity

Norbeck, et al. (1981) tested the validity of the NSSQ on two groups of subjects, 75 first-year graduate (M.S.) students in nursing and 60 senior nursing students. To test response bias, the short form of the Marlowe-Crowne Test of Social Desirability was administered concurrently with the NSSQ to 75 subjects from group one. None of the items of the NSSQ were significantly related to the social desirability measure. The correlation ranged from .01 to .17. The Social Support Questionnaire developed by Cohen and Lazarus was administered concurrently with the NSSQ to 42 subjects from group one to test concurrent validity. The correlation among the three functional sub-scales, tangible, informational, and emotional of the Cohen & Lazarus measure and affect, affirmation, and aid of the NSSQ ranged from .33 to .56 and was significantly correlated ($p < .05$). To test the construct validity, the NSSQ was administered in conjunction with the Profile of Mood States to 75 subjects from group one. None of the mood sub-scales or the total negative mood score was significantly related to the NSSQ functional sub-scales (range: .03 to .01). In 1995, Norbeck further tested construct validity with factor analysis and found the component of emotional support and tangible support existed.

In this research study, 6 experts (Appendix E) evaluated the content validity of the Thai version of NSSQ. The investigator evaluated rating scores given by all six experts and calculated a content validity index (CVI = the items given a rating of 3 or 4 by both judges divided by total items) (Waltz, Strickland, & Lenz, 1991: 172-173). Of six experts, only 5 experts gave these scores. Thus, all five experts who rated 3 or 4

were required to establish content validity beyond the .05 level of significance (Lynn, 1986: 382-385). Since all five experts rated on scores 3 and 4, the CVI of social support questionnaire was 1.00 (CVI = 18/18). The back-translation technique was used to confirm the accuracy of using the Thai language (Appendix F). Construct validity was tested by factor analysis in a trial study among 159 working primiparous mothers, who were hospitalized at postpartum wards of Ramathibodi hospital during October 1998, before being used in the actual research study. Only 142 mothers had completed the questionnaire. The results show that total items were rotated into three components of emotion, aid, and properties of network (Appendix G), giving explained variance on maternal social support of 63.91 %.

In the actual study, the construct validity testing results of the Norbeck Social Support Questionnaire showed that all of the items had rotated into those same three components. All of the scale accounted for 64.81 % of variance on social support, in which the variance explained as emotion, aid and network on social support were 38.54 %, 14.67 %, and 11.59 % respectively.

Reliability

The one-week test-retest reliability was used to evaluate the stability of the NSSQ in the 75 group one subjects initially, and 67 of these subjects participated in the retest one-week later. Each of the functional items: affect, affirmation and aid, and network property items had a high degree of test-retest reliability (ranging from .85 to .92). Internal consistency was tested through intercorrelation among all items. The

correlation between the two affect items was .97, the two affirmation items .96, the two aid items .89. The correlation among the three network property items: number, duration, and frequency, ranged from .88 to .96 and was also highly related to the functional properties (ranging from .69 to .97).

In this research study, the Thai version of the NSSQ was evaluated for reliability by Cronbach's Coefficient Alpha with 142 working primiparous mothers before being used in the research study. The trial result of Alpha Cronbach's Coefficient was .85 and when tested among 390 mothers in the actual study the Alpha Cronbach's Coefficient was the same value of .85.

Working Conditions

Lennon, (1994) used Kohn & Schooler's (1983) conceptualization of many important dimensions of work to develop the instrument, Job Conditions. This instrument is designed to ask questions about specific tasks or behaviors, rather than questions about subjective appraisals, and is measured in six dimensions of work: autonomy, time pressure, responsibility for things outside one's control, interruptions, physical effort, and routine. Working Conditions is an 18-item questionnaire consisting of 4-autonomy items (items 1 to 4), 3-time pressure items (items 5 to 7), 3-responsibility items (items 8 to 10), 3-interruption items (items 11 to 13), 1-physical effort item (item 14), and 4-routine items (items 15 to 18). The interviewees were asked to choose one of the following four responses to indicate how much each statement resembled their work: very much (coded 4), somewhat (coded 3), only a little

(coded 2), or not at all (coded 1), and scales were scored by summing up responses across components. Thus, the component scale had a possible range in scores from 4 to 16 for autonomy and routine, from 3 to 12 for time pressure, responsibility, and interruption, and from 1 to 4 for physical effort.

The researcher translated Working Conditions into the Thai language (Appendix H). Item 14 was omitted since the component of variables should comprise of 3 items or more and this item 14 of physical effort was load into time pressure component when construct validity was tested. Therefore, the Thai version of Working Conditions scale comprised of 17 item whose 5 components represented working conditions. The sum of scores was treated as the total score representing all working conditions. The possible range of score was 17 to 68, the higher scores indicated that the mother had a higher working control ability. Each item was arranged into its component as follow:

Autonomy is comprised of the items 1, 2, 3, and 4

Time pressure is comprised of the items 5, 6, and 7 (reverse score was performed on item 7)

Responsibility is comprised of the items 8, 9, and 10

Interruption is comprised of the items 11, 12, and 13 (reverse score was performed on item 11)

Routine is comprised of the items 15, 16, 17, and 18.

Validity

Lennon, (1994) claimed that he evaluated the construct validity with factor analysis in 202 homemakers and 179 employed women. The items included in the final version of the scales were loaded highly on similar factors but he did not show the statistical parameters in publication.

For the Thai version, 6 experts evaluated for content validity (Appendix E). Of the six experts, only 5 gave these scores. Thus, all five experts who rated 3 or 4 were required to establish content validity beyond the .05 level of significance (Lynn, 1986: 382-385). Since there were 13 items having the given rate of 3 to 4, the CVI of the working conditions questionnaire was .72 (CVI = 13/18). After adjustment following the experts suggestions, this instrument was sent to seven high school educated, two certificate educated, four bachelor degree educated, two master degree educated, and one doctoral degree educated working mothers, for revised comprehensive reading. The back-translation technique was used to evaluate the accuracy of using the Thai language (Appendix I). Construct validity was tested by factor analysis in a trial study among 245 working primiparous mothers before being used in the research study. The trial results showed that all items quite loaded very well on their factors, except for physical effort (Appendix J). The total scales explained the variance on maternal working conditions for 61.63 %. According to this result, item 14 of physical effort was cut deleted from the scale when used to represent the measurement construct in the model.

In the actual study, there were five components that were loaded on Working Conditions Scale. Fifty-eight percent of the variance was explained by the total items. The component of routine accounted for 16.33 %, whereas the component of responsibility and autonomy accounted for 14.06 % and 11.26 % respectively. Time pressure and interruption accounted for 9.40 % and 6.82 % respectively.

Reliability

Reliability was evaluated by Cronbach's Coefficient Alpha. The reliability coefficient among housework and autonomy of paid work is .56 and .71, time pressure is .69 and .76, responsibility is .76 and .71, interruption is .81 and .72, and routine work is .73 and .83.

According to the validity testing samples, the Thai version of the 17-item Working Conditions was tested for reliability by Cronbach's Alpha reliability with the same respondents of 245 working primiparous mothers before being used in the real study. The results showed a moderate Cronbach's Alpha coefficient of .60. This alpha coefficient is of somewhat small value, so then the reliability testing was repeated in 71 working primiparous mothers who received follow up investigation at the postpartum clinic of Ramathibodi hospital during April 1999. The second reliability testing yielded the alpha coefficient of .61 and when analyzed with 390 actual samples the alpha coefficient was .66.

What My Baby Is Like (WBL)

What My Baby Is Like (WBL) was developed by Pridham, Chang & Chiu, (1994). WBL is a 19-item questionnaire that assesses parents' perceptions of 4 dimensions of their infant's characteristics adapted from 11 dimensions of temperaments of very young infants (positivity of mood, rhythmicity, responsiveness or sensitivity to stimuli, activity, approach to new things, adaptability, intensity of reaction, distractibility, persistence, cuddliness, and soothability). The four dimensions of infant's characteristics are (a) malleability, the ability to accept new things, (b) amenability, positivity of mood, (c) responsivity to stimuli, and (d) persistence, the infant's engagement with the world. A 9-point rating scale graphed with equal intervals and marked at the ends of the scale with bipolar descriptors was used for each item. The possible scores range from 19 to 171, the higher the score the higher the adaptability the infant has.

In this study, the researcher translated the WBL questionnaire into the Thai language (Appendix K) and slightly modified it into an 18-item questionnaire by omitting item no. 2. In the original scale, Pridham, et al., used only a 16-item questionnaire in their research, in which items 2, 7, and 10, were omitted because they were not loading well on any factors. However, they suggested a trial of the 18-item questionnaire in this study, and therefore categorized the items into components as follows:

Amenability consists of the items 1, 3, 4, 5, and 16 (reverse score was performed on item 1)

Malleability consists of the items 11, 12, 13, and 14 (reverse score were performed on item 12, 13)

Responsivity to stimuli consists of the items 6, 7, 8, 9, 10 and 15.

Persistence consists of the items 17, 18, and 19.

Validity

Construct validity was evaluated by factor analysis in a three-step strategy among infant's mothers at 1 week (n =100), 1 month (n =136), and 3 months (n = 152). For this analysis, cuddliness was omitted because it did not load well on any factors, leaving 16 items to be analyzed. The infant's characteristics components obtained with a four-factor analysis, accounted for 59.7 %, 62.1 %, and 61.3 % of the variance among the three administrations of the WBL in each time step (Pridham, Chang & Chiu, 1994).

The Thai WBL version was evaluated by 6 experts (Appendix L) for content validity. Thus, to calculate the CVI, 5 to 6 experts whose rating scores were 3 to 4 were required to establish the .05 level of significance (Lynn, 1986: 384). The CVI of WBL was .55 (10/18). The back-translation technique was used to test accuracy in using the Thai language (Appendix M). Construct validity was tested by factor analysis in a trial of 245 working primiparous mothers before being used in the research study. But only 201 mothers completed the questionnaire. The total scales accounted for 59.3 % of the explained variance (Appendix N), in which, four factors existed with quite a good loading – amenability, malleability, responsivity to stimuli, and persistence.

Corresponding to the actual study, construct validity testing results of What My Baby Is Like Scale consisted of five components and the total scales accounted for and explained variance of 51.69 %. However, they would account for 45.95 % of variance when a fixed factor to four as theoretical based was used. There was 14.40 % of variance, which explained and accounted for responsivity to stimuli component, 13.68 % by malleability, 10.12 % by persistence, and 7.75 % by amenability.

Reliability

Reliability was evaluated by Cronbach's Alpha Coefficient. The reliability coefficient of the four-factors ranged from .50-.81 at 1 week, .71-.87 at 1 month, and .69-.81 at 3 months.

In this research study the Thai version of the WBL was evaluated for reliability by Cronbach's Alpha Coefficient technique in a trial of 201 working primiparous mothers before being used in the research study. The results showed that the Cronbach's Alpha Coefficient was .66. When the reliability was done in actual samples they yielded the Alpha Cronbach's Coefficient of .70.

Self-Esteem Scale

The Self-Esteem Scale was developed by Rosenberg (1965) and initially used to assess teenage self-esteem. It was modified to be used in many ages of people, especially in pregnant and postpartum mothers (Mercer, et al., 1988, 1993; Kemp &

Page, 1987; Mercer & Ferketich, 1988, 1994, 1995). The Self-Esteem Scale is a 10-item self-evaluated questionnaire, with a 4-point rating scale ranging from strongly agree (coded 1), agree (coded 2), disagree (coded 3), and strongly disagree (coded 4). The possible scores range from 10 to 40, the higher the score, the more self-esteem people have.

Soomlek (1996) translated and tested the Self-Esteem scale into the Thai language for use in maternal subjects. She rewrote the explanation of the score to 1 all the time, 2 often, 3 sometimes, and 4 never (Appendix O). This scale was used in the current research study

Validity

Soomlek (1996) tested the content validity of Self-Esteem scales by using 6 experts. In the current research, the construct validity was tested by factor analysis in a trial of 159 working primiparous mothers, in which the two factors of total scales explained the variance for 50.05 % (Appendix P).

In the actual study, construct validity by factor analysis of Self-Esteem scale was done among 390 mothers and the results revealed that the total scales accounted for and explained variance of 51.04 %. It consisted of two components, one accounted for 34.18 % while the other accounted for 16.56 % of explained variance.

Reliability

The internal consistency reliability coefficient was .92 and the test-retest reliability in the two-weeks tested was .88 (Rosenberg, 1965 cited in Napholz, 1994: 311). In addition the Cronbach's Alpha Coefficient ranged from .84-.87 (Rosenberg, 1979 cited in Mercer & Ferketich, 1988) when using this scale on ordinary people. In maternal respondents, however, the Alpha Coefficient ranged from .84-.90 in high risk mothers and .87-.90 in low risk mothers and the coefficient was highest when using this scale for working women (.95) (Meisenhelder, 1986).

Soomlek (1996) evaluated the reliability of the Thai version with 30 first-time mothers and found the Alpha Coefficient was .75 and .80, which was confirmed when she used this in her research study among 205 first-time mothers. In the current research, this scale was previously tested for reliability on 159 working primiparous mothers and the Cronbach's Alpha Coefficient was .73. And reliability testing among 390 actual samples gave the same value Cronbach's Alpha Coefficient of .73.

Maternal Role Attainment Scale (MRAS)

The researcher, using Mercer's conceptualization (Mercer, 1981, 1985) developed the Maternal Role Attainment Scale (MRAS) as a self-evaluated questionnaire. Scale development was followed by the steps as presented below:

1.) Maternal role attainment and the three indexes were analyzed by the concept analysis method (Walker & Avant, 1995).

2.) From the 3 components of maternal role attainment: maternal role competence, maternal role satisfaction, and maternal-infant attachment, the researcher developed the main questions and sub-questions as a guided in-depth interview for working mothers.

3.) Using the guided interview questions, the three working mothers were interviewed individually. The nine mothers at 6-weeks postpartum and the three mothers at 2-months postpartum were interviewed by the focused group technique at the postpartum clinic and well-baby clinic respectively at Ramathibodi hospital. All conversations were taped for data analysis.

4.) The tape recordings were transcribed word by word and treated as the qualitative data, and then analyzed by the phenomenology technique to formulate meaning and grouping of the statements into themes. These first 3 steps were performed in order to understand the phenomena.

5.) From the theme of maternal role attainment and grounded data statement, the researcher developed the 145-item questionnaire for the subsequent quantitative method under supervision of the 6 experts (Appendix Q).

6.) The 145-item questionnaire was used in data collection to test for a confirmatory maternal role attainment construct in 439 first time working primiparous mothers.

7.) The data from step 6 was analyzed by factor analysis and consisted of 41 factors that explain the variance on maternal role attainment.

8.) With the results of the analysis in step 7, the researcher, together with the major advisor selected the items by the criteria of a) factors loading over 0.3, b) the

items reflecting maternal role attainment attributed under the themes of 3 indexes in the dimension of cognitive, affective, and performance with an average ratio of 1:1:1. At the same time, some items were adjusted for accuracy and validity reflecting the attributes in which the 52 items were developed.

9.) The 52-items of the maternal role attainment scale were sent to 7 experts (Appendix R) for repeated content validity evaluation. This 52-item questionnaire was adjusted following the suggestion of experts (Appendix S) before being used in the current research.

In summary, MRAS was a 52-item, 5-point questionnaire, with scores ranging from strongly disagree (coded 1) to strongly agree (coded 5). Possible scores then range from 52 to 260. Greater scores indicate a greater maternal perception of success in the mothering role experience. The categorization of the items into components was as follows:

Competency consists of the items ranging from item 1 to item 33 (reverse score were performed on item 2, 3, 5, 8, 11, 14, 18, 22, and 29)

Satisfaction consists of the items ranging from item 34 to item 43 (reverse score were performed on item 34, 35, and 36)

Attachment consists of the items ranging from item 44 to item 52 (reverse score was performed on item 45)

Pilot Study

A pilot study was performed for testing the reliability of the 52-item maternal role attainment instrument among 73 working first-time mothers who received service at the postpartum clinic in Ramathibodi hospital 6 weeks after delivery, during April 1999. The samples had ages ranging from 20 to 42 years with a mean of 28 years (sd = 5.46) and ninety-three percent were Buddhist. Most of them lived with their husbands (97 %) as a nuclear family (80 %) and had been married for a mean of 3.5 years. Seventy-one percent of the samples were educated to at least high school level and most of them (81 %) worked outside the home as employees (74 %). They, mostly, had maternity leave (82 %) with a range of time from 30 to 90 days and had no experience (73 %) in caring for a young baby. Sixty-four percent of the samples had normal delivery and births were split 56 % male babies and 44 % female babies. All of the babies had normal weights and their mothers reported most of them (92 %) as healthy. The total scores of the Maternal Role Attainment Scale gave the variance of $(14.08)^2$.

Validity

The CVI was calculated from 6 experts conclusions, and it was .67 (35/52 = .67). This instrument was adjusted follow expert suggestions before being used in the current research.

The construct validity was previously tested in the 390 real samples. The construct validity of Maternal Role Attainment showed that the total scales explained

59.23 % of variance and consisted of 16 components. But, they would explain only 26.19 % of variance when fixed with three factors as theoretical based. The maternal role competence accounted for 16.22 % of variance on MRAS, 5.71 % of variance was shared and accounted for by maternal role satisfaction and maternal-infant attachment, and 4.26 % of variance was accounted for by unnamed component. Furthermore, there were five items, which did not load on any components and they were item 3, 17, 18, and 23 of maternal role competence and item 45 of maternal-infant attachment. These five items, then, were not included in their component to represent the measurement construct.

Reliability

The Cronbach's Coefficient Alpha was used to analyze reliability in 73 working primiparous mothers in a pilot study before being used in the current research. The result showed that the Alpha Cronbach Coefficient was .88. The reliability testing among 390 mothers in the real sample yielded the Alpha Cronbach's Coefficient of .86.

Setting

Data collection took place in the postpartum wards of 5 randomly selected government hospitals, Rajvithi, Vajira, Police, Bhumipol, and Ramathibodi hospital. These hospitals offered general services including OB&GYN, where postpartum mothers stayed for 3-5 days after delivery.

Data Collection

Upon approval of the dissertation proposal by the examination committee, Faculty of Nursing Review Committee, and the Chairman of the Programme Committee of the Faculty of Nursing, Mahidol University, the data collection procedure was initiated as follows:

1.) Permission had been obtained from the directors of the 5 hospitals for the investigator to approach potential participants in the postpartum wards. The researcher make appointments to meet the head nurses of each postpartum ward to introduce herself and inform them about the research study and the researcher's profile and asked for cooperation.

2.) After the service management of each ward had been surveyed for appropriate timing to collect data, the potential participant's profiles were checked with the inclusion criteria of the sample.

3.) Mothers who met the criteria were informed about the purpose of the study by the investigator and the right to participate in the study.

4.) When the potential participants gave oral consent, data collection was arranged as follows. First, the participants were asked to fill out the Personal Information Questionnaire. Second, the participants were requested to complete the three questionnaires written in Thai as follows: Working Conditions, the Dyadic Adjustment Scale, and Norbeck's Social Support Questionnaire. These questionnaires took about 30-45 minutes to complete.

5.) After the participants had finished the questionnaire, the researcher checked for the completeness of the answers. And, the participants were asked for their address and telephone number in order for them to be sent the last three questionnaires.

6.) When they had been back at work for a month after delivery leave (about 4 months postpartum) the last three questionnaires of Infant's Characteristics, Self-Esteem, and the Maternal Role Attainment Scale were sent to the maternal samples. They were then asked to return the completed questionnaires to the investigator.

Protection of Human Subjects

This study was reviewed by the Faculty of Nursing Review Committee, Mahidol University, and the Human Research Board of the five hospitals. In addition, approval for the investigator to contact the potential participants at postpartum clinic had been obtained from the directors of the 5 hospitals. Potential participants were informed about the purpose of the study and their right to refuse participation or to withdraw from the study at any time (Appendix T). Their names were not attached to their data, a code number was used on the questionnaires instead. There were no known risks of participation in this study. The only known inconvenience was the time (60-90 minutes) they spent completing the questionnaire. There was no cost to, nor was there any payment to, participants in the study.

Data Analysis Procedure

Data analysis procedure was arranged as follows.

Preliminary Analysis

1.) Descriptive statistics including frequency and measurement of central tendencies were used to describe the demographic characteristics of the sample and the major variables of the study.

2.) The factor analysis was done for construct validity testing of each variable using SPSS/PC for windows version 7.52.

3.) The assumptions underlying multivariate analysis for structural equation model and the relationships among variables were tested using regression analysis and Pearson Product Moment Correlation. All of them are analyzed by using the Statistical Package of the Social Science for Personal Computer (SPSS/PC for windows version 7.52).

Principal Analysis

A Statistical Package Program for Analyzing Linear Structural Model (LISREL) was used to examine a causal model among variables to predict the maternal role attainment. It consisted of two steps of analysis as follows:

1.) Prelis procedure was performed for data preparation in a covariance matrix form.

2.) The measurement models were tested for construct validity by confirmatory factor analysis using a covariance matrix of each variable's components as data. Since most of the factor analysis of variables' constructs, which were represented by their items, were quite well loaded on their own components. Therefore, the researcher summated all item scores of each variable component to represent the construct of variables by component. These summated scores were used analyze in the next procedure.

3.) Each measurement model was joined together make a construct model and to test as a causal model. First, the full model had been tested for adequacy. Second, the modification for best fit and parsimony was performed. The final model would be used to answer the hypotheses.

CHAPTER IV

RESULTS

This chapter presents the results of data analysis in three sections. The first section described the return-rate and the characteristics of the samples. The second section displayed the descriptive factors affecting maternal role attainment. The third section explained the results of the research hypothesis testing.

The Characteristics of the Samples

The distribution of the sample's characteristics is presented in Table 2.

Table 2 Number, Min-Max, Mean, Standard Deviation (SD), Skewness, and Kurtosis of the Samples (n = 390)

Item	n	Min-Max	Mean	SD	Skew-Ness	Kurto-sis
Age	390	20-41	26.71	4.42	0.52	-0.31
Duration of Marriage	389	0-14	3.25	2.36	1.45	2.05
Family Members	389	3-13	4.05	1.92	2.07	3.94
Delivery leave (Days)	388	0-120	70.12	29.85	-1.18	6.34
Duration of Baby Care	389	15-90	70.85	22.48	-0.62	-1.14

As far as the demographic factor of the samples is concerned, findings revealed that the sample's age ranged from 20 to 41 years with a mean age of 26.71 years (SD = 4.42). Their duration of marriage ranged from 0-14 years with a mean duration of 3.25 years (SD = 2.36). The members of the family ranged from 3 to 13 people with a mean number of 4.05 people (SD = 1.92). They had taken their maternity leave with a mean of two months leave, in which they had time to care for their baby ranging from 15-19 days with a mean duration of baby care of 70.85 days. The other profiles of mothers and their spouses is presented in Table 3.

Table 3 Characteristics of the Samples (n = 390)

Items	n	Percent
Education of Mothers		
None	1	0.26
1-6 Grade	77	19.74
7-9 Grade	86	22.05
10-12 Grade	96	24.62
Certificate	55	14.10
Bachelors	72	18.46
Masters	2	0.51
Missing	1	0.26

Table 3 Characteristics of the Samples (n = 390)(Continued)

Items	n	Percent
Spouse's Education		
1-6 Grade	83	21.28
7-9 Grade	67	17.18
10-12 Grade	133	34.10
Certificate	42	10.77
Bachelor	52	13.33
Master	2	0.51
Missing	11	2.82
Religion		
Buddhist	379	97.18
Christ	3	0.77
Isslam	8	2.05
Type of Family		
Nuclear Family	263	67.44
Extended Family	126	32.31
Missing	1	0.25
Maternal Occupation		
Laborer	8	2.10
Industrial worker	106	27.20
Office worker (Clerk, Government officer)	210	53.80
Business	66	16.90

Table 3 Characteristics of the Samples (n = 390)(Continued)

Items	n	Percent
Living with Husband		
No	11	2.82
Yes	379	97.18
Delivery Leave		
No	33	8.46
Yes	357	91.54

Fifty-eight percent of mothers had completed at least high school. Over 18 % of them were bachelor degree holders and only one mother had no education. Of their spouses, fifty-eight percent had completed at least high school and over 13 % had bachelor degrees. Most of the samples (97%) were Buddhist. Ninety seven percent of them were living with their husband. There were more nuclear families than extended families (67% versus 32%).

Of their working condition, most of them (53.8%) were typical office workers, twenty-seven percent were industrial workers, and only two percent were laborers. Most of them (92%) spent their due maternity leave. The data about maternal delivery, newborn and baby care experience is presented in Table 4.

Table 4 Number and Percentage of Infant Care Experience, Type of Delivery, Infant's Sex, Source of Infant Care Knowledge, and Infant's Caretaker (n = 390)

Item	n	Percent
Infant Care Experience		
No	262	67.18
Yes	126	32.31
Missing	2	0.51
Type of Delivery		
Normal	246	63.08
Forceps Extraction	8	2.05
Vacuum Extraction	25	6.41
Cesarean Section	109	27.95
Missing	2	0.51
Infant's Care-taker		
Mother	33	8.46
Father	7	1.79
Baby-sitter	26	6.66
Grandparents	151	38.72
Relative	137	35.13
Grandparent & Others	32	8.21
Nursery	4	1.03

Table 4 Number and Percentage of Infant Care Experience, Type of Delivery, Infant's Sex, Source of Infant Care Knowledge, and Infant's Caretaker (n = 390) (Continued)

Item	n	Percent
Infant's Sex		
Male	211	54.10
Female	179	45.90
Source of Infant Care Knowledge		
(Number of Answers = 557) *		
Book	185	33.21
Direct Experience	111	19.93
Health-Care Provider	91	16.34
Grandparents	71	12.75
Relatives	56	10.05
Friends	21	3.77
School	16	2.87
Media (T.V., Radio)	6	1.08

Note * = One person could select more than one choice

Most of the mothers (67%) had no experience in infant care. Eighty-two percent of infant's caretakers were grandparents and relatives. Knowledge about infant's care came from various sources such as books (33.21 %), direct experience (19.93 %), and health-care providers (16.34 %) rather than from grandparents (12.75 %) and relatives (10.05 %).

In regard to the mother's type of delivery, thirty-six percent of mothers had a complicated obstetric maneuver, of which 28 % (n = 109) had cesarean section. There were 211 male infants (54.1 %) and 179 female infants (45.9%). Their birth weight ranged from 2500 to 4500 grams with a mean birth-weight of 3111.96 grams.

The Factors Affecting Maternal Role Attainment

Marital Relationship

The distribution of responses is illustrated in Table 5.

Table 5 Possible Range, Actual Range, Mean, and Standard Deviation (SD) of Marital Relationship (n = 390)

Variable	Possible Range	Actual Range	Mean	SD
Marital Relationship	28-140	46-132	102.58	13.76
Dyadic Consensus	10-50	10-49	33.87	6.67
Dyadic Satisfaction	9-45	14-45	37.21	4.38
Dyadic Cohesion	5-25	6-25	16.46	3.43
Affectional Expression	4-20	8-20	15.03	2.04

Subjects rated their marital relationship at a high level, and the scores ranged from 46 to 132 with a mean of 102.58 (SD = 13.76). Corresponding to its components,

subjects had a high score of marital relationship on dyadic satisfaction (mean = 37.21, SD = 4.38) and affectionate expression (mean = 15.03, SD = 2.04), but they had a moderate marital relationship on dyadic consensus (mean = 33.87, SD = 6.67) and dyadic cohesion (mean = 16.46, SD = 3.43).

Working Conditions

Summary of the data is shown in Table 6.

Table 6 Possible Range, Actual Range, Mean, and Standard Deviation (SD) of Working Conditions (n =390)

Variable	Possible Range	Actual Range	Mean	SD
Working Conditions	17-68	23-62	42.24	6.57
Autonomy	4-16	4-16	8.48	3.16
Time Pressure	3-12	3-12	7.21	2.28
Responsibility	3-12	3-12	7.85	2.48
Interruption	3-12	3-12	5.51	1.84
Routine	4-16	4-16	13.18	2.86

The findings revealed that mothers had a moderate control over work activities (mean = 42.24, SD = 6.57). According to their dimension, subjects had a high level of routine (mean = 13.18, SD = 2.86), which indicated a high level of engaging in routine work. The subjects had a moderate level of time pressure (mean = 7.21, SD = 2.28)

and responsibility (mean = 7.85, SD = 2.48) while the higher the score the more time pressure and responsibility they had. The small scores of autonomy (mean = 8.48, SD = 3.16) earned meant that they had lower autonomy of work. They also had small scores of interruption (mean = 5.51, SD = 1.84), which indicated that they had lower interruption of work.

Social Support

The data of social support is presented in Table 7.

Table 7 Possible Range, Actual Range, Mean, and Standard Deviation (SD) of Social Support (n = 390)

Variable	Possible Range	Actual Range	Mean	SD
Social Support	0-34	20-34	26.76	2.81
Emotional	0-16	6-16	11.52	1.81
Aids	0-8	3-8	6.14	1.23
Network	0-10	7-10	9.10	0.56

There was a high level of social support reported by the subjects as reflected in the scores that ranged from 20 to 34 with a mean of 26.76 (SD = 2.81). Specifically, subjects had a high level of emotional support (mean = 11.52, SD = 13.81), aids (mean = 6.14, SD = 1.23), and properties of network (mean = 9.10, SD = 0.46).

Infant Characteristics

The results are presented in Table 8.

Table 8 Possible Range, Actual Range, Mean, and Standard Deviation (SD) of Infant Characteristics (n =390)

Variable	Possible Range	Actual Range	Mean	SD
Infant Characteristics	18-162	90-156	121.60	3.99
Amenability	5-45	15-45	35.39	4.78
Malleability	4-36	14-36	26.43	4.83
Responsivity to Stimuli	6-54	22-54	42.78	5.55
Persistence	3-27	3-27	17.00	3.99

Mothers had a high positive perception of infant's characteristics with the total scores ranging from 90 to 156 and a mean of 121.60 (SD = 3.99). Subjects perceived their child had a high level of responsivity to stimuli (mean = 42.78, SD = 5.55), malleability - acceptance of new things, adaptability in general as well as in feeding and sleeping (mean = 26.43, SD = 4.83), and amenability - soothability, positive mood (mean = 35.39, SD = 4.78), but perceived moderately in their persistence (mean = 17.00, SD = 3.99).

Self-esteem and Maternal Role Attainment

A summary of means, standard deviations, and range of possible and obtained scores of variables are presented in Table 9.

Table 9 Possible Range, Actual Range, Mean, and Standard Deviation (SD) of Self-Esteem and Maternal Role Attainment (n = 390)

Variable	Possible Range	Actual Range	Mean	SD
Self-Esteem	10-40	20-40	32.04	3.39
Maternal Role Attainment	52-260	165-239	203.86	13.12
Maternal Role Competence	33-165	92-146	123.47	9.11
Maternal Role Satisfaction	10-50	31-50	41.09	3.52
Maternal-Infant Attachment	9-45	30-45	39.31	3.19

Mothers evaluated themselves to have a high self-esteem and maternal role attainment. Self-esteem scores ranged from 20 to 40 with a mean of 32.04 (SD = 3.93). Maternal role attainment scores ranged from 165 to 239 with a mean of 203.86 (SD = 13.12). Mothers had a high level score of their role competence (mean = 123.47, SD = 9.11), satisfaction (mean = 41.09, SD = 3.52) and attachment with their infant (mean = 39.31, SD = 3.19).

Preliminary Analysis Results

Assumptions underlying the multivariate analysis for structural equation model (SEM) must be achieved to facilitate the generalization of the findings from the study. The three assumptions are (1) independent observations, (2) random sampling of respondents, and (3) the linearity of all relationships. In addition, SEM is more sensitive to the distribution of the characteristic data, particularly the departure from multivariate normality (Hair, Anderson, Tatham & Black, 1998: 601). The first assumption was accepted by the data collection procedure. The second assumption of a representative sample was clearly met since a random sampling technique was used to obtain the setting of data collection. The third assumption of linearity was met for variables shown by the scatterplot (Figure 3) and significant regression coefficient on maternal role attainment variable from independent variables (R^2 = .27, $F_{(5, 384)}$ = 29.004, p = .000). The analysis of variance is presented in Table 10.

Table 10 Analysis of Variance of Maternal Role Attainment (n = 390)

Source of Variance	Sum of Squares	df	Mean Square	F	sig
Regression	18352.123	5	3670.425		
Residual	48595.121	384	126.550	29.004	.000
Total	66947.244	389			

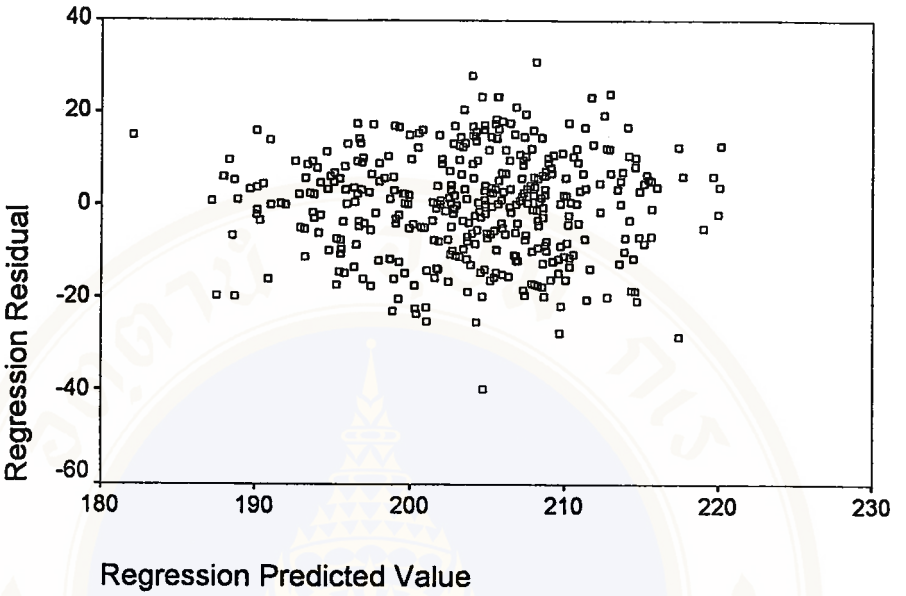

Figure 4. Scatterplot between Regression Residual and Regression Predicted Value

The process of data covariance matrix preparation using Prelis program (Joreskog & Sorbom, 1996a) yielded testing results for the distribution of each variable. The results indicated the significance of univariate and multivariate normality ($\chi^2 = 103.67$, $p < .01$).

The correlation among predictor variables and maternal role attainment were computed by using Pearson Product Moment Correlation. The correlation matrix among the studied variables is presented in Table 11.

Table 11 Correlation Matrix of the Studied Variables (n = 390)

Variable	WCON	MRR	SS	SE	IC
WCON	1.00				
MRR	.078	1.00			
SS	.025	.348***	1.00		
SE	-.032	.323***	.195***	1.00	
IC	-.128*	.273***	.203***	.165**	1.00
MRA	.094	.368***	.324***	.339***	.345***

* p < .05 ** p = .001 *** p < .001

Note: WCON = Working Conditions, MRR = Marital Relationship, SS = Social Support, SNW = Social Network, SE = Self-Esteem, IC = Infant's Characteristics, MRA = Maternal Role Attainment

The results revealed that working conditions (WCON) was significantly and negatively correlated with infant's characteristics (IC) ($r = .128$, $p < .05$). Marital relationship (MRR) was significantly and positively correlated with social support (SS) ($r = .348$, $p < .001$), self-esteem ($r = .323$, $p < .001$), infant's characteristics ($r = .273$, $p < .001$), and maternal role attainment ($r = .368$, $p < .368$). Social support was significantly and positively correlated with self-esteem ($r = .195$, $p < .001$), infant's characteristics ($r = .203$, $p < .001$), and maternal role attainment ($r = .324$, $p < .001$). Self-esteem was significantly and positively correlated with infant's characteristics ($r = .165$, $p = .001$), and maternal role attainment ($r = .339$, $p < .001$). Infant's characteristics was significantly and positively associated with maternal role

attainment ($r = .345$, $p < .001$). There was no relationship between work conditions and marital relationship, social support, self-esteem, and maternal role attainment.

Results of Research Hypothesis Testing

Before estimating the structural model, each measurement model should be tested for construct separately (Joreskog & Sorbom, 1993: 128). For this reason, confirmatory factor analysis was computed by LISREL (Joreskog & Sorbom, 1993, 1996b). Part of the model evaluation dealt with the overall assessment that could fit to the data. The goodness of fit of the whole model may be determined through four measures of overall fit, Chi-square (χ^2), Goodness-of-fit indices (GFI), Adjusted goodness-of-fit indices (AGFI), and Root mean square error of approximation (RMSEA). However, chi-square was too sensitive to the sample size, especially for cases in which the sample size exceeds 200 respondents. Low chi-square values, which result in insignificance levels greater than .05 or .01, indicated that the actual and predicted input matrices were not statistically different (Hair, Anderson, Tatham, and Black, 1998: 654-655). Because 390 respondents yielded the significant chi-square, therefore chi-square was not used as the serious fit index in this research. GFI and AGFI represented the overall degree of fit and ranged in value from 0 (poor fit) to 1 (perfect fit), the value over .90 was acceptable. RMSEA was the discrepancy per degree of freedom measured in term of population. Values ranging from .05 to .08 are deemed acceptable (Hair, Anderson, Tatham, and Black, 1998: 654-656). The summary of fit measures of measurement model is presented in Table 12.

Table 12 Statistical Fitted Index Values of Measurement Model (n = 390)

Test Statistics	WCON	MRR	SS	SE	IC	MRA
Chi-square (χ^2)	9.51*** (df = 2)	15.15*** (df = 2)	4.54 (df =0) (p = 1)	312.88*** (df = 35)	11.42*** (df = 2)	0 (df = 0) (p = 1)
GFI	0.99	0.98	0.99	0.82	0.99	-
AGFI	0.94	0.90	-	0.72	0.93	-
RMSEA	0.09	0.13	-	0.17	0.11	-

*** $p < .001$

Note: GFI = Goodness of Fit Index, AGFI = Adjusted Goodness of Fit Index
RMSEA = Root Mean Square Error of Approximation

The results of confirmatory factor analysis of the scales showed that, maternal role attainment scale (MRA) was a perfect fit ($\chi^2 = 0$, $p = 1$), so was the social support scale (SS) ($\chi^2 = 4.54$, $p = 1$, GFI = 0.99). According to GFI and AGFI, working conditions (WCON), marital relationship (MRR), and infant's characteristics (IC) seemed to be in an acceptable level of measurement fit. All of them did not fit with the index of RMSEA. The results revealed that only self-esteem (SE) did not fit in any fitted index values.

To test the research hypotheses not only an assessment of the overall goodness-of-fit for a structural equation model was needed but also the comparative fit to a base model would be considered simultaneously. The expected cross-validation index (ECVI), comparative fit index (CFI), incremental fit index (IFI), and the normed fit

index (NFI) were used as indicators of the selection of the best alternative model. Except for ECVI which should be closed to zero and RMSEA which should be ranged from .05 to .08, all of the index values should be close to 1, the values exceed .90 were needed.

To test the empirical model, the researcher used the LISREL program to analyze the data with the structural equation and measurement models. To provide a metric for the latent constructs and to identify the measurement model, the first indicator loading for each latent construct was set to 1.0 in the unstandardized solution for each model. At first, the full model could not be computed due to the limitation of the program that it can not analyze the interaction effects between self- esteem and infant's characteristics and interaction effects among marital relationship, social support, and self-esteem. These constraints could occur since the full model was not uniquely identified (Wiratchai, 1995: 37). Therefore, these non-recursive paths were deleted from the full model. The results of the hypothesized model are displayed in Table 13 and Figure 5.

Table 13 Statistical Fitted Index Values of Hypothesized and Parsimonious Model (n = 390)

Test Statistics	Hypothesized Model	Parsimonious Model
Chi-square (χ^2)	293.87 (df = 159, p = .00)	244.79 (df = 125, p = .00)
GFI	.93	.93
AGFI	.90	.91
PGFI	.70	.68
RMSEA	.048	.051
ECVI	1.04	.88
NFI	.82	.85
CFI	.91	.92
IFI	.91	.85

Note: GFI = Goodness of Fit Index, AGFI = Adjusted Goodness of Fit Index
PGFI = Parsimony Normed Fit Index, NFI = Normed Fit Index
CFI = Comparative Fit Index, IFI = Incremental Fit Index
RMSEA = Root Mean Square Error of Approximation
ECVI = Expected Cross-Validation Index

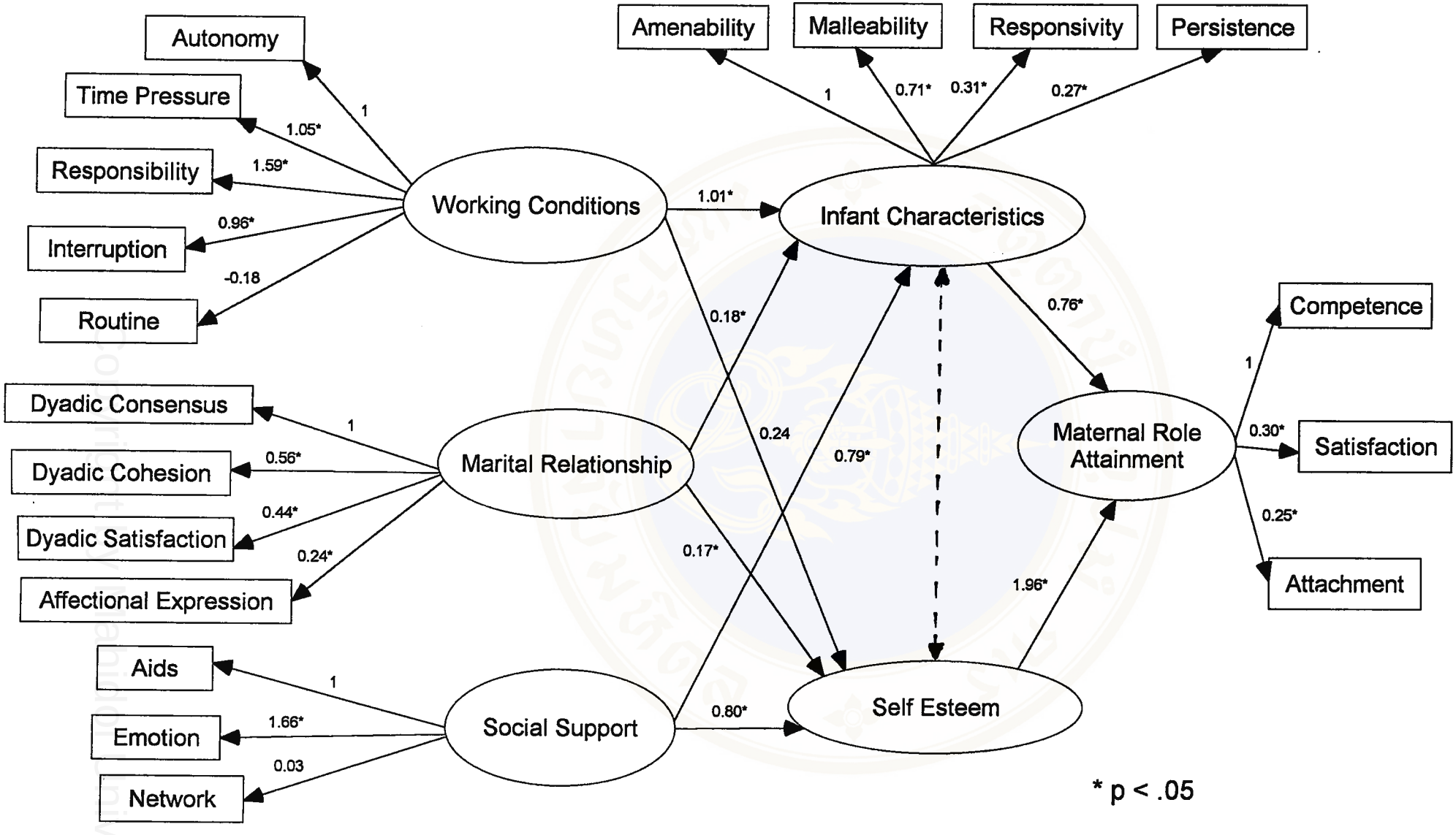

Figure 5. A Hypothesized Structural Equation Model of Maternal Role Attainment

The result showed that the hypothesized model had a validation index of adequacy of the model at some acceptable level. The goodness of fit index exceeded .90 and a value of adjusted goodness of fit was nearly the same. Other fit indexes, RMSEA (.048), CFI (.91), and IFI (.91), revealed that the data fitted the model (Table 13, Figure 5). Moreover, the Stem Leaf Plot showed that the standardized residuals were symmetrical around zero, with most in the middle and fewer in the tails (the smallest fitted residual was –3.24 and the largest fitted residual was 3.83). Furthermore, this model accounted for and explained variance on infant's characteristic of 26 percent (R^2 = 0.26), self-esteem of 46 percent (R^2 = 0.46), and maternal role attainment of 59 percent (R^2 = 0.59). This indicated that hypothesized model was a good model. In the next step, the researcher tried to adjust the model to achieve the best-fitted model.

In the second step, the researcher modified the former model by considering the details of analysis results and theoretical reasoning. Based on the previous findings, the researcher focused on standardized residuals with values over 2 and modification indices (MI) that exceed 5 as judged points to improve the model by adding (positive value) or deleting the path (negative value) (Joreskog & Sorbom, 1993: 126-127; Piumsomboon & Sawangnatre, 1992: 44).

In the hypothesized model, some of the beta paths had marginal value of modification indices (MI = 5.36) and standardized residuals were slightly over 2 and all the gamma paths did not fall in criteria. Therefore, there were no changes in these paths. Then, the reduced model was prepared in the next step.

Modification to be the parsimonious model focused on the path coefficients of the parameter estimates which were less than .08 and non-significant paths (t-values <

1.96 should be deleted from the model (Piumsomboon & Sawangnatre, 1992: 54-56). The coefficients, standard errors, and t-values of each path are shown in Table 14.

Table 14 Path Coefficients, Standard Errors, T-Values of Parameter Estimates (N = 390)

Path	Path Coefficients	Standard Errors	T-Values
LAMDA-X			
WCON→Autonomy	1.00	-	-
WCON→Time Pressure	1.05	0.39	2.70*
WCON→Responsibility	1.59	0.57	2.78*
WCON→Interruption	0.96	0.35	2.77*
WCON→Routine	-0.18	0.26	-0.64
MRR→Dyadic Consensus	1.00	-	-
MRR→Dyadic Satisfaction	0.56	0.04	14.36*
MRR→Dyadic Cohesion	0.44	0.03	14.52*
MRR→Affecional Expression	0.24	0.02	13.37*
SS→Aids	1.00		
SS→Emotion	1.66	0.21	7.75*
SS→Network	0.03	0.05	0.73
LAMDA-Y			
SE→TSE	1.00	-	-
IC→Amenability	1.00	-	-
IC→Malleability	0.71	0.12	6.03*

Table 14 Path Coefficients, Standard Errors, T-Values of Parameter Estimates (N = 390) (Continued)

Path	Path Coefficients	Standard Errors	T-Values
LAMDA-Y			
IC→Responsivity to Stimuli	0.31	0.10	2.97*
IC→Persistence	0.27	0.08	3.48*
MRA→Competence	1.00	-	-
MRA→Satisfaction	0.30	0.03	9.82*
MRA→Attachment	0.25	0.03	9.39*
GAMMA			
WCON→SE	0.24	0.30	0.81
WCON→IC	1.01	0.51	1.97*
MRR→SE	0.17	0.04	4.41*
MRR→IC	0.18	0.05	3.58*
SS→SE	0.80	0.24	3.25*
SS→IC	0.79	0.33	2.37*
BETA			
SE→MRA	1.96	0.43	4.53*
IC→MRA	0.76	0.20	3.72*

* $p < .05$

Note: WCON = Working Conditions, MRR = Marital Relationship, SE = Self-Esteem, TSE = Total Score of Self-Esteem, SS = Social Support, IC = Infant Characteristics, MRA = Maternal Role Attainment

Corresponding to the path coefficients, three paths should be eliminated; the path from social support (SS) to network component ($\beta = .03$, $p > .05$), the path from working condition (WCON) to routine component ($\beta = -.18$, $p > .05$), and the path from working condition to self-esteem (SE) ($\beta = .24$, $p > .05$). Thus, in this step the insignificant three paths were deleted. The fitted index values of the parsimonious model are presented in Table 13 and Figure 6.

The goodness of fit indexes of the modified model (Table 13) revealed that there were nearly the same values corresponding with the hypothesized model: GFI (.93); AGFI (.91); CFI (.92); and RMSEA (.051), and there was only the ECVI (.88) that was slightly smaller than the indexes of the hypothesized model. These indicated that a slight improvement to best fit existed in the modified model. The modified model accounted for explained variance on infant's characteristics 26 percent ($R^2 = 0.26$), self-esteem 45 percent ($R^2 = 0.45$), and maternal role attainment 58 percent ($R^2 = 0.58$). These explained variances were also slightly decreased from the hypothesized model as displayed in Table 15.

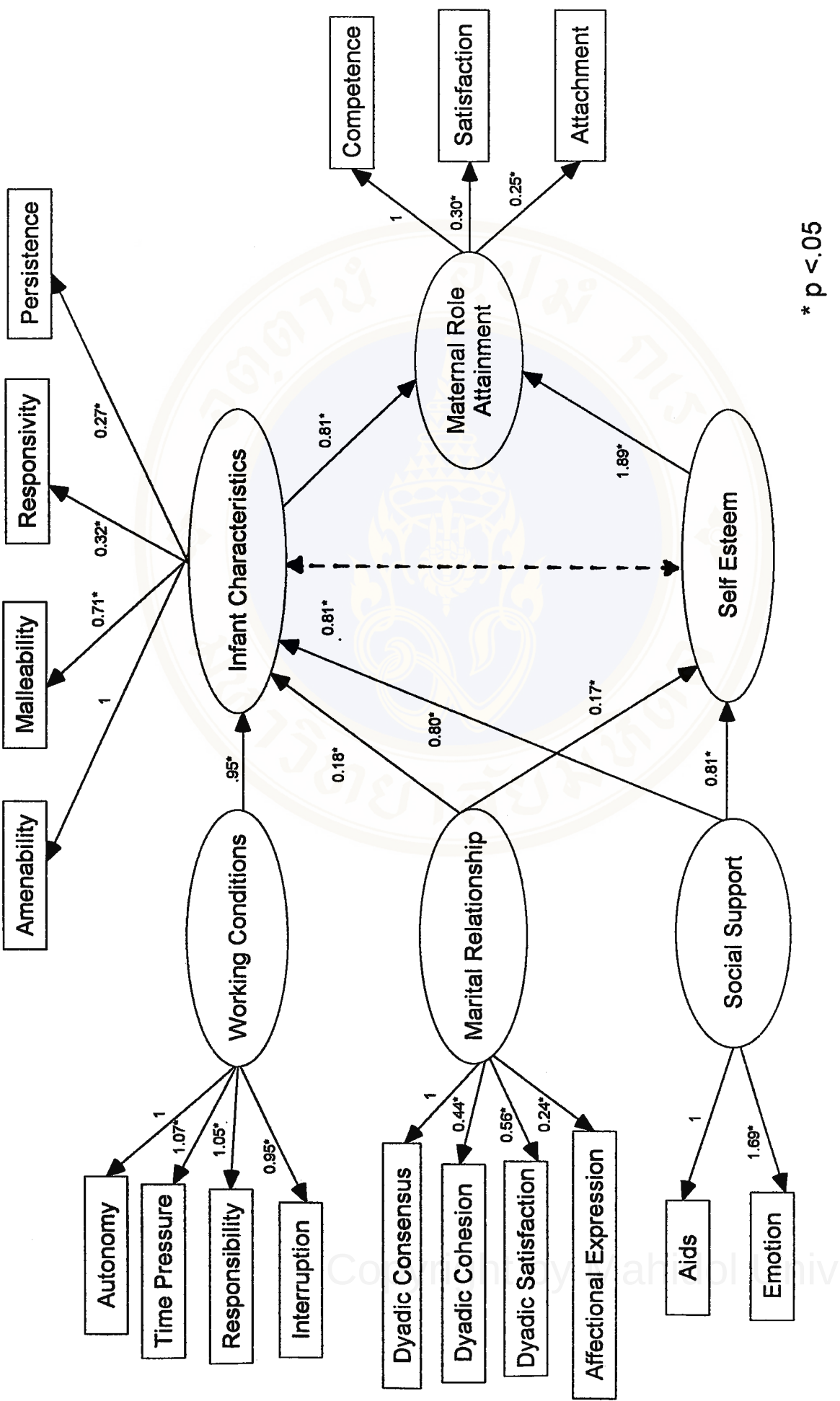

Figure 6. The Parsimonious Structural Equation Model of Maternal Role Attainment

Table 15 Variances Explained of the Model on Dependent Variables

Dependent Variable	Hypothesized Model R^2	Parsimonious Model R^2
IC	0.26	0.26
SE	0.46	0.45
MRA	0.59	0.58

Note: IC = Infant's Characteristics, SE = Self-Esteem

MRA = Maternal Role Attainment

However, the explained variances on dependent variables of the modified model were somewhat less than the hypothesized models, and most comparative index values did not yield a huge different value. For the theoretically based reason, thus the parsimonious model (Figure 6) was selected as a proposed model to answer the research questions and to test the research hypotheses. The summary of path coefficients is illustrated in Table 16.

Table 16 Total Effects, Indirect Effects, and Direct Effects of Caused Variables on Affected Variables (N = 390)

Caused Variables	Affected Variables								
	IC			SE			MRA		
	TE	IE	DE	TE	IE	DE	TE	IE	DE
WCON	0.95*	-	0.95*	-	-	-	0.77*	0.77*	-
MRR	0.18*	-	0.18*	0.17*	-	0.17*	0.48*	0.48*	-
SS	0.80*	-	0.80*	0.81*	-	0.81*	2.17*	2.17*	-
IC	-	-	-	-	-	-	0.81*	-	0.81*
SE	-	-	-	-	-	-	1.89*	-	1.89*
	R^2 = .26			R^2 = .45			R^2 = .58		

* $p < .05$

Note: WCON = Work Conditions, MRR = Marital Relationship, SS = Social Support
IC = Infant's Characteristics, SE = Self-Esteem,
MRA = Maternal Role Attainment
TE = Total Effect, IE = Indirect Effect, DE = Direct Effect

Hypothesis 1: Hypothesis one stated that working conditions, social support, and marital relationship have a positive direct effect on self-esteem and infant's characteristics. The parameter estimated results in Table 16 and Figure 6 revealed that working conditions had a significant and positive direct effect on infant's characteristics ($\beta = 0.95$, $p < .05$), but did not have an significant direct effect on self-esteem. Social support had a significant and positive direct effect on self-esteem ($\beta = 0.81$, $p < .05$), and infant's characteristics ($\beta = 0.80$, $p < .05$). Marital relationship had

a significant and positive direct effect on self-esteem ($\beta = .17$, $p < .05$) and infant's characteristics ($\beta = .18$, $p < .05$). Therefore, hypothesis one was mostly supported.

Hypothesis 2: Hypothesis two stated that working conditions, social support, and marital relationship have an indirect effect on maternal role attainment via self-esteem and infant's characteristics. The results shown in Table 16 and Figure 6 revealed that marital relationship ($\beta = 0.48$, $p < .05$) and social support ($\beta = 2.17$, $p < .05$) had a significant and positive indirect effect on maternal role attainment via self-esteem and infant's characteristics. Regarding work conditions, there was a significant and positive indirect effect on maternal role attainment only through infant's characteristics ($\beta = 0.77$, $p < .05$). Therefore, hypothesis two was mostly supported.

Hypothesis 3: Hypothesis three stated that infant's characteristics and self-esteem have a positive direct effect on maternal role attainment. The results (Table 16, Figure 6) showed that there were significant and positive direct effects on maternal role attainment from infant's characteristics ($\beta = .81$, $p < .05$), and self-esteem ($\beta = 1.89$, $p < .05$). Thus hypothesis three is completely supported.

CHAPTER V

DISCUSSION

This chapter presents the interpretation and discussion of the data. It focuses on interpreting characteristics of the samples and components of the model: marital relationship; working conditions; social support; self-esteem; infant's characteristics and maternal role attainment. The structural equation model of maternal role attainment will be discussed to test the proposed hypothetical relationship among variables. The discussion is as follows.

Characteristics of the Samples

The findings about age of the samples that ranged from 20 to 40 years and most were less than 30 years (78 %) with a mean of 27 years are rather higher than other non working first time mothers. However, based on the standard of the Ministry of Public Health, the samples in this study are in still in their reproductive age. Their education attainment is at least at high school level (58 %), and about 25 % of them were in grade 10-12. It is consistent with the report of Thomson and Pongvate (1995) that found working women have a higher education and marry at an older age than women who did not work are. Moreover, the samples have an education level consistent with their husband and 58 % of the samples' husbands are at least high school graduates and some of them (34%) finished grades 10-12. A higher mean of

age for the birth of the first child and higher education levels suggest that working mothers tend to be well prepared, better off financially and have economic support before having their first baby. This suggestion is likely when considering the findings about duration of marriage, where most of them have been married for more than three years before getting pregnant. It indicates that they may want to adapt and adjust to their dyad family life before transferring into a triad family.

Most samples came from a nuclear family (67 %) and thirty two percent are from extended family (32 %) and the mean of family members in the study is four. These are congruent with Thai family characteristics, particularly in Bangkok and statistics from the Ministry of Public Health, reported that Thai families tend to be more nuclear and a decrease in family members to 4 people had occurred by the year 2000 (Women' Work Planing Committee, 1994: 2-20). The social and economic change in this modern Thai society give rise to higher numbers of laborers migrating from upcountry to big cities, and has led to higher cost of living. Consequently, younger couples favor separating from their former family to establish their own new family (Wongboonsin, 1991: 3-4). This phenomenon is true in this study as it is found that more than 97 % of samples are living with a husband in a nuclear family. Furthermore, the national birth control policy is effective because national social and economic planning has tried limiting the number of family member to promote the quality of life of people. All of the reasons have led to a decrease in family size.

Most samples (83%) in this study are employees and only seventeen percent are manual workers. This result is consistent with the study of Richter and Havanon (1995) on women's economic contribution to households in Thailand. It indicates that women who participate in the labor force are more usually employed than self-

employed workers. However, all of them have a right of delivery leave with a mean of seventy days and this is a time that they, themselves, have an occasion to care for their baby, and develop their maternal performance before taking other roles of work later. Moreover, in regard to maternal delivery, most of them (63%) had a normal delivery with babies birth weight normal with a mean of 3112 grams. The healthiness of the baby at birth indicates that these babies have innate characteristics that they are ready to adapt themselves to the external world.

Discussion on the Studied Variables

This section discusses the properties of variables in the model and explains the characteristics and distribution of variables as follows.

Marital Relationship

The results revealed the samples' scored highly in marital relationship (mean = 102.58, sd 13.76) at the postpartum period in hospital, and at the recovery period. It is consistent with the study of Soomlek (1996) whose mean of marital relationship scores was 102.36 (sd = 10.87) at the same period of time. Higher scores of marital relationship indicates the couples are well adjusted to living together as they have a mean time of three years to adapt to married life before having a baby. Living together gives them a chance to establish special intimacy, coping strategy in various situations, and respect the importance of each other. Love and understanding between the couples leads to conjugal love and satisfaction in their marriage. The findings of the high

scores of emotional components of dyadic satisfaction (mean = 37.21, sd = 4.38) and affectionate expression (mean = 15.03, sd = 2.04) support this position.

However, moderate scores of reasoning components, dyadic consensus (mean = 33.87, sd = 6.67) and dyadic cohesion (mean = 16.46, sd = 3.43) were found. It may be due to the fact that mutual activity and family planning are varied according to particular situations. The well-educated working couples tend to be equal in family activities. They have their own ideas, which they have to adjust accordingly to fit with their personal life pattern that may differ in some cases. In addition, individual tasks and work lead to a decrease of time available for themselves for mutual activity too (Avioli & Kaplan, 1992; Kluwer, Heesink, & Van de Vliert, 1996:959). However, the overall results show that they have a high level of total score that indicates a high level of satisfaction in their marital relationship.

Working Conditions

There is low interruption (mean = 5.51, sd = 1.84) and low autonomy (mean = 8.48, sd = 3.16) of working conditions among the samples. Other work characteristics found are those of moderate time pressure (mean = 7.21, sd = 2.28), moderate responsibility (mean = 7.85, sd = 2.48), and high routine work (mean = 13.18, sd = 2.86). The total scores of working conditions show that mothers have a moderate control over their work activities (mean = 42.24, sd = 6.57).

Corresponding to a high control of work characteristics is more autonomy, time pressure, responsibility, and interruption and less routine (Lennon, 1994). The incongruent of some characteristics such as autonomy, time pressure, responsibility,

and routine lead to moderate control of work activities. Most of the samples are employees whose schedule of work is fixed, and routine in work characteristic. Altogether 66 % percent of the samples have an education level lower than certificate, so it indicates that most of them do not work in high level jobs. So, freedom from close supervision, control over others' work activities, and authority to set organizational policies and procedures may be diminished too.

Social Support

There are high level of emotional support (mean = 11.52, sd = 1.81), and aids (mean = 6.14, sd = 1.23) which are considered as a functional support. Because of the number of people in the network among the samples with a mean of 4.81 people, and, since contact frequencies and duration are included in network properties to represent this variable it was rated in a high level (mean = 9.10, sd = 0.46). This may be the reason the mothers perceive support from networks in a high degree. In some cases, most of their networks live far away from them. Mothers work in Bangkok while their relatives were at home in another province. But after they had a baby, they usually went back to their mother's home for recovery from the exhausting period of delivery or asked their relatives to live with them to care for both mother and baby (Wongboonsin, 1991). This symbiosis characteristic of the Thai culture tends to make the maternal samples perceive the availability of support that they can draw from their network.

Infant's Characteristics

The results revealed that there were high scores on perception of infant's characteristics (mean = 121.60) among the samples. Mothers perceived their infant's characteristics as positive characteristics and that they were easy to care for. Although most of the mothers (67.18%) did not have an experience in caring for a baby, they tried to seek information from other sources. People who have a high level of education like the mothers in this study may know how to find more information about the infant from various sources. This idea is strengthened by the various information sources concerning the infant's care reported by respondents that includes books (33.21 %) and health-care providers (16.34 %), but not direct experience (19.93 %). It is consistent with previous research in that middle class mothers were more likely to obtain knowledge about parenthood and child development from reading materials and experts than do mothers with low socio-economic status (Furstenberg et al., 1989; Lighfoot & Valsiner, 1992). The mother, who understands cues from her infant, can provide better and appropriate responses to the infant's need. This is believed to exact positive feedback from the infant.

Self-Esteem

The respondents rated their self-esteem in a very high range of scores from 20 to 40 with a mean of 32.04 (sd = 13.21). The self-esteem scale is developed to evaluate general self-esteem. In this study, samples were mothers who had quite a high education, worked, were independent, had their own family and gave birth to a healthy baby, and tended to perceive themselves as capable, significant, successful, and

worthy (Coopersmith, 1981; Rosenberg, 1989). This is particularly true in Thai culture that venerates the value of mothers in a high level. The married women who can have a normal infant will feel the fulfillment of their step in life that meets social expectations (Sherwen, Scoloveno, & Weingarten, 1991). Thus, a high self-esteem is likely to occur. Furthermore, working may increase admiration and prestige for women who believe that they can provide a financial contribution to a family. This makes the mothers proud of success and worthiness that leads to the perception of a high self-esteem.

Maternal Role Attainment

Mothers rated their maternal role attainments at a high level (mean = 203.86) even in role competence (mean = 123.47), satisfaction (mean = 41.09), and attachment with their infant (mean = 39.31). Considering the characteristics of the samples, it may be because mothers had a delivery leave to care for their baby with a mean of 70 days. At that time, they had a real practice after they had acquired knowledge and studied from other sources. Moreover, they may have immediate feedback from their child. In some cases, they developed maternal performance under supervision of a health-care provider, their grandparent or relative as mothers said that about 39 % of knowledge came from these three sources. This may be a reason for having a high score on maternal role attainment. Furthermore, Thai traditional mothers always return to stay with their own family during the recovery period even though they were separated from their parent's family. In some instance, they may get the relative to stay with them in the new family and separate again after the period of delivery leave. The

occasion to perform maternal role under feedback and supervision from valid person lets mothers perceive their competence and satisfaction in their maternal role and form an attachment with their infant.

Another reason, is the sample is ready to have a baby as they had family planning before the birth of their first child, such as allowing three years (the mean of duration of marriage = 3.25) before having a child. They may want to adjust their relationship and prepare enough savings before having a baby. The will to have a baby and to build up their own family together with the financial readiness of the couple would encourage mothers to pay more attention in learning how to care for their babies. Under somewhat constant situations, mothers should acquire more knowledge about babies and parenthood in order to facilitate the development of their competence, satisfaction, and attachment with their baby and their role.

Moreover, the outcomes of maternal tasks, such as being pregnant, giving birth to a normal and healthy baby, and being able to respond to the needs of their baby in a correct way leads the mother to perceive the competency of her own maternal task and satisfied with the role of mother (Sherwen, Scoloveno, & Weingarten, 1991). The maternal-infant attachment then developed simultaneously with the psychological process of the maternal role.

Discussion on Structural Equation Model of Maternal Role Attainment

The structural equation model of maternal role attainment was hypothesized based on Mercer's theory of factors that affect maternal role attainment. It was conceptualized that the following factors; role doer, role partner, and environment influence maternal role attainment through maternal self-esteem - an evaluation of self-concept -, which are partly perceived by getting feedback from a role partner and the baby. To study causal relationships among these factors and maternal role simultaneously, the LISREL Program (Joreskog and Sorbom, 1996a, 1996b) was used to facilitate the testing of the fitness of empirical data within the hypothesized model. The results are shown as follows.

Working conditions, marital relationship, and social support have a significant and positive direct effect on infant's characteristics.

The findings revealed that working conditions ($\beta = .95$, $p < .05$) had more influence on infant's characteristics than did the social support ($\beta = .80$, $p < .05$) and marital relationship ($\beta = .18$, $p < .05$) and the model accounted for 26 % ($R^2 = 0.26$) of explained variance on infant's characteristics.

The finding suggests that the more control the mothers have over work activities the greater the positive marital relationship is likely to be. Thus, mothers have more positive perceptions of infant's characteristics.

Regarding working conditions, this finding is consistent with the study of Rogers, Parcel, & Menaghan (1991) in that maternal working conditions with higher pay, lowers the perceptions of children's behavior being a problem and the longer the work hours, the more mothers perceived children's behavior as a problem. In other word, the less time pressure mothers have, the greater they perceive as positive infant's characteristics. This is due to the fact that the samples had a moderate control over work activity and most of them were desk workers who are considered as having of medium socioeconomic status in Thai society. In addition, their work characteristics were low interruption and were quite routine. These working conditions satisfied working mothers in some level. However, they had low autonomy, so that they could not decide when to work and when to leave, could not decide on their own of how to go about doing the work, could not control the speed at which they work, and could not take breaks whenever they want. This is a normal characteristic of the scheduled work of employees, and mothers may accept this limitation and it may give them some work satisfaction. Moreover, the highly routine work and certain income let the mothers comfortably organize their working role in consistence with maternal and other relevant roles. In this sense the role conflict or stress is likely to lessen among the mothers.

Accordingly, the samples may have less role conflict between the work and parent role and this may lead to having more attention and positive perceptions about their infant. Repetti (1989) suggested that when people experience stress at work their patience, sensitivity and responsiveness toward family members might be reduced and this study confirms this observation. It is congruent with the study of Riech (1984) who found that income was correlated with occupational commitment and lead to

maternal sensitivity to infant behaviors. In addition, MacEwen & Barling (1991) found a negative correlation among working satisfaction and cognitive difficulties, maternal negative mood, and rejection of children. That is, working conditions which give mothers more control over work activity will make low work stress and let mothers perceive their infant's characteristics in a positive way too.

Mothers who have a good quality of marital relationship are likely to have dyadic consensus and cohesion to do anything and have support from spouses even emotional support and tangible, aid, time, to help them organize multiple roles and have control over their activities. This support will provide a good environment to perform their role, so they will have the time and psychological readiness to interact with the baby and perceive infant's characteristics in a positive way. Mothers who have marital distress experience more anxiety and depression and will perceive child behavior as a problem more often than non-marital distress mothers (Bond & McMahon, 1984). The marital quality will influence maternal psychological well being, thereby contributing to maternal sensitivity to infant cues. This suggestion was supported by the study of Broom (1994), which found that among first time mothers who perceived marital quality accounted for the variance of prediction on sensitivity to infant cues of 13 percent ($R^2 = .13$, $p < .05$). Furthermore, there is a study in Thailand, which supports the direct influence of marital relationship on maternal infant's characteristics such as, Soomlek's study (1996) of role mastery among Thai first-time mothers. She found that the marital relationship at 3 days postpartum had a positive direct effect on maternal perceptions of infant's behaviors at 4-6 week postpartum ($\beta = .17$, $p < .05$) among 205 first time mothers.

Corresponding to social support could predict the mother's positive perception of infant's characteristics, however this finding is incongruent with Soomlek's study (1996) of maternal role mastery model. It was found that although there was a significant relationship between social support and maternal perception of infant's characteristics ($r = .22$, $p < .01$), there was no causal direct effect of social support on maternal perception of infant's characteristics ($\beta = .086$, $p > .05$). The result of Soomlek's study has the same pattern as the present study, in which the relationship between the two variables is significantly positive ($r = .20$, $p < .05$) (Table 10), but the result shows a significant direct effect between the two variables ($\beta = 0.80$, $p < .05$) (Figure 6, Table 16) when examined with the causal relationship statistics. A possible explanation is that Soomlek's study and the present study use a general social support questionnaire which is not specific to cues of the baby and is assessed at 2-3 days postpartum. In this period, there is not much change in infant's characteristics so mothers need no more information support than what they already know (Brouse, 1988). Thus, mothers tend to evaluate their support in general rather than in specific consideration of the information about the baby in Soomlek's study. However, the present study evaluated the maternal perception of their infant's characteristics at 4-5 month after delivery and there have been drastic changes in infant's behaviors and emotions at this period. That is, the available support known to mothers tends to be recruited during this time. This finding was supported by Cronenwett's study (1985b), which found that emotional support has an effect on the maternal perception of infant's caring behavior and satisfaction in the maternal role. Furthermore, Majewski (1987) reported that mothers who identified their husbands as their major support person had an easier transition to the maternal role. Therefore, the mutual good quality

of their relationship could be the cause of the effect from social support on infant's characteristics, which exists in the model.

Social support and marital relationship have a significant and positive direct effect on self-esteem.

Marital relationship ($\beta = .17$, $p < .05$) has less influence on self-esteem than social support ($\beta = .81$, $p < .05$), and the model accounted for and explained variance on self-esteem of 45 % ($R^2 = 0.45$). That is the mother who has a positive marital relationship, tend to have higher self-esteem. This result is consistent with the study of Hall, Kotch, Browne, & Rayens (1992) which explored self-esteem as a mediator of the effects of stressors and social resources on depressive symptoms. They found that among factors affecting self-esteem – everyday stressors, life events, quality of relationship, and quantity of ties – only quality of relationship had a significantly positive direct effect on maternal self esteem ($\beta = .27$, $p < .001$). This result is similar to Soomlek's study (1996) of maternal role mastery in Thailand, which found the significant direct effect of marital relationship on self-esteem ($\beta = .29$, $p < .001$) among 205 first-time mothers. These studies supported the present research study's result pertaining to self-esteem.

Self-esteem is the result of an individual who believes himself to be capable, significant, successful, and worthy (Coopersmith, 1981; Rosenberg, 1989), which arises from the discrepancy between the perceived self, or self-concept and ideal self. Since people can not evaluate themselves without the criteria (Rosenberg, 1989), especially from significant persons which, in a married couple, is their husband. That

is the couple, who pertain to positive marital relationship may have a consensus about caring their babies. The husband's support may influence the mothers not only in aid but also in psychological well being, which allows the mother to be ready and happy to learn and interact with the infant's cues as well as to perceived self-esteem when the goal of their role is met. The positive quality of a marital relationship will form love and comprehension between a married couple. It will promote intimacy, positive interaction, and support in a closed relationship and cause positive effects to maternal self-esteem later (Brown & Harris, 1987; Miller, et al., 1989). Working mothers with a positive marital relationship will experience love, shared feelings, behavior affirmation and acceptance from their husbands. They perceive self worth either in financial participation in the family or by being well organized in multiple roles, thus they will experience high self-esteem.

The study's result showed the high effect of social support on self-esteem. In fact, there was the report of social support, evaluated by the NSSQ, in the aspect of total functional support and total network, which were significantly correlated with self-esteem (Koniak-Griffin, 1988). There was also a report of the significant direct effect of functional support, husband support, on self-esteem, but no significant direct effect of amount of social network on self-esteem (Hall, Kotch, Browne, & Rayens, 1996). Furthermore, there was much social-psychological literature reported that support from a network might have positive and negative elements, thus the support provided could be perceived as unhelpful, particularly when it undermines self-esteem. Some ties with friends and families are sources of stress and conflict rather than support (Brenner, Norwell, & Limacher, 1989; Fisher, Goff, Nadler, & Chinsky, 1988; Malone, 1988, cited in Stewart, 1993: 14). Since social support in this study is

comprised of functional support and structural support in which a network component of structural support not only consists of numbers of network but also consists of the duration and frequency of contacts known to network properties. Of these characteristics, this measure asked for the positive perception of support that the subjects gained from network, then it caused a significant effect coefficient on the path from social support to self-esteem supported by those previous mentioned studies.

Working conditions have a non-significant direct effect on self-esteem.

The explanation for this finding may be as the following. Since the belief of self-esteem's sources come from the evaluation of significant other people and the ability to self-regulate (Coopersmith, 1981), this will let people experience success as a reward and lead to self-esteem (William James, 1980 cited in Bednar, Wells, & Peternson, 1989). Then, working conditions, which increase higher self-regulation will increase self-esteem as well. From this conceptualization, working conditions, that initiate a sense of reward whether financial or admiration, work that gives a sense of control over work activities – autonomy and less routine are increments of well being and self-esteem (Lennon & Rosenfield, 1992; Lenon, 1994). It indicates that only the aspect of control over one's work may be not sufficient to initiate self-esteem but it needs other aspects such as sense of rewarding and satisfaction to evaluate the effect of working conditions on self-esteem.

However, for the control over work activities that influence the transition to maternal role in this study, the more routine was expected, it seemed to be easier to operate than when it was less routine. And, other work conditions such as, less

interruption, time pressure, and responsibility over other's activities should be considered as the working conditions, which increase control over work activities too (Lenon, 1994). Therefore, without these conditions, self-esteem may decrease in consequently. Accordingly, the result of the present study revealed that maternal working conditions are inconsistent with the characteristics of work that mothers can have control over work in some dimension such as less autonomy, moderate time pressure and responsibility, thus the subjects have moderate control over work in total. Another possible reason to explain this result could be that in Thai culture, particularly for women, it is expected that people tend to have the patience to perform tasks. There is a saying that "if we are not overwhelmed, be patient until the end". Thai women also have not much choice about work, especially in a slower economic situation at the present time (Richter & Havanon, 1995). People look forward to working even if they do not have the self-esteem. For all these reasons, it may cause working conditions not to be associated with self-esteem.

Infant's characteristics and self-esteem have a significant positive direct effect on maternal role attainment.

Between them, self-esteem ($\beta = 1.89$, $p < .05$) had more influence than infant's characteristics ($\beta = 0.81$, $p < .05$). In addition, the model accounted for the variance and explained maternal role attainment of 58 percent ($R^2 = .58$). This result may imply that if mothers have high self-esteem and positively perceive infant's characteristics, they will have a high experience of success in the maternal role - competence, satisfaction, and attachment with their baby.

On self-esteem, there are many studies, which support the relationship between self-esteem and some dimension of maternal role attainment. That is, among high-risk and low-risk mothers self-esteem seems to be related to maternal competence rather than maternal-infant attachment in the first week, 1 month, 4 months, and 8 months post delivery (Mercer & Ferketich, 1990, 1994b). Moreover, the strength of the relationship is increased to a peak at 4 months among low-risk mothers. Regarding maternal-infant attachment, most studies found the relationship with self-esteem only in experienced mothers (one or more previous children) (Mercer & Ferketich, 1994a, 1995). As for a causal relationship, self-esteem has a direct effect on maternal sense of competence ($\beta = .27$, $p < .05$) and accounted for 5 % of variance among adult first-time mothers (Soomlek, 1996).

The finding of the relationship between self-esteem and maternal role attainment components could be explained that mothers who have high self-esteem tend to be self-confident, a subjective part of role attainment (Walker, Crain, & Thomson, 1986; Mercer & Ferketich, 1994b) and experience success in problem solving. Then, high self-esteem mother learned more strategies to face with problems and have a personal trace to deal with maternal role. In addition, a significant person such as the husband and her own mother, who partly promote self-esteem will give the direction and suggestions about the transitional process to maternal role. Once they choose maternal behavior approved by a significant person, they have the confidence to perform and when it is successful, they gain high self-esteem (William, 1980). Competence - behavioral part of maternal role attainment-, and satisfaction with the maternal role will develop in consequence (Mercer, 1995). Moreover, besides role competence and satisfaction existence, the health of baby and outcome of maternal

role are also the rewards of mothers. The intimacy among role doers and partners also initiates the existence of attachment between mother and infant simultaneously (Rubin, 1967a).

Corresponding to infant's characteristics, the interaction between mother and child lets the mother learn more about the baby, accept the difference of each baby, and perform particular care for each baby. The difference of each baby challenges mothers to find out the particular needs of the baby, to find out how to deal with the baby from other people. It promotes competency and satisfaction in manipulative maternal roles when they experience success in integrating their knowing in the maternal role. Moreover, the close contact with the baby will bring about intimacy with their infant and the attachment will develop concomitantly.

There were indirect effects from working conditions, marital relationship, and social support on maternal role attainment through self-esteem and infant's characteristics.

The highest strength of indirect effect is from social support ($\beta = 2.17$, $p < .05$) through self-esteem and infant's characteristics, followed by the indirect effect from working conditions ($\beta = .77$, $p < .05$) through infant's characteristics. The lowest indirect effect is from marital relationship (β .48, $p < .05$) through self-esteem and infant characteristics. This finding supports the theoretical thinking, which was conceptualized from Mercer's theory. That is, maternal role attainment is the process which consists of a cognitive-affective part and behavioral part, in which self-esteem, the solution of the mother's self perception, acting as a mediator in the cognitive part

to maternal role attainment. Whereas, the infant's characteristics is to act as the feedback from role partner in their reciprocal interaction and be a guide for maternal behavior. Social support, working conditions, and marital relationship are the asset from the environment, which help mother to adjust cognitive and behavioral factors to learn to improve her maternal role.

Contribution to Nursing Theory or Knowledge Development

This established model underlying the theoretical construct of Mercer's theory of Factors that Affect Maternal Role Attainment was tested and validated by the present research findings and it can make a contribution to nursing theory and knowledge development as the following.

Corresponding to nursing theory, this research finding based on Mercer's theory reflects the relationships between nursing metaparadigm concepts, that is the linkage between the person, environment and health. One of the propositions of nursing phenomena states that the discipline of nursing is concerned with the principles and laws that govern the life-process, well being, and optimal functioning of human beings, sick or well. The relationships between the person and health is recognized and they are in continuous interaction with their environment (Fawcett, 1995: 7; Donaldson & Crowley, 1978 cited in Nicoll, 1992). Since the theory of Factors that Affect Maternal Role Attainment of Mercer (1981, 1985) believes in a person especially the Core Self in transition to attain maternal role under the environmental system, mothers have to arrange their cognitive learning process which is dynamic adjustment by learning, experience and feedback from the baby (Mercer,

1995: 4). They also adjust themselves by evaluating their ideal self, self-image, and body image, which are related to each other. All of the processes exist under the mother's environment. These reflect the principles of the relationship between person and health specifically to optimal functioning of human beings, which influences the other dimensions of health in consequence. In this sense, Mercer's theory can be classified along with the nursing theory particularly to the function and role in parent-infant science of the parental development paradigm (Walker, 1992: 12).

Mercer's theory can be classified as middle range theory considering the scope of the theory (Walker & Avant, 1995: 11) or as factor related or explanatory theory by considering the function (Dickoff & James, 1968 cited in Nicoll, 1992: 99-111). Accordingly, the contribution to knowledge development when this theoretical model is tested is that the level of theory can be raised up to situation-relating theory (predictive theory). Since this model will clarify the mechanisms of factors that affect the maternal role attainment process and give an equation model to predict maternal role attainment.

Furthermore, this tested model makes Mercer's theory clearer and more parsimony since this theory is in a developmental process, where the relationships between theoretical concepts remain vague and repetitive.

Moreover, this research study can be considered as testing or extending Mercer's theory. According to theory testing, this research study develops the hypothetical statements under the deductive system by testing the proposition of how many factors influence the process of maternal role attainment. According to the results of the study, the factors of marital relationship, working conditions and social support had indirect effects on maternal role attainment via self-esteem and perception

of infant's characteristics. That is, self-esteem and infant's characteristics acted as the mediator of the maternal role attainment process. To extend the theory, this research study yields the basis for further prescriptive study since it is a proven model giving added theoretical statement such as the following:

1. Working conditions, social support, and marital relationship have influenced the maternal role attainment by promoting maternal perception of infant's characteristics.
2. Social support and marital relationship have influenced the maternal role attainment by promoting the maternal self-esteem.
3. Maternal perception of infant's characteristics and maternal self-esteem are concomitant in promoting maternal role attainment.

In correspondence with knowledge development, this tested model reflects the validity of Mercer's theory of Factors that Affect Maternal Role Attainment which can be applied to many sociological concepts to explain nursing' client phenomena. That is, in the maternal role adaptation process all factors; such as role doer, role partner, family relationship, environment system and so on, will affect the process of maternal role attainment through the maternal self's system. This indicates that the maternal core self, which is the balance of ideal self, self-image and body image is the essential component of the process. Thus, in order to promote the maternal role adaptation process, the maternal thinking system about self should be organized. Therefore, this tested model has revealed the strength of the Mercer's theory, which places the high value on human beings, particularly on the self-system. Moreover, Mercer's theory revealed the participation of family and social environment, which is concomitant to

shape the maternal self-system and consequently influence maternal role attainment. Especially, during the four months after delivery, factors that affect maternal role attainment in this period should be mostly concerned with working conditions, marital relationship, social support, infant's characteristics, and self-esteem.

In summary, in the area of maternal and child nursing science, maternal role attainment is an essential concept since it reflects the transition to the maternal life cycle pertaining to many factors which can be manipulated by nursing interventions to promote optimal functioning of human beings which is the role and responsibility of the nursing profession.

CHAPTER VI

CONCLUSION

The purpose of the study was to generate and test a causal model among the role doer, role partner and environmental factors that contribute to maternal role attainment. Mercer's theory of factors affecting maternal role attainment was used as a conceptual framework for this study. The following research question was generated from the model: Did self-esteem and infant's characteristics act as the mediators of the maternal role attainment process, in which working conditions, social support, and marital relationship would predict the maternal role attainment indirectly, through self-esteem and infant's characteristics?

The samples were the primiparous mothers who were selected by the following criteria: age over 19 years old, delivered of normal full-term baby with a normal birth weight, no abnormalities, and no major complications, and who returned to work after they left hospital and had delivery leave.

Data were collected from three hundreds and ninety working mothers in two steps. First, while they stayed at the postpartum wards of five general hospitals of Metropolitan Bangkok, Thailand. They had to answer questionnaires about marital relationship, working conditions, and social support. Second, when they returned to work after delivery (4-5 months), the self-evaluated questionnaires of self-esteem,

what my baby is like, and maternal role attainment scale were sent to the maternal samples and the completed questionnaires were sent back to the researcher by mailed.

The instruments used in this study included the personal information questionnaire and the five translated Thai version instruments for which back-translation technique was use for accuracy of language. The researcher developed only the maternal role attainment scale. All of the instruments are presented as follows:

The Dyadic Adjustment Scale first developed by Spanier (1976) and translated into Thai and slightly modified by Gasemgitvatana (1994) and Soomlek (1996). The internal consistency (Cronbach's alpha) in the pilot study was .90 and existed in six dimensions accounting for 56.1 % of variance explained when tested for construct validity by factor analysis. In this study, the same Chronbach's alpha (.90) and with valid construct if fixed to four dimensions could explain variance of 46.52 %.

The Norbeck Social Support Questionnaire (Norbeck, 1995) was translated by the researcher and tested for content validity by 5 experts with the CVI of 1. The internal consistency was .85 in the pilot study and three factors loading of construct validity accounted for 63.91 % of variance. For this research samples, Chronbach's alpha was .85 and the same factor loading as in the pilot study and accounted for variance of 64.81 %.

Working Conditions Scale (Lennon, 1994) was translated by the researcher and content validity proved by 5 experts with the CVI of .72. Regarding of construct validity, all items loaded quite well in their component and accounted for 61.63 % of variance in the pilot study. Only one item of the physical effort component was omitted and all the remaining items accounted for 57.86 % of variance in the present study. The Chronbach's Alpha reliability in the pilot study among 245 working

primiparous mothers was a small value of .60, then the researcher repeated the trial study again in seventy-one working mothers and it yielded a Chronbach's Alpha coefficient of .61. The Chronbach's Alpha coefficient of working conditions in the present study was .66.

Self-Esteem Scale (Rosenberg, 1965) was translated into the Thai language by Soomlek (1996) and content validity was tested by 6 experts. In the current research, this scale was tested for construct validity with factor analysis, and the result yielded two factors accounting for 50.05 % of variance in the trial study and 51.04 % in the actual research. The Chronbach's Alpha reliability in the trial and actual study was the same value of .73.

What My Baby Is Like Scale (Pridham, Chang, & Chiu, 1994) was used to assess infant's characteristics. It was translated by the researcher and was tested for content validity by 6 experts with the CVI of .55. The construct validity was tested by factor analysis, of which total scales and 6 factors accounted for 59.3 % of variance explained. But when fixed to four factors in the present study the total scales accounted for variance explained of 45.95 %. The Chronbach's Alpha reliability of the pilot study was .66 and when used in the actual study this scale yielded reliability of .70.

The 145 items of Maternal Role Attainment Scale was established by the researcher using the method of content analysis, in-depth interview, phenomenology data analysis, and factor analysis. Six experts yielding the CVI of .67 and proved the final 52 items of maternal role attainment for content validity. The reliability, which was tested in 73 working mothers, was .88. In the actual study, the factor analysis and Chronbach's Alpha coefficient are used to test the construct validity and reliability.

The results showed that the items not only loaded very well on maternal role competence but also loaded on the same component for maternal role satisfaction and attachment. However, all of the items accounted for 59.23 % of variance explanation. The alpha coefficient of reliability in the present study was .86.

The LISREL confirmatory factor analysis for construct validity was used again for measurement model. The results showed the GFI exceed .90 for Dyadic Adjustment, Working Conditions, Norbeck Social Support, What My Baby Is Like, but .82 for Self-Esteem, and the Chi-square of Maternal Role Attainment was zero.

Data were analyzed by using descriptive statistics, Pearson's Product Moment correlation, regression analysis, and factor analysis by SPSS/PC. The causal relationships, which were proposed in the model, were tested by LISREL program version 8.30.The hypotheses of the study were mostly supported.

The study results showed that there were three groups of causal variables that had significant positive direct effect on affected variables ($p < .05$). First, the direct effect from work condition ($\beta = .95$), social support ($\beta = .80$) and marital relationship ($\beta = .18$) on infant's characteristics. Second, the direct effect from social support ($\beta = .81$) and marital relationship ($\beta = .17$) on self-esteem. Third, the direct effect from infant's characteristics ($\beta = .81$) and self-esteem ($\beta = 1.89$) on maternal role attainment. Furthermore, there were significant indirect effects on maternal role attainment ($p < .05$) through infant's characteristics and self-esteem from marital relationship ($\beta = .48$) and social support ($\beta = 2.17$). There were also indirect effects on maternal role attainment through infant's characteristics from work condition ($\beta = .77$). However, there was an insignificant direct effect from working conditions on self-esteem, therefore, the indirect effect from this antecedent variable via mediator

variable of self-esteem did not existed. However, the model accounted and explained for variance on infant's characteristics, self-esteem, and maternal role attainment for 26 percent, 45 percent, and 58 percent, respectively.

Most of the study results supported the validity of the theoretical propositions of the established model based on Mercer's theory of factors affecting maternal role attainment. Accordingly, maternal self-esteem acted as a mediator, through which antecedent environmental variables yielded effects on maternal role attainment. And infant's characteristics acted as a mediator, which came from a role partner feedback for reciprocal interaction.

Summary of Findings

The findings of this study were summarized as the following.

1.) There was a significantly positive direct effect of working conditions on infant's characteristics, and a significantly positive indirect effect on maternal role attainment through infant's characteristics.

2.) There were significantly positive direct effects of marital relationship on infant's characteristics and self-esteem, and a significantly positive indirect effect on maternal role attainment through both of them.

3.) There were significantly positive direct effects of social support on marital relationship and self-esteem, and a significantly positive indirect effect on maternal role attainment through both of them.

4.) There were significantly positive direct effects of infant's characteristics and self-esteem on maternal role attainment.

5.) They was no direct effect of working conditions on self-esteem and the indirect effect via them on maternal role attainment did not exist.

Implications and Recommendations

Implications and Application of Research Findings

The result of the study indicated that, role doer factors such as self-esteem, a cognitive-affective factor of self-evaluation, and role partner, and their infant's characteristics were the mediators and had a positive direct effect on maternal role attainment among working mothers. Regarding self-esteem, this result provided a guide that nurses should develop strategies to promote maternal self-esteem. Since self-esteem has a dual characteristics approach, general self-esteem and situational self-esteem, in which the general self-esteem is used in this study. General self-esteem develops throughout the life span therefore time is needed to promote this self-esteem. This characteristic of self-esteem indicates that for maternal & child nursing, nursing intervention should not be limited only to hospital, but mothers should be treated by a holistic approach, so nurses should join in society around the nursing target in the early stages of life.

However, in the short-term, nurses in hospital can promote situational self-esteem, a maternal self-esteem in other words, by supporting and educating not only maternal performances but also the infant's cues for feedback from. Particularly, nurses should suggest about the uniqueness of infants, which make them different in cues to action. Maternal comprehesion about infant's characteristics raise the mother's

responses to infant's needs in the correct way, then positive feedback from her children will enhance maternal confidence, and satisfaction when performing her maternal role and initiating attachment among them.

In the long term, nurses should invent strategies consistent with the women' life cycle such as projects of older care for younger sisters in school. This project will initiate self-esteem in caring for young people among girls and provide readiness for becoming mothers in the future. Another method, is nurse may be involved with schoolteachers and family by providing suggestions, courses, or workshops, to educate and enhance concern about the importance of promoting self-esteem not only in maternal tasks but also in general tasks among students or family members. With these strategies, self-esteem will be established more and more across growth and development along with the life cycle.

The existence of direct effects from infant's characteristics to maternal role attainment indicated that during the first four to five months of an infant's life, the infant's characteristics play an important role for mothers in adjusting to their maternal role. This result also supported the idea that mothers should be informed about infants even when they were back home. Moreover, the results showed that to initiate either self-esteem or perception of infant's characteristics needs good support from husbands and families and an appropriate work environment. That is, in maternal and child nursing, the participation of family and society should be considered as important factors for mothers to attain their maternal role. Therefore, caring people who become mothers should integrate family members, especially husbands, and society in nursing care plans. Nurse can facilitate the environment for husbands and other significant people to participate in caring and promoting the maternal adaptation by providing

education and information about the need for support from the specific network, especially the importance of the marital relationship. For society, the result of this study revealed that maternity leave of at least two months is essential for mothers to learn about their babies' behaviors and emotions. This suggestion about the importance of maternity leave should be recognized by the national policy so as to reorganize the working environment to be suitable for maternal role adaptation.

As involvement of nursing intervention in society is needed, so nurses have to extend their role from the hospital to people's home and the referral system seems to be appropriate for the broad administration of maternal and child nursing. As well as campaigns to enhance the attitudes of people and promote comprehension about the importance of building a good maternal role a process to influence the quality of the national population is also needed. Furthermore, nurses with a broaden role also need to gain more societal knowledge. Accordingly, the nursing education curriculum may need to be adjusted to be appropriate with the nursing role in society and higher education may be necessary to prepare novice nurses.

Implications of Further Studies

The finding of this study indicate the need for further studies as presented below.

1.) Since the working conditions scale relies on the belief that one's control over work activities should be eased to organize another role, then the other work dimensions, especially those which affect people psychologically such as work satisfaction and sense of reward are not covered by the study. Furthermore, the work

characteristics that affect the cognitive process are not completely agreed among scholars, therefore it needs to be further studied.

2.) The Maternal Role Attainment Scale did not have clear loading of items on each component when the measurement model was tested. This instrument needs to be readjusted before using it in the same fashion as this study for further study.

3.) An experimental study should be performed to promote maternal role attainment by certain interventions to promote those factors affecting it; working conditions, marital relationship, social support, self-esteem, and infant's characteristics. It will confirm the validity of the theory and it will provide the contribution of theory to practice, which brings about the development of nursing science.

4.) Another group of mothers such as housewives, mothers who work in rural areas, including fathers, should be repetitively studied. A comparative study should be made for understanding and verifying the theory of factors that affect maternal role attainment among people in diversity groups as well.

5.) Since this study was a prospective study, which snapshot the process of maternal role attainment for around four to five months after delivery. Then a further comparative study of this process at different stage of life such as at nine months or one year should be conducted as a longitudinal study in order to understand clearer of the pattern of maternal role attainment process and verify the theoretical construct of the model. Moreover, the effect of maternal role attainment on the sequel of children's well being, either physical or psychological, should be studied both prospective and longitudinal studied to illustrate the outcomes of maternal role attainment.

6.) This study shows that Thai women have to handle multiple roles, such as working outside the home, doing household work, and being a wife and a mother, which have influenced their well being. They have participated in family economics, however their other roles, particularly household work, which they have done simultaneously, are not considered or counted as worthy as it should be by the Thai society. These issues reflect that the feminist ideology research should be applied to promote empowerment, and equity among people of both sexes. Regardless of the assumption of feminist research, the process can be used to encourage society to be more concerned about women's health, which will be the national population's health in the future.

Limitation of the Study

1.) According to working conditions, this instrument was designed to assess the characteristics of work by the actual work properties not by the perception of respondents so it may influence reliability if respondents evaluate their work by their perception. Most of all, the instruments such as working conditions, social support, and self-esteem may be too general and did not specific to maternal role adaptation phenomena, so they could cause insignificance in some path coefficients.

2.) The samples of this study are from five general hospitals, in which they prefer to answer the questionnaire in different styles. For example, the samples from Ramathibodi Hospital preferred to do it by themselves, but in the other four hospitals they mostly preferred the researcher to read the questions and they answered question by question. The inconsistency of data collection is a threat to validity of the results,

since the self-administered questionnaires may be limited to what mothers want to share and when they have doubts about some questions they may answer without real concern.

3.) The sample of this study was limited to working mothers and their 4-5 month-old first-born healthy infants in intact families who were delivere and born in five general hospitals located in Bangkok. The research finding, therefore, cannot be generalized to all Thai working mothers and their infants. The result can be applied only to mothers and their infants, who have the same characteristics as the sample.

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Appendix A

Personal Information Questionnaire

Part I

กรุณากรอกข้อความ หรือทำเครื่องหมาย √ ลงใน [ ] หน้าคำตอบของท่าน

1. ข้อมูลของมารดา และคู่สมรส

1.1 มารดาอายุ.....ปี ศาสนา.....

1.2 วุฒิการศึกษา..... อาชีพ..... สามีวุฒิการศึกษา.....

ลักษณะของอาชีพ [ ] ทำงานนอกบ้าน

[ ] ทำงานอยู่กับบ้าน

1.3 ระยะเวลาของการสมรส.....ปี

1.4 ลักษณะครอบครัว [ ] เดี่ยว [ ] ขยาย

จำนวนสมาชิก.....คน ประกอบด้วย.....

.....

1.5 ปัจจุบันอยู่ร่วมกับสามีหรือไม่

[ ] อยู่ [ ] ไม่อยู่ เพราะ.....

1.6 คลอดวันที่.....โดยวิธี.....

1.7 เคยมีประสบการณ์การเลี้ยงดูเด็กวัยก่อน 1 ปี หรือไม่ ? [ ] เคย [ ] ไม่เคย

1.8 ได้รับความรู้ในการเลี้ยงดูเด็กจาก.....

.....

1.9 ท่านมีสิทธิ์ลาพักหลังคลอดหรือไม่ ? [ ] ไม่มี [ ] มี จำนวน.....วัน

1.10 ขณะนี้ท่านอยู่ระหว่างการลาพักหลังคลอดหรือไม่ ? [ ] อยู่ [ ] ไม่อยู่

2 ข้อมูลของบุตร

2.1 เพศ..... อายุ.....น้ำหนักประมาณ.....

2.3 แรกเกิดมีปัญหาเกี่ยวกับสุขภาพหรือไม่ ? [ ] ไม่มี [ ] มี คือ.....

.....

2.4 หลังจากกลับจากโรงพยาบาลมาอยู่บ้าน มีปัญหาสุขภาพหรือไม่ ?

[ ] ไม่มี

[ ] มี คือ.....

Part II

กรุณาใส่เครื่องหมาย √ ลงใน [ ] หน้าข้อความที่ตรงกับตัวท่านมากที่สุด

1.) ขณะนี้ท่าน

[ ] ยังคงพักหลังคลอด เนื่องจาก

[ ] ยังเหลือวันลาพักคลอด

[ ] ไม่ได้ทำงาน (เป็นแม่บ้าน/ลาออกจากงาน/กำลังหางานทำ)

[ ] อื่น ๆ โปรดระบุ .....

[ ] กลับไปทำงานแล้ว เป็นระยะเวลาได้ประมาณ.....เดือน.....วัน

2.) ลักษณะอาชีพของท่าน คือ

[ ] งานโรงงาน (เข้ากะตามเวลา)

[ ] งานสำนักงาน หรืองานประจำอื่น ๆ (เช่น งานด้านเอกสาร บัญชี ครู ฯลฯ)

[ ] ค้าขาย, ธุรกิจส่วนตัว

[ ] งานอิสระอื่น ๆ เช่น เสริมสวย ตัดเย็บเสื้อผ้าอยู่กับบ้าน จัดรายการวิทยุ ฯลฯ

[ ] อื่น ๆ โปรดระบุ.....

3.) การเลี้ยงดูบุตรในระยะเวลา 3 เดือนหลังคลอดที่ผ่านมา

[ ] เลี้ยงดูด้วยตนเองมาตลอดตั้งแต่หลังคลอดจนปัจจุบัน

[ ] เลี้ยงดูด้วยตนเองเท่ากับระยะลาพักหลังคลอด (ประมาณ.....วัน) แล้วให้ผู้อื่นเลี้ยงต่อ

[ ] เลี้ยงดูด้วยตนเองร่วมกับมีผู้ช่วยเหลือมาตลอดจนปัจจุบัน

[ ] ไม่เคยเลี้ยงดูด้วยตนเองมาตลอดจนปัจจุบัน

[ ] อื่น ๆ โปรดระบุ.....

4.) ปัจจุบันท่าน

[ ] เลี้ยงดูบุตรเอง

[ ] มีผู้เลี้ยงให้ตลอดเวลา ซึ่งผู้เลี้ยง คือ .....

[ ] มีผู้เลี้ยงให้เฉพาะขณะที่ไปทำงาน ซึ่งผู้เลี้ยง คือ [ ] พี่เลี้ยงเด็ก

[ ] มารดา

[ ] ญาติ.....

[ ] ฝากเลี้ยงที่ศูนย์รับเลี้ยงเด็ก

[ ] อื่น ๆ.....

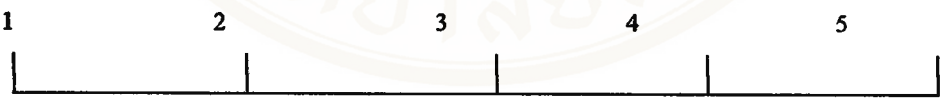
[ ] อื่น ๆ .....

Appendix B
Dyadic Adjustment Scale
(แบบวัดสัมพันธภาพระหว่างคู่สมรส)

โปรดเขียนวงกลมล้อมรอบตัวเลขที่ตรงกับคำตอบของท่านมากที่สุด

ข้อความ	บ่อยมากที่สุด	บ่อยมาก	บ่อย	บางครั้ง	ไม่เคยเลย
ท่านและสามีมีความเห็นพ้องต้องกันในเรื่องต่อไปนี้ บ่อยครั้งแค่ไหน					
1. การจัดการค่าใช้จ่ายภายในครอบครัว	5	4	3	2	1
.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....
เหตุการณ์หรือความรู้สึกต่อไปนี้เกิดขึ้นกับท่านและสามีบ่อยครั้งแค่ไหน					
13. ความคิดหรือการพูดที่จะหย่า หรือแยกทางกับสามี	5	4	3	2	1
.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....
26. สามีไม่แสดงออกให้รู้ว่ามีความรักใคร่	5	4	3	2	1

27. โปรดเขียนวงกลมล้อมรอบตัวเลขที่ท่านเห็นว่าเป็นตัวแทนความสุขในชีวิตสมรสของท่านได้ดีที่สุด



ไม่มีความสุขเลย มีความสุขเล็กน้อย มีความสุขปานกลาง มีความสุขมาก มีความสุขมากที่สุด

28. โปรดเขียนวงกลมล้อมรอบตัวเลขหน้าข้อความ ที่ท่านเห็นว่าแทนการอธิบาย**สัมพันธภาพในอนาคตระหว่างท่านและสามีได้ตรงกับความรู้สึก ความคาดหวังของท่านมากที่สุด**

5 ฉันต้องการให้สัมพันธภาพราบรื่นมากที่สุด และจะทำทุกอย่างไม่ว่าจะใช้ความพยายามมากแค่ไหนก็ได้เพื่อให้เป็นผลสำเร็จ

4 ฉันต้องการให้สัมพันธภาพราบรื่นอย่างมาก และจะทำทุกอย่างเพื่อให้เป็นผลสำเร็จ

3 ฉันต้องการให้สัมพันธภาพราบรื่นอย่างมาก และจะทำเท่าที่คิดว่าควรจะทำได้เพื่อให้เป็นผลสำเร็จ

2 ฉันคิดว่าจะเป็นสิ่งที่ดีถ้าสัมพันธภาพราบรื่นแต่ฉันไม่สามารถจะทำอะไรได้มากกว่าที่ฉันทำในขณะนี้อีกแล้ว

1 ฉันคิดว่าสัมพันธภาพระหว่างฉันและสามีไม่มีทางที่จะราบรื่นและไม่มีประโยชน์อะไรที่จะรักษาสัมพันธภาพ นั้นให้ยังคงดำเนินต่อไป

Appendix C

Factor Matrix of Dyadic Adjustment Scale (N = 306)

Item	F_1 (Con)	F_2 (Sat)	F_3 (Coh)	F_4	F_5	F_6	h_i^2
Dyadic Consensus							
Mrr1	.515						.477
Mrr2				.674			.602
Mrr3	.596						.548
Mrr5				.699			.579
Mrr7	.447						.558
Mrr8	.664						.549
Mrr9	.746						.656
Mrr10	.746						.418
Mrr11	.545						.570
Mrr12	.398						.450
Dyadic Satisfaction							
Mrr13		.706					.600
Mrr14		.603					.399
Mrr15		.403					.591
Mrr16		.397					.397
Mrr17		.595					.503
Mrr18		.816					.682
Mrr19		.728					.624

Dyadic Cohesion							
Mrr20				.634			.584
Mrr21			.687				.676
Mrr22			.550				.639
Mrr23			.705				.515
Mrr24			.666				.659
Mrr27		.480					.582
Mrr28					.658		.500
Affectional Expression							
Mrr4	.634						.579
Mrr6				.453			.517
Mrr25						.713	.663
Mrr26						.652	.563
λ	8.186	2.555	1.411	1.312	1.228	1.016	
% Variance (Total)	29.24	9.12	5.04	4.68	4.39	3.63	56.10
% Variance (Common)	52.12	16.27	8.98	8.34	7.82	6.47	100

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.909
Bartlett's Test of Sphericity	Approx. Chi-Square	3089.114
	df	378
	Sig	.000

Appendix D

Social Support Questionnaire

(แบบวัดการสนับสนุนทางสังคม)

คำแนะนำในการตอบแบบสอบถาม

จากรายชื่อบุคคลด้านซ้ายมือ กรุณาตอบคำถามโดยเติมหมายเลขคำตอบตามหมายเลขชื่อ (กรุณาตอบทุกข้อ)

0 = ไม่เลย 1 = เล็กน้อย

2 = ปานกลาง 3 = มาก

4 = มากที่สุด

โปรดระบุรายชื่อของบุคคลที่ท่านคิดว่ามีความสำคัญต่อตัวท่าน และให้การสนับสนุนท่านในที่ว่างด้านซ้ายมือเท่าที่ท่านเห็นว่าสำคัญจริง ๆ อาจใช้ชื่อเล่น หรือชื่อย่อ พร้อมทั้งบอกความสัมพันธ์กับท่าน ดังตัวอย่างต่อไปนี้

คำถามที่ 1: บุคคลเหล่านี้ทำให้ท่านรู้สึกว่าท่านเป็นที่ชื่นชอบหรือเป็นที่รักมากน้อยเพียงใด ?	คำถามที่ 2: บุคคลเหล่านี้ทำให้ท่านรู้สึกว่าท่านเป็นที่ชื่นชมหรือเป็นที่นับถือมากน้อยเพียงใด ?
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.
6.	6.
.	.
.	.
.	.
14.	.
15.	.
[Emo 1]	[Emo 2]

ตัวอย่าง

ชื่อ หรือ ชื่อเล่น	ความสัมพันธ์
1. ไก่	เพื่อน
2. ชาญชัย	สามี
3. นาง ม.	แม่
4. คุณ จุ๋ม	พยาบาล
5. คุณ มนู	เพื่อนบ้าน
6. หลวงพ่อแช่ม	พระที่นับถือ
.	.
.	.
.	.
.	.
.	.

กรุณาเปิดหน้าถัดไป

Appendix E

List of experts: working conditions and social support questionnaire

(รายนามผู้ทรงคุณวุฒิ ในการตรวจสอบความตรงตามเนื้อหาของแบบวัด Working Conditions และSocial Support)

1. ศาสตราจารย์ ดร. สมจิต หนุเจริญกุล
   ภาควิชาพยาบาลศาสตร์ คณะแพทยศาสตร์ ร.พ. รามาธิบดี
2. รองศาสตราจารย์ ดร. ศิริพร ขัมภลิขิต
   คณะพยาบาลศาสตร์ มหาวิทยาลัยธรรมศาสตร์ ศูนย์รังสิต
3. ผู้ช่วยศาสตราจารย์ ดร. ยุพาพิน ศิรโพธิ์งาม
   ภาควิชาพยาบาลศาสตร์ คณะแพทยศาสตร์ ร.พ. รามาธิบดี
4. ผู้ช่วยศาสตราจารย์ ดร. สายพิณ เกษมกิจวัฒนา
   คณะพยาบาลศาสตร์ มหาวิทยาลัยมหิดล
5. อาจารย์ ดร. อวยพร ตันมุขยกุล
   คณะพยาบาลศาสตร์ มหาวิทยาลัยเชียงใหม่
6. อาจารย์ ดร. ปัญชลี วาสนสมสิทธิ์
   สถาบันภาษา จุฬาลงกรณ์มหาวิทยาลัย

Appendix F

Back Translate of Social Support Questionnaire

Original	Back Translate
1. How much does this person make you feel liked or loved ?	1. How much do these people make you feel appropriated or loved ?
2. How much does this person make you feel respected or admired ?	2. How much do these people make you feel admired or respected ?
3. How much can you confide in this person	3. How much can you trust these people ?
4. How does this person agree with or support your actions or thoughts ?	4. How much do these people agree with or support your actions or thoughts ?
5. If you need to borrow $10, a ride to the doctor, or some other immediate help, how how much could this person usually help ?	5. If you want to borrow 100 Baht from these people or if you them to take you to the doctor, how helpful will these people be ?
6. If you were confined to bed for several weeks, how much could this person help you	6. If you have to be bed ridden for weeks, how helpful will these people be ?
7. How long have you known this person ?	7. How long have you known these people ?
8. How frequently do you usually have contact with this person ? (Phone calls, visits, or letters)	8. How often do you get in touch with these people ? (By phone, visitation, letter or others)

Appendix G

Factor Matrix of Social Support Questionnaire (N = 142)

Item	F_1 Emotional	F_2 Aid	F_3 Network	h_i^2
Affect1	.828			.694
Affect 2	.834			.704
Affirm 3	.790			.680
Affirm 4	.680			.541
Aid 5		.352		.526
Aid 6		.371		.594
Duration			.929	.867
Frequency		.652		.460
λ	3.608	1.112	1.031	
% of Variance (Total)	40.092	12.357	11.454	63.903
% of Variance (Common)	62.739	19.337	17.924	100

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.771
Bartlett's Test of Sphericity	Approx. Chi-Square	422.997
	df	36
	Sig	.000

Appendix H

Working Conditions Scale
(แบบวัดลักษณะของงาน)

โปรดอ่านข้อความแต่ละข้อ และวงกลมล้อมรอบตัวเลข ที่ตรงกับลักษณะงานอาชีพของท่านให้มากที่สุด

ข้อความ	ใช่มากที่สุด	ค่อนข้างใช่	ใช่เล็กน้อย	ไม่ใช่เลย
1. ฉันจะเริ่มหรือเลิกทำงานเมื่อไรขึ้นอยู่กับการตัดสินใจของฉัน	4	3	2	1
2. ฉันสามารถหยุดพักเมื่อไรก็ได้ที่ฉันต้องการ	4	3	2	1
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17. ฉันทำงานแบบเดิม ๆ วันแล้ววันเล่า	4	3	2	1
18. งานของฉันเป็นงานที่จำเจ	4	3	2	1

Appendix I

Back Translate of Working Conditions Scale

Original	Back Translate
1. You decide when you come to work and when to leave.	1. I can decide when to start or stop working.
2. You can take brakes whenever you want.	2. I can take a break whenever I want.
3. You control the speed at which you work.	3. I can finish my work at any own pace.
4. You decide on your own how to go about doing the work.	4. I can the one who decides which work to do next and how.
5. You have to work under time pressure.	5. I have to complete with time when working.
6. There is more work than there is time to complete the work.	6. I have too much work to finish as planned.
7. You have enough time to do the work you are supposed to do	7. I have enough time for the work I have to do.
8.You are held responsible for others' mistakes.	8. I am responsible when others make a mistake.
9. You are held responsible when things don't get done.	9. I am responsible when things don't get done.
10. You are held responsible when things happen at work even though you can't control them.	10. I have to be responsible for what happens with my work even though I cannot control them.
11. You can complete your work without	11. I can finish my work without being

interruptions.	interrupted.
12. There are distractions that interfere with the work.	12. I always distracted from my work.
13. You are interrupted by other people or telephone calls while doing your job.	13. I am always interrupted by others or by phone while I am working.
14. The job requires physical effort.	14. My work requires a lot of physical strength.
15. The job requires doing the same thing over and over.	15. My work is repetitions.
16. You usually know exactly what you'll be doing from one day to the next.	16. In general, I know exactly what I have to do each day.
17. You follow the same routine day-in and day-out.	17. My work is always the same day after day.
18. The job involves repetition.	18. My work is very routine.

Appendix J

Factor Matrix of Working Condition Scale (N = 245)

Item	F_1 (Rou)	F_2 (---)	F_3 (Tim)	F_4 (Res)	F_5 (Aut)	F_6 (Int)	h_i^2
Autonomy							
Wcon1					.819		.679
Wcon2					.739		.706
Wcon3					.379		.559
Wcon4		.674					.495
Time Pressure							
Wcon5			.825				.518
Wcon6			.794				.650
Wcon7			.334				.634
Responsibility							
Wcon8				.606			.587
Wcon9				.752			.803
Wcon10				.821			.771
Interruptions							
Wcon11						.543	.649
Wcon12						.688	.480
Wcon13						.599	.590

Physical Effort							
Wcon14			.458				.736
Routine							
Wcon15	.778						.689
Wcon16	.540						.446
Wcon17	.893						.507
Wcon18	.870						.594
λ	2.659	2.490	1.991	1.531	1.375	1.049	
% Variance (Total)	14.77	13.83	11.06	8.50	7.64	5.83	61.63
% Variance (Common)	23.97	22.44	17.95	13.79	12.40	9.45	100

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.667
Bartlett's Test of Sphericity	Approx. Chi-Square	943.484
	df	153
	Sig	.000

Appendix K

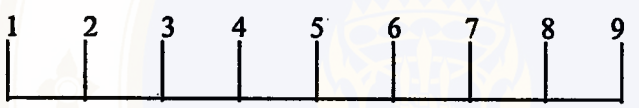
What My Baby Is Like Scale

(แบบวัดคุณลักษณะบุตร)

แบบวัดนี้ใช้สอบถามเกี่ยวกับคุณลักษณะบุตรของท่าน รวมทั้งวิธีการที่บุตรท่านใช้ตอบสนอง หรือ มีปฏิสัมพันธ์กับสิ่งต่าง ๆ , เหตุการณ์ต่าง ๆ , และตัวท่านเอง

กรุณาวงกลมล้อมรอบหมายเลขที่ตรงกับคำตอบของท่านมากที่สุด

ตัวอย่าง



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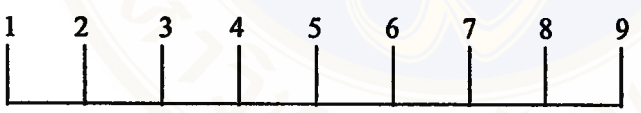
1. การปลอบโยนให้บุตรของท่านเงียบสงบ ทำได้ยากง่ายเพียงใด?



ไม่ยากเลย ยากมาก

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19. เมื่อบุตรของท่านมองดูสิ่งใดสิ่งหนึ่ง เขาจ้องมองเป็นเวลานาน ๆ หรือมองเพียงชั่วขณะ ?

ไม่นานเลย นานมาก

Appendix L

List of experts: What My Baby Is Like

(รายนามผู้ทรงคุณวุฒิในการตรวจสอบความตรงตามเนื้อหาของแบบวัด What My Baby Is Like)

1. รองศาสตราจารย์ ดร. ฟองคำ ติลกสกุลชัย
   คณะพยาบาลศาสตร์ มหาวิทยาลัยมหิดล
2. รองศาสตราจารย์ อรพินท์ เจริญผล
   ภาควิชาพยาบาลศาสตร์ คณะแพทยศาสตร์ มหาวิทยาลัยมหิดล
3. รองศาสตราจารย์ ดร. นงลักษณ์ จินตนาดิลก
   คณะพยาบาลศาสตร์ มหาวิทยาลัยมหิดล
4. ผู้ช่วยศาสตราจารย์ ดร. พรทิพย์ วงศ์วิเศษสิริกุล
   ภาควิชาพยาบาลศาสตร์ คณะแพทยศาสตร์ มหาวิทยาลัยมหิดล
5. ผู้ช่วยศาสตราจารย์ ดร. จริยา วิทยะศุภร
   ภาควิชาพยาบาลศาสตร์ คณะแพทยศาสตร์ มหาวิทยาลัย มหิดล
6. อาจารย์ ดร. ปัญชลี วาสนสมสิทธิ์
   สถาบันภาษา จุฬาลงกรณ์มหาวิทยาลัย

Appendix M

Back translate of What My Baby Is Like Scale

Original	Back Translate
1. How hard is your baby to soothe or Comfort ?	1. How difficult it is to clam your baby ?
2. How cuddly is your baby ?	2. How cuddly is your baby ?
2. How happpy or content is your baby most of the day ?	3. How happy or cheerful is your baby most of the time each day ?
4. How regular in feeding is your baby ?	4. How much does your baby get fed or eat at regular hours ?
5. How regular in sleeping is your baby ?	5. How much does your baby sleep at regular hours ?
6.When awake, how sensitive is your baby to sounds or things going on around him /her ? (Think about how loud a sound or change in activity it takes before you're baby responds.)	6. While awake, how sensitive is your baby to sounds and surrounding environment ? (Please take into account the degree of loudness or the change of the surrounding activities before your baby responds.)
7.How active physically is your baby while feeding ?	7. While baby fed, how much does your baby move him /her body ?
8.How active physically is your baby while being bathed ?	8. While taking a bath, how much does your baby move his/her body ?

9.How active physically is your baby while being diapered	9. How much does your baby move his/her body when you are changing the diaper ?
10. How activ physically is your baby while sleeping ?	10. While asleep, how much does your baby move his/her body ?
11. How much your baby accept new things	11. How much can your baby accept new things ?
9. How long does it take your baby to get used to a change in feeding arrangements or routines ?	12. How long does it take your baby to accept new food or new feeding methods.
10. How long does it take your baby to get used to a change in sleeping arrangements or routines ?	13. How long does it take your baby to accept new methods and time of sleep ?
11. Most of the time, is it hard for your baby to get used to a change, or is it relatively easy ?	14. In general, how easy it is for your baby to accept changes ?
12. How loudly or intensely does your baby express him/herself and let you know about his/her feelings ?	15. How much does your baby use his/her voice or other expressions to let you know his/her feelings and emotions ?
13. In general, how easily can you stop your baby's crying by holding him/her, or by some other means ?	16. In general, how easy can you calm your baby down, either by holding or by other means ?
14. Think of a time when your baby is	17. When your baby is doing something

doing something other than feeding or sleeping. Would you say your baby sticks to what he/she is doing for a long time, or for only a few moments ?

15. When your baby is trying to do something related to feeding (for example, grasping the nipple so he/she can feed), would you say your baby keeps at it for a long time or only briefly ?

16. When your baby is looking at something, does he/she stick to looking at it for a long time, or for only a few moments ?

which is not eating or sleeping, how long can he/she concentrate ?

18. When your baby is trying to do something about eating (such as grasping a nipple to make it easier to suck milk), how long does your baby do such on act ?

19. When your baby looks at something, does he/she stares at it for a long time or does he/she just glance ?

Appendix N

Factor Matrix of What My Baby Is Like (N = 201)

Item	F_1 (Mal)	F_2 (Res)	F_3 (Ame)	F_4 (Per)	F_5 (---)	F_6 (---)	h_i^2
Malleability							
Wbl 11	.539						.518
Wbl 12	.808						.730
Wbl 13	.799						.703
Wbl 14	.595						.426
Responsivity to Stimuli							
Wbl 6						.780	.683
Wbl 7		.671					.615
Wbl 8		.688					.569
Wbl 9		.700					.519
Wbl 10		.636					.598
Wbl15			.660				.376
Amenability							
Wbl 1			.767				.676
Wbl 3			.660				.493
Wbl 4					.839		.708
Wbl 5					.820		.734
Wbl 16			.730				.581

Persistence							
Wbl 17				.789			.637
Wbl 18				.763			.592
Wbl 19				.698			.520
λ	3.143	1.943	1.875	1.422	1.223	1.072	
% Variance (Total)	17.46	10.80	10.42	7.90	6.79	5.95	59.32
% Variance (Common)	29.43	18.21	17.56	13.32	11.45	10.03	100

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.652
Bartlett's Test of Sphericity	Approx. Chi-Square	677.907
	df	153
	Sig	.000

Appendix O

Self-esteem Scale
(แบบวัดความรู้สึกมีคุณค่าในตนเอง)

โปรดอ่านข้อความแต่ละข้อ และวงกลมล้อมรอบตัวเลข ที่ตรงกับความรู้สึกของท่านมากสุด คำตอบที่ได้จะไม่มีผิดหรือถูก

ข้อความ	ตลอดเวลา	บ่อย	นาน ๆ ครั้ง	ไม่เลย
1. ฉันรู้สึกว่าฉันมีคุณค่าเท่าเทียมคนอื่น ๆ	4	3	2	1
2. หลายครั้งที่ฉันรู้สึกว่าเป็นคนไร้ประโยชน์	4	3	2	1
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9. หลายครั้งที่ฉันรู้สึกว่าเป็นคนไร้ประโยชน์	4	3	2	1
10. หลายครั้งที่ฉันรู้สึกว่าไม่มีอะไรดีเลยในตัวเอง	4	3	2	1

Appendix P

Factor Matrix of Self-Esteem Scale (N = 159)

Item	F_1	F_2	h_i^2
Se1	.652		.476
Se2	.710		.535
Se3		.763	.585
Se4	.699		.490
Se5		.592	.399
Se6	.694		.514
Se7	.720		.571
Se8		.409	.214
Se9		.698	.589
Se10		.724	.632
λ	3.317	1.688	
% of Variance (Total)	33.17	16.88	50.05
% of Variance (Common)	66.27	33.73	100

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.785
Bartlett's Test of Sphericity	Approx. Chi-Square	377.967
	df	45
	Sig	.000

Appendix Q

List of experts: Maternal role attainment 145 items

(รายนามผู้ทรงคุณวุฒิในการตรวจสอบความตรงตามเนื้อหาของแบบวัด Maternal Role Attainment 145 Items)

1. รองศาสตราจารย์ ดร. ศิริพร ขัมภลิขิต
   คณะพยาบาลศาสตร์ มหาวิทยาลัยธรรมศาสตร์
2. รองศาสตราจารย์ ดร. รุจา ภู่ไพบูลย์
   ภาควิชาพยาบาลศาสตร์ คณะแพทยศาสตร์ ร.พ. รามาธิบดี มหาวิทยาลัยมหิดล
3. รองศาสตราจารย์ ดร. สายฤดี วรกิจโภคาทร
   คณะสังคมและประชากรศาสตร์ มหาวิทยาลัยมหิดล
4. ผู้ช่วยศาสตราจารย์ ดร. พยอม อยู่สวัสดิ์
   คณะพยาบาลศาสตร์ มหาวิทยาลัยธรรมศาสตร์
5. ผู้ช่วยศาสตราจารย์ ดร. บุปผา ศิริรัศมี
   คณะสังคมและประชากรศาสตร์ มหาวิทยาลัยมหิดล
6. อาจารย์ ดร. โยธิน แสวงดี
   คณะสังคมและประชากรศาสตร์ มหาวิทยาลัยมหิดล

Appendix R

List of experts: Maternal role attainment 52 items

(รายนามผู้ทรงคุณวุฒิในการตรวจสอบความตรงตามเนื้อหาของแบบวัด Maternal Role Attainment 52 Items)

1. รองศาสตราจารย์ อรพินท์ เจริญผล
   ภาควิชาพยาบาลศาสตร์ คณะแพทยศาสตร์ ร.พ. รามาธิบดี
2. รองศาสตราจารย์ ดร. สุกัญญา ปริสัญญกุล
   คณะพยาบาลศาสตร์ มหาวิทยาลัยเชียงใหม่
3. รองศาสตราจารย์ ดร. นงลักษณ์ จินตนาดิลก
   คณะพยาบาลศาสตร์ มหาวิทยาลัยมหิดล
4. ผู้ช่วยศาสตราจารย์ ยุพิน จันทรัคคะ
   คณะพยาบาลศาสตร์ มหาวิทยาลัยมหิดล
5. อาจารย์ ดร. อวยพร ตันมุขยกุล
   คณะพยาบาลศาสตร์ มหาวิทยาลัยเชียงใหม่
6. อาจารย์ ดร. ปัญชลี วาสนสมสิทธิ์
   สถาบันภาษา จุฬาลงกรณ์มหาวิทยาลัย

Appendix S

Maternal Role Attainment Scale
(แบบวัดการดำรงบทบาทมารดา)

คำชี้แจงในการตอบแบบสอบถาม

แบบสอบถามนี้ต้องการทราบถึงการปฏิบัติ ความรู้สึก และความคิดเห็นในการดำรงบทบาทมารดาของท่าน แบบสอบถามนี้จะมีข้อความให้ท่านอ่านเพื่อพิจารณาว่าท่านมีการปฏิบัติ ความรู้สึก และความคิดเห็นตรงกับข้อความแต่ละข้อมากน้อยเพียงใด ดังนั้น คำตอบจึงไม่มีถูกหรือผิด ขอให้ท่านตอบให้ตรงกับความรู้สึก ความคิดเห็นหรือการกระทำที่เป็นจริงของท่านให้มากที่สุด

โปรดอ่านข้อความแต่ละข้ออย่างรอบคอบ แล้วทำเครื่องหมาย ✓ ตรงช่องที่ตรงกับความรู้สึก ความคิดเห็น หรือการกระทำของท่านมากที่สุด ขอให้ท่านเลือกตอบเพียงคำตอบเดียว และกรุณาตอบทุกข้อ การเลือกตอบขึ้นอยู่กับเกณฑ์ต่อไปนี้

เห็นด้วยอย่างยิ่ง คือ เมื่อท่านเห็นว่าข้อความตรงกับความรู้สึก ความคิดเห็นหรือการกระทำของท่านมากสุด

เห็นด้วย คือ เมื่อท่านเห็นว่าข้อความตรงกับความรู้สึก ความคิดเห็นหรือการกระทำของท่านมาก

ไม่แน่ใจ คือ เมื่อท่านไม่แน่ใจว่าข้อความตรงกับความรู้สึก ความคิดเห็นหรือการการทำของท่านหรือไม่

ไม่เห็นด้วย คือ เมื่อท่านเห็นว่าข้อความนั้นไม่ตรงกับความรู้สึก ความคิดเห็นหรือการกระทำของท่านมาก

ไม่เห็นด้วยอย่างยิ่ง คือ เมื่อท่านเห็นว่าข้อความนั้นไม่ตรงกับความรู้สึก ความคิดเห็นหรือการกระทำของท่านมากที่สุด

ข้อคำถาม	เห็นด้วยอย่างยิ่ง	เห็นด้วย	ไม่แน่ใจ	ไม่เห็นด้วย	ไม่เห็นด้วยอย่างยิ่ง
1.ฉันรู้ว่าควรจะให้นมหรืออาหารเสริมอะไรแก่ลูก และให้เมื่อไร อย่างไร					
2.ฉันรู้สึกว่าเป็นเรื่องยุ่งยากใจเมื่อลูกสำรอก หรืออาเจียน					
3.ฉันจะให้นมลูกทุกครั้งที่รู้ว่าลูกหิว					
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51. ฉันคิดว่าเพื่อลูกแล้วฉันทำได้ทุกอย่าง					
52.เมื่อกลับไปถึงบ้าน สิ่งแรกที่ฉันทำคือการตรงไปหาลูก					

Appendix T

Protection of Human Subject
(การพิทักษ์สิทธิ์ของมารดาผู้เข้าร่วมการวิจัย)

" สวัสดีค่ะ ดิฉัน อาจารย์ ศรีสมร ภูมนสกุล เป็นอาจารย์พยาบาล สังกัดงานการพยาบาลสูติ-นรีเวชศาสตร์ ภาควิชาพยาบาลศาสตร์ คณะแพทยศาสตร์ ร.พ. รามาธิบดี ขณะนี้กำลังศึกษาต่อในระดับปริญญาเอก มีความสนใจที่จะศึกษาติดตามการเป็นมารดาครั้งแรกของผู้หญิงที่ทำงานนอกเหนือจากการเป็นแม่บ้าน และปัจจัยต่าง ๆ ที่เกี่ยวข้อง ซึ่งอาจเป็นแนวทางในการวางแผนให้การพยาบาล คำแนะนำในการปฏิบัติตัวและการเลี้ยงดูบุตรของมารดาได้อย่างเหมาะสม ตลอดจนใช้เป็นข้อมูลพื้นฐานในการปรับเปลี่ยนนโยบายด้านการอนามัยแม่และเด็ก ซึ่งการศึกษาในครั้งนี้จะติดตามเป็น 2 ช่วง คือ หลังคลอดขณะอยู่ในโรงพยาบาล และเมื่อหลังคลอด 4 เดือน (โดยตอบแบบสอบถามทางจดหมาย) จึงเรียนมาเพื่อขอความร่วมมือคุณแม่ทุกท่านตอบแบบสอบถาม โดยใช้เวลาประมาณ 30 นาที คุณแม่ทุกท่านมีสิทธิ์จะตอบรับหรือปฏิเสธการตอบแบบสอบถามครั้งนี้ได้นะคะ

ในระหว่างการตอบแบบสอบถาม หากคุณแม่ไม่พอใจหรือไม่ต้องการที่จะตอบแบบสอบถามจนครบ คุณแม่สามารถยกเลิกการตอบแบบสอบถามได้โดยไม่มีผลต่อการรักษาหรือบริการที่คุณแม่จะได้รับ และคำตอบของคุณแม่ทุกท่าน ดิฉันจะถือว่าเป็นความลับและนำมาใช้เฉพาะการวิจัยครั้งนี้เท่านั้น ขอบคุณค่ะที่ให้ความร่วมมือ"

BIOGRAPHY

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