

CHAPTER 2

LITERATURE REVIEW AND RELATED RESEARCH

This chapter presents a review of related research and literature pertinent to the research study as follows:

1. An overview of cesarean section and normal labor
2. An overview of decision making
3. Perceptions of cesarean section
4. Decision making style
5. Personal factors related to selection of cesarean section

An Overview of Cesarean Section and Normal Labor

In recent years, there has been increasing concern about the high cesarean section rate. Thus, this review described the advantages and disadvantages of cesarean section and normal labor, including indications of cesarean section, and factors influencing increasing rates of cesarean section.

Cesarean Section

Performing a cesarean section operation involves making an incision in the abdomen through the uterus to extract the fetus. The birth weight of the fetus must be at least 1,000 grams or have a gestational age of at least 28 weeks. If the fetus weight

is below 1,000 grams, the operation is called a Hysterotomy (Khunlerdkit, 1992; Chatuchinda, 1988).

Cesarean Section Indications

A decision for a cesarean section can be either planned or unplanned. Planned cesareans include those where cesarean is elected and scheduled in advance. In this case, the procedure is decided upon one to two weeks before the operation, and includes cases where it is determined that the mother will not be able to give birth naturally. Definite indications include cephalo-pelvic disproportion, placenta previa, multipregnancy, and other observations of the attending physician. Unplanned cesareans include cases where there is a necessity for an immediate delivery where the possible safety of the mother and/or the child is a consideration. Indications include cord compression, cephalo-pelvic disproportion causing lack of progress of labor, and fetal distress (Doris, 1989: 422).

Advantages and Disadvantages of Cesarean Section

Performing a cesarean section has both advantages and disadvantages (Wathisathokkit, 2000). These are described below.

Advantages of Cesarean Section

There are a number of advantages with a cesarean birth:

1. Saving the life of the fetus while in the uterus. This could become necessary any time near the scheduled birth date due to, e.g., abruptio placenta or degradation of the placenta, cord compression or fetal apnea due to unknown causes.

2. Reducing risk to the mother due to pregnancy induce hypertension , diabetes mellitus, or embolism or other accident occurring close to the time of birth or during the birth process.

3. Reducing injury to the cranium and the body of the fetus.

4. Precluding injury or tearing of the vagina, uterus, or bladder or the intestine which could occur in the case of a prolonged natural birth and could result in stretching of the vagina, urinary incontinence, or painful intercourse.

5. Precluding extended periods of painful labor.

6. Preventing introduction of infections, some of which could have been identified before and some of which could be hidden such as virus (including hepatitis, herpes, condyloma, AIDS), bacteria, and fungus in the vagina.

7. Allowing scheduling of the date and time of delivery, so all individuals concerned can be prepared physically and mentally, avoiding the need to wait and worry about when the birth will occur.

Disadvantages of Cesarean Section

Disadvantages of cesarean section include the following:

1. Risk of maternal mortality four to seven times greater than with vaginal delivery.

2. Post-partum pain greater than with vaginal delivery.

3. Incidence of ectopic pregnancy and placenta previa increased by approximately one percent (Barros et al., 1991).

4. Cost of a cesarean is more than twice that of a vaginal birth.

[The Childbirth Organization (1989) surveyed the costs in the United States and found that the cost of a cesarean averaged \$7,186 versus \$4,334 for a vaginal birth. If the

rate of cesarean births were reduced from 17% to the 11.9% of Finland, the cost of medical care in the U.S. would be reduced by \$19 million per year.]

5. After a cesarean birth, the total number of addition children cannot exceed two.

6. Performing a cesarean too early in the gestational process could result in a premature infant.

7. Health risks increase with each successive cesarean procedure.

Even though performing a cesarean section can help save the mother and child, there are other potential complications which could occur, some major, some minor, depending on an number of factors including the general heath of the mother, the experience level of the attending physician and the anesthesiologist and the cleanliness of the operating room. These complications can be divided into immediate and post-operative complications (Phaosawat, 1997).

1. Immediate complications arising during the operation:

a. Tearing a major artery resulting in serious blood loss. This is often found in cases where the mother has had prolonged labor pains to the point that the uterus becomes thinned. In some cases, a hysterectomy must be performed.

b. Injury to the infant in the case of a large fetus or a transverse presentation.

c. Injury to the urinary bladder or the colon.

d. Complications resulting from the anesthesia.

2. Post-operative complications

a. Distended stomach.

- b. Infection in the abdomen or the uterus of the mother.
- c. Infection of the incision or the bladder.
- d. Uterine bleeding or failure of the uterus to contract.
- e. Respiratory tract infection.
- f. Visible scarring of the abdomen.

Factors Influencing Increasing Rates of Cesarean Section

The rapid increase in the cesarean section rate in many countries has been of concern to both the medical and lay communities. A review of the literature suggests that the reasons for this increase are complex and reflect a combination of a number of changes that have occurred primarily during the past two decades. Many factors have been proposed as contributors to the increase. Issues identified during this review are classified into four major categories (Berga, 1997):

1. Maternal and infant risk factors
2. Medical care provider
3. Practice environment
4. Clinical practices

1. Maternal and Infant Risk Factors

Maternal and infant factors correlated with an increase the cesarean section rate include maternal age, socioeconomic status, race and ethnicity, maternal height, maternal weight and weight gain during pregnancy, infant birth weight, prediction from anthropometric characteristics, and sex of infant. The presence of a multiple pregnancy and conception after treatment for infertility are also associated with higher rates of cesarean section.

1.1 Maternal age. Maternal age of over 35 years has been consistently associated with approximately a two-fold increase in the incidence of cesarean delivery among both nulliparous and multiparous women due to the increased health risks associated with giving birth at an older age. Among the risks are that older mothers are more likely to have chronic medical conditions and pregnancy complications that are associated with an increased incidence of cesarean delivery. In addition, existing data suggest that older women tend to have longer labors with more disorders of arrest and less responsiveness to treatment with oxytocin. However, the literature also provides support for the theory that physician attitudes toward pregnancy in older women may increase the rate of cesarean delivery, particularly in the case of older nulliparous women for whom this may be their only pregnancy (Adashek et al., 1993; Charoenphanich, 1988; Edge & Laros, 1993; Gordon et al., 1991; Kolkitkowitz, 1995; Laiwaechwithaya, 2000; Peipert & Brecken, 1993; Prysak, Lorenz & Kisly, 1995).

1.2 Socioeconomic status. Few studies have directly examined the association of socioeconomic status with cesarean delivery rates. Two studies, both using California birth certificate data, found lower crude rates of cesarean delivery among women of lower socioeconomic status as defined by census tract of residence (Gould, Davey & Stafford, 1989; Braveman et al., 1995). Suggested explanations for this finding include differences in insurance coverage, site of care (public vs. private hospitals), provider decision making processes, and patient attitudes (Braveman et al., 1995).

1.3 Race and ethnicity. Crude rates of cesarean section for black women have been reported to be similar to or slightly lower than those for white

women (Braveman et al., 1995; Gonld, Davey & Stafford, 1989). Overall cesarean rates have been consistently noted to be lower among Hispanic and Asian women (Stafford, Sullivan & Gardner, 1993).

1.4 Maternal height. Studies from a variety of countries and time periods have consistently demonstrated that cesarean section is performed much more frequently among women of short stature ≤ 1.50 m tall. Sokal et al (1991) stated that women less than 155 cm in height were 4.9 times more likely to have a cesarean section. In general, the shortest group of women in each population were found to be 1.3 to 3.2 times as likely to require a cesarean section (Frame et al., 1985; Mahmood et al., 1988).

1.5 Maternal weight and weight gain. Most studies have noted a significant association of maternal obesity with increased risk of cesarean delivery. It has also been suggested that the increase of cesarean section in the presence of obesity may result from problems associated with an increase in pelvic soft tissue that narrows the birth canal (Crane et al., 1997; Garbaciak et al,1985; Johnson et al., 1992; Perlow et al., 1992).

1.6 Infant birth weight. Given that successful vaginal delivery requires the fetus to pass through the bony maternal pelvis, it is not surprising that a number of studies have reported a higher rate of cesarean delivery among women with heavier fetuses. Most studies examining this issue specifically examined the rate of cesarean section for mothers with the largest infants, those weighing at least 4000 to 5000 gm., compared with the rate among women with babies of lower weight (Modanlou et al., 1980; Farks et al., 1978).

1.7 Prediction from anthropometric characteristics. It has been difficult to predict which pregnancies will end in cesarean section for dystocia. Anthropometric factors that have been considered in attempts to predict dystocia include maternal size (height and shoe size) and fetal weight. X-ray pelvimetry has also been used in an attempt to predict the presence of cephalopelvic disproportion that will result in the need for cesarean delivery.

1.8 Sex of infant. An increased risk of cesarean section among women with singleton pregnancies carrying male fetuses has been reported in several studies. A 40% increase in cesarean deliveries among women with male fetuses was noted in two studies that included only nulliparous women, whereas a smaller increase 17% was noted when both nulliparous and multiparous women were included (Lieberman et al., 1997). The reason for the increase in cesarean section is not clear, but could be explained on the basis of the larger size of male fetuses.

1.9 Multiple pregnancy. In 1990 the cesarean section rate in the United States was 54.7% for twins and more than 85% for triplets and higher order births compared with 21% for singleton births (Taffel, 1992). Increases in the number of multiple births were related to the increased average age of childbearing women and, more important, to the increased number of pregnancies resulting from infertility treatment. There was also an increase in the cesarean section rate for singleton pregnancies among those treated for infertility (Alsalili et al., 1995; Rufat et al., 1994).

2. Medical Care Provider

Substantial variation exists in cesarean delivery rates among providers caring for similar populations at the same institution. Such variation include:

2.1 Provider training. Studies in the literature have noted substantial variation in the cesarean delivery rates of different providers both across specialties (obstetricians, family practitioners, and certified nurse midwives) and within groups of similarly trained providers. In those studies, attempts have been made to identify which provider characteristics are associated with lower rates of cesarean delivery. A lower rate of cesarean sections in patients treated by certified nurse midwives has been consistently noted in retrospective studies. Differences in overall cesarean section rates between 2% and 5% have generally been reported, representing a relative risk for cesarean delivery from 1.3 to 2.1 for physician compared with midwife patients (Chambliss et al., 1992; Hueston & Rudy, 1993).

2.2 Interprovider variability. It have been also found that physician age (which is closely related to years of practice), gender, practice setting (solo vs. group), and individual practice styles are a predictor of cesarean section rate. It has also been suggested that differences in rates could relate to the provider's reaction to the current medico-legal climate or that individual's experience with litigation (Demott & Sandmire, 1990; Goyert et al., 1989).

2.3 Provider convenience. Several studies have investigated whether convenience to the physician influences the rate of cesarean delivery, particularly for nonemergent indications. (Evans et al., 1984; Fraser et al., 1987). Phillips, et al., (1982) compared the number of cesarean sections performed on weekends and weekdays, reasoning that if convenience were a factor, a larger than expected number of cesarean deliveries for dystocia would be performed on weekends (to shorten labor and expand provider leisure time). No significant correlation was found between weekday and weekend births.

3. Medical Practice Environment

The impact of medical practice environment including such factors as insurance coverage, patient care services, medico-legal concerns, and hospital type are discussed as follows:

3.1 Insurance coverage. Studies examining variation in the rate of cesarean delivery according to type of maternal insurance coverage have found lower rates among women receiving Medicaid than among women with private insurance. The reason for the lower rate of cesarean section among women receiving public assistance is unclear. It has been suggested that financial incentives are a contributor to this differential (Braveman et al., 1995).

3.2 Patient care services. A lower rate of cesarean delivery among patients treated in clinics compared with private patients was noted. It was concluded that the difference in cesarean section rate was mainly a function of differences in care of patients in different diagnostic categories such as dystocia, fetal distress, or malpresentation rather than a function of differences in the frequency with which specific conditions were diagnosed (Haynes et al., 1986; Jones, 1976).

3.3 Medico-legal concerns. The effect of concerns regarding professional liability is difficult to study because of the many potentially confounding factors that must be considered. The most recent studies suggest, however, that concerns regarding professional liability do not contribute substantially to an increase in cesarean section for low-risk women but may be a factor in higher risk populations (Baldwin et al., 1975).

3.4 Hospital type. Hospital ownership has been noted to be a predictor of cesarean delivery rates. Proprietary hospitals have been repeatedly

reported as having the highest cesarean delivery rates, whereas teaching hospitals are frequently reported as having lower than average rates. One explanation advanced for the lower cesarean rate in teaching institutions is that teaching hospitals may have improved compliance with clinical management protocols for common indications as a result of their training mission (Braveman et al., 1995; Newton & Higgins, 1989; Oleke et al., 1991; Petitti, 1985; William & Chen, 1983). In addition, it has been suggested that technological sophistication, often thought of as contributing to increases in the rate of cesarean delivery, could rather result in a lower cesarean rate because of improved identification and treatment of problems during labor (Oleke et al., 1991).

4. Clinical Practice

A number of clinical practices have been found to be associated with an increased risk of cesarean section including the following:

4.1 Electronic fetal monitoring. The widespread use of electronic fetal monitoring has been repeatedly cited as an important factor contributing to increase in cesarean delivery rates. In randomized studies, continuous electronic fetal monitoring was found to be associated with a 1 1/2 to three fold increase in risk of cesarean delivery (Kelso et al., 1978; Vintzileos et al., 1993).

4.2 Induction of labor. The results of nonrandomized studies have suggested that induction of labor may be associated with an increased risk of cesarean delivery. It is important to consider the specific indications for which the inductions are performed. The indications for inductions are postdate pregnancy, and premature rupture of the membranes (Bergsjö, Bakketeig & Eikhom, 1982; Dyson, Miller & Armstrong, 1987; Macer, Macer & Chan, 1992; Smith et al., 1984).

4.3 Active management of labor. Active management of labor has been suggested as a method of labor management that could be implemented to safely lower cesarean delivery rates. Active management is a standardized method of labor management consisting of four main components: (1) standardized criteria for diagnosis of labor (painful uterine contractions accompanied by bloody show, rupture of membranes, or full cervical effacement), (2) standardized methods of labor management including early rupture of the membranes and careful monitoring of progress with a high dose oxytocin regimen in the absence of expected progress, (3) one-to-one nursing care throughout the course of labor, and (4) prenatal education to teach women about the protocol (Boylan et al., 1991; O' Driscoll & Foley, 1983; Turner, Brassil & Gordon, 1988).

4.4 Epidural analgesia. The association of epidural analgesia with increased incidence of cesarean delivery has remained controversial despite the fact that a number of studies have investigated the issue. A small increase in cesarean section rates was reported when an epidural is administered later in labor (Thorp et al., 1989; Thorp et al., 1991).

4.5 Labor support. In the only clinical trial performed in the United States, the cesarean section rate for the well supported group (husband present at the birth, nurse or other official continually present, etc.) was 8% compared with 13% in the control group (Kennell et al., 1991; Sosa et al., 1980).

The above summary of the literature reviewed suggests that the reasons for increasing cesarean section are complex and reflect a combination of a number of changes that occurred during this time period. Changes include women beginning childbearing at an older age, the advent of assisted reproductive technologies such as

in vitro fertilization. There was also an increase in the percent of women who were overweight, allowable weight gain during pregnancy was liberalized which together resulted in an increased mean birth weight. In addition, a number of practice patterns also changed. The rate of cesarean section in the presence of a breech presentation increased approximately sevenfold. There was an increase in the use of electronic fetal monitoring and epidural analgesia. In addition, the use of forceps decreased. The increasing primary cesarean section rate also increased the pool of women with previous cesarean deliveries, fueling a rise in the number of women with repeat cesarean delivery despite an increasing rate of vaginal birth after cesarean (Berga, 1997). Despite the relative safety of cesarean deliveries, they are associated with a higher rate of maternal morbidity and mortality, infant morbidity, and increased health care costs. Specific ramifications of cesarean section versus vaginal delivery are explained in the next section.

Normal Labor

Labor refers to the series of processes by which the product of conception is expelled from the uterus through the birth canal (Reeder, Martin, & Koniak-Griffin, 1997).

Most of vaginal deliveries are normal labor. Abnormal deliveries include those where forceps or vacuum are used for extraction. Normal labors are less harmful to the fetus and the mother.

The Characteristics of Normal Labor

1. Full term of pregnancy, i.e., a gestational age up 38 to 42 weeks (40 ± 2 weeks)

2. Vertex presentation and flexion of head
3. Vaginal delivery
4. Duration of delivery less than 24 hours
5. Spontaneous labor
6. No complication during intrapartum period including true labor pain until expulsion of the placenta (Sripichyakan, K., 1994).

Advantages and Disadvantages of Normal Labor

Normal labor has many advantage, but there are some disadvantage as follows (Wathisathokkit, P., 2000):

Advantages of Normal Labor

1. Perceived pride enhancing the mothering role in the labor process in which the male cannot participate.
2. Vaginal birth costs are less than cesarean birth costs.
3. If the perineum is not lacerated, there will rarely be postpartum hemorrhage.
4. Recovery time is shorter, about 6 hours, and the mother can return to work one to two weeks after delivery.
5. The next parity will be smoother.

Disadvantages of Normal Labor

1. Prolonged labor pain. [Waldenstrom (1996) in Sweden stated that nulliparous labor periods averaged 21 hours and multiparous labor periods averaged 15 hours.]

2. Painful labor. More than 70% of nulliparous woman need analgesia and sedative drugs. They also have anxiety regarding unpredictable labor and about sudden accidents which could put the mother and her fetus into a bad situation (Waldenstrom, 1996).

3. Risk for fetal distress related to uterine contraction especially during nearly birth period.

4. Maternal exhaustion, painful intercourse, or stretching of the vagina due to prolonged pushing. Thai women also fear that a loose vagina might encourage the husband to seek a second wife.

5. Uncertainty and uncontrolled labor process, e.g, what time the baby will be born, whether the birth will be easy or difficult, whether the baby will be healthy or require resuscitation.

Given these important positive and negative aspects related to natural versus cesarean birth there are many considerations in making a decision about birth mode.

An overview of the decision making process is provided below:

An Overview of Decision Making

A decision defined as a choice made from two or more alternatives (Robbins & Conlter, 1999). Mallach (2000) proposed that each decision is characterized by a decision statement, a set of alternatives, and a set of decision making criteria. The decision statement implies what they are trying to decide. The alternatives are the possible decisions that can be made. Decision making criteria are the things that one wants to optimize in a decision. Decision making may be defined as the process of

selecting one course of action from among two or more alternatives. Decisions should be evaluated not just by results but also by the process used to make them (Goetsch & Davis, 2000). The purpose of a decision is to solve a problem or seize an opportunity. Decisions can be viewed as either programmed or non-programmed. Programmed decisions involve situations that have occurred often enough that both the circumstances and solutions are predictable. Non-programmed decisions are made in response to situations that have unique circumstances and unpredictable results (Ivancevich & Matteson, 1999).

Decision making process is a logically sequenced series of activities through which decisions are made. These activities include identifying or anticipating the problem, gathering relevant facts, considering alternative solutions, choosing the best alternative, and implementing, monitoring, and adjusting. All approaches to decision making are objective, subjective, or a combination of the two (Goetsch & Davis, 2000). Decision making is the process of identifying problems and opportunities, developing alternative solutions, choosing a preferred alternative, and then implementing it (Holt, 1990). The formal decision making process consists of five steps: identify goals, gather information, identify and evaluate alternatives, decide, and outcome (King, Lembke & Smith, 2001). In making decisions an individual should consider the degree of certainty, the problem of limited resources, and the internal and external environments. In this study, the decision making process focuses on women's decision making regarding cesarean section.

A simple schematic model of decision making would conceive of it in terms of three interacting components: the decision-maker, the task, and the decision context or situation. A decision-maker may be viewed as a stable personality bringing to a

task certain beliefs, pre-dispositions, skills, experiences, and a distinctive cognitive style (Hunt et al., 1989).

Factors Influencing Decision Making

Many environmental factors can influence different types of decisions in various ways. Some of these are: demographic changes, economic trends, the current business philosophy, legal and legislative enactment, social attitudes and practices, educational trends, religious attitudes and changes in public mortality, war and peace developments, scientific and technological developments, political developments, foreign developments, health and medical developments (Easton, 1976). Values, life experience, individual preference, and the individual decision maker's willingness to take risks, all influence decision making (Marquis & Huston, 1998).

Decision making can be influenced by multiple factors which include: personal variables such as perceptions, aptitudes, interests, sex, age, physical strength, and personal history; social and cultural factors, which operate on an impersonal basis, including societal values and other norms, job requirements, and employment opportunities; interpersonal relationships received by the decision maker; and the relevance of the decision maker's reference group (Herr, 1970). Personal influences affecting an individual's decision making can include personal attributes and attitudes, decision making approaches and abilities, timing, scope of vision, prior commitments, and creativity (Plunkett & Attner, 1994).

A number of factors influence the decision making process such as individuals, groups, and society (Greenberg & Baron, 2000). Assael (1995) has

suggested that decision making is influenced by individual characteristics, including decision making styles. In addition, differences in decision making may also arise from differences in decision making style, knowledge, education, locus of control, and any number of other individual differences (Galotti, 1998; Scott & Bruce, 1995). Rackich and others (1985) suggested that many factors influence and shape the manner in which decision making is performed, the style used, and the final outcome or quality of the alternative selected. These include attributes pertaining to the decision maker, the nature of the situation and the environment. To some degree, all the above factors can influence and affect each decision making step beginning with problem identification and continuing through assumptions, identifying tentative alternative solutions, and decision making and implementation (Rakich et al, 1985).

In the area of health services where treatment decisions have been examined, the evidence suggested that many variables influence decisions about treatment: both the characteristics of the presenting patient (Rabinowitz et al., 1995; Schnyder, Klaghofer, & Buddeburg, 1999) and clinician experience (Rabinowitz, Mordechai, & Slyuzberg, 1994) have been shown to have impact on treatment decisions. However, many of the studies in this area have not studied all of these contributing factors, or the process by which clinicians arrive at treatment decisions because of dilemmatic areas (Engleman et al., 1998; Rabinowitz et al., 1995). Moreover most of the research has focused on some of personal characteristics, psychological and sociological factors (Adashek, 1995; Gamble, Health, & Creedy, 2000). There are many aspects of decision maker characteristics. From the review of literature and clinical experience the important decision maker characteristics are decision making style and personal

factors (Assael, 1995; Galotti, 1998; Galotti, Pierce, Reimer & Luckner, 2000; Rakich et al, 1985; Scott & Bruce, 1995).

Whether the decision involves other areas related to daily life or method of delivery, pregnant women have the right to decide many other areas of childbirth (Enkin, 1977). Many decisions can be made easily with minimal deliberation, but pregnant women often have to make difficult decisions during all stages of labor and delivery. More complex decisions require much thought and analysis. Especially for these decisions, using Health Decision Model helps nurse midwife have a clear picture of the pregnant women who have available choices and the way to increasing pregnant women's decision skill as decision makers.

Schwartz and Griffin (1986) developed the Health Decision Model (HDM) which was a revision of the Health Belief Model. The Health Belief Model focuses on the relationships of health behaviors, practices and utilization of health services. The model states that the world of the perceiver is what determines what an individual will and will not do. The model also puts a strong concentration on the individual's current dynamics, believing that prior experience exercises influence only insofar as it is still represented in the individual's present state of affairs (Hochbaum, Leventhal, Kegels, & Rosenstock, 1950).

HDM includes health decisions, health behavior compliance, and health outcomes, including patient preferences and other decision theory constructs. HDM views compliance as the result of a set of general health beliefs, specific health beliefs, and an independent set of patient preferences. These beliefs and preferences are derived from experience and medical knowledge, both of which, in turn, depend on interpersonal, social, and economic factors. Some of the more important variables

and their effects are patient and doctor characteristics, social class, sex and appearance, physician background and beliefs, the doctor-patient relationship, the doctor-patient interaction, patient compliance, patient involvement in decision making, and so on (Schwartz & Griffin, 1986). However, several factors have been omitted from this study. One of the omitted factors is decision making regarding cesarean section which is similar to health decision making and is also subject to specific health beliefs, patient preference, patient characteristic, and socio-demographic factor influences. The specific health beliefs which were added in this research include perceived susceptibility to disease, severity of condition, patient preferences such as benefits and risks, patient characteristics such as decision making style (Assael, 1995), socio-demographic factors such as age, sex, income, education, health insurance (Schwartz & Griffin, 1986).

From a review of literature and clinical experience, there are three factors in decision making regarding cesarean section which need to be to examined: (1) health beliefs which are beliefs derived from HBM and which consist of perceived susceptibility, perceived seriousness, perceived benefits, and perceived barriers, (2) patient decision making style characteristics, and (3) socio-demographic data including the personal factor age, education, occupation, family income, parity, health insurance, home location, and selection of hospital for prenatal care.

The decision makers' perceptions of the problem will determine what data are collected. Decision making style is the individual's characteristic mode of perceiving and responding to decision making tasks (Harren, 1979). Decision making style of decision maker affects the way they will deal with the data and use the decision making process. The personal factors influence how individuals respond to treatment

recommendations in making their decisions. A detailed description of three influencing factors (perceptions of cesarean section, decision making style and personal factors) is provided below.

Perceptions of Cesarean Section

The key question facing researchers of the decision making process regarding cesarean section is how pregnant women gather and use available clinical information such as physical, psychological, social, and financial information. Information is data that have been converted into a usable format that is relevant to the decision making process. Decision makers are receivers of information who base decisions in whole or in part on what they receive (Goetsch & Davis, 2000). To determine the quality of decision, several factors must be considered. The most important factor is what kind of input led to decision. A good decision cannot be made unless complete, factual, relevant, and objective data are available to the decision-maker. The decision-maker must gather and use all the available data. The behavioral characteristics of the decision-makers affect the ways they will deal with the data and use the decision making process. The decision maker's perceptions of the problem will determine what data are collected (Bernhard & Walsh, 1995). All clinical information involves some degree of risk that it might be inaccurate or incomplete. In many cases, the ultimate decision about whether the risks are worth taking will depend on the pregnant women's perceptions. These perceptions in turn, depend on the type of information provided to the pregnant women and the manner in which this

information is presented. The following paragraphs review the theoretical basis of perception, which is then related to decisions regarding birth mode.

Differing philosophical and theoretical views of perception can be found in the literature. Perception or perceiving is a process of interaction with the environment. The individual receives or extracts information about the objects or events encountered, and organizes or interprets the experience to formulate a representation or image of reality (Dember, 1960; Forgas & Melamed, 1966; King, 1981). Perception is an integral part of virtually every aspect of one's active existence, yet perceptions are unique because each individual is unique in such things as the integrity of the nervous system and the level of development (Bartley, 1972). Perception means an impression of something obtained through the sense of the mental product or a sensation (a sensation plus memories of similar sensations and their relationships). Perception is variously described as the basic process in cognitive development (Forgas, 1966), the basic psychological process which responds to the stimuli supported by self-experience, knowledge and memory (Bunting, 1988), and the interpretation of a stimulus and conscious appreciation of it which is the result of activities of cells in the cortex (Roy, 1991). The perception process involves responding to stimuli, and selecting, organizing and interpreting sensory stimuli into a meaningful and coherent picture of the world. Perception places its focus on sensory stimuli. Each person has a unique perceptual field that includes public opinion, justice, value, love, hate, compassion, and other variables (Kozier & Erb, 1988). Consequently, individual perceptions are related to past experiences, concept of self, socioeconomic groups, biological inheritance, and educational background (King, 1981) and are influenced by current interests, needs, and future goals. Human beings

are in a continuous state of active participation in perception. Awareness of past events, values, and needs serve as organizing factors in one's perceptions (King, 1981).

As indicated by the preceding discussion, perception refers to the process through which individuals receive, organize, and interpret information from their environment. In terms of making effective decisions regarding cesarean or vaginal delivery, the pregnant women first obtains information from health care providers and general mass media, and then interprets those data which she has perceived and makes a decision regarding birth method.

Complete and correct information on birth methods, however, is a goal which is often not achieved. Churchill (1997) suggested that pregnant women might have a lack of general understanding about cesarean section. Fear and pain are omnipresent among the pregnant women (Marut & Mercer, 1979). Galotti, Pierce, Reimer, and Luckner (2000) suggested that pregnant women may face many obstacles on their way toward making an informed and autonomous decision about their pregnancy and childbirth. The pregnant woman's choices may be affected not only by the quality and quantity of information on the birth process itself, but also by her understanding of the terms and conditions of her insurance or health plan, her family disposable income level, any pre-existing medical conditions, and her proximity to different health care providers or services.

The HBM stated that the perception of a personal health behavior threat is itself influenced by at least three factors: general health values, which include interest and concern about health; specific health beliefs about vulnerability to a particular health threat; and beliefs about the consequences of the health problem.

The pregnant woman's perceptions are divided into four key dimensions: (1) perceived susceptibility, (2) perceived seriousness, (3) perceived benefits, and (4) perceived barriers related to cesarean section. These four are possibly the most significant factors affecting a woman's decision to have a cesarean. Other psychosocial phenomena related to cesarean decisions have been suggested, e.g., cesarean section trends reflect the increasing tendency to view birth as intrinsically pathological and dysfunctional (Sakala, 1993), that birth requires technological intervention (Gaskin, 1998), or that birth is intrinsically dangerous so elective cesarean section at term is most appropriate (Mank, 1963); however, these ideas are properly regarded as facets of the four key dimensions of the HBM than alternative theories.

1. Perceived Susceptibility of Cesarean Section

There is a wide variation among individuals in their feelings of personal vulnerability or susceptibility. In the case of medically established illness, the dimension of susceptibility has been reformulated to include such questions as estimates of susceptibility, belief in the diagnosis, and susceptibility to illness in general. (Janz & Becker, 1984).

In the case of cesarean section, perceived susceptibility refers to the beliefs, the thoughts, and the feelings of pregnant woman regarding complications and consequences of cesarean section involving in physical risk, psychological risk, social risk and financial risk which affect both herself and her infant. Poothong (1987) reported that perceived susceptibility to pregnancy complications was positively correlated with prenatal booking services. Kitpinyo (1989) found that perceived

susceptibility to pregnancy complications was positively correlated with health promotion behavior. Therefore, pregnant women who believe that post cesarean complication have a high risk of health problem will have appropriate choices of delivery.

2. Perceived Seriousness of Cesarean Section

Perceived seriousness is defined as feelings concerning the seriousness of potential medical and clinical consequences as well as possible social consequences (Janz & Becker, 1984).

Perceived seriousness of cesarean section refers to the beliefs, the thoughts and the feelings of pregnant women regarding the degree of severity of possible complications and consequences of cesarean section to both herself and her infant. Poothong (1987) found that perceived seriousness to pregnancy complications was positively correlated with prenatal booking services. Oopasrivit (1989) reported that perceived seriousness to health problem was positively correlated with self-care behavior of pregnant women. Therefore, if pregnant women perceived that severity of post-cesarean complication could make their infant or themselves long term recovery or die, then they are more likely to have appropriate choices of delivery (vaginal delivery).

3. Perceived Benefits of Cesarean Section

Perceived benefits is defined as personal beliefs regarding the effectiveness of the various actions available in reducing the disease threat (Janz & Becker, 1984).

Perceived benefits of cesarean section refers to the beliefs, the thoughts and feelings of pregnant women regarding cesarean section involving in physical, psychological, and social factors which affect both herself and her infant. Poothong (1987) reported that perceived benefits to prenatal booking was positively correlated with prenatal booking services. Oopasiriwit (1989) found that perceived benefits to self-care behavior was positively correlated with health behavior. Perceived benefits to self-care behavior or health behavior was positively correlated and predictor of pregnant women's selfcare (Jaruwachareewong, 1993; Limtoprasert, 1991; Nirattharadorn, 1996; Suwabhabh, 1994). Therefore, if pregnant women perceived benefits of cesarean section, they are likely to have cesarean section.

4. Perceived Barriers to Cesarean Section

Perceived barriers is defined as the potential negative aspects of a particular health action which may act as impediments to undertaking the recommended behavior. A kind of cost-benefit analysis is thought to occur wherein the individual weighs the action's effectiveness against perceptions that it may be expensive, dangerous, unpleasant, inconvenient, time consuming, and so forth (Janz & Becker, 1984).

Perceived barriers to cesarean section refers to the beliefs, the thoughts and the feelings of pregnant woman involving physical, psychological, social, and financial factors that inhibit the decision to conduct a cesarean section. Jaruwachareewong, (1993) reported that perceived barriers was significantly correlated and to be a predictor variable with pregnancy health promoting behaviors (Nirattharadorn, 1996;

Suwabhabh, 1994). Therefore, pregnant women who perceived barriers of making cesarean section would have appropriate choices of birth mode.

A selection of the various types of perceptions of information related to cesarean section decisions is provided below.

Physical information. Physical information includes the mother's understanding of risk factors for the mother (rate of maternal morbidity and mortality with cesarean section versus vaginal delivery; risks of maternal infection in the uterus or nearby pelvic organs such as the bladder or kidneys; increased blood loss; decreased bowel function resulting in distention, bloating and discomfort; respiratory complications such as pneumonia; longer hospital stays and recovery time with cesarean birth; and reactions to anesthesia or other medications during surgery and risks of additional surgeries, for example, hysterectomy, bladder repair, etc.) and risks for the infant (premature birth, breathing problems, lack of the normal stimulation which occurs during vaginal birth, and fetal injury.) Most women do not have the time or professional knowledge needed to review all relevant literature regarding these medical factors, and therefore must make a decision based on partial information.

Psychological and social information. Psychological factors which mothers might consider include the pain of a cesarean operation versus the pain of natural childbirth, general fear of childbirth, concerns regarding responsibility, control, and involvement in the birthing process, and degree of perception of cesarean as a "high-class delivery" that elevates the social status of women (Oakley, 1983).

Other maternal psychosocial responses include considerations of loss of control over bodily function and treatment, loss of control over the birthing process,

loss of self-esteem, and role conflict, feelings of detachment, indifference, lessened satisfaction, increased fear, and guilt (Mutryn, 1993), poor quality of interaction and bonding with the infant during the initial postpartum period. The cesarean section offers the promise of maintaining “the vaginal tone of a teenager” (frequently promoted in popular books and by hospitals in Latin America). The degree to which these factors are considered by the mother varies with a complex set of psycho-social variables (Klaus & Kennell, 1976; Lipson, 1980; Oakley, 1983; Sargent & Stark, 1987).

Psychological feeling of the father are also a consideration in the decision making process, e.g., concerns that the father would have a sense of isolation, inadequacy, dissatisfaction, stress, loss, grief, anxiety, sadness, fear, fright worry, shock, concern, nervousness, disappointment, guilt, anger, confusion, helplessness, frustration, and role failure due to being blocked from performing the supportive ‘coaching’ role often prepared for in childbirth classes if cesarean were selected (Erb, Mill & Muston, 1983; Fawcett, 1981; May & Sollid, 1984; Sargent & Stark, 1987). An indication of the importance of psychological feelings of the mother is that pregnant women who lack medical indication for cesarean birth have frequently requested this procedure citing the expectation that it involves less pain, greater convenience, or other advantages (Johnson, Elkins, Strong, & Phelan, 1986; McClain, 1990).

Financial information. Because doctors and hospitals nearly always earn much more money from a cesarean section than from a vaginal delivery (Wagner, 1994), they may tend to promote this procedure. Hospitals also tend to promote “high tech” births in order to make use of new and expensive equipment (Wagner, 1998).

On the other hand, financial costs associated with the cesarean delivery which are borne by the mother are of great concern, and not without reason: for the U.S.A. a vaginal delivery costs \$6,000 while a cesarean section costs \$10,000 (Keeler, 1996). In Thailand the fee of cesarean section and normal delivery at the government hospital are about 5,293 and 1,693 baht, respectively, and at the private hospital about 23,403 and 11,664 baht, respectively (\$135, \$42, \$586, \$292, respectively). (Tangchareansathein, 1996).

Perceptions regarding cesarean section are rarely studied. The existing research in the medical area on perceptions focuses primarily on perceived health risk behaviors, e.g., smoking, control of physical hazards through activities such as exercise, and control diseases such as cholesterol and diabetes (Nirattharadorn, 1996; Oopasiriwit, 1988; Tungchareon, 1991). Previous studies of cesarean section focus primarily on the actual, rather than perceived, benefits and risks of cesarean section (Shearer, 1993). Individuals vary greatly in terms of the four categories of perceptions described above, e.g., what information (or mis-information) the mother receives. In addition, different individuals organize their perceptions of reality in a distinctive if not unique manner. With the diverse treatment options, these differences can readily moderate the ways in which pregnant women make decisions regarding birth mode. Different individuals, for example vary in terms of how much importance they attach to cesarean section-related benefits, the style of health care service they prefer (or can afford), their need for interpersonal contact and interaction with the care provider, and their pain tolerance and acceptance of the childbirth process. While some women are independent thinkers and decision-makers, others try to please as many constituents as possible in making their decisions. Thus, a decision regarding

birth modes can be influenced by not only the mother's perception of cesarean section, but also the perceptions of individuals that will be affected. The following is decision making style.

Decision Making Style

The individual differences in decision making are called the decision making style. Decision making style has been defined as "habitual patterns individuals used in decision-making" (Driver, 1979). It is the individual's characteristic mode of perceiving and responding to decision making tasks (Harren, 1979). Driver, Brousseau, and Hunsaker (1990) posited out that decision making style is defined by the amount of information gathered and the number of alternatives considered when making a decision, although others suggest that it refers to differences in the way individuals make sense of the data they gather (Hunt, Krzytofiak, Meindl, & Yousry, 1989). Driver (1979) and Driver et al. (1990) proposed that decision making style is a learned habit and that the key differences among styles involve the amount of information considered during a decision and the number of alternatives identified when reaching decisions. Decision making style refers to the manner in which decision-makers think and react to problems, the way they perceive, their cognitive response, and their values and beliefs, which vary from individual to individual and from situation to situation (Turban, 1990). In summary, decision making style can be defined as the learned, habitual response pattern exhibited by an individual when confronted with a decision situation.

There are two aspects of decision making which appear to provide the greatest power to describe the key differences in decision making style: 1) Information use – the amount of information actually considered in making a decision, and 2) Focus – the number of alternatives identified when reaching decisions (Driver, 1990).

The first aspect, information use, can be divided into satisficers and maximizers. The satisficer pattern describes a range of styles in which people use only enough information to get one or two “good enough” solutions to a situation. Satisficers tend to limit their information use to information that contributes most rapidly to their understanding of the problem. The maximizers, on the other hand want to get all relevant information before making a solution. Maximizers typically go on using information until they are sure that there really is no new information available that could give them any new insights into a problem. Typically, they remain open to any information that could add further to their understanding of a situation. Most people’s information use habits typically fit one of these two patterns in a greater or lesser degree, most of the time. People can shift patterns as the situation changes. No one style is best, because each situation involves many factors, e.g., Is there time pressure? Is the decision critical? Is the information complicated?

The second aspect of decision making style is focus. When faced with a problem to be solved some people use information to come up with one solution, one course of action for dealing with the problem. Others see information about the problem as leading to a variety of solutions and different alternatives for handling the problem. There are two patterns of focusing on a situation: the unifocus pattern, which uses information to produce only one definite course of action, and the multifocus pattern, which uses information to come up with many alternatives.

Contrary to what the unifocus person may suspect, the multifocus pattern is not one of making no decisions. The multifocus person often tries to put a variety of courses of action into motion at once.

A number of decision making researchers focus on the manner in which individuals gather and process information. For example, McKenney and Keen(1974) suggested that individuals bring habit and strategic modes of thinking to bear on the tasks of organizing information in their environments and processing information. In the information gathering stage of decision making, individuals either rely on concepts and previously established cognitive categorizations to filter data or perception, or else focus on the details of the stimulus itself, independent of their precepts or reception. In the information processing stage, decision makers either structure the problem in terms of a method likely to lead to a solution or system, use a strategy of iterative solution testing, or else use trial and error or intuition.

A number of decision making style only focus on career decision making style, consumer decision making style, or administer decision making style (Bowman, 1992; Jessie & Jing, 1997; Scott & Bruce, 1995; Westcot, 1991). Scott and Bruce (1995) proposed another model of career decision making style which identifies five styles: rational, intuitive, dependent, avoidant, and spontaneous.

Using the above described theoretical decision making framework, the decision making style of pregnant women can be explored. In this study, the following definitions of decision making style will be used in the study:

1. Rational Decision Making Style

Rational decision making style is characterized by the ability to perceive, understand, and anticipate the consequences of previous decisions upon later decisions. This style requires the use of an expanded time perspective in which several sequential decisions are seen as forming a means-to-an-end chain. Rational decision makers anticipate and prepare for future decisions by seeking out information regarding the anticipated situation. Rational deciders accept responsibility for their decisions. They systematically gather and evaluate information about the decision situation in a logical, deliberate, and objective manner. Pregnant women who employ rational decision making will attempt to gather information on available choices and will make what they feel is an informed decision.

2. Intuitive Decision Making Style

Intuitive decision making style is characterized by a lack of anticipation of future events, little information-seeking behavior, and little or no logical weighing of decision-related factors. Consideration of present emotional factors, impulse, use of fantasy, and emotional self-awareness, serves as the basis for intuitive decision making. Commitment to a course of action is quickly reached, based on a feeling of internal "rightness". Like the rational deciders, the intuitive decision maker also accepts responsibility for decision making. Pregnant women who follow this style will confidently make their own decisions regarding birth method without having followed a rigorous course of explicitly evaluating options.

3. Dependent Decision Making Style

Dependent decision making style is characterized by a denial of responsibility for choice on the part of the decider, and a projection of that responsibility to external events or other individuals. The dependent decision maker is compliant, passive, and heavily influenced by the desires and expectations of others. Dependent deciders have a high need for social approval, and often perceive the environment as offering a limited number of options. This style often results in a lack of fulfillment or personal satisfaction for the dependent decision maker. Few people rely on exclusive use of one style across all situations. Women in this category will blindly follow the advice of their doctor, mother or other authority figure.

4. Avoidant Decision Making Style

Avoidant decision making style is characterized by attempts to avoid decision making. A pregnant woman who uses this style of decision making will generally not seek pre-natal care until the birth is imminent, and will not make a decision regarding birth mode.

5. Spontaneous Decision Making Style

Spontaneous decision making style is characterized by growing naturally without being planned or tended. A pregnant woman with this style will make a last minute decision regarding birth mode, with little or no consultation with attending physicians.

From the review of literature, it was found that decision making behavior only focuses on managerial behavior. Chantachot (1988) reported that head nurses who had high scores for confidence, creativity, flexibility, judgement and reasoning also had high levels of decision making ability. Serekajornkicharoen (1993) studied factors affecting decision-making ability of chiefs of health centers, and reported that chiefs of health centers have good decision making. Research on decision making style of pregnant women is relatively new, but understanding such stylistic differences clearly is a key factor in understanding the decision making process regarding cesarean section. Coupled with their interpersonal skills, their personalities lead them to approach decisions regarding modes of delivery using different decision making style.

A number of other factors also have an interactive impact with decision making style. For example, even those who employ the rational decision making method do not avoid all pitfalls: some women choose cesarean section as a means of avoiding the “biblical sentence to a painful childbirth” due to incomplete or misinformation. Thus by choosing a cesarean section, she exchanges 12 hours of labor pain for severe days of postoperative pain and debility and a longer recovery period with weeks or even months of pain. The dependent decision making style individual accepts the male dominated obstetric model, and gives up any chance to control her own body and make true choices. It should be noted, however, that it has been clearly established in law that an individual has the right to refuse medical treatment but it does not follow that the converse is also true—that an individual has the right to demand treatment which is not medically indicated. If a woman asks for a cesarean section for which the doctor can find no medical indication and which, to the best of

the doctor's knowledge, carries risks for the women and her baby which outweigh any possible benefit, the doctor has the right, perhaps even the duty, to refuse.

Pregnancy is not an illness. Most women do not need medical or surgical treatment during pregnancy, delivery and the puerperium. Vaginal birth is the normal consequence of being pregnant, a state for which the woman and her sexual partner must take responsibility, not the medical profession (Wagner, 1995). A pregnant woman consenting to any medical procedure must be given full, unbiased information on what is known about the chances that the procedure will make things better and efficient or worse and risky. While this principal of informed choice is gaining acceptance, the pregnant woman must have accurate information. Information readily available to the physician may be biased, generated by commercial firms interested in profit or by professional organizations wishing to promote more doctor-friendly data on procedures (Wagner & Marsden, 2000). For example, many obstetric organizations promote hospital birth, suppressing evidence on the safety of planned home birth. Professionals are also turning to the internet, where medical chat lines are full of misinformation on efficacy and risks with no control of validity. Some believe professionals' ignorance to be a form of misconduct (Goodstein, 1996). Unless professionals can provide correct information, pregnant women will not be able to make truly informed choices about their maternity care. The last factor is personal factors related to birth mode decision.

Personal Factors Related to Selection of Cesarean Section

In addition to decision making style described above, personal factors including age, education, occupation, family income, parity, health insurance, home location, and selection of hospital for prenatal care available can also impact on birth mode selection. Each of these types of personal factors is addressed below.

1. Age

Age is an indicator of ability to deal with the environment, of mental maturity and of decision making ability. People of different ages will respond differently to problems (Kucita, 1986). The maternal physical, mental, emotional and social maturity including decision making skills of women age 20 to 30 make this the optimal age for safe, healthy pregnancy (Theintawon, 1995). In women below the age of 20, the organs involved in pregnancy and delivery are immature, so there are often complications in the delivery process including premature labor, congenital abnormality, and pregnancy induce hypertension (Thongsong, 1993). In younger women there is also an increased incidence of the need to terminate a pregnancy with a cesarean operation in order to save the mother and child, (Lumpikanon, 1999).

In older pregnant women, those over 30 years, cesarean section is often indicated because of soft tissue dystocia resulting in prolonged contraction of uterus (Charoenphanich, 1995).. As the age of the mother increases beyond 30, the incidence of placenta previa, a medical indication of cesarean, rises, e.g., from 1 in 100 for women age 35 to 1 in 50 for women over 40. That rate is significantly higher than the 1 in 300 found with women age 20 to 29 (Taekaichana, 1995).

The study conducted by Chaiprasit at Rajvithee Hospital during 1984-1991 found that one of the indications for cesarean section was elderly primigravida which accounted for 864 cases during the time of the research (Chaiprasit, 1993). The study conducted by Wichaiditsa at one province in the Southern region of Thailand found that most mothers who chose cesarean section were older than those who delivered naturally. About 55 percent of mothers in the sample group who chose cesarean section were aged 26 to 35 years, while most of mothers (48%) who gave birth naturally were aged 15 to 25 years. Although no statistically significant correlation was found between the age of mother and cesarean section incidence in this study (Wichaiditsa, 1998), studies conducted in Thailand by Chanytong (1985), Laohatapongpuri (1996), and Pothong (2002), all found a statistically significant correlation between age and incidence of cesarean section. Studies in different areas of the U.S. also found significant correlation, e.g., Clark & Taffel (1995), Guihard & Blondel (2001), Mor-Yosef, et al. (1990), Paul & Miller (1995), Peipert & Brecken (1993), Tuning & Wojtowycz (1992), and Woolbright (1996). Puangmali (1998), working in Thailand, also found a statistically significant correlation between age and mother's valuation of cesarean section. A larger fraction of older pregnant women (30 years and over) valued cesarean birth higher than natural birth (36.1%) versus 25 to 29 years (29.3%), 20 to 24 (18.5%) and under 20 years (10%).

2. Educational Level

Education levels reflect individual's background of knowledge and skills. Educated people can search for health related information from a number of sources. Ability to comprehend instruction varies with educational levels. Higher educated

Ability to comprehend instruction varies with educational levels. Higher educated people have higher abilities to seek for information than those who have a lower formal education level (Muhlenkamp & Dayles, 1986). Clients who have a high education level expect high levels of health service (French, 1985). Tunsuphom (1990) has conducted a study on knowledge and opinion on delivery methods of nulliparous women in Ramathibodee Hospital and found that 69, 52 and 29 percent of cesarean women were educated at the bachelor's degree, diploma and secondary school levels, respectively. Similarly, a study conducted by Puangmali (1998) also found that individuals with only a primary level education or lower valued the cesarean section option lower than more highly educated individuals ($p < .05$). Wichaiditsa (1998), who conducted a post-partum study on social and cultural factors related to elective cesarean section in a province in the south of Thailand, found that education level was correlated to the imputed value of cesarean section ($p < .05$). Likewise, a study conducted by Pothong (2002) also found that education at the level of bachelor's degree or higher was correlated to elective cesarean section with significance of .05. Other studies, e.g., (Laohatapongpuri, 1993; Suwaree, 1998), found a similar correlation. A similar correlation was found in the U.S.: Woolbright (1996), who conducted a study in Alabama in 1991-1993, divided years of education into three groups: less than 12 years, 12 years, and over 12 years, also found that the number of years of education was positively correlated to the incidence factor of cesarean section. One study, however, by Guihard and Blondel (2001) found no statistically significant correlation between cesarean section selection and education level.

3. Occupation

An individual's occupation is important not only for the support it provides for economic needs but also for the other types of needs it meets, e.g., social, mental and health service needs. Pregnant women in different occupations have different lifestyles which have an impact on their decision regarding birth mode, e.g., the relative importance placed on convenience, the amount of time lost from their job, etc.

According to Pothong (2002), found that mothers whose occupation were trader or business operator had higher elective cesarean section than the mother whose occupation were agriculture or employees (OR = 4.19, 95%CI = 1.57 - 15.84). Similarly, government officials or company employees had higher cesarean section rate than agriculture or laborers (OR = 5.18, 95%CI = 2.45 - 11.05). Likewise, Wichaiditsa (1998), found that cesarean mothers who were government/state enterprise official, company employees (38.1%), trading/self-employed (20%), employee (7%), agriculture (15%), housewife (20%). Occupation was related to the elective cesarean section ($p < .05$). Similarly, Laohatapongpuri (1996) found in a study of clinical and social factors of mothers delivering by cesarean section conducted at Chulalongkorn University in 1996 that the cesarean section rate was higher if the women or their husbands were company employees or government / state enterprise officials than when they had other occupations. The study on value of pregnant women conducted by Puangmali (1998) among 394 pregnant women at Siriraj Hospital found that employees (49.7%) rated cesarean section as having the highest imputed value, followed by housewives (32.2%), traders, self-employed (10.9%) and government / state enterprise officials (7.2%). Fawcett et al. (1992) also studied the perception of pregnant women regarding cesarean section versus vaginal

birth and found that of 113 individuals who planned for cesarean, 37 percent were housewives, 36 percent were professionals, 22 percent were cashiers / clerks, and 5 percent had other occupations.

4. Family Income

Income affects health priorities of families including accessibility of health-care services and materials as well as propensity to follow through with medical recommend behavior. There are also economic considerations related to employment in that some occupations reimburse health care costs, while others do not (Sunthorntada & Tongthai, 1996). Income is also an indicator of socio-economic status, career and education. The data suggested that more cesarean section were performed on women of high socioeconomic status (Mutryn, 1993). Wichaiditsa . (1998) also found that the family income was related to elective cesarean section ($p < .05$). Similarly, Laohatongpuri (1996) found that in Chulalongkorn Hospital cesarean women had higher monthly incomes than those who gave birth normally. Pothong (2002) found that monthly income was significantly positively correlated to the elective cesarean section. Puangmali (1998) found that high incomes were correlated with high imputed value of cesarean section.

5. Parity

Data analyzed by Goodrick and Salanick (1996) suggest that cesarean section rate is higher in primigravidarum because of the perception that their babies are premium babies which should receive the very best. Laohatongpuri (1996) and Wichaiditsa (1998) found that mothers having their first baby had higher cesarean

section rates than second and subsequent births. Similarly, Wilkinson et al (1998) found that women having their first baby had a section rate of 18.2%. Those having previous cesarean section had a section rate with subsequent births of 56.9%, while the rate for those having no previous history of previous cesarean section was 6.9%.

6. Health Insurance

Health insurance was related to cesarean section due to differences in physician and hospital financial incentives including types of health insurance. Private insurance benefits are generally significantly higher than those provided by government social security and health programs. According to Clark & Taffel the rate of cesarean section in the U.S. from 1988 and 1993 for pregnant women with private health insurance was higher than for those who were supported by public insurance programs or who had no insurance (Clark & Taffel, 1993). Likewise, a study, by Gregory, Korst and Platt (2001) found that the pregnant women with private health insurance had higher cesarean section rates than those who were received only government insurance. Similar results were found in a study by Murray & Pradenas (1997) on cesarean section in Chile during 1986-1994 which found that pregnant women with private health insurance had higher cesarean section rates than those who were supported by the national insurance funds.

7. Home Location

According to Sakala (1993) stated that the pregnant women who live in urban areas had a higher cesarean section rate than those in rural areas. This finding is

likely due, at least in part, to the greater availability of medical services in urban areas.

8. Selection of Hospital for Prenatal Care

Although not technically a personal factor, there are differences in care services provided by different hospitals which affect cesarean rates. Some hospitals provide pregnant women the option of freely selecting the method of delivery. This is especially true in private hospitals where the pregnant women can make decisions with the doctor for scheduling cesarean section (Charoenphanich, 1998). On the other hand, government hospitals have a fixed protocol for selection of and scheduling of cesarean section operations. As would be expected, the rate of cesarean deliveries varies greatly among hospitals. For example, teaching hospitals have a slightly lower cesarean section rate than non-teaching government hospitals (22.1 versus 24.4 percent). There were also large differences in rates based on hospital ownership, ranging from 18.8% in public hospitals to 29.8% in proprietary hospitals (Zdeb & Logrilto, 1989).

Conceptual Framework

The proliferation of cesarean deliveries over the past 20 years has been attributed predominantly to non-obstetric factors, including increased use of birth technology, fear of litigation, financial incentives, physicians' preferences, and a philosophy of medical education and practice that views childbirth as pathology. In addition, some researchers have reported that women are requesting cesarean section

delivery, which is thought partly to account for the high cesarean section rates. An understanding of factors contributing to predictors of cesarean section rates is important to enable the implementation of safe and successful strategies for reduction of incidence of the procedure.

Pregnant women have the right to decide many other areas of daily life including decisions involving other areas related to method of delivery (Enkin, 1977). Schwartz and Griffin (1986) proposed the Health Decision Model (HDM). HDM consists of health decisions, health behavior compliance, and health outcomes, including patient preferences and other decision theory constructs. Decision making regarding cesarean section is related to other health decisions and is also affected by: (1) specific health beliefs and patient preferences relates to perceptions of cesarean section which can be visualized as containing four categories: susceptibility, seriousness, benefits, and barriers, (2) patient characteristics links to decision making style (DMS), is classified by Scott and Bruce (1995) in five categories: rational DMS, intuitive DMS, dependent DMS, avoidant DMS, and spontaneous DMS, and (3) socio-demographic factors includes personal factors such as age, educational level, occupation, family income, parity, health insurance, home location and selection of hospital for prenatal care. Together these three major groups of factors are important indicators which are likely to have a relationship and predictive power with decision making regarding cesarean section. The conceptual framework of this study is represented schematically in Figure 1.

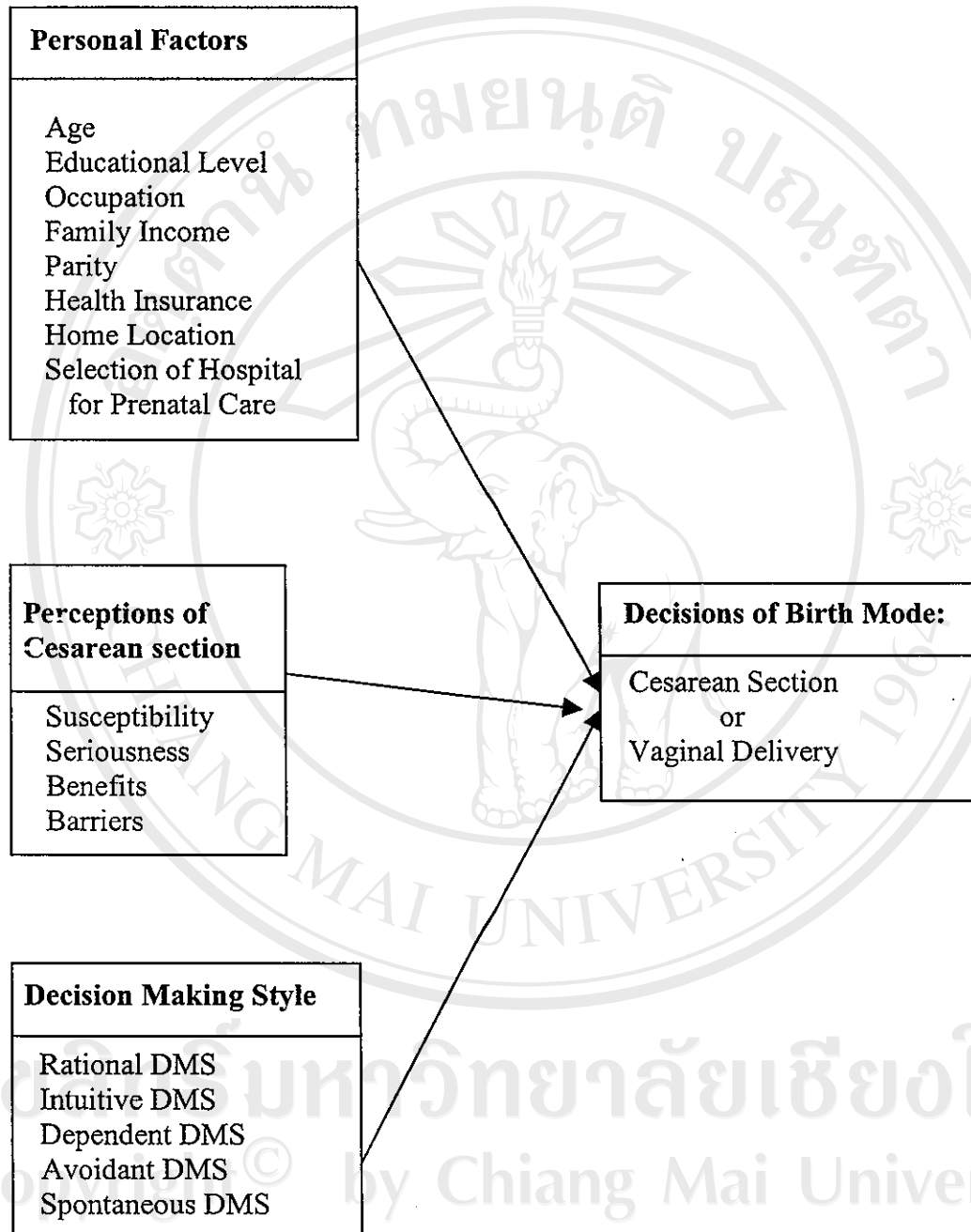


Figure 1. Conceptual Framework of the Decisions of Birth Mode