LAMAZE METHOD OF PREPARATION FOR CHILDBIRTH

A DESCRIPTIVE STUDY

by

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STATEMENT BY AUTHOR

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ABSTRACT

Greater understanding of the advantages and disadvantages of various methods of childbirth preparation is needed to contribute to and to improve patient-centered care. The purpose of this study was to describe the course of labor of eleven women who had attended Lamaze method of preparation for childbirth classes and to describe their comments about their experience. The data were then examined for correlations and described using a modified directional analysis system, mean averages, and card sort.

All of the women in the sample did remain awake for the childbirth. All of the husbands were present in both labor and delivery. The comments of these mothers were more strongly positive in nature than negative. However, negative comments were made which offer constructive criticism.

The study seemed to support the belief that Lamaze preparation of childbirth is beneficial to those mothers who are motivated to take such a course. Several implications for nursing became obvious and as a result several recommendations were made to the health team working in obstetrics.
CHAPTER I

INTRODUCTION

In spite of the advances in the physical aspects of medical science, which have led to a low maternal mortality rate, problems still plague present day obstetrics. Childbirth is a normal process, but through our medical intervention we have imposed the use of analgesia and anesthesia upon the natural development of the maternal-child relationship. In the words of Blake (1954):

When the mother has experienced intense discomfort during labor and has required deep sedation and anesthesia there is more apt to be a lag in the development of feelings of motherliness. The majority of these women awaken uncomfortable, fearful, and unaware of what has happened to them. They have heard no birth cry and have had no opportunity to hold the child. They often feel no love—only a deep sense of loss and emptiness which disturbs them and threatens their peace of mind. Many mothers who have been asleep during delivery react to their babies as though they were changelings and feel remorseful, guilty, inadequate, and afraid as a result. It is difficult for these mothers to feel that their babies belong to them. They become disturbed and attempts to suppress such feelings are inevitable for they are painful and disquieting. Emotional experiences of this nature bring insecurity to the mother-child relationship (p. 73).

Childbirth is a challenging experience requiring considerable effort—physical and mental. The unprepared mother who attempts labor without sedation and anesthesia is likely to experience frustration and pain. Hence the
question arises: how can nurses help prepare mothers for their childbirth?

As a result of years of research, a new method of childbirth preparation has evolved. This method is known as the Lamaze method of antepartal conditioning, and it is gaining increasing attention throughout the world. It differs from other methods in its basis on conditioning theory, the standardization of its teaching techniques, and the employment of constant verbal signals used during the woman's training period. According to the Lamaze interpretation of Pavlovian theory, conditioning can alter habitual or reflex responses to sensory experiences. The application of this theory as it has been used in Lamaze training for childbirth is supposed to minimize those sensations that are subjectively experienced as pain during labor (Horowitz, 1964).

**Statement of the Problem**

This was a descriptive study which examined the behaviors expressed by women who had attended the researcher's classes in the Lamaze method of preparation for childbirth.

The study sought to answer the following questions:

1. What comments do Lamaze-trained mothers make about the childbirth experience during the early postpartum period?
2. What do the medical records show concerning the course of labor and early post-partum periods for these patients?

3. What degree of correlation exists between specific aspects of the course of labor and early post-partum periods, and the kinds of comments about the childbirth experience made by these mothers?

Purposes of the Study

The researcher was hopeful that: (1) the study's findings would constitute a description of the mother's experience using Lamaze that would contribute to the evaluation of this method of ante-partal preparation for childbirth, suggesting whether a return to a more nearly natural type of labor is desirable in some situations as compared to the more common medical approach; and (2) the findings would provide a useful link in maternity nursing's continuing critical examination and scientific exploration of methods of nursing intervention and anticipatory guidance for childbirth.

Limitations

This study was restricted by the following factors:

1. The sample of mothers was small.

2. Mothers included in the study were referred for Lamaze training and therefore use of random sampling
or control group comparison was impossible. The study was therefore a descriptive one.

3. The sample was composed of only English speaking women of the Anglo-middle class.

4. The researcher was both teacher and observer, and therefore more subject to bias than a neutral observer.

5. The participating mothers were aware of the researcher's interest in the Lamaze method (since she was their teacher) and this may have colored their responses.

6. Many variables were in action that the researcher could not control. Nursing approaches used during labor and the nurses' attitudes towards these patients were assumed to influence the mothers. Their physicians' expectations were also an influence on their behavior. The attitude of each of the husbands and his absence or presence during labor was an influence. The mother's conscious and unconscious reasons for wanting to be awake also had their effects.

7. Attention was limited to conscious attitudes expressed verbally, for it was clear that the data would not allow any adequate assessment of deep-seated attitudes.
Theoretical Framework

Global theories are usually not operational but they serve as umbrellas which encompass subordinate theories closer to the empirical data. Examination of these global theories can be fruitful (Ginker, 1956, p. vi). On this concept, the researcher builds her theoretical framework.

Almost everyone is familiar with the story of Pavlov's dogs salivating to a bell which was sounded just before the presentation of meat, and with Skinner's rats pressing levers in complex rhythms to obtain pellets of food. These procedures have been widely copied and adapted to other species, including man, and there is a growing realization of their applicability to a wide range of human behavior. Indeed, many sophisticated forms of conditioning have evolved in the last decade which have led to the current and rapid extension of conditioning methodology into clinical fields (Martin and Levey, 1969, p. 1). Lamaze is only one example. The effectiveness of this method seems to depend to a great extent upon the mother's conditioning herself to relax and breathe appropriately with the stimulus of a contraction. This again depends upon weeks of daily practice and the formation of a true, learned, conditioned response.

It is interesting to note that the principles presumed by its initiators to underlie the Lamaze method are complex and not universally accepted as its actual basis of
operation. In general, Pavlovian theories of physiology give the method its central thrust, especially regarding the management of pain. Labor pain is considered almost entirely "conditioned" in character and, hence, not inevitable. For this reason much pain is considered preventable and is therefore labeled unnecessary (Tanzer, 1968, p. 18).

Under the scope of general systems theory, man is seen comprehensively as a "biological organism, striving as part of his animal, human and physical environment for continuity and for self-fulfillment as an individual" (Ginker, 1956, p. ix). This suggests a number of struggles and pressures from both within and without that have led to the development of the behavioral and medical sciences as we know them. The researcher sees childbirth as one of the numerous struggles that women face in their search for the self-fulfillment. Here, then, is a possible area for application of the theory of the learned conditioned response to make possible the level of behavior in childbirth for which these women seem to be searching.

Applicable also is a sub-theory for living organisms developed by the naturalists Child, Coghill, Herrick, and Lillie: "Organisms search for their goals in a purposeful manner to maintain and regulate life. They also are goal-changing, reaching out beyond need gratification, utility or preservation and thereby become creative and evolving"
(Ginker, 1956, p. ix). The women who seek out these classes seem goal directed and in search of self-fulfillment of the goal. They seek a certain level of behavior in their childbirth. These goals become affected by the values absorbed from the sociocultural system. They are learned or introjected as parts of the ego, superego, and ego ideal. Erickson suggests that "ego identity produces a feeling of appropriateness and satisfaction or even euphoria, whereas ego diffusion is experienced unpleasantly as a disjunction between self and society" (Cumming and Cumming, 1966, p. 20).

The mother's success in adapting to labor and accepting the situation can change the course of labor. The woman who accommodates herself to the situation should speed the labor process. Labor, then, should be less traumatic for her. She should use less medication and be in need of less operative interference (Oxorn and Foots, 1968, p. 493). Such an experience of successful adaptation to labor should increase her ego strength.

Commenting on the work of Hartmann and Erickson, Cumming and Cumming (1966) said, "We can conceive the ego as a product of both biological characteristics and the encounter with emergent problems. As the person adapts to the environment, he modifies it at the same time, partly through spontaneous, creative acts. In doing so, he achieves a certain harmony with the interpersonal and cultural situation" (p. 20).
Cumming and Cumming say of Hartmann's work:

The way the person comes to perform appropriately in a wide variety of situations is usually known as "adaptation." This adaptation not only symbolizes continuity because it is the act of accepting the situation created by past generations of men, but it also contributes to the situation, thus changing the environment, if only imperceptibly. In this sense, adaptation is a two-way process in which the individual reorganizes himself to accommodate to the milieu and at the same time influences that milieu. In this formulation, Hartmann converges upon two other important schools of thinking: the interpersonal school of Sullivan, and the existentialist school with its emphasis upon the effect of the individual's choice upon the environment. The holistic ego thus finds, in adaptation, creative outlets that in turn are reflected in the face of the general culture (p. 18).

Lamaze, when seen as a method built upon the principle of the learned conditioned response, is a tool for women to use to enhance their adaptation to the labor process. If successfully used, the woman should gain ego strength and be more capable of further problem solving. In order to prevent ego diffusion these classes need be taught in a manner that suggests there is no failure, only varying degrees of success.

**Definition of Terms Used**

For the purpose of this study the following definitions of terms were utilized.

**Analgesic**

Analgesic is a medication which relieves pain or causes loss of sensibility to pain.
Anesthesia

Anesthesia refers to partial or complete loss of sensation, with or without loss of consciousness, as the result of administration of a drug or gas. General anesthesia refers to rendering the individual unconscious. Local anesthesia produces insensitivity to pain without loss of consciousness. These anesthetic agents may be used for topical or surface anesthesia, in local infiltration, or to produce nerve block. Locals most commonly used in labor are the pudendal and paracervical. These are nerve block anesthetics secured by placing the drug around the main nerve supplying the area of operation. This will block the conduction of the impulses to the brain. Paracervical anesthesia blocks impulses from the nerve endings in the cervix. Pudendal anesthesia blocks impulses from the pudendal nerves.

Apgar Score

Apgar score is a simple clinical method of determining the condition of the baby one minute after birth. The heart rate, respiratory effort, muscle tone, reflex irritability, and color are each graded 0, 1, or 2. The dead baby would thus have a score of 0 and a completely healthy, vigorous, pink baby would earn a score of 10.
Behavior

Behavior is a manner of behaving or acting, the aggregate of observable responses of the organism in its interrelationships. It is a dynamic action or reaction of a being under specific circumstances.

Conditioned Reflex

Conditioned reflex is a reflex acquired as a result of training, in which the cerebral cortex is an essential part of the neural mechanism. It is any reflex not inborn or inherited. It is a learned reflex.

Course of Labor

Course of labor refers to the conduct of the process by which the fetus is expelled from the uterus. Descriptions of the individual's course of labor in this study are confined to selected aspects dependent upon information available in the record audit.

Depressants

Depressants are the opposite of stimulants. Drugs that decrease cell activity are called depressants. These drugs include those depressing the autonomic nervous system and the central nervous system. In this study the bulk of depressants involved will be either analgesics or hypnotics. The cholinergic blocking agent, atropine, is also included, as is scopolamine which is a cholinergic blocking agent as
well as a central nervous system depressant (Falconer, 1966, p. 56).

Hypnotic

Hypnotic is a medication which produces sleep as contrasted with a sedative which has a quieting effect on the body, or promotes a state of relaxation and rest not necessarily accompanied by sleep. Commonly, the same drugs are hypnotics and sedatives; a small dose of a drug may act as a sedative, while a larger dose of the same drug may act as a hypnotic (Krug and McGuigan, 1955, p. 230). For the convenience of this study, the researcher will refer to these drugs as hypnotics.

Lamaze Method of Childbirth

Lamaze method of childbirth is a method of education for childbirth with the goal of helping mothers to remain awake, aware, and fully participating in their labors. Use of the method is hoped to minimize the mother's need for anesthesia or analgesia. Ability to use the method is acquired through concentrated effort and hard work on the part of the expectant mother and her husband. The method is merely a tool for the mother to use. It is based on two objectives, deconditioning and conditioning. Deconditioning is the removal of fears and misconceptions that the mother may harbor about childbirth. Parents are prepared to meet the experience with knowledge and understanding.
Conditioning is the development of certain conditioned reflexes (breathing techniques and specific behaviors) to the stimulus of the contraction. These reflexes are learned through exercises which are performed daily. This reconditioning of the mothers is done to create a new center of concentration, thereby causing the awareness of pain to become peripheral. Husbands are very important to successful use of the method. They direct the practice at home which requires two persons and they act as coach for their wives while in labor. Postpartum reports show a much higher success in mothers attended by their husbands.

Natural Childbirth

Natural childbirth is a method of delivery based on complete or substantial elimination of sedation in labor and delivery, the conscious participation of the mother during the birth process, and preparatory education during pregnancy (Tanzer, 1968, p. 18). For the purposes of this paper: (1) it does not refer to the Grantly Dick Read method of "Natural Childbirth"; (2) nor does it refer to painless childbirth; and (3) it is not "natural," in the sense that it is a learned and purposeful method not leaving the woman to do what comes "naturally."

Operative Interference

Operative interference is any surgical procedure performed to facilitate the birth process. Specifically
included in this study will be the episiotomy, forceps delivery, and Cesarean section.

Participate Fully

Participate fully refers to purposeful and active participation in the labor on the part of the mother. She cooperates with and to some extent controls her labor by mentally and physically working with it (Blake, 1954, p. 49).

Relaxation

Relaxation refers to the absence of discernable tension either mental or physical.

Satisfaction

Satisfaction is emotional pleasure or sense of well being and in the present context is assumed to accompany giving birth to a child.

Traditional Medical Approach

Traditional medical approach to childbirth commonly includes the use of analgesic and amnesic agents administered during labor. Usually this sedation consists of a combination of meperidine hydrochloride and scopolamine, sometimes with the addition of a barbiturate such as secobarbital or a medication such as promazine hydrochloride to control central nervous system excitation. Typically, the baby emerges while the woman is under a general anesthesia or under spinal anesthesia and heavily medicated.
"Low" forceps are often routinely used to assist in the delivery. After the baby's birth, the woman awakens, usually in a recovery room (Tanzer, 1968, p. 18).

**Assumptions**

For the purposes of this study, the following assumptions were made:

1. Women motivated to attend the classes have different reasons for doing so. The presence of some mothers may grow out of a subconscious desire to punish themselves through pain tolerance. Many mothers want to be awake, aware, and fully participating in their childbirth. Some want to share the childbirth experience with their husbands as completely as possible. Some want simply to guard against loss of self control while in labor.

2. Pain in childbirth is a complex matter with many psycho-physiological aspects in need of further investigation. Even more broadly, the entire nature of pregnancy and childbirth is dramatically in need of study as a psychological experience. These factors, as well as any antepartal preparation for childbirth, are assumed to affect the course of labor.

3. Since mothers referred had themselves expressed the initial interest in attending the classes, the
researcher assumes that the majority of learners had a positive attitude towards the method.
CHAPTER II

REVIEW OF LITERATURE

In antepartal care, the goal of aiding the mother to achieve maximum and healthy motherliness must remain primary in the nurse's mind. This in turn should help to insure healthy mothers and babies and help parents achieve a happy family life with warm and secure relationships.

Keeping this in mind, there are several aspects to the problem of childbirth preparation which need to be examined. First to be studied was the value of the mother's remaining conscious for the birth. Following examination of this problem, some of the more technical aspects of the Lamaze method were examined in some depth.

Literature on Conscious Delivery

According to Corbin (1957, p. 54), every woman who is carrying a child has the same broad needs. One of these needs is the opportunity to achieve mature femininity as a wife and mother.

To be awake when her baby is born is a primal feminine experience, affording unparalleled joy and satisfaction according to the reports of many, many women (Corbin, 1957, p. 55).

Our modern way of life seems to deprive many people of the opportunity to be creative. Women no longer weave
the cloth for the family's clothes, nor bake the bread, nor grow the vegetables they use on their tables. "We no longer make our living but we buy it" (Corbin, 1957, p. 55). Perhaps this is why modern woman attaches so much importance to her ability to create a child. And perhaps this explains why today's father is so often eager to participate in the birth of his child (Corbin, 1957, p. 55).

Also, women today are very familiar with the term anoxia which is no longer confined to professional vocabularies. Concern for the child's welfare in view of the potential threat of anoxia motivates some mothers to a conscious birth (Corbin, 1957, p. 55).

Studies of women in labor have shown that antepartal preparation alleviates anxiety and makes it possible for many women to participate more fully in the delivery of their babies.

Studying the relationship between prenatal attitudes and the behavior of women during labor, it has been found that preparation influenced the progress of labor, its duration, and the degree of discomfort the individual experienced. It has also been found that the majority of women were able to participate in the process of natural childbirth if they were prepared for labor psychologically and physically, had exercised to increase the elasticity of their abdominal and perineal muscles and had mastered the art of relaxation (Blake, 1954, p. 46).

Blake explains that these studies were of older methods of childbirth such as the Dick Read method. It has generally been accepted over a long period that these older
methods are beneficial only to a limited number of women. Does this hold true for the Lamaze method or does it offer something of value for larger numbers of women? The researcher hoped to contribute to the answer to this question.

Experience has demonstrated that "natural childbirth" is possible. It has also demonstrated that this is an experience which is very important to some mothers and should not be denied them. With the experience of "natural childbirth" the mother sees her child immediately. This reassures her and frequently results in an ecstasy, a sense of fulfillment which nourishes her love for this new child. "Birth has not destroyed the gratification she experienced when the fetus was a part of her and with this emotional response her security is increased" (Blake, 1954, p. 50). In turn, this feeling of reassurance brings relaxation and freedom for rest which the recuperation process requires (Blake, 1954, p. 50).

In contrast, under general anesthesia or amnesia, the mother awakens to a sense of loss and emptiness. She views the baby as a stranger. She asks herself with estrangement, "Is this what I had inside me?" (Benedek, 1949, p. 646).

Several persons, however, take an opposite point of view. Paul (in Reid and Barton, 1969) of University of Toronto states:
I have failed to be impressed that either the patients or their babies have been emotionally deprived because they accepted a pharmacologic rather than a psychologic approach to pain relief. In my experience, the mother enjoys seeing her baby immediately after a birth conducted in conscious comfort, but this accomplishment is more predictably obtainable with the use of analgesics and anesthesia in labor than by any other technique (p. 191).

These people point out that the concepts of natural childbirth are founded on some questionable interpretations of physiology, promoted with an emotional zeal which is sometimes excessive, and grossly oversold as to its effectiveness (Paul [in Reid and Barton, 1969, p. 192]).

They also point out that it is a sad sight to see a mother who has been led to expect too much from the method hyperventilating herself to tetany as she realizes with dismay that it does not offer painless childbirth (Paul [in Reid and Barton, 1969, p. 192]).

Taking a third point of view on the pain relief in labor and delivery is Flowers (in Reid and Barton, 1969) of Baylor University College of Medicine. He points out the physiologic factors affecting obstetric anesthesia and analgesia:

The altered physiologic demands of the pregnant patient are also associated with other factors which increase the anesthetic risks of the pregnant patient. The heavy uterus may cause pressure on the great vessels when the patient is anesthetized in the supine position; this may result in a reduction in cardiac return, a fall in the blood pressure, and a decrease in oxygenation to the central nervous system of the fetus and the mother. The increase in blood volume and placental
circulation is associated with an increase in the venous vascular bed. Thus, any sympathetic block may be associated with profound hypotension that is more difficult to treat in the pregnant than in the nonpregnant patient.

A pregnant patient is also in a particularly hazardous situation when she receives inhalation anesthesia for delivery, since she often has food or liquid in her stomach. Labor causes a reduction in the motility of the gastrointestinal system that is not unlike intestinal obstruction, thereby increasing the potential danger of aspiration of vomitus. The aspiration of stomach contents (Mendelson's syndrome) is one of the major reasons obstetric anesthesia now ranks fourth or fifth among the causes of maternal mortality (p. 196).

Dr. Flowers continues by stressing the importance of preparation of the patient and her husband for labor and delivery. He suggests a uniform system of preparation that should be accepted in every hospital and principles that should be adhered to during labor.

At least one recent study has been done to examine the results of natural childbirth experiences. Tanzer (1968) in her doctoral dissertation, "Natural Childbirth: Pain or Peak Experience?" found that almost all the women trained in Lamaze, in her study, experienced a highly positive event, while for the control group of untrained women, it was almost uniformly negative. The Lamaze group described joy, excitement, feelings of continuity, and positive first contacts with their babies. The control group described negative emotions, a gap in continuity, and
fearful and unpleasant memories of the anesthetized period as well as of anesthesia itself.

She also found, however, that taking the Lamaze course is likely to reduce pain in childbirth only for a woman with relatively good menstrual history. Pain reduction thus appeared to be a joint product of taking the Lamaze course and previous menstrual history. But even the woman with a poor menstrual history and pain during labor experienced the positive and heightened subjective emotions of a peak experience.

**Literature Related to Technical Aspects of Lamaze**

Many of the principles and philosophies behind Lamaze are challenged and questioned. The following discussion is a review of such material. How does such a method work? What other studies have been done in this area? What are the ways to pain control in labor? Do artificial breathing patterns cause hyperventilation? These questions and other related aspects are discussed.

One summary published in the *Yearbook of Obstetrics and Gynecology of 1957-58* (cited by Fielding and Benjamin, 1962) described the Lamaze-psycho prophylaxis method simply as one of pain relief by hypnotic suggestion and pointed out that there was no unity of opinion about the nature or extent of its benefits even among its most enthusiastic medical supporters. The summary also cited a 1956 study of
four hundred women prepared according to several psycho-
prophylactic methods, which compared the results of their
labors and deliveries with those of a similar group not so
prepared. The incidence of unassisted versus operative
deliveries proved to be the same in both groups. The amount
of medication and anti-spasmodics was also the same as was
the duration of labor (Fielding and Benjamin, 1962, p. 19).

A more in-depth study on the efficacy of education
for childbirth was performed in Sweden in 1963 with a sample
of 250 "healthy primiparas." Walan (1963), the researcher,
stated that, "Swedish education for childbirth resembles
that of other countries in seeking to instill an affirmative
attitude towards labour, to reduce labour pains, and to
eliminate anxiety" (p. 131). He refers to his approach as
"prophylaxis."

The study included four sample groups, two experi-
mental groups and two control groups. Each of the experi-
mental groups was given a different antepartal course. The
mothers in the first control group did not attend the
antenatal course, nor did they desire to take the classes.
The mothers in the second control group did not have access
to the courses even though some were interested in taking
them.

The findings of this study indicated that the
subjective evaluations of mothers support the assumption
that education for childbirth mitigated their experience of
pain during labor. Trained groups reported less pain in their questionnaire responses than did the non-trained groups. This assessment of pain was not in physiological terms but rather with reference to subjective evaluations.

Evaluations on the effect of training on anxiety were performed in several ways. The hypothesis was supported that education for childbirth mitigates anxiety during labor. The difference was significant at the $P > 0.001$ level. Walan consistently found the experimental groups to be calmer than the control groups. Fewer sedatives were administered to the experimental groups.

Study of blood pressure in labor showed no significant difference between blood pressure levels of the four groups. However, further and more controlled study of this area was recommended.

The average duration of labor including the first and second stages, showed a mean difference of 3.08 hours with the shorter labors occurring in the experimental groups. Duration of labor was determined solely by record audit.

The incidence of perineum rupture was equal in both experimental and control groups.

Analgesia (nitrous oxide) was requested by trainees and controls to the same extent. Also, the groups did not differ from one another in regards to the need of obstetrical maneuvers.
"Labour pains" and anxiety during the first and second stage of labor showed no dissimilarities on account of age. However, trainees experienced less pain and anxiety than the control groups. Educational attainments were found to be higher in the trained groups. "Possession of a general educational background seems to have had some influence, and probably has helped the mother experience labour with less apprehension" (Walan, 1963, p. 139). Walan reaches the decision that "education for childbirth thus has a distinctly favorable effect on women of low education" (p. 140). However, he demonstrates that education for childbirth helps all women regardless of their previous schooling. Taking the findings altogether suggests that education for childbirth influences the experience of anxiety to a greater extent than it does the experience of pain.

A tendency was also noted for gainfully employed mothers to be less anxious than the stay-at-home mothers (Walan, 1963).

This study is well worth more thorough review by the interested reader.

Walser (1948) reported on fear as an important etiological factor in obstetric problems in the American Journal of Obstetrics and Gynecology. As a result of his examination of the subject, he gained certain impressions
which should add light to our present incomplete knowledge.

Some of these were:

1. Fear and the ultimate ramification of its effects can change the physiology of the human organism.

2. Pregnancy and labor should be physiological processes. However, because of the complete control of the reproductive system by the sympathetic and para-sympathetic nerve chains, the function of reproduction is very susceptible to emotional stimuli. Fear, leading to tension, can disrupt the reproductive function in devious ways.

3. Avoidance of the effects of fear by dealing with it is in the hands of the medical team. This depends to a great extent upon the establishment of rapport with the patient as quickly as possible (p. 804).

Many factors affect the mother-child tie. Significant contributions to this relationship can be made during pregnancy and delivery; therefore, it seems that the medical team should do so. The woman's sense of mastery of a vital function, reproduction, in terms of ego-identity, or self-esteem, shapes her acceptance of the child (Shainess, 1963, p. 2924).

Use of anesthesia or analgesia can definitely affect this beginning relationship.

In the obstetrical and pediatric literature there has been particular emphasis placed on the deleterious effects of medications on infants. Minimal use of medication does seem desirable.

One of the most striking effects on the newborn infant's ability to adapt to the environment in the first week of life seems to be the effect
of the accumulation of a drug in the infant as a result of pre-delivery medication given the mother. When the dose is large enough and administered sufficiently prior to delivery, an effective level of medication may be transmitted via the placenta to the infant. Blood levels in the infant tend to be in direct proportion to those in the mother (Brazelton, 1961, p. 513).

The newborn infant's liver is overtaxed with "blood-breakdown" products, so that the detoxification of drugs may proceed slowly. There is evidence that appreciable circulating levels of barbiturates continue in the neonate for a week after delivery (Ploman and Persson, 1957, p. 706).

It can be said that the use of drugs to abolish the pain of childbirth holds for the mother and especially the infant potential danger that one should not underestimate. Attempts should then be made to minimize the use of such drugs. This seems to be one of the more major incentives behind the various "natural childbirth" methods. They are, as such, an attempt to produce a means to painless childbirth. Several of these methods have laid claim to the offer of painless childbirth.

Here the researcher deems it necessary to mention a difference in philosophy expressed in literature between the United States and Europe on the subject of Lamaze. Europeans using the method state that it is a means to painless childbirth, but Bing (1967, p. 20), the U. S. national authority, states that if used successfully, it will alleviate "unnecessary" pain. According to Bing, it does not promise painless childbirth and, in fact, relatively few women will experience painless childbirth.
Vellay (1960), assistant to Dr. Lamaze, says of the method:

Psychoprophylaxis is verbal analgesia based on the training of the pregnant woman. It is quite different from other methods of obstetrical analgesia. It depends on words as therapeutic agents (Pavlov's second system). Its basis is the use of conditioned reflexes, studied by Pavlov and his pupils and applied to obstetrics by Russian doctors such as Velvoski and Nicolaiev.

It attempts to equilibrate the brain (cortex) of the pregnant woman by creating during pregnancy complex chains of conditioned reflexes which will be applicable at the confinement. The pregnant woman learns to give birth as the child learns to read or swim. She completes this education, and so understands the simple mechanism of childbirth and can adapt herself when confinement arrives. She gets rid of the bad influences and memories she has previously accumulated, which may inhibit her in the act of birth.

Women lose the passive attitude which most of them adopt when facing childbirth. They know what is going to happen and learn to adapt themselves and control the changes which occur in their bodies during labor. Like expert engineers with perfect machines they control, direct and regulate their bodies (p. 21).

Patients prepared for the sample of this study were not led to believe they would experience painless childbirth. They were told that there is an apparently natural discomfort or pain in childbirth. The causes of this undeniable discomfort were then discussed as well as the ways to minimize it and cope with it.

Scott (1970), in presentation of the 1969 Joseph Price Oration, spoke on the various aspects of obstetric
analgesia. His discussion included psychoanalgesia, and it warrants examination here.

He points out that all methods of psychoanalgesia demand a high level of personal enthusiasm from those practicing them. But he sees this great need for enthusiasm as a weakness in the method, stating that it is unlikely they can compete for long against one requiring only basic knowledge and skill. Yet, within them, he says, is something good and it would be a great pity if the beneficial aspects were lost. He recognizes them for their underestimated contribution to the psychological problems and difficulties of labor (Scott, 1970, p. 960).

He continues:

A major disadvantage of the psychoanalgesic cults in my experience, is the disastrous psychological trauma suffered by the enthusiast who fails to get pain relief in practice. She has been so conditioned that she feels it is she who has failed—not the method.

All obstetricians recognize that psychological preparation for labor is valuable but most, including myself, insist that some more predictable and reliable methods of analgesia also be offered (p. 960).

He concludes, however, "Scientifically the Franco-Russian technique may claim to greater respectability as its principles are apparently formulated on Pavlovian neurophysiology" (p. 960).

One of the major arguments against Lamaze is that it may lead to hyperventilation. Yet, Saling and Ligdas (1969)
recently suggested that antenatal preparation can help to control hyperventilation.

A surprisingly large number of women hyperventilate during labor. The resulting hypocapnia can exert an adverse influence by increasing metabolic acidosis in the mother and fetus. . . . The metabolic acidosis following hyperventilation may have a particularly adverse effect on the baby already in distress. Therefore, it is only advisable to encourage an increase in respiration when status indicates respiratory acidosis. In order to prevent high rates of respiration during labor, women should be taught during antenatal preparation classes to breathe at a rate no greater than 6 to 8 breaths per minute (p. 880).

Saling and Ligdas' study seems supportive of the Lamaze method, rather than against. Lamaze teaches slow chest breathing at a rate of six to eight breaths per minute. Mothers are taught that the panting methods of breathing, used in advanced labor, are performed very shallowly. If the breathing techniques are done properly, they should prevent hyperventilation. However, mothers also learn the symptoms of hyperventilation and how to reverse the process.

The American Medical Association Committee on Maternal and Child Care's investigation on reducing infant mortality also suggested that several general recommendations be instituted for primary prevention in reducing infant mortality. One of these suggestions included promoting participation in antepartal and expectant-parent classes. The subject of hyperventilation was not discussed in this statement, however.

Apparently, it is an accepted theory that maternal alkalosis following excessive hyperventilation leads to a
reduction in the intervillous flow and fetal acidosis
(James, 1965, p. 502).

On the other hand, a number of factors influence the rate of recovery from birth asphyxia. Of these, analgesics and anesthetic drugs given to the mother prior to delivery are primary influences.

An Australian survey of breathing techniques of the various "natural childbirth" methods attempts to examine the problem of using consciously controlled patterns of breathing during labor.

Patients and midwives have been questioned about the value of breathing exercises performed in labour and a diversity of views have emerged. However, adequate questionnaire study and evaluation have still to be completed on this aspect. Many consider them to be a good distraction and provide something on which to concentrate. Others find them helpful, particularly in the early stages of labour. Some patients discover that in labour they are difficult to perform or are of no assistance.

Certain midwives have commented on the Lamaze type of breathing. Some find that the patients can become very tired from its performance and also emotionally distressed if they are unable to remember the details to follow all their instructions. The frequency of these occurrences is unknown.

The majority of trained patients co-operate well during the second stage and can push or restrain themselves as requested (Blankfield, 1969a, p. 312).

On the subject of Lamaze chest breathing as compared to abdominal breathing, Wade (in Blankfield, 1969a, p. 313) concluded in 1954 that, there is a close coordination between
the movements of the diaphragm and the chest. He found no evidence that a person can have direct voluntary control over the diaphragm, but trained subjects could inhibit changes in the chest expansion. He also found that the action of the diaphragm in respiration does not increase intra-abdominal pressure to any significant level to cause irritation of the uterine muscle as Lamaze suggested (Blankfield, 1969a, p. 313).

Blankfield continues by considering the psychological aspects of this type of childbirth preparation.

The psychological aspects, as yet, are almost unexplored, but on preliminary survey both favourable and undesirable effects emerge.

The performance of breathing exercises gives the patient something to concentrate on and occupy herself with in labour. Distraction—in this instance breathing exercises—apparently can elevate the pain threshold to a limited extent. If the pain intensity increases far beyond this elevated threshold, the patient may then find them of no further assistance.

Difficult in performing breathing exercises in labour can occur for two reasons. Firstly, the patient might be in severe pain and/or drugged. Secondly, some of the exercises are unrelated to spontaneous respiratory rhythms which occur in labour, and this can create problems in their execution. Inability to carry out these exercises as instructed can occasionally cause the patient distress, but this depends on the personalities of patient and teacher (p. 314).

The diaphragm and thorax largely coordinate their action. The individual has no direct control over the diaphragm. Therefore, instruction in breathing only with
the upper portion of the chest, as Dr. Lamaze suggested, does not prevent movement of the diaphragm.

The movement of the diaphragm does not increase intra-abdominal pressure to a level which can irritate the uterus. Therefore, the Lamaze slow chest breathing method need not be taught with any trick movement of the chest which can cause confusion. This one principle as suggested by Dr. Lamaze is apparently unfounded.

However, as Williams (1969, p. 154), chairman of the Obstetric Association of Chartered Physiotherapists pointed out, preparation for childbirth is not a treatment but a form of education. Although the principles on which they work may be under attack, the education and preparation do apparently hold definite advantages for the patient.

Many people have written about the subject of pain control in labor, and much of this literature is worth examining.

McLennan (1970) remarks briefly on the subject:

As maternal mortality rates decline, the role of anesthesia in producing maternal death becomes more prominent. About 10% of maternal deaths now are attributable in some way to the anesthetic used. Aspiration of vomitus and excessively high levels of spinal anesthesia are the chief problems.

Obstetric anesthesia presents several general problems that must be considered in arriving at a choice of technique.

I. In normal labor anesthesia is not absolutely necessary, although the mother may, of course, experience considerable pain at intervals for varying periods of time.
2. The fetus is peculiarly susceptible to sedative and anesthetic drugs given to the mother, and fetal respiration is easily embarrassed.

3. Anesthesia merely for the actual delivery is considered inadequate. Relief of pain during many hours of labor may be demanded in addition.

4. Certain anesthetic agents will stop uterine contractions and in the immediate postpartum period may lead to excessive hemorrhage from an atonic uterus.

5. Obstetric anesthesia may be required promptly without adequate preparation of the patient. Vomiting and aspiration of gastric contents may occur, and this can be fatal.

6. No completely safe and satisfactory form of obstetric anesthesia is currently available. Although a small percentage of patients may be carried through labor with positive conditioning (that is, "natural childbirth") or hypnosis, the more usual approach is to use some combination of analgesic, sedative, and amnesic drugs. Such drugs may be supplemented later in labor by various local, regional, or general anesthetics (p. 182).

Pain control in labor can be examined from a slightly different light. Labors vary to great extent as to how much pain they cause, and women vary much in the extent to which they are distressed by labor. However, for most women, transition or the period just before full dilation of the cervix is attained is the most distressing time of the whole labor. It is at this point that the mother needs assistance in pain control more than any other, whether it be through encouragement, medication, or a method of childbirth.

It does seem to be beyond dispute that labor pain should be controlled. Pain, if long continued and
unrelieved, causes emotional disturbance and ultimate fatigue. Both of these factors are important in inhibiting uterine action. The relief of pain, therefore, may actually shorten labor and secure a more natural delivery (Brews, 1963, p. 317).

Reference must also be made to the possibility of preventing rather than relieving the pain of labor. Much of the suffering frequently encountered in the civilized world can be called the emotion of fear. This fear has been engendered and perpetuated by various influences. As a result, childbirth is anticipated with fear and apprehension.

The sympathetic nervous system is over stimulated; the extrusive forces of labour are inhibited and a hypertonic state of the cervix and lower uterine segment develops. In its turn the excessive muscle tone generates painful stimuli by compressing the nociceptor nerve endings lying between the individual muscle fibres. This pain and the anticipation of its recurrence creates further fear and so a vicious circle is established. In a similar way, fear may make it difficult or impossible for the patient to relax the voluntary muscles of the pelvic floor during the second stage of labour and, as a result, labour is more prolonged and more painful than would otherwise be the case (Brews, 1963, p. 318).

Two measures are available for prevention of this type of pain. First, fear of labor can be dissipated by reassuring the mother that all is progressing satisfactorily and that there is no reason to anticipate other than an easy, straightforward confinement without complications. She must be given complete confidence in herself, those
attending her, and in some means of pain control. Secondly, there can be antepartal preparation for childbirth which teaches relaxation and breathing which will aid the mother-to-be in accepting each contraction and allow her to work with her labor and not against it (Brews, 1963, p. 319).

In further examination of literature on pain control in labor, Horowitz (1964) examines the psychologic effects of Lamaze education for childbirth:

The stress and strain of labor activates sensory endings in the uterus and other pelvic structures. These nerve impulses travel via the spinal cord to areas of sensation in the brain. The quality of these sensations and the previous cultural conditioning of the woman are such that they are subjectively experienced as pain. This is viewed as being due, at least in part, to spreading excitation from the site of sensory reception over surrounding areas of the brain. Around this area of excitation there is thought to be an area of dampening or inhibition which prevents the excitation from spreading further and producing uncontrolled phenomena. Conditioned reflexes are regarded as preventing pain from being experienced through this mechanism. The arriving sensations produce in the properly deconditioned and reconditioned person a counteractive strong concentration and counteractivity. This excites adjoining areas of the brain cortex and such excitation has a surrounding zone of inhibition that prevents or reduces perception of painful impulses.

The mother has learned that certain respiratory activities, muscle relaxation, and the active concentration required to perform the exercises may be expected to reduce discomfort and enhance the labor processes (p. 1).

DeLee (1939) stated on the subject of pain relief in labor, "The way to meet women's demands is not to give them
more anesthetics, but to use less of them, and educate the women's minds" (p. 142).

An English midwife, Myles (1968), has examined the various methods of antepartal preparation and identified the psychological principles on which they are based. Her discussion warrants examination and seems to offer a summary:

There is no mystique or miraculous element in any of the methods of preparation, including psychoprophylaxis, nor is there any justification for adopting a fanatical degree of fervour which demands absolute adherence to the minute details of the procedures taught. The methods now in vogue are based on psychological principles and the fact that they all succeed to a greater or lesser degree indicates that there is some underlying factor common to all. These principles are:

1. Suggestion. This proves the influence of the mind over the body. If the health worker uses a persuasive manner and a pleasant tone of voice the expectant mother becomes more receptive to the teacher and to what she is being taught.

2. Distraction. This is probably the most powerful and the widely used factor. Awareness of pain is reduced when attention is diverted. In psychoprophylaxis much is made of distraction; the cortex of the brain is bombarded with so many distracting activities during a uterine contraction that the woman has little opportunity to be aware of pain. She is required to breath at different rates and levels, to hum or drum a tune, to use effleurage (stroking the skin), to keep alert and awake using muscle release (active relaxation).

3. Concentration. This is closely allied to distraction for unless the woman concentrates on the diverting activity it will not be effective. When concentrating on some engrossing subject a person can be oblivious to physical discomfort and the passage of time.
4. Confidence. This is a psychological state stemming from knowledge and experience and is an excellent antidote to fear. Every method of preparation for childbirth makes use of giving instruction that will enable the woman to comprehend the processes of pregnancy and labour in so far as they will affect her. When a woman knows what to expect and realizes that labour is pursuing a normal course she is more likely to cope with any stress successfully. Giving assurance is a means of instilling confidence.

Every woman is entitled to approach the emotional aspect of childbirth in her own way: no person has the right to pontificate to another individual as to how she ought to feel or behave during labor. How a woman reacts to the pain of labour or feels towards her new born baby depends on the type of person she is, her attitude to love, marriage, motherhood and to life in general. Not all have the emotional endowment to glorify the pain of labour and to interpret it as being pleasurable, nor to find enrichment in the process (p. 675).

She continued with a discussion about attitude to pain, pointing out that the majority of women describe what they feel during a uterine contraction as pain.

Allen (1964) in an American Journal of Nursing article stated:

A calm well-controlled patient makes progress more quickly, feels less pain, and has the satisfaction that the more relaxed she is, the more she is helping her baby. A tense mind and a tense body due to fear, sensation of pain, or other considerations inhibit a patient's normal uterine contractility whether labor is spontaneous or induced (p. 73).

One of the hazards of pregnancy is fear of pain, combined with a sense of personal inadequacy. Fear and worry help to create pain, and make the process of
child-bearing just what it is not intended to be—a harrowing experience (Rathbone, 1969, p. 145).

Most authorities seem to agree that control, relaxation, minimal fear, and adequate preparation are desirable in order that the mother's comfort and enjoyment will be maximum. This in turn promotes the beginning relationship between mother and child. The question remains, "Is Lamaze a valuable method to use in helping some women to achieve these goals?"

**Summary**

In this chapter the literature has been reviewed in order to study the value of a conscious birth and to examine some of the technical controversy which surrounds the Lamaze method of childbirth.
CHAPTER III

RESEARCH DESIGN

This chapter presents the research design of the study, collection of the data, and techniques for analyzing the data.

Design of the Study

A design was selected to describe as nearly as possible the women's courses of labor; their comments about their childbirth experiences during their early post-partum periods; and the degree of correlation that exists between specific aspects of the course of labor and early post-partum periods, and the kinds of comments about the childbirth experience. A sample of eleven patients was used.

The researcher designed an open-ended questionnaire to collect comments of women using the method. The content of the responses was then analyzed using a directional analysis system. Each patient's response to each individual question was analyzed by three independent readers. The responses were then classified as negative or positive using Tabak's system of directional analysis modified to be appropriate to this questionnaire. Responses with this system were graded as qualified if they were not totally positive or negative in nature. A category of no direction
was included for responses involving neither favorable nor unfavorable aspects or both favorable and unfavorable presentations clearly and equally involved. The positive and negative signs were then tallied for each patient's questionnaire and used for the purpose of ranking these responses for correlation purposes. Summaries of these responses were included in the analysis.

To obtain information on the course of labor, the women's records were audited after their discharge. For this purpose the researcher developed an audit form in order to obtain information in a consistent and uniform manner. This audit form was drawn up as the result of a feasibility study conducted at each hospital. Thirty charts of discharged maternity patients were examined and relevant information was tallied in order to ascertain what information was consistently recorded.

Sample

The sample consisted of eleven women trained in the Lamaze method by the researcher, and delivering at either of two of the community hospitals in Tucson, Arizona, a community of about 300,000 people. These women included primiparas and multiparas, and they were under the care of several different obstetricians. The women included in the study were referred for Lamaze training by their physicians. Since all patients referred are expected to receive
instruction, an experimental study with a control group was not possible in this study.

The sample, drawn from women who had attended the classes, consisted of the first eleven who delivered following the acceptance of the research proposal.

The classes were groups of four to six couples as recommended by the American Society for Psychoprophylaxis in Obstetrics.

The researcher assumes that a certain type of woman is to be found in her classes. The Lamaze method is culturally fashionable to some extent in the Anglo, middle-class American society. Some private obstetricians channel their patients to these classes, though a few disapprove of them. The researcher does not pretend to present a cross section of American society. She limited herself to this group of interested women. No one sold the method. The initial interest was expressed by the expectant mother. These mothers were then referred to the researcher by their physicians. All women had written permission from their physicians to participate in the classes. Written permission was also given by both the physicians and the patients before they were included in the study.

Training sessions were held once weekly for six consecutive weeks and should, ideally, have taken place during the last six to eight weeks of the third trimester. At this time motivation is strong and the conditioning, if
learned, should have been at its peak effectiveness when labor and delivery took place.

The patients sampled met the following criteria:

1. Were diagnosed as a term pregnancy.
2. Had attended a minimum of three of the six classes.
3. Were married.
4. Had been under the care of an obstetrician recognized by the American Medical Association.
5. Had delivered at one of the two general hospitals in one urban community.
6. Were able to communicate in English.

Sources of Data

The sources of data for the study were the patients and the patients' charts. The reader is referred to Appendix G where patient information gathered is listed.

It must be mentioned that both the Apgar score and the length of the first stage of labor as recorded on the medical records are not consistently accurate. This interpretation is based on the researcher's personal experience in the maternal-newborn unit of both facilities. Different members of the staff use different criteria in reaching their decisions. Some people answer them very casually if at all. The researcher included them, however, as an approximation of the actual situation for clarity purposes and for the interest of the reader.
Collection of Data

Written permission that the women could be included in the sample was received from both the physicians involved and their patients. Only willing patients were studied. However, there were no refusals to participate.

Patients meeting the criteria were interviewed within 72 hours after delivery and a record audit was performed after their discharge.

The procedure for interviewing the patients was as follows:

Step 1. The respondents were read aloud a letter of explanation and the purpose of the study.

Step 2. Instructions for the questionnaire were read aloud by the researcher.

Step 3. The open-ended questionnaire was given orally by the researcher who recorded the responses.

Both instruments were used with each patient.

Techniques of Analyzing Data

The raw data from the record audit and the interview are given for each patient as a description of each woman's childbirth experience. This description includes information on the course of labor and early post-partum experience, and the mother's comments about her experience with the Lamaze method of childbirth.
The Spearman rank correlation coefficient (rho) is applied to the data to measure the association of positive and negative comments and the:

1. Use of depressants and anesthesia in labor.
2. Use of depressants in the early post-partum period.
3. Length of the first stage of labor.
4. Length of the second stage of labor.
5. Operative interference required during delivery.

Rho will be considered significant at the > .05 and > .01 levels.

Since these subjects do not constitute a random sample of the population of pregnant women, the significance of these correlations cannot be applied to the general population. They remain non-parametric and are included only for the purpose of more thorough examination of the behaviors of these women.

Ranking of depressants was accomplished through an equivalency chart based on Falconer's Current Drug Handbook 1966-68 edition (in Falconer 1966) and Chapman's (1969) table of drug equivalence. Both drug dosage and numbers of administrations were considered.

Length of stages of labor was simply stated in hours and minutes. Types of anesthesia and operative interference were ranked (see Appendix H). Several mean averages were also calculated. These mean averages are also listed in Appendix H. The researcher differentiated between
primiparas and multiparas when determining these mean averages.

The verbal data obtained were categorized in ordinal form in order to permit analysis. To achieve this, content analysis was performed by using a card sort. The comments recorded during the interview with each of the mothers were placed on individual cards in two forms. On one set of cards the complete response to each of the questions was recorded, one card per question. On the other set of cards these responses were broken down into apparent ideas or thoughts of the mothers while answering. The two types of cards were color coded. Each card was identified by the patient's number, question number, and card color.

The next step was to sort these cards into the appropriate five categories as defined. Categories for this study were based on Tabak's directional analysis system. Use of graded positive and negative categories provided appropriate information for correlation and analysis purposes. Three readers completed this task independently and recorded their decisions. Further description will follow.

The three readers were used to increase the reliability of the scores. Differences in their decisions were then examined and noted. The closer the scores, the more reliable they were considered to be.

The researcher presented her conclusions and their implications for nursing care.
Term definitions for categories were as follows:
Behaviors of mothers in labor which were not in accord with
the method were classified as negative, as were comments
suggesting an unfavorable attitude toward the method.

Pain experience in question four was classified as
negative if the woman reported having experienced pain.
Pain is a sensation in which a person experiences discomfort,
distress, or suffering. Lamaze suggests the substantial
reduction of pain and possibly its eradication; therefore,
its presence was classified as negative. The researcher
also recognized that for some women, pain may not be a
negative experience but may actually fulfill some need.
However, from experience and by the very connotation of the
word pain, she expected these exceptions to be few if any,
and assumed they had minimal effect on the results as
presented.

Behaviors of mothers in labor which were in accord
with the method were classified as positive, as were
comments suggesting a favorable attitude towards the method.

The researcher identified these categories as
appropriate and when used in graded form, as exhaustive and
mutually exclusive and believed, therefore, that they
should be reliable and valid. The definitions in themselves
were somewhat subjective; they inform the reader as to how
the final figures were obtained. This, however, does not
guarantee the absence of bias in the comments themselves.
The researcher and two other readers classified the comments according to their graded positive and negative directions using the card sort method described earlier. Readers were chosen who were registered nurses working in maternity units and who were somewhat knowledgeable in Lamaze. One of these nurses holds a positive attitude towards Lamaze and the other has admittedly negative views on the subject. Responses of two sample questionnaires were studied by the readers as a group, discussing them and categorizing accordingly. Then a third sample questionnaire was given to the readers to categorize independently. The results showed that the readers were grading in a uniform manner. After this preparation the readers independently graded each questionnaire by performing a card sort.

Each comment was classified with reference to the direction of the context of the complete comment. The meaning manifested in whole phrases and entire comments was considered, not words in isolation.

Tabak's expanded directional analysis was employed as the researcher believed this approach gave a more complete picture of the comments content. In order to reduce subjectivity, the panel of three readers classified the same content employing the same set of criteria. Again, the researcher was one of the readers.

The modification of Tabak's levels of expanded directional analysis is as follows:
1. No Direction (0): Presentations involving neither favorable nor unfavorable aspects (often called neutral), or presentations where both favorable and unfavorable aspects were clearly and equally involved. Also includes no response.

2. Unqualified Positive (+++): Favorable presentations of the symbol, without explicit qualification of its favorable character.

3. Qualified Positive (++-): A basically favorable presentation, with unfavorable aspects clearly involved.

4. Qualified Negative (---+): Basically unfavorable, with favorable or ameliorating aspects clearly involved.

5. Unqualified Negative (---): Unqualified unfavorable presentation.

Total positive and negative signs were then tallied for each patient and were used for ordinal ranking for the purpose of correlation.
CHAPTER IV

PRESENTATION OF DATA

Introduction

In this chapter the course of labor and early post-partum periods of mothers in the sample are described based on information available in the medical records. The comments made by these mothers in response to the questionnaire are also presented. Correlations are examined and discussed when significant.

To obtain the sample utilized in this study, the first eleven patients delivering and meeting the criteria were included in the study following the acceptance of the research proposal. The eleven patients represent five obstetricians. The patients delivered at one of two of the community hospitals as planned.

To analyze the findings of this study, the raw data were transferred from the record audit form to a comprehensive table for comparison. The comments to the structured questionnaire were transferred to sort cards in two manners. The complete response to each question was placed on one sort card. Then parts of comments which conveyed separate meanings were placed on separate cards. Cards were coded as to patient, question, and card sort one and two.

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The researcher then studied the responses to each question and presented a summary of all statements according to the modified directional analysis system and the categories defined therein. Classification of statements into these categories was completed by the three readers independently evaluating each comment. Classification of the complete comment accomplished by each reader was used for comparison and discussion.

The categories of the modified directional analysis system included unqualified positive, qualified positive, qualified negative, unqualified negative, and no direction.

As the researcher was analyzing in these two manners, a third method of card sort became obvious. By using the sort cards with separate conveyed meanings, the researcher could sort the types of comments into different stacks. This revealed that several persons were usually expressing the same type of comment. These combined comments seemed to give more descriptions as to the mothers' apparent feelings.

**Structured Questionnaire**

The questionnaire was answered by the mother within 72 hours after the patient's delivery. The purpose of this questionnaire was to help the researcher determine if Lamaze is an effective method to use during labor and to describe the strong and weak points as seen by the mother.
The first question was, "Did the Lamaze classes change your thoughts or feelings about labor? If so, how?" Eight of the eleven mothers answered in an unqualified-positive manner to that question. They reported a change in attitude towards labor that became increasingly positive as the course progressed. They reported a decrease in fear and apprehension about labor. They reported gaining confidence in themselves, their husbands, and the method. Three of the eleven mothers responded in a qualified-positive manner and stated that the classes did not change their feelings about labor. However, they all three stated that they had never had negative feelings about childbirth. Mother number four expressed it in this manner, "I guess my mother never said anything bad about childbirth. I always thought it would be a wonderful experience." These three women did report that the classes were a reinforcement to their attitudes.

Mother number eight made the statement, "I was fanatical after reading the Lamaze books, but the classes made me a little more realistic. After taking the classes, I would have accepted medication or anesthesia if I had needed it. I wouldn't have accepted it before the classes."

Four of the mothers also mentioned in answering this question that the education alone was very helpful. Mother number three stated it in this manner, "I understood childbirth more explicitly and in much more detail than I ever
had before." They reported that they knew what to expect from each phase of labor and exactly what would happen to them in the hospital setting. "There were no surprises in labor. I knew what to expect" stated mother number three.

There were no negative responses to this question; however, reader number three classified patient number eight's response as qualified positive. Readers one and two graded it as unqualified positive. There were no other differences of opinion.

The second question asked, "Did you experience any difficulty maintaining mental or physical control in labor? If so, at what point?" Some comments indicated negative reactions to the experience. Mother number eleven reported an unqualified negative response. She indicated having great difficulty all the way through her labor, maintaining physical and mental control. The method gave her almost no help in the practical sense of coping with her labor.

Eight of the mothers reported the greatest difficulty in maintaining control during transition, that is between eight centimeters to complete dilation. Two of the mothers reported "panic" in early labor. For one of these mothers, number ten, labor was being induced and she reported being confused by the nurse and the induction procedure. She stated that at that point, her husband was too shy to speak up and help her. Mother number two reported "panic" because her contractions "were so hard right from the beginning, but
my husband was able to calm me down and get me started with the Lamaze breathing. That settled me down."

Mother number six reported that the greatest difficulty maintaining control during her breech delivery came when she went to the delivery room and was separated from her husband for approximately 20 minutes. She reported that she needed the most help at that point and the staff could not give it to her. She needed her husband. Once he finished changing his clothes and entered the delivery room, she stated that she was again in control of the situation.

The two most positive statements came from mothers eight and nine. Mother eight stated that she had difficulty only during two contractions. "I didn't breathe twice on purpose to see what it would be like. I was sort of standing outside myself to see." Mother number nine reported that she really had difficulty maintaining control only during two or three contractions.

Mothers two, six, and ten stressed the importance of their husband's presence in helping them maintain control during labor.

All eleven of the mothers did report at least a moment or two of difficulty in maintaining control. For most, that difficulty was experienced during transition. However, two mothers did point out the aspect of "panic" in early labor as well. And mother number eleven had difficulty maintaining control all the way through her labor.
The readers had no difference of opinion in categorizing the comments to question two.

Question number three asked, "Did you hyperventilate? If so, at what point?" Seven of the eleven mothers responded with unqualified positive comments. They did not hyperventilate; therefore, they responded positively to the breathing techniques. Four of the mothers did hyperventilate to some degree. Mother number seven, having a history of hyperventilation during this pregnancy, did not hyperventilate during labor. She did, however, hyperventilate in the recovery room when the nurse administered oxygen to her for nausea. The mother was able to reverse the situation in a matter of minutes.

All three readers placed these responses in the same categories.

Question number four continued, "If you did hyperventilate, how did you handle it and did it help?" Mother number one hyperventilated during the pant and pant-blow breathing. She reported tingling in her palms. She breathed into a paper bag during her contractions and corrected the situation. Mother number four reported hyperventilating at eight centimeters, the same time at which she lost physical control. She reported that it lasted for four contractions, but she also corrected it by cupping her hands over her face during the contraction in order to rebreathe the CO₂ she was blowing off. The problem did not recur.
Mother number nine reports that she began to hyperventilate during about two contractions, but she simply slowed her breathing pattern and corrected the situation.

Although four of the mothers did experience hyperventilation, the situation was recognized and controlled; therefore, severe hyperventilation was prevented. Only mother number one had a recurring problem, and she, too, controlled the situation.

Patient number eleven did not hyperventilate, although she continued throughout most of her labor with the Lamaze pant-blow breathing without feeling in control of the situation.

All three readers placed these responses in the same categories.

Question number five read, "Did you experience pain? If so, when?" Comments in response to this question were also strongly negative. Nine of the eleven mothers reported pain during transition. Mother number ten reported the most pain occurred when she was at six centimeters dilation. She stated, "It wasn't in the cervix. I had this continual backache that wouldn't go away in between contractions. It radiated down my legs. There was no rest, no way to cope with it." And, again, mother number eleven reported pain all the way through her labor.

Mother number four reported that pain began for her in transition when the urge to push began. It continued on
from that point. She described her earlier labor as just annoying. Also note that these women were three of the five who received spinal anesthesia when in the delivery room. Mother number six reported feeling pain during the delivery. She delivered breech without the aid of medication or anesthesia. Piper forceps were used to deliver the baby's head.

The most positive response came from mother number nine. "Uncomfortable. I felt uncomfortable. I never felt agonizing pain. Really, I only felt uncomfortable during transition, not at all when I was pushing or in the delivery room."

In summary to this question, all of the mothers experienced pain to some degree. The majority reported that the pain was difficult to cope with and that it usually occurred during transition. One mother experienced pain throughout the entire process of labor.

Reader number three classified mother number nine's comment as unqualified positive. Readers one and two classified her response as qualified positive. Agreement was unanimous on all other comments to this question.

Question number six asked, "Did you see the birth of your baby? Please, explain how you felt at that time?" Examination of the replies to this question show that all eleven of the women were awake, and aware of their childbirth. Essentially then the responses to this question were
positive. However, two of the readers qualified the positive responses of mothers one, five, nine, and eleven.

Mother number one stated, "I have a narrow mid-pelvis. I said, 'It's interesting but get it out and over with!' As soon as it was born, I became very misty eyed and tender feeling." Mother number five delivered on the delivery table but unattended. A Registered Nurse was in the room at the time but not near the patient. The physician had not yet arrived. The mother described herself as feeling very confused during the experience. She denied any pain at that point. Mother number nine stated, "I felt very scientific. Detached. I didn't feel emotional until four hours later. Then I wanted to see my baby and I couldn't have him. Then I was mad!" Mother number eleven stated, "I was pretty mixed up. I was disappointed because I didn't want to use any medication. And that was my own goal, not one I developed in the classes. I was feeling sorry that I had had anything. Once I saw the birth begin I became very interested. It was really an intellectual curiosity and not emotional involvement." Patients one, nine, and eleven received spinal anesthesia.

Seven of the mothers described the experience as emotionally satisfying. However, four of the mothers described the experience only as an intellectually interesting process. For example, mother number six stated, "I was more interested than excited. When I could see the
progress of the baby, I knew what to do next. I should have been excited, too, since it was a boy and that's what I wanted."

Mother number seven made the comment, "At first it was like I was watching someone else. I could see everything but it was hard to realize it was me I was looking at!" Mother number eight also describes a feeling of "standing outside myself and watching."

A typical unqualified positive comment was, "I was ecstatic! My husband and I were both crying." Mother number four made this statement.

Question number seven, "How would you describe your husband's role during your labor and how would you have changed it?" All responses were graded as unqualified or qualified positive with one exception. Patient number nine's response was graded as unqualified negative by two readers and as unqualified positive by reader number three.

Typical were the responses of mothers one and five. Mother number one stated, "He was great. He was essential. He reminded me to relax and how to do it. He encouraged me. He was totally involved in the entire experience and it was great." Mother number five pointed out, "Really, he was very important to me. He gave a sense of continuity to me while different nurses were coming and going. He breathed with me in my ear. I would have lost my concentration without him."
Three of the eleven mothers made the remark that they "wouldn't have been able to do it without him." Also two of the mothers mentioned being upset when the father was asked to leave the labor room during a vaginal examination, especially since the husband would also be in the delivery room.

Unqualified negative classification was given to mother number nine's response by two of the readers. This mother stated, "It would have been nice to have had him there. I missed him. He was only with me about an hour. I couldn't get relaxed in the beginning because he wasn't there to help me. I needed him too when they told me to push. Like you said, I forgot how. It didn't come natural either. He could have helped me."

Mother number eleven described her husband as very helpful but pointed out that he became very nervous because she was so uncomfortable. "At that point the nurse was more supportive than he was. She was really the one in control," stated mother number eleven.

Question number eight read, "Who was the greatest assistance to you while you were in labor? Why?" All three readers classified the comments to this question as unqualified positive with one exception. Readers number one and two classified the response of patient eleven as qualified negative. This patient stated that the nurses were her greatest assistants. She continued, "The reason was that I
wasn't concerned with disappointing them. With my husband, well, I wanted to live up to his expectations, especially since I had to convince him to try natural childbirth anyway." Readers one and two felt that this indicated a poor attitude to have after attending the course.

Seven of the mothers stated that their husbands gave them the greatest assistance in labor. All eleven mothers felt that their husband's presence was very helpful both in the labor room and in the delivery room. Three of the mothers reported that the nurses gave them the greatest assistance in labor. Mother number five expressed it in this manner, "The nurse was familiar with Lamaze and very secure. She stayed an hour after her shift just to be with me. She was the calm voice of experience whispering in my ear. She was very soothing." Mother number nine also reported the nurse was her greatest assistance.

A typical response of a mother who reported her husband was her greatest assistance might be that of mother number seven, "My husband was really the biggest help because when I would get excited and forget what to do, he would direct me. He was my strength. The nurse was nice too but she didn't really know in detail what we were doing." Mother number one also made the comment, "He was vital," meaning her husband.

Mother number three was unable to choose one individual as giving the greatest support. She stated, "I don't
know. Everyone really. I couldn't say that one helped me more than the other. They were all great."

None of the mothers mentioned their obstetricians.

Question nine read, "I'll ask you what you did like and what you did not like about the Lamaze method. First, what was there that you did like about Lamaze?" There was total agreement among the readers in classifying the responses to this question. All were classified as unqualified positive except mother number eleven's response. Her comment was classified as qualified positive.

Examples of the responses to this question were as follows. Mother number one, "I liked having something to do, knowing what to expect, and being in control." Mother number six, "Lamaze gives you a definite program. It's a structured thing. It gives you something to concentrate on. You have some idea of what's happening and what's going to come. You're prepared." Mother number ten stated, "It gave me a technique to employ to handle my pain so it wouldn't overcome me. It taught me how to relax. And it made my labor shorter because I was relaxed. It gave me dignity. I wasn't helpless like my sister, and I wasn't hysterical. This technique doesn't sacrifice the person. It lets the individual pick the tools she likes. It doesn't claim to be painless. It just offers a way to control the pain."
Mother eleven's qualified positive comment was, "I liked the classes in general. They were informal. You never talked down to us. I was afraid that might be the situation. Doctors do that.... I liked the method in theory but not in practice. I guess the pant-blow was the most helpful."

Question number ten asked, "People sometimes do not like Lamaze. What part of the Lamaze method did you not like?" Classification of responses to this question varied, although the readers were generally in agreement.

Four responses were classified as unqualified negative. Four were classified as qualified positive, and three were classified as unqualified positive. The unqualified positive statements of mothers seven, eight, and ten indicated, as mother number ten stated, "I liked it all."

The four unqualified negative responses were as follows. Mother number one stated, "It probably didn't shorten my labor. Seventeen hours is long. I had unrealistic expectations for the length of my labor." Mother number three said, "The slow chest breathing didn't work for me. It wasn't valuable. The effleurage really didn't help either." Mother number five stated, "Really, I was almost terrified when blowing didn't stop me from pushing. I became confused. I couldn't believe that things were moving so fast! It was good to hear the nurse say, 'You're complete and crowning.'" Mother number eleven stated, "Towards the
last class the repetition was driving me 'nuts.' In labor, I didn't effleurage." (Effleurage is a light brushing on the abdomen with the fingertips to aid distraction and relaxation.)

The four qualified positive comments all began with, "I liked everything," but ended with a negative comment. Mother number nine expressed it this way, "There wasn't anything that I didn't like. I was disappointed that I had so many drugs, although I guess it's good that I had them. Somehow I think that I would have been more emotional if I'd not had a spinal block. I couldn't feel anything. It was like someone else had had the baby and I was watching." Mother number two stressed the importance of encouraging people to, "practice, practice, and practice." Mother number six, again, expressed difficulty in maintaining control in the delivery room while her husband was changing his clothes in order to enter the room. And, mother number four stated that "pushing hurt."

Readers one and three classified mother number two's response as qualified positive; however, reader number two classified it as unqualified positive. Readers one and three classified mother eleven's response as unqualified negative and reader number three classified it as no direction. Other than these exceptions, the readers were in agreement.
Question eleven asked, "Would you use Lamaze again with any future baby?" Responses were classified as entirely positive with two exceptions. Unqualified positive statements stated something to the effect of, "Yes, definitely."

The two qualifications came from patients three and eleven. Mother number three stated, "Yes, but I'd be prepared to use medication as I felt I needed it. I think Lamaze would work even better the second time because you'd really know what to expect." This patient had originally wanted to use hypnosis. The other qualified response came from mother number eleven, whose labor was induced. She stated, "Yes, I think I would, but I definitely would not be induced." Reader number two graded this latter response as no direction. Readers one and three graded it as qualified positive.

Question twelve asked, "Did you have any 'special problems' during your pregnancy?" Nine of the mothers denied special problems during pregnancy and their comments were graded as unqualified positive. However, all three readers felt that this question did not adapt itself well to the directional analysis system.

"Special problems" in pregnancy did not directly relate to the use of Lamaze in labor. It was included, however, because it does give information about the mother's pregnancy.
Mothers two and seven were the only ones reporting special problems. Mother number two reported, "Just four bad days of back pain. Dr. X said that I injured it. That's the only time anything bothered me." Mother number seven reported, "I had hyperventilation and the thyroid 'thing' that caused pain in my chest and arm during this pregnancy. That happened four or five times during this pregnancy. It had never happened before. Apparently, it's because of an enlarged thyroid."

Readers two and three classified patient two's response as qualified positive. Reader one classified it as qualified negative.

Question thirteen asked, "Why did you take the classes?" This question did not lend itself well to the directional analysis system either. Readers were confused as to how to classify the statements. However, all responses were classified as positive to some degree or no direction, with one exception. Mother number three stated, "My first choice was really hypnosis, but Dr. X encouraged me to use Lamaze."

Four of the mothers reported reading about Lamaze. Four of the mothers made statements indicating that they wanted natural childbirth classes so they could be awake and watch the birth. Mother number five stated, "Because the book wasn't enough. I knew I shouldn't go by the book alone. It's good that I didn't, too, because I had
misconceptions before the classes." All three responses were graded as no direction by readers one and three. Reader two classified them as qualified positive.

Mother number ten stated, "Originally I signed up to learn to handle my labor. I really didn't care about the baby coming out. I was so scared that I would be like my sister in labor. I used to think that natural childbirth was for people who can handle pain or want to show off, but that's not at all true. As the classes went on, I was less scared. My purpose changed. I wanted to be completely involved in everything, especially the end!" Readers one and three also classified this response as qualified positive.

Mother number six, who had used Lamaze with her previous pregnancy, stated, "Because I needed the review. The conditioning only takes place with practice."

Mother number nine stated, "I wanted to try the method. It would be horrifying to go to the hospital and not know anything, not know what was going to happen to you."

Mother number four stated, "When I was in nursing school, the instructor said so many nice things about it that I really didn't realize any other way to do it."

Qualification of these last responses varied with each reader.
Question fourteen asked, "Do you believe that most women should be encouraged to use Lamaze or only those that express the interest themselves?" Classification of these responses varied and there was no tendency towards positive or negative averages. The three readers agreed, with three exceptions. This question also did not lend itself to the directional analysis system.

All of the responses were very similar in nature. Mother eleven's comment expressed the common response, "Well, I have mixed reactions. They should all be encouraged to use it, but if they have negative feelings, it couldn't possibly be successful. If everyone used it, things would sure be better."

Mothers one, six, and nine suggested that the course was of value to all mothers, even if taken for the educational aspect alone.

Mothers five and eight stated that more women should be informed of the availability of such classes. Mother number five expressed it in this manner, "It should be advertised so all women know about it, not just happen to hear about it. Just knowing about it would cause more women to use it."

Mother number one also pointed out that, "For the husband, it's the difference between being scared out of his wits or being educated and in control. My husband would never have been able to stay without it."
Seven mothers inferred that "most women" should take the course or at least be well informed about its availability and benefits. The other four mothers pointed out that, "Some women don't want it to be 'natural.' They want to be 'put out.' But if you want the thrill of being awake, then you need it." Stated mother number two, "But those women that are interested and want to be awake for the birth of their baby would find the course of benefit."

Question number fifteen asked, "Do you feel that most husbands should attend their wives in labor and delivery? Why?" Using the directional analysis system, four mothers gave unqualified positive responses, two received qualified positives, four received qualified negatives, and one received unqualified negative classification.

Mother eleven's comment to this question typified the unqualified positive statements. "Yes, they should definitely be there. He's part of the family too. He helped create the baby and it's his as much as mine. He should share the birth."

A qualified positive statement was that of mother number two. "I think they could all do it if they only wanted to. That would be wonderful. Of course, the wife should want him there too."

Qualified negative responses of four women stated "no," that the father should not be there unless he wanted
to be there and then only if he was trained. Mother number four stated it in this manner, "No, they shouldn't be there unless they've had Lamaze. It could be traumatic for the husband if he wasn't prepared."

The one unqualified negative comment of mother number eight read, "I don't know. I was married before and I know I wouldn't have wanted him to be there. I really can't say for most." This patient earlier in question eight reported that her husband had given her the greatest assistance in labor. Reader two interpreted this response as no direction. Readers one and three classified it as unqualified negative.

Readers two and three also graded mother number six's response as unqualified negative. That response read, "No, not most husbands. He'd have to be 'in tune' and not have negative feelings about being there."

Question sixteen read, "Do you feel that women in general should strive to see the birth of their baby?" Four mothers responded in an unqualified positive manner, three in a qualified positive manner, two in a qualified negative manner, and one in an unqualified negative manner. Again, this question did not lend itself to the directional analysis system. The readers interpreted several of the responses differently and reported confusion in categorizing these comments.
Four unqualified positive responses came from mothers two, seven, ten, and eleven.

Mother eleven stated, "Yes, I can't imagine anyone not wanting to watch the birth of their baby." Mother number two said, "I think it's a most wonderful thing to experience. If they want to be 'out cold,' I wonder what's wrong with them." Mother number seven stated, "Yes. I wish I could have seen my first child being born. I think that I will always miss that. I was so afraid that Dr. Y would knock me out this time. Thank goodness he didn't."

Qualified positive responses came from mothers three, six, eight, and nine. Mother three stated, "I really would recommend it, unless, in rare exceptions, it makes you physically sick." Mother number six stated, "That depends upon the woman's own psychological response to it. But I can't think of any reason not to want to unless you were inhibited or something."

Qualified negative comments were made by mothers one and five. Mother number one stated, "I don't see any intrinsic value in watching the birth. It's groovy! But some couldn't appreciate it." Mother number five stated, "Only if you really want to. Some have no desire to watch the birth. There's no reason to push it if they don't want to. On the other hand, education for childbirth makes a big difference."
The one unqualified negative response came from mother number four. She stated, "No, some women are not capable of handling it. It could make them sick."

Question seventeen asked, "Would you recommend the method to other women?" Nine of the responses read to the effect, "Yes, I certainly would." These were graded as unqualified positive. Two responses were qualified positives. These two qualifications came from mothers two and five.

Mother two stated, "Yes, I would, for those that want to be awake." Mother five stated, "Oh yes, but just good friends or people I know, not every pregnant woman I see!"

There was no difference of opinion among the readers in classifying comments to this question.

Record Audit

The samples of eleven women contained nine primiparas and only two multiparas. Ten of the mothers delivered at one hospital. Mother number six delivered at the second facility included in the study. All the mothers were English speaking, married, and were diagnosed as having a term pregnancy. Religions, if any, varied. All mothers were Caucasian.

Mother number six was a multipara, gravida two, para one. She had used Lamaze with her first child also. Mother
number seven was the other multipara. She was a gravida five, para one, with a history of three abortions since her first, term pregnancy.

All eleven of the mothers breast fed their babies. This was not discussed, encouraged, or discouraged in the classes.

Eight of the mothers attended all six of the classes. Mothers two, three, and eight each missed one class. Husbands also attended class with their wives with one exception. Mother number six attended by herself. Her husband had taken the Lamaze classes during his wife's first pregnancy. He reread the books as a review for this labor.

All eleven husbands attended their wives both in labor and delivery.

The labors of four of the mothers were induced, mothers number four, five, eight, and eleven. Mother number ten was stimulated with pitocin because of secondary uterine inertia.

The baby of mother number six presented in a frank breech position. Ten of the babies were vertex in presentation. Although vertex, four of the babies were in a persistent posterior position. This included mothers one, four, nine, and ten. Mother eleven experienced a persistent transverse position. These five mothers received spinal anesthesia for their deliveries. The deliveries of mothers ten and eleven required mid-forceps rotation. Mother number
eleven found the Lamaze method of very little help in reducing pain. She did, however, continue to use the method throughout her entire labor. She reported in the questionnaire having difficulty coping with her labor throughout the entire experience until she received the spinal anesthesia in the delivery room. The researcher recognizes the high incidence of persistent posterior position and the high number of rotations required including two mid-forcep extractions.

Only two of the mothers received analgesia during labor. Mother number five received 25 milligrams of meperidine hydrochloride intravenously when dilated to eight centimeters. Mother number eleven received 25 milligrams meperidine hydrochloride and 25 milligrams promethazine hydrochloride intravenously at three centimeters dilation.

Table 1 provides additional information.

Ages of the mothers ranged from twenty-three to thirty-six years of age. Ages of the primiparas ranged from twenty-three to thirty-one years of age. The mean age of the primiparas was 26 years of age. Mean age of the multiparas was 30 years of age.

For more mean averages, the reader is referred to Table 2.

For the purposes of ordinal ranking, the patients were scored on anesthesia and depressants received in labor, depressants received post-partum, and operative
Table 1. Profile of Information Available on the Labors of Women in the Sample

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<th>Patient</th>
<th>Age</th>
<th>Religion</th>
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Table 1.—Continued Profile of Information Available on the Labors of Women in the Sample

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<td>Breast</td>
<td>6</td>
<td>0</td>
<td>yes</td>
</tr>
<tr>
<td>7</td>
<td>Breast</td>
<td>6</td>
<td>6</td>
<td>yes</td>
</tr>
<tr>
<td>8</td>
<td>Breast</td>
<td>5</td>
<td>5</td>
<td>yes</td>
</tr>
<tr>
<td>9</td>
<td>Breast</td>
<td>6</td>
<td>6</td>
<td>yes</td>
</tr>
<tr>
<td>10</td>
<td>Breast</td>
<td>6</td>
<td>6</td>
<td>yes</td>
</tr>
<tr>
<td>11</td>
<td>Breast</td>
<td>6</td>
<td>5</td>
<td>yes</td>
</tr>
</tbody>
</table>

<sup>a</sup>Numbers refer to Patient number column on page 74.
Table 1.—Continued Profile of Information Available on the Labors of Women in the Sample

<table>
<thead>
<tr>
<th>Room Type</th>
<th>Length of Hospitalization before Delivery</th>
<th>Total Hospitalization</th>
<th>Length of 1st Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&lt;sup&gt;a&lt;/sup&gt; 2 bed Rooming-in</td>
<td>9 hours 39 minutes</td>
<td>3 days 3 hours 20 minutes</td>
<td>12 hours 39 minutes</td>
</tr>
<tr>
<td>2 2 bed Rooming-in</td>
<td>1 hour 35 minutes</td>
<td>2 days 5 hours 35 minutes</td>
<td>2 hours 58 minutes</td>
</tr>
<tr>
<td>3 2 bed Rooming-in</td>
<td>3 hours 17 minutes</td>
<td>2 days 23 hours 47 minutes</td>
<td>3 hours 47 minutes</td>
</tr>
<tr>
<td>4 4 bed Regular</td>
<td>11 hours 58 minutes</td>
<td>3 days 4 hours 5 minutes</td>
<td>8 hours 53 minutes</td>
</tr>
<tr>
<td>5 2 bed Regular</td>
<td>11 hours 56 minutes</td>
<td>2 days 16 hours 24 minutes</td>
<td>8 hours 24 minutes</td>
</tr>
<tr>
<td>6 2 bed Rooming-in</td>
<td>3 hours 9 minutes</td>
<td>3 days 8 hours 18 minutes</td>
<td>4 hours 18 minutes</td>
</tr>
<tr>
<td>7 4 bed Regular</td>
<td>2 hours 45 minutes</td>
<td>1 day 17 hours 10 minutes</td>
<td>2 hours 10 minutes</td>
</tr>
<tr>
<td>8 4 bed Regular</td>
<td>5 hours 5 minutes</td>
<td>1 day 3 hours 25 minutes</td>
<td>2 hours 25 minutes</td>
</tr>
<tr>
<td>9 2 bed Rooming-in</td>
<td>2 hours 34 minutes</td>
<td>3 days 16-1/2 hours 30 minutes</td>
<td>3 hours 30 minutes</td>
</tr>
<tr>
<td>10 2 bed Rooming-in</td>
<td>11 hours 40 minutes</td>
<td>3 days 23-3/4 hours</td>
<td>6 hours 23-3/4 hours</td>
</tr>
<tr>
<td>11 2 bed Rooming-in</td>
<td>12 hours 13 minutes</td>
<td>3 days 6 hours 25 minutes</td>
<td>9 hours 25 minutes</td>
</tr>
</tbody>
</table>

<sup>a</sup>Numbers refer to Patient number column on page 74.
Table 1.--Continued  Profile of Information Available on the Labors of Women in the Sample

<table>
<thead>
<tr>
<th></th>
<th>Length of 2nd Stage</th>
<th>Length of 3rd Stage</th>
<th>Induction</th>
<th>Operative Interference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1(^a)</td>
<td>49 minutes</td>
<td>3 minutes</td>
<td>none</td>
<td>Episiotomy Low forceps</td>
</tr>
<tr>
<td>2</td>
<td>21 minutes</td>
<td>2 minutes</td>
<td>none</td>
<td>Episiotomy Low forceps</td>
</tr>
<tr>
<td>3</td>
<td>27 minutes</td>
<td>3 minutes</td>
<td>none</td>
<td>Episiotomy Low forceps</td>
</tr>
<tr>
<td>4</td>
<td>33 minutes</td>
<td>2 minutes</td>
<td>Amniotomy IV pitocin in D5/W</td>
<td>Episiotomy Low forceps</td>
</tr>
<tr>
<td>5</td>
<td>14 minutes</td>
<td>21 minutes</td>
<td>IV pitocin in D5/W</td>
<td>none</td>
</tr>
<tr>
<td>6</td>
<td>16 minutes</td>
<td>12 minutes</td>
<td>none</td>
<td>Episiotomy Piper forceps</td>
</tr>
<tr>
<td>7</td>
<td>10 minutes</td>
<td>2 minutes</td>
<td>none</td>
<td>Episiotomy</td>
</tr>
<tr>
<td>8</td>
<td>40 minutes</td>
<td>17 minutes</td>
<td>IV pitocin in D5/W</td>
<td>Episiotomy</td>
</tr>
<tr>
<td>8</td>
<td>34 minutes</td>
<td>3 minutes</td>
<td>none</td>
<td>Episiotomy Low forceps</td>
</tr>
<tr>
<td>10</td>
<td>1 hour 35 minutes</td>
<td>2 minutes</td>
<td>Stimulation IV pitocin in D5/LR</td>
<td>Episiotomy Mid forceps</td>
</tr>
<tr>
<td>11</td>
<td>43 minutes</td>
<td>2 minutes</td>
<td>IV pitocin in D5/LR</td>
<td>Episiotomy Mid forceps</td>
</tr>
</tbody>
</table>

\(^a\)Numbers refer to Patient number column on page 74.
<table>
<thead>
<tr>
<th>Position</th>
<th>Apgar: @ 1 &amp; 5 minutes</th>
<th>Complications or Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&lt;sup&gt;a&lt;/sup&gt; Vertex</td>
<td>8 to 10</td>
<td>Slight contraction of pelvis</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Persistent posterior position</td>
</tr>
<tr>
<td>2 Vertex</td>
<td>10 to 10</td>
<td></td>
</tr>
<tr>
<td>3 Vertex</td>
<td>9 to 10</td>
<td>Repair of sphincter ani</td>
</tr>
<tr>
<td>4 Vertex</td>
<td>10 to 10</td>
<td>Slight contraction of pelvis</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Persistent posterior position</td>
</tr>
<tr>
<td>5 Vertex</td>
<td>9 to 10</td>
<td>First degree vaginal laceration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nurse only in attendance</td>
</tr>
<tr>
<td>6 Breech</td>
<td>5 to 8</td>
<td></td>
</tr>
<tr>
<td>Frank</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Vertex</td>
<td>8 to 9</td>
<td></td>
</tr>
<tr>
<td>8 Vertex</td>
<td>10 to 10</td>
<td></td>
</tr>
<tr>
<td>9 Vertex</td>
<td>9 to 10</td>
<td>Persistent posterior position</td>
</tr>
<tr>
<td>Rotated</td>
<td></td>
<td>Repair of sphincter ani</td>
</tr>
<tr>
<td>10 Vertex</td>
<td>9 to 10</td>
<td>Persistent posterior position</td>
</tr>
<tr>
<td>Rotated</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 Vertex</td>
<td>9 to 10</td>
<td>Persistent transverse position</td>
</tr>
<tr>
<td>Rotated</td>
<td></td>
<td>Reports extremely painful</td>
</tr>
<tr>
<td></td>
<td></td>
<td>labor</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Method gave very little relief</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reports no relief from para-cervical or pudendal</td>
</tr>
</tbody>
</table>

<sup>a</sup>Numbers refer to Patient number column on page 74.
Table 1.—Continued  Profile of Information Available on the Labors of Women in the Sample

<table>
<thead>
<tr>
<th>Weight of Baby</th>
<th>Doctor</th>
<th>Analgesia Received in Labor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&lt;sup&gt;a&lt;/sup&gt;</td>
<td>5 pounds 13 ounces</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>7 pounds 7 ounces</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>6 pounds 11 ounces</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>6 pounds 2 ounces</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>7 pounds</td>
<td>3</td>
</tr>
<tr>
<td>6</td>
<td>7 pounds 12-1/2 ounces</td>
<td>4</td>
</tr>
<tr>
<td>7</td>
<td>6 pounds 14 ounces</td>
<td>5</td>
</tr>
<tr>
<td>8</td>
<td>8 pounds 2 ounces</td>
<td>3</td>
</tr>
<tr>
<td>9</td>
<td>8 pounds 7-1/2 ounces</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>7 pounds 10 ounces</td>
<td>1</td>
</tr>
<tr>
<td>11</td>
<td>7 pounds 5-1/2 ounces</td>
<td>1</td>
</tr>
</tbody>
</table>

<sup>a</sup>Numbers refer to Patient number column on page 74.
<table>
<thead>
<tr>
<th>Anesthesia Received in Labor</th>
<th>Total Time in Recovery Room</th>
<th>Post Partum Complications or Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1(^a) Paracervical block @ 6 cm. Repeated paracervical @ 8 cm. Spinal anesthesia in Delivery</td>
<td>3 hours 40 minutes</td>
<td></td>
</tr>
<tr>
<td>2 Pudendal in Delivery</td>
<td>1 hour</td>
<td></td>
</tr>
<tr>
<td>3 Paracervical block @ 8 cm. Pudendal in Labor room</td>
<td>1 hour</td>
<td></td>
</tr>
<tr>
<td>4 Paracervical block @ 6 cm. Pudendal block @ 9 cm. Spinal block in Delivery room</td>
<td>1 hour</td>
<td></td>
</tr>
<tr>
<td>5 none (local after delivery for repair of laceration)</td>
<td>1 hour</td>
<td></td>
</tr>
<tr>
<td>6 none (local for repair of episiotomy)</td>
<td>3 hours</td>
<td></td>
</tr>
<tr>
<td>7 Paracervical block @ 7 cm. Pudendal in Labor room</td>
<td>1 hour</td>
<td>Declomycin medication for &quot;flu&quot; post partum</td>
</tr>
<tr>
<td>8 none (local for repair of episiotomy)</td>
<td>1 hour</td>
<td></td>
</tr>
<tr>
<td>9 Paracervical block @ 4-5 cm. Spinal block in Delivery room</td>
<td>2 hours</td>
<td></td>
</tr>
<tr>
<td>10 Paracervical block @ 5-6 cm. Pudendal @ rim dilation Spinal block in Delivery room</td>
<td>2 hours 20 minutes</td>
<td>Bladder infection 2 pp</td>
</tr>
<tr>
<td>11 Paracervical block @ 4-5 cm. &amp; repeated @ 5-6 cm. Pudendal @ complete dilation Spinal block in Delivery room</td>
<td>2 hours</td>
<td>Spinal headache</td>
</tr>
</tbody>
</table>

\(^a\) Numbers refer to Patient number column on page 74.
Table 2. Table of Mean Averages

<table>
<thead>
<tr>
<th></th>
<th>Primiparas</th>
<th>Multiparas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of hospitalization before delivery</td>
<td>7 hours 46 minutes</td>
<td>2 hours 57 minutes</td>
</tr>
<tr>
<td>Total hospitalization period</td>
<td>2 days 21 hours 55 minutes</td>
<td>2 days 12 hours 38 minutes</td>
</tr>
<tr>
<td>Length of the first stage of labor</td>
<td>6 hours 27 minutes</td>
<td>3 hours 19 minutes</td>
</tr>
<tr>
<td>Length of the second stage of labor</td>
<td>39.6 minutes</td>
<td>13 minutes</td>
</tr>
<tr>
<td>Length of the third stage of labor</td>
<td>6.1 minutes</td>
<td>7 minutes</td>
</tr>
<tr>
<td>Total time spent in the recovery room</td>
<td>1 hour 41 minutes</td>
<td>2 hours</td>
</tr>
</tbody>
</table>
interference required during delivery. The reader is referred to Figure 1. These ranked scores were then used for correlational purposes (see Table 3). Length of the stages of labor is in minutes and therefore interval in nature. Anesthesia and depressants required during labor were tallied together since only two patients received depressants in labor. Both mothers received small dosages.

Table 4 presents a tally of positive and negative signs from Q-sort method number one. This tally provided the second set of numbers used in the correlations.

Table 5 presents the correlations calculated from this information.

Mean averages for both primiparas' and multiparas' first stage of labor demonstrated that these mothers experienced a far shorter than average labor.

Correlations were significant only in one area, at the > .01 level. The longer the mother's first stage of labor, the more negative comments she used in the early post-partum period. This tendency was also present when comparing amounts of anesthesia and depressants received in labor with negative comments. However, it did not reach a significant level.

Examination of prenatal records revealed very little information, none of which was significant. There were no excessive weight gains. Blood work was within normal
### a. Analgesics

<table>
<thead>
<tr>
<th>Medication</th>
<th>Dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetylsalicylic acid p.o.</td>
<td>640 mgm</td>
</tr>
<tr>
<td>Codeine phosphate p.o.</td>
<td>32 mgm</td>
</tr>
<tr>
<td>Propoxyphene hydrochloride (Darvon) p.o.</td>
<td>65 mgm</td>
</tr>
<tr>
<td>Meperidine hydrochloride (Demerol) I.M. or I.V.</td>
<td>25 mgm</td>
</tr>
<tr>
<td>Meperidine hydrochloride (Demerol) p.o.</td>
<td>50 mgm</td>
</tr>
<tr>
<td>Morphine sulfate 'h'</td>
<td>3.6 mgm</td>
</tr>
<tr>
<td>P.A. codeine p.o.</td>
<td>32 mgm</td>
</tr>
<tr>
<td>Pentazocine lactate (Talwin) I.M.</td>
<td>30 mgm</td>
</tr>
<tr>
<td>Alphaprodine hydrochloride (Nisentil) I.M. or I.V.</td>
<td>40 mgm</td>
</tr>
<tr>
<td>Percodan p.o.</td>
<td>1 tab</td>
</tr>
<tr>
<td>Fiorinal p.o.</td>
<td>1 tab</td>
</tr>
<tr>
<td>Darvon Compound p.o.</td>
<td>32 mgm</td>
</tr>
</tbody>
</table>

### b. Hypnotics

<table>
<thead>
<tr>
<th>Medication</th>
<th>Dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promethazine hydrochloride (Phenergan) I.M. or I.V.</td>
<td>25 mgm</td>
</tr>
<tr>
<td>Propiomazine hydrochloride (Largon) I.M. or I.V.</td>
<td>10 mgm</td>
</tr>
<tr>
<td>Promazine hydrochloride (Sparine) I.M. or I.V.</td>
<td>25 mgm</td>
</tr>
<tr>
<td>Hydroxyzine hydrochloride (Atarax) I.M. or I.V.</td>
<td>50 mgm</td>
</tr>
<tr>
<td>Sodium pentobarbital (Nembutal) p.o.</td>
<td>100 mgm</td>
</tr>
<tr>
<td>Sodium secobarbital (Seconal) p.o.</td>
<td>100 mgm</td>
</tr>
<tr>
<td>Glutethimide (Doriden) p.o.</td>
<td>500 mgm</td>
</tr>
<tr>
<td>Methyprylon (Noludar) p.o.</td>
<td>200 mgm</td>
</tr>
<tr>
<td>Tuinal p.o.</td>
<td>100 mgm</td>
</tr>
<tr>
<td>Chloral hydrate p.o.</td>
<td>500 mgm</td>
</tr>
</tbody>
</table>

### c. Cholinergic blocking agents

<table>
<thead>
<tr>
<th>Medication</th>
<th>Dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atropine sulfate I.V. or I.M.</td>
<td>0.25 mgm</td>
</tr>
<tr>
<td>Scopolamine I.V. or I.M.</td>
<td>0.25 mgm</td>
</tr>
</tbody>
</table>

---

Figure 1. Dosages of Medication That Would Produce Comparable Effects
Table 3. Table of Raw Data Used for Calculations

<table>
<thead>
<tr>
<th>Patient Number</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anesthesia and depressants received in labor</td>
<td>12</td>
<td>3</td>
<td>5</td>
<td>11</td>
<td>3</td>
<td>2</td>
<td>5</td>
<td>2</td>
<td>10</td>
<td>11</td>
<td>15</td>
</tr>
<tr>
<td>Operative interference required in delivery</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>1</td>
<td>6</td>
<td>2</td>
<td>2</td>
<td>5</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Depressants received post-partum</td>
<td>18</td>
<td>15</td>
<td>7</td>
<td>12</td>
<td>4</td>
<td>16</td>
<td>5</td>
<td>2</td>
<td>8</td>
<td>16</td>
<td>14</td>
</tr>
<tr>
<td>Length of the first stage of labor</td>
<td>759</td>
<td>178</td>
<td>227</td>
<td>533</td>
<td>504</td>
<td>258</td>
<td>140</td>
<td>145</td>
<td>210</td>
<td>360</td>
<td>565</td>
</tr>
<tr>
<td>Length of the second stage of labor</td>
<td>49</td>
<td>21</td>
<td>27</td>
<td>33</td>
<td>14</td>
<td>16</td>
<td>10</td>
<td>40</td>
<td>34</td>
<td>95</td>
<td>43</td>
</tr>
<tr>
<td>Length of the third stage of labor</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>21</td>
<td>12</td>
<td>2</td>
<td>17</td>
<td>3</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>
Table 4. Table of Positive and Negative Sign Tallies

<table>
<thead>
<tr>
<th>Patient Number</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative signs</td>
<td>42</td>
<td>29</td>
<td>37</td>
<td>39</td>
<td>45</td>
<td>30</td>
<td>25</td>
<td>22</td>
<td>29</td>
<td>23</td>
<td>46</td>
</tr>
<tr>
<td>Positive signs</td>
<td>104</td>
<td>109</td>
<td>101</td>
<td>99</td>
<td>99</td>
<td>123</td>
<td>116</td>
<td>110</td>
<td>115</td>
<td>121</td>
<td>103</td>
</tr>
</tbody>
</table>
Table 5. Table of Correlations

<table>
<thead>
<tr>
<th></th>
<th>Negative Comments</th>
<th>Positive Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anesthesia and Depressants Received in Labor</td>
<td>rho .541</td>
<td>rho .007</td>
</tr>
<tr>
<td>Operative Interference Required in Delivery</td>
<td>rho .278</td>
<td>rho .364</td>
</tr>
<tr>
<td>Depressants Received Post-Partum</td>
<td>rho .329</td>
<td>rho .337</td>
</tr>
<tr>
<td>Length of the First Stage of Labor</td>
<td>rho .750</td>
<td>rho .482</td>
</tr>
<tr>
<td>Length of the Second Stage of Labor</td>
<td>rho .077</td>
<td>rho .028</td>
</tr>
</tbody>
</table>

Rho is significant at the .553 level > .05.

Rho is significant at the .684 level > .01.
limits. Very little information was actually recorded. No significant medical histories were mentioned.

Nursing notes revealed no significant information.
Fetal heart tones remained within normal limits both during prenatal and confinement periods.

Vital signs were essentially non-significant with few exceptions. Mother number two's admission blood pressure was 160/100. Within thirty minutes it had lowered to 138/83. The elevation apparently did not recur. Mother number seven ran a moderate temperature elevation, 101-102°, during the day of delivery and during the first post-partum day. She reported to the investigator that she had the "flu." No medical diagnosis was recorded in the medical records. She was treated with Declomycin during her hospitalization.

Mother number ten suffered a bladder infection, noted on the second post-partum day.

Mother number eleven suffered a "spinal headache." Record audit revealed no other information that seemed significant to this study.

Exclusion from the Study

One patient was excluded from the study because she unexpectedly delivered at home. Her description of her labor and her comments are included here for examination by the reader due to any possible implications for Lamaze.
This patient visited her obstetrician at 10 a.m. the day before delivery. In the physician's office she received an injection of Tocasamine as an attempted induction. She reported that she began contracting and "cramping" almost immediately. She went home with irregular contractions which she described as continuing about 45 minutes.

Being a piano teacher, she gave her lessons for the rest of the day. While walking with her two-year-old daughter about 5 p.m. that evening, she noticed the return of irregular contractions. When she stopped walking, they disappeared. Around 8 p.m. the contractions returned and became regular at 5 minutes apart. She reports that they were very mild and she did not need to use any of the Lamaze breathing techniques with them. After about 45 minutes of regular contractions, they became irregular again and by 9:30 p.m. they were gone. At this time she retired for the night. About midnight she reported arising "for an aspirin for my sore throat." She denies having any contractions that she was aware of at this time. She returned to bed and awoke about 2 a.m. with mild contractions. She reported that they were of the same character as early the prior day. Around 2:45 a.m. she stated that she began the slow chest breathing as she thought that she was just beginning the latent stage of her labor. She reported being very comfortable and still thinking that they might go away. By 3:15 a.m. she stated that they became stronger and that she
was doing the slow chest breathing more deeply. She woke her husband and began preparing to go to the hospital. They were in no hurry as they believed the delivery to be several hours away. The mother reported, however, that from 3:30 a.m., each contraction became much stronger. At this time she decided that she needed to void and went in to the bathroom. She realized then that her labor was moving rapidly. She said to her husband, "Let's go." While finishing her dressing, she reported "I felt blood and ran to the bathroom. There was a heavy bloody show. I sat on the toilet, then I had one very bad, very strong contraction. I felt pressure and spreading. There was no rectal pressure. I was trying to void again. Then I looked down and saw hair. I was still slow chest breathing. I was calm but then I knew that we weren't going to make it to the hospital. I called my husband and told him that I could see the head. He told me to get off the toilet. I wouldn't get off. I said 'I'll hold it in to the hospital.' My husband tried to pull me in to the bedroom. We didn't get that far. Just as I looked down the baby came out and my husband caught her. Then he wrapped her up in his warm shirt. She was crying. Then he undid the cord around her neck. I laid down on the cold floor. I can still see myself there. Then my husband brought in blankets and more blankets and wrapped us up. Next I told him to call the doctor. While he did that I held the baby up close. We could see that she was
fine. The doctor told my husband how to tie the cord in two places and cut in the middle. He said for us to wait until the placenta was delivered and then to come to the hospital. We waited for the next contraction and then I pushed. It came right out, easily and fast. I got dressed, and we all went to the hospital!"

Comments of this mother, who was excluded from the study, are also presented. The questionnaire was given in the same manner.

In response to the first question she stated, "Yes, the classes definitely changed my feelings about labor. They took away my fear of labor by informing me exactly what labor meant. Lamaze made me look forward to labor. I had a tool to help. Last time I was afraid of pain and everything. This time I didn't feel that way. Labor was accomplishing something . . . ."

When asked if she experienced difficulty maintaining mental or physical control, she answered, "No. For me it's really easy to have babies. I really never did panic."

She denies hyperventilation.

When asked if she experienced pain, she said, "No. I wouldn't call it pain, very strong cramping but it wasn't intolerable. It didn't even hurt when the baby came out."

In response to question six, she stated, "I saw the birth as well as I could. I was standing. I guess I was afraid for just a moment. Afraid to look because I thought
she might be dead, since she came out so fast, so easy! I thought to be normal it had to be slow and controlled by the doctor. But she cried right away and I held her. Then I felt great. We weren't fearful from that point on. Her eyes were open and she was warm."

In answering question seven, she described her husband's role in detail as very helpful. She stated, "I wouldn't have changed his role except to have gotten me going faster to the hospital!"

She names her husband as the greatest assistance to her in labor. "All of a sudden he made these good, quick decisions. He didn't panic. He was calm and I knew it. He never expressed any negative feelings the whole time. He was positive and quick."

In commenting about what she likes about Lamaze, she stated, "Lamaze made me feel like an intelligent person having a baby and not a subject for pain and torture. I knew I had an active role. I would be in control. I knew I had something. . . . Lamaze gave me specific tools. And it changes as the labor changes. It's specific. Nothing is unknown. There are no breaks in it. Lamaze is not misleading."

She stated that there was nothing she did not like about the method. And she indicated she would definitely use the method again. She also denied any "special problems" during this pregnancy. However, she did report
having nightmares about her first labor for about two years. She also made the comment that she was "sure that would not happen this time."

When asked question fifteen, if she felt that most husbands should attend their wives in labor she stated, "Yes, and I have a special reason for saying so. Last time he was with me until the head crowned. Then I went to the delivery room and he didn't. I had this tremendously emotional experience and there was no one there who knew me. No one cared! It was a break in communication, a vacancy. I could never share that with him. This time it was the opposite. Now I feel like a stranger here in the hospital. But it's kind of nice. My husband and I are so close. You don't want to lose that tie. And I think that accounted for some of my depression last time. I dwelled on it."

She also stated that women in general should strive to see the birth of their baby and that she would recommend the method to other women.
CHAPTER V

ANALYSIS OF FINDINGS

This chapter discusses the generalizations, conclusions, implications for nursing, and recommendations of this study. Such discussions are limited by the nature of the study. The sample was small. The criteria selected for evaluation were subject to the effects of many variables. The methods used in analyzing the data were subjective. However, it was designed to study the effectiveness of Lamaze preparation for childbirth for the women in this study, who were motivated enough to attend the Lamaze course.

Generalizations

The classes apparently did promote more positive feelings about the childbirth experience or reinforce such feelings when already present.

Most of the mothers did reach a point during their labors where they experienced difficulty maintaining mental or physical control. Usually this difficulty was experienced during transition.

Hyperventilation did not appear to be a problem. If it was experienced, it was reportedly recognized and controlled.
These mothers did report experiencing pain during labor. The nature and the degree of the pain apparently varied to a large extent. Most of the mothers reported the more intense discomfort to be during transition.

All of the mothers were able to remain awake for their deliveries. Some described pleasant emotional responses to the birth, and others described experiencing more of an intellectual curiosity in the situation. Several mothers also described a feeling of standing outside themselves and watching.

All of the husbands were present in both the labor and delivery rooms. Their presence was referred to in a strongly positive manner. Several mothers described difficulty in continuing to maintain control of their breathing and relaxation when the husbands were asked to leave the room for some reason. Seven of the mothers named their husbands as giving them the greatest assistance in labor. Four named the nurse as giving the greatest assistance although these four also felt that their husband's presence was very helpful. The nurses seemed to step in and become the mothers' primary support when the husband became apprehensive or was unable to give strong enough support for some reason.

The mothers expressed positive feelings about knowing what to expect in labor, understanding the childbirth process, and knowing how to relax and work with their
labors. Negative responses were less frequent. One mother described having unrealistic expectations for the length of her labor. Another described disappointment at requiring "so many drugs." She had received meperidine hydrochloride 25 milligrams and promethazine 25 milligrams intravenously during labor, two paracervicals, and a spinal anesthesia in the delivery room.

All the mothers indicated that they would use the method again. They stated that they would also recommend the method to other women.

These mothers generally did not experience "special problems" during their pregnancy.

Record audit revealed that those mothers experiencing a persistent posterior or transverse vertex presentation expressed more difficulty in maintaining control. They also described higher degrees of pain and, in all cases, they received spinal anesthesia.

Six of the mothers experienced a low forceps delivery. Apparently this was not important to those mothers. However, it may indicate as suggested earlier, that such preparation does not significantly reduce the need for operative interference during the delivery.

Although local anesthesia was frequently used, the use of analgesia or depressants during labor seems to have been very minimal. This seems not to have been the case on
the post-partum ward where it appears that these mothers freely used oral analgesics and depressants.

The mean age of these primiparas was 26.1 years of age, which is above the mean age for primiparas. This would indicate that older-than-usual primiparas tend to seek classes in the Lamaze method.

Review of the prenatal records and nurse's notes for these mothers indicated either very uneventful pregnancies and post-partum periods or lack of recorded information. Complications during the post-partum period were minimal. One mother experienced a "spinal headache," another experienced a bladder infection, and one mother had an elevated temperature.

Mean averages of the length of the first stage of labor suggest that the Lamaze method may reduce the length of the normal labor. This interpretation may be warranted for primiparas but cannot be inferred for multiparas due to the size of the sample.

One correlation was significant at the > .01 level. The longer the first stage of labor, the more negative were the comments made about the method and the experience by these mothers.

Conclusions

From the data presented in the preceding pages, from the review of literature, and from the researcher's
experience gained in doing this study, the following conclusions are derived:

1. This study does make a contribution towards evaluation of the Lamaze method of anticipatory guidance for antepartal patients. All of the participant mothers did remain awake, aware, and fully participating in their childbirth experience. Comments from these mothers about the method were strongly positive.

2. Lamaze did not offer a means to painless childbirth for this group of women but offered instead a way to minimize tension and cope with the discomfort of childbirth.

3. Use of Lamaze apparently did not reduce the need for operative interference for these women.

4. These patients, trained in Lamaze, used minimal amounts of analgesics.

5. The presence of the husband in both the labor and delivery areas offered great assistance to these mothers in helping them to continue to maintain mental and physical control.

6. The occurrence of hyperventilation did not appear to be a valid criticism against Lamaze, based on the experience of these mothers.
7. Education in understanding the childbirth process and how to work with it was very important to these mothers.

8. The researcher believes that the mothers who desire to take such a course, should do so in accord with their physicians' recommendations. She suspects that this accordance may be associated with the behavior of the mother in labor.

9. This study supports the thesis that such preparation is effective in at least the uncomplicated labor and probably also is of value even in the complicated situation. The position of the vertex baby apparently is an important factor since those mothers experiencing a persistent posterior position required spinal anesthesia in the delivery room.

Implications for Nursing
The researcher noted the following implications for nursing:

1. The amount of nursing care required for these mothers may not be less than for most other mothers. For many mothers, the use of Lamaze may increase her need for nursing care and support.

2. The father is prepared to offer assistance to his wife and if both so desire, he should be allowed to remain at his wife's side whenever feasible. The
mothers in this study suggested that he remain during vaginal examinations and during the expulsive stage of labor if both husband and wife desire, assuming there are no medical complications or substantial reasons why his presence is not desirable. He also may need nursing support.

3. The patient has the right to choose to use such a method of childbirth, assuming that her physician agrees. She also has a right to the nurse's support in her decision.

4. Since the patient has a right to supportive nursing care, this requires that the nurse be knowledgeable and understand the method of childbirth preparation and the underlying philosophy upon which it is taught.

5. Mothers using such a method must never be led to think they have failed to succeed in proper use of the method. Lamaze is only an aid to cope with labor and it has limitations. If the mother finds one of these limitations she must not interpret this as her failure. Instead, her efforts and behavior should be praised in order to increase her ego strength.

6. Review of labor, being a normal event that should take place in the early post-partum period, is especially important to these mothers. For
continuity of care, it would seem helpful if the attending labor room nurses would visit these mothers post-partum for this review.

7. The nurse teaching these antepartal classes:
   a. Should not lead the mother to expect a shorter-than-average labor.
   b. Should not introduce fearful situations to the expectant mother.
   c. Should not lead the expectant mother to expect a painless childbirth.
   d. Should recognize individual needs and work through them.
   e. Should encourage the use of analgesics or anesthetics at any point when the mother is no longer comfortable or enjoying the childbirth process, if there are no medical contradictions to its use.

8. Nursing notes should contain information about the individual that might be helpful to the nursing team in planning the patient's present or future nursing care plan or which might be informative to those doing future research in the maternal-newborn area.
Recommendations

The researcher recommends that:

1. The study be replicated using a larger sample and having both a control group and an experimental group.

2. A more valid questionnaire be developed.

3. A study be done to compare other methods of childbirth preparation with the Lamaze method.

4. Such classes be taught in a manner that:
   a. Does not lead the mother to expect a shorter than average labor.
   b. Does not introduce fearful situations to the expectant mother.
   c. Does not lead the expectant mother to expect a painless childbirth.
   d. Supports the physical, psychological, and social needs of the mother and her husband.
   e. Encourages the use of analgesics or anesthetics at any point that the mother is no longer comfortable or enjoying the childbirth process.

5. Fathers also be interviewed.
CHAPTER VI

SUMMARY

The purpose of this study was to describe the course of labor of women who have attended Lamaze preparation for childbirth classes, to describe what comments these Lamaze trained mothers use about their childbirth experience during the early post-partum period, and to determine the degree of correlation that exists between specific aspects of the course of labor and early post-partum periods and the kinds of comments about the childbirth experience made by these mothers.

The theoretical framework was based on the idea that the mother's success in attaining her goal of adapting to labor would promote her ego strength and increase her ability to problem solve in the future, and that finding self-fulfillment would promote her positive feelings about the experience and have a beneficial effect on the beginning mother-child relationship.

Review of obstetrical literature indicated a lack of agreement as to the effectiveness of such childbirth preparation. There was also lack of agreement on which principles are actually the basis of such methods and which principles are valid.
The data for this study were collected and described using a modified directional analysis system and card sort method of content analysis. Mean averages and correlations were also calculated. The sample of eleven mothers consisted of the first twelve mothers to deliver following the acceptance of the research proposal. One mother was excluded. These mothers attended the Lamaze course given by the researcher in a southwestern community of 300,000 population.

The limitations of the study were: (1) the sample was small; (2) mothers included in the study were referred for Lamaze training and therefore use of random sampling or control group comparison was impossible; (3) the sample was composed of only English speaking women of the Anglo-middle class; (4) the researcher was both teacher and observer, and therefore more subject to bias than a neutral observer; (5) many variables were in action that the researcher could not control; (6) attention was limited to conscious attitudes expressed verbally, for it was clear that the data would not allow an adequate assessment of deep-seated attitudes; and (7) the participating mothers were aware of the researcher's interest in the Lamaze method (since she was their teacher) and this may have colored their responses.

All of the mothers in the sample did remain awake, aware, and fully participating in the childbirth experience. All of the husbands were present in both the labor and
delivery rooms. The comments these mothers used in the early post-partum period were strongly positive in nature. Mean averages of the first stage of labor demonstrated that these mothers experienced a far-shorter-than-average first stage of labor. One correlation was significant at the > .01 level. The longer the first stage of labor, the more negative were the comments made about the method and the experience. All of the other correlations were not significant.

In conclusion, the structured questionnaire proved to offer an adequate description of the mother's experience and feelings about that experience. All of the questions did not, however, lend themselves to the modified directional analysis system of content analysis.

The study findings seem to support the belief that Lamaze preparation for childbirth is beneficial to those mothers who are motivated to take such a course.
APPENDIX A

INFORMATION AND CONSENT FORM FOR PARTICIPATION IN A RESEARCH STUDY UTILIZING MATERNITY PATIENTS TRAINED IN THE LAMAZE METHOD OF CHILDBIRTH

A research study is being conducted by A. D. Neal on maternity patients trained in the Lamaze method of childbirth. The purpose of this form is to describe briefly the study and to ask if you will participate in it.

If you will do so you will be visited in the post partum unit of the hospital within 72 hours following your delivery. During this visit you will be asked to respond to a questionnaire focused on your childbirth experience and use of the Lamaze method. The researcher will record your responses by hand. She will also examine your medical records for information concerning the course of your labor.

All information which is obtained will be kept confidential. Within the study, all information will be identified by a number, not your name.

Your physician must also give permission for you to participate in this study. The record of your comments could contribute some very important information to health workers interested in finding out how they can be more helpful to patients. If you are willing to participate, please sign your name in the space provided below.

I consent to participate in this study as described above. I understand that if I choose to withdraw from the study at any time I will be able to do so.

Signature ____________________________

Date ________________________________
Mrs. ______________________ has the permission of her physician to participate in the research study as described above.

Signature__________________

Date  ______________________
### APPENDIX B

#### RECORD AUDIT FORM

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<th>Details</th>
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<tbody>
<tr>
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<tr>
<td>Doctor</td>
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<td>Record #</td>
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<tr>
<td>Hospital</td>
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<td>Race</td>
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<td>Religion</td>
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<td>G/ P/ A/</td>
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<tr>
<td># of classes</td>
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<td>Age</td>
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<tr>
<td>Breast or Bottle</td>
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<td>Husband's presence in classes</td>
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<tr>
<td>labor room</td>
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<td>EDC</td>
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<tr>
<td>Rooming-in or Regular</td>
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<td>Adm.</td>
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<td>Dishg.</td>
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<td>Total</td>
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<td>Length hospitalization before delivery:</td>
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<td>Length of labor:</td>
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<td>1st stage</td>
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<td>2nd stage</td>
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<td>3rd stage</td>
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<td>DX:</td>
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<td>Stimulation or Induction:</td>
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<td>Complications:</td>
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<td>Infections:</td>
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<td>Bld. Loss:</td>
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<td>Operative Interference:</td>
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<td>Epis.:</td>
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<td>Sex:</td>
<td></td>
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<tr>
<td>Position:</td>
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<tr>
<td>Apgar:</td>
<td></td>
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<tr>
<td>Comments:</td>
<td></td>
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<td>FHT during hospitalization:</td>
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<tr>
<td>VS during hospitalization:</td>
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</table>
Analgesia received during labor: __________________________________________

Anesthesia received during labor: _________________________________________

Total time in Rec. Rm.: _________________________________________________

Significant Medical History: _____________________________________________
  Type:_________  Rh:_________
  Meds:______________________________________________________________
  Family:____________________________________________________________

Previous Pregnancy History:______________________________________________

Prenatal Record:________________________________________________________

BP:_________  Wt. Gain:_________  Hot:_________  Hgb:_____________________

POST PARTUM MEDICATIONS RECEIVED AND OTHER NOTATIONS IN MEDICAL RECORDS:

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<thead>
<tr>
<th>Delivery Day</th>
<th>1st PP Day</th>
<th>2nd PP Day</th>
<th>3rd PP Day</th>
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APPENDIX C

STANDARDIZED INSTRUCTIONS FOR THE SUBJECTS RESPONDING TO THE QUESTIONNAIRE

Mrs. _________________________ I am here as a result of the research project you consented to participate in and am not associated with the staff of this hospital. I am now going to give you the questionnaire which is a part of the study. I will ask the questions and write down your responses. Your honest comments could contribute some very helpful information. Your name will not be used in the study.
APPENDIX D

POST PARTUM QUESTIONNAIRE FOR MOTHERS USING LAMAZE

This questionnaire is to be answered within 72 hours after delivery. Its purpose is to help the researcher determine if Lamaze is an effective method to use during labor and to describe the strong and weak points of this method as seen by the mother.

1. Did the Lamaze classes change your thoughts and feelings about labor? If so, how?

2. Did you experience any difficulty maintaining mental or physical control in labor? If so, at what point?

3. Did you hyperventilate? If so, at what point?

4. If you did hyperventilate, how did you handle it? Did it help?
5. Did you experience pain? If so, when?

6. Did you see the birth of your baby? Please, explain how you felt at the time.

7. How would you describe your husband's role during your labor? How would you have changed it?

8. Who was the greatest assistance to you while you were in labor? Why?

9. I'll ask you what you did like and what you did not like about the Lamaze method. First, what was there that you did like about Lamaze?

10. People sometimes do not like Lamaze. What part of the Lamaze method did you not like?
11. Would you use Lamaze again with any future baby?

12. Did you have any "special problems" during your pregnancy?

13. Why did you attend the classes?

14. Do you believe that most women should be encouraged to use Lamaze or only those that express the interest themselves?

15. Do you feel that most husbands should attend their wives in labor and delivery? Why?

16. Do you feel that women in general should strive to see the birth of their baby?

17. Would you recommend the method to other women?
APPENDIX E

LETTER REQUESTING PERMISSION FOR FEASIBILITY STUDY IN THE HOSPITALS

14 September 1970
225 Spring Valley Drive
Tucson, Arizona 85704
297-4204

Office of:
Director of Nursing Service

Dear Ladies,

In preparation for a research project to describe the course of labor of women having attended the Lamaze method of childbirth classes, I find it necessary to do a feasibility study to determine what information is available on hospital charts after discharge from a maternity unit.

A portion of my data collection will be based on record audit and I find it necessary to know what data will be available in both hospitals included in my study.

This information will not be used in any written form. It is simply needed to inform me as to what type of information is consistently available on charts. Examination of fifteen charts would be quite sufficient. Neither patients' names nor doctors' names would be noted. Thank you for your time.

Yours truly,

Alaine Diann Neal, R.N.
APPENDIX F

LETTER REQUESTING PERMISSION TO CONDUCT RESEARCH STUDY IN THE HOSPITALS

16 October 1970
225 Spring Valley Drive
Tucson, Arizona 85704
297-4204

Office of:
Director of Nursing Services

Dear Mrs. ,

A research study is being conducted by A. D. Neal on maternity patients trained in the Lamaze method of childbirth. The purpose of this letter is to ask permission for the researcher to conduct a portion of her study in the maternity unit at .

If you will allow her to do so, patients will be visited in the post partum unit of the hospital within 72 hours following their delivery. During this visit they will be asked to respond to a questionnaire focused on their childbirth experience and use of the Lamaze method. The researcher will record the responses by hand. She will also examine your medical records for information concerning the course of labor for each patient in the study.

All information which is obtained will be kept confidential. Within the study, all information will be identified by a number, not the patient's name.

Both the patient and their physician must give written permission before delivery for the mother to participate in the study.

Mrs. Neal is a graduate student at the University of Arizona College of Nursing. She is working towards a Master of Science degree in maternal-newborn nursing. She is at present a registered nurse in the state of Arizona. Her advisor is Miss Betty Jo McCracken, associate professor. She can be reached at the University of Arizona College of Nursing.
It is hoped that this study will contribute some very important information to health workers interested in finding out how they can be more helpful to patients. Thank you.

Sincerely,

Alaine Diann Neal, R.N.
University of Arizona
College of Nursing
APPENDIX G

LIST OF PATIENT INFORMATION GATHERED

Patient information gathered included:

1. Age, doctor, hospital
2. Religion, race
3. Estimated date of confinement
4. Gravida, para, abortions
5. Number of classes attended
6. Husband's attendance in classes, labor, and delivery
7. Total length of hospitalization
8. Length of hospitalization before delivery
9. Length of each stage of labor
10. Diagnosis, complications, and operations
11. Breast or bottle feeding
12. Vital signs—prenatal and during confinement
13. Anesthesia received during hospitalization
14. Depressants received during hospitalization
15. Apgar score
16. Abnormalities noted in fetal heart tones
17. Time spent in recovery room
18. Significant medical history
19. Previous pregnancy record
20. Prenatal record—weight gain, blood work, complications
21. Obstetrical interference required
22. Notation of nursing or medical care problems in records
23. Verbal expressions of patients during interview
APPENDIX H

RANKED LIST OF ANESTHESIA, OPERATIVE INTERFERENCE, 
AND LIST OF MEAN AVERAGES REPORTED

Anesthesia was ranked as follows:

1. none  
2. local  
3. pudendal  
4. paracervical  
5. paracervical and pudendal  
6. repeated paracervicals and pudendal  
7. penthrane mask, self administered  
8. penthrane mask and paracervicals  
9. spinal  
10. paracervical and spinal  
11. paracervical, pudendal, and spinal  
12. repeated paracervicals and spinal  
13. repeated paracervicals, pudendal, and spinal  
14. general

For examination purposes, mean averages were given for:

1. length of hospitalization before delivery  
2. total hospitalization period  
3. length of the first stage of labor  
4. length of the second stage of labor  
5. length of the third stage of labor  
6. total time spent in the recovery room

Operative interference will be ranked as follows:

1. none  
2. episiotomy  
3. low or outlet forceps  
4. mid forceps or Piper forceps  
5. Cesarean section

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