THE EFFECT OF PRENATAL EDUCATION UPON THE KNOWLEDGE AND ATTITUDES OF FIFTY POSTPARTUM PATIENTS

by

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CHAPTER I

INTRODUCTION

Pregnancy and childbirth mean something different to each woman, but in general, these terms refer to a time of preparation. Throughout history among different cultures, this preparation has differed. "The American culture has evolved a system of childbearing in which each prospective mother potentially receives the best science has to offer in terms of a physician and hospitalization" (Haire, 1972). In the context of physical care, Haire's statement was accepted. Some question exists however as to the adequacy of the emotional care as well as the adequacy of the instruction given to each mother-to-be.

The impact of the "natural childbirth" movement upon the American culture has bearing upon the focus of this study, therefore a brief discussion of methods, purposes and studies of natural childbirth are included. In 1959, Thank You Doctor Lamaze was first published in the United States. This book presented one woman's experience with the Lamaze technique of natural childbirth, and served to introduce on a broad scale to the American public, a method of preparation for childbirth in which the mother

actively participated in the process of birth. Publication of this book created an upsurge of interest in alternative methods of childbirth which led to a widespread introduction of other previously established methods of preparation for childbirth. These methods included the Read (1957) method practiced in England, the Pavlovian or Russian technique (Tanzer, 1972), and the psychoprophylactic or Lamaze (1970) method used extensively in France. Each of these methods involved prenatal education to assist the pregnant women in understanding what happened to her body during pregnancy, labor, and delivery, as well as conditioning exercises to enable her to participate in the birth process. All of these methods of preparation were grouped under the general category of natural childbirth. This term, natural childbirth, has many connotations ranging from Karmel's (1965), and Lamaze's (1970) idea of delivery without pain, through Read's (1957) idea of delivery without fear, to Tanzer's (1972) view of the more positive subjective experience of prepared women during delivery.

Studies concerning the advantages of natural childbirth have been undertaken but for the most part, research into natural childbirth has dealt with its physiological effectiveness. Investigations have compared users and non-users of natural childbirth techniques in terms of length of labor, amount of medication, and condition of the

infant as measured by the Apgar score.

Natural Childbirth and Length of Labor

Several authors (for example, Huttel, 1972, and Yahia, 1965) have suggested that prenatal education and conditioning exercises enable the mother to experience a shorter labor. However, contradictory evidence exists in that Reid etal. (1972) found in a study of 800 women that women who used a technique of natural childbirth did not have a significantly shorter labor.

Natural Childbirth and Medication

Users of natural childbirth techniques tend to require much less labor and delivery medication. This is an important benefit because, as Dr. Virginia Apgar (1966) pointed out, "almost everything ingested by or injected into the mother can be expected to reach the fetus within a few minutes." According to Tanzer (1972), the use of drugs during pregnancy, labor and delivery is a dangerous practice in terms of possible harm to, 1) the mother, 2) the baby, 3) the relationship between the mother and baby. Concerning the possible danger of obstetrical medication and anesthesia to the mother, Hellman (1971) stated that: "Anesthesia is playing an increasing role in maternal mortality. It is the decisive factor in five per cent of such deaths and a contributing factor in another five per cent." In relation

to the baby, Brazelton (1970) found that:

> ...some sluggishness of respiration is observed in the majority of infants whose mothers have received morphine or its derivatives, barbituates, ether, or other drugs in labor. This especial sensitivity of the fetus to the effects or occasional side effects of almost all forms of maternal anesthesia poses one of the most difficult problems in obstetrics.

It has become increasingly apparent that many babies who must be resuscitated at birth may have brain damage which is not immediately identifiable (Brazelton, 1970; Windle, 1969). Drugs may also affect the mother-child relationship in that a sleepy baby may be unresponsive and this sleepiness of the infant or the lack of milk in some drugged mothers may make breast feeding more difficult (Brazelton, 1971).

Natural Childbirth and the Apgar Score

The Apgar score is an index for evaluating the infant's condition at birth in terms of heart rate, respiratory effort, muscle tone, reflex irritability, and color. The use of medication will affect the physical condition of the baby at birth as described above, and this will be reflected in the Apgar score. Therefore, users of natural childbirth techniques requiring less labor and delivery medication may give birth to infants with better Apgar scores.

There is no doubt that the effect of the use of natural childbirth techniques upon the physiological aspects of labor and delivery are important to ascertain. However, additional benefits of natural childbirth have been claimed and these also need examination. Thus, various proponents of natural childbirth have suggested that their methods enhance a woman's feelings of self-esteem and usefulness; make pregnancy and childbearing more meaningful; strengthen marital and mother-child relations; and enrich maternal feelings (Read, 1953; Portnuff, 1954; Karmel, 1965; Bing, 1967; Lamaze, 1970; Tanzer, 1972). Tanzer (1972) felt these benefits were of utmost importance since, "childbearing is a pivotal experience in a woman's life. Having a baby changes her identity and alters her relationships with her husband, with her parents, and with her other children."

To date, little effort has been made to identify the attitudes and reactions to childbearing of the patient who is not participating in natural childbirth education. Many authors refer to this lack of information (Morris, 1960; Grimm, 1967; Mead and Newton, 1967; Blankfield, 1972). Grimm (1967), in her discussion of the psychological and social factors in pregnancy has stated:

> ... regardless of the theoretical framework, virtually all who have studied emotional reactions in pregnancy agree on two issues,

> 1) all women have both positive and negative attitudes towards their pregnancy and 2) all women experience an increase in anxiety or tension during that time.

With the exception of natural childbirth studies, all investigations dealing with the realtionship of personality variables to psychological and physiological reactions during labor and delivery have utilized physicians as respondents (Grimm, 1967). In other words, a woman's attitude was measured either by her physician's appraisal of her emotional status or his knowledge of the physiological characteristics of her labor and delivery. That is, a woman experiencing a short and uncomplicated delivery would probably receive a high attitude rating. The present investigator considered the reliance on physician ratings to be a limitation of the research area. To the author's knowledge, no studies have been conducted in which patients attending prenatal classes other than natural childbirth classes rated their own attitudes toward pregnancy, labor and delivery. A second question as yet unanswered concerns the extent to which the participator in a childbirth education class retains the cognitive material to which she has been exposed. A third question relates the effect of the exposure to cognitive information to the birth experience. To arrive at some understanding of this third problem, a review of the literature was undertaken concerning the relation between the exposure to factual

material and favorableness of attitude. Since no studies of this nature have been done in the general area of childbirth, the following discussion was drawn from research into other areas.

Researchers who have studied the relationship between cognitive learning and attitude change have looked at this problem in terms of a persuasive communication (Greenwald, 1968; Hovland, 1949; McGuire, 1966; Miller, 1959; Watts and McGuire, 1964). Thus, Greenwald (1968) stated:

> It is a common assumption that the effectiveness of a persuasive communication is at least in part a function of the extent to which its content is learned and retained by the audience. It remains an empirical question to determine whether acceptance of a persuasive communication is related to retention of its content.

It is widely hypothesized that cognitions bearing on the object of an attitude form a major component of the structure of the attitude towards that object (Katz, 1954; Smith, Brunner and White, 1956; Miller and Campbell, 1959; Rokeach, 1960; Krech, Crutchfield and Ballachey, 1962). "Since the individual is not born with his cognitions but acquires them, there seems to be no reasonable alternative to the assumption that cognitions bearing on attitude are learned (Greenwald, 1968)." The research however, as reviewed by Greenwald in 1967 and Hovland in 1953, is not wholly supportive of this hypothesis.

> It was generally found that both communication retention and persuasion diminish with increasing time between communication and post test, consistent with the hypothesis that retention is necessary for persuasion.. On the other hand, these same studies have found only weak and variable correlations between communication retention and persuasion among subjects tested at the same post test interval, suggesting that the relation between retention and persuasion is not a necessary one. (Greenwald, 1968)

Greenwald (1968) conducted research in which communication retention was the manipulated variable and found that communication content is not a sufficient condition and perhaps not even a necessary condition for persuasion. He concluded that "perhaps persuasive communications can induce attitude change without necessarily providing the cognitive content on which the attitude is based."

While the literature did not conclusively provide a framework for the problem, this researcher suggests that as a result of prenatal education, the more knowledge a patient gains concerning pregnancy, labor and delivery, the more favorable her resultant attitude toward the labor and delivery experience will be. This suggestion was derived from the statements, 1) postpartum patients have more or less favorable attitudes towards their labor and delivery (Hurst, 1938; Menniger, 1943; Thompson, 1942) and, 2) understanding is pertinent to attitude development (Redman, 1972).

Statement of the Problem

The preceeding discussion of prenatal education and the relationship between attitude and knowledge leads to the following questions which this investigation attempted to answer.

To what extent does prenatal education affect the labor and delivery experience of patients in a selected clinical setting?

How effective is prenatal education in terms of the subject's favorable attitude formation towards the labor and delivery experience?

What is the relationship between prenatal education and the patient's knowledge retention concerning pregnancy, labor and delivery?

CHAPTER II

METHODOLOGY

Setting of the Study

The investigation was conducted in a county hospital affiliated with a medical school and in its associated clinic. The hospital is located in a city with a population of approximately 325,000. Specifically, the data were collected in the postpartum section of the county hospital.

Prenatal classes were offered to all clinic patients planning to deliver at the selected hospital. These classes were intended to be an integral part of the prenatal care. The series consisted of five classes. Films, pamphlets, and audio-visual aids augmented the classes. The prenatal classes were instituted in August of 1972. Information concerning the specific content and instructors of each class is presented in Appendix A, p.51.

Subjects

The study sample consisted of fifty postpartum patients who had delivered at the selected county hospital. The sample size was set at fifty because of the time

involved to obtain such a sample.

Some homogenity of the sample was ensured by selecting as subjects only that patient meeting the following criteria:

1. availability and willingness to participate
2. delivery had occurred within the previous forty-eight hours
3. delivery was vaginal
4. subject was married and living with spouse
5. the baby was to be kept by the subject
6. the baby was healthy at the time of administration of the data collecting tool
7. subject had made at least four visits to the prenatal clinic at the selected county hospital

The subjects were selected on the basis of attendance or non-attendance at the prenatal classes and placed in either the attenders or non-attenders group. Members of the attenders group had attended at least Class I, III and V, while the non-attenders group was restricted to those who did not attend either Class III or V. The investigator determined Classes I, III and V to be most directly related to the labor and delivery experience by virtue of their content. (See Appendix A, p.51 for the specific content of each class) As subjects became available who met the sample criteria, they were included in the appropriate group until a total of twenty-five subjects was obtained for each group.

The subjects ranged in age from 16 to 36 with an average age of 22. They had completed from 8 to 16 years

of education with a mean of 11.54 years. The average number of pregnancies was 2.38 with a range from 1 to 6. Two other investigators (Moore-Nunnally, 1973; Niswander and Gordon, 1972) obtained information regarding age, education and the number of pregnancies (gravida). These findings are presented together with the similar data from the present research sample in Table 1. Moore-Nunnally's

Table 1. The Mean Age, Education and Gravida Obtained in the Present Research, Moore-Nunnally's and Niswander and Gordon's Studies of Pregnant Women

	Present Research	Moore-Nunnally	Niswander & Gordon
Age	$n = 50$ $\bar{x} = 21.96$	$n = 78$ $\bar{x} = 21.89$	$n = 19{,}000$ $\bar{x} = 22$
Gravida	$n = 50$ $\bar{x} = 2.38$	$n = 78$ $\bar{x} = 2.27$	$n = 19{,}000$ $\bar{x} = 2.46$
Education	$n = 50$ $\bar{x} = 11.54$	$n = 78$ $\bar{x} = 12$	$n = 18{,}000$ $\bar{x} = 11.55$

data were collected at the same county hospital clinic but at an earlier period in time. Niswander and Gordon's data were the result of a seven-year study conducted at fifteen university affiliated medical centers. The similarity among the three studies seems to indicate that the present sample does represent a typical pregnant population at a university

affiliated medical center.

A comparison of the attender and non-attender groups in terms of age, gravida, and educational level in Table 2 shows, on inspection, no gross difference between them. It would seem that the two groups are not dissimilar.

Table 2. The Mean Age, Education and Gravida of the Attender and Non-Attender Groups

Characteristic	Attenders	Non-attenders
	n = 25	n = 25
Age	22.32	21.60
Gravida	2.04	2.72
Education	11.60	11.48

Ideally all patients in the attender group would have attended all classes and the non-attenders attended none. However many clinic patients attend Class I prior to an initial doctor appointment. Eight patients from the non-attender group attended Class I. Only six patients from the non-attender group had attended Class II or IV. No non-attender subjects attended Class III or V. Sixty-four per cent of the attender group had attended all five classes. All attender group subjects attended Class I, III and V. Seventeen attended Class II and twenty attended Class IV.

Development of the Data Collecting Tool

In view of the fact that no tool could be found which assessed cognitive knowledge and attitudes of patients attending required prenatal classes in a public hopsital, a suitable tool was developed by the researcher. The final tool developed was a patient questionnaire combined with a chart audit form. The chart audit form was used to determine which patients met the sample criteria.

The initial questionnaire was developed after formulating the purpose and goals of the study, a review of the relevant literature and informal discussions with nursing staff, graduate nursing students, members of the graduate nursing faculty, the chief of the obstetrical services, and the perinatal nurse specialist. The questionnaire was pretested by five patients who met the criteria of the sample population, and by several graduate nursing students. The questionnaire, as initially presented, required the average subject one and one-half hours for completion. This was too long a time period for the postpartum patient. Also, certain questions and statements were found to be poorly phrased and difficult to understand. Therefore revisions were made and the final questionnaire read and critiqued by the perinatal nurse specialist and an associate professor of Sociology prior to administration to the sample population.

The final patient questionnaire contained four sections (See Appendix B, p. 52 for a copy of the actual questionnaire):

Part A elicited information not available in the patient's chart
Part B consisted of five open-ended statements dealing with attitudes towards labor and delivery and prenatal classes
Part C was a series of twenty-five attitude statements
Part D consisted of nine multiple choice questions dealing with factual material concerning pregnancy, labor and delivery

Part A of the patient questionnaire had two purposes, 1) to check on the accuracy of some data found in the patient chart as for instance the actual classes which the subject attended, 2) to obtain information such as education which often was not available in the patient chart.

Part B represents an inventory of attitudes towards pregnancy in the form of open-ended statements adapted from Tanzer (1972). Modifications in the statements used in this research were made where necessary. For example Tanzer (1972) administered her test during pregnancy and one statement which she used was "Pregnancy is _____ ". This statement was modified in this research to read, "My labor and delivery was _____."

In order to develop Part C, a review of the relevant literature was undertaken with reference to the meaning of attitudes, the development of patient attitudes and the

evaluation of attitudes. A series of twenty-five attitude statements was developed by the researcher. The statements were divided into four general areas relating to the patients' attitudes toward their labor and delivery. These areas were:

1. feelings about one's self during labor and delivery
2. feelings about the particular hospital and staff at the facility in which labor and delivery took place
3. feelings about the pain which may have occurred during labor and delivery
4. feelings about the worth of knowledge concerning labor and delivery

The statements which were purposely mixed for questionniare administration included:

1. Self

   I feel badly about my labor and delivery.
   My husband should be proud of me.
   I am not afraid to have another baby.
   I wish that men had babies so we women would not have to go through labor and delivery.
   If women have some idea of what labor is like, they'll have an easier time.
   I lost control of myself during labor and delivery.
   There is really nothing a woman can do to help herself during labor and delivery.

2. Hospital and Staff

   The doctor was always there when I needed him.
   I was not sure of where to go when I came to the hospital in labor.
   The delivery room frightened me.
   The nurses were attentive.
   No one told me anything during my labor and delivery.
   I wish I had had my baby in a private hospital.

3. Pain

Nothing seemed to help the pain.
I wished I had been asleep during labor and delivery.
The pain I felt was not unbearable.
No matter what anyone says, childbirth is a very painful experience.

4. Knowledge

The breathing techniques were a waste of time.
If I become pregnant again, I will go to pregnancy classes.
I was well prepared for my labor and delivery.
I was interested in reading the pamphlets given to me in the clinic.
I asked questions about my progress during labor and delivery.

The patient was instructed to answer each item in terms of her own labor and delivery by checking a column marked either "strong yes", "yes", "strong no", or "no".

Part D was developed after establishing a frame of reference through attending and/or instructing the specified prenatal classes. Nine multiple-choice questions were developed and included in the questionnaire. Content of the questions was validated by the perinatal nurse specialist.

The first question concerned ovulation, the correct answer was "14" days. The second question asked for the warning signs of danger in pregnancy and the answers were "vaginal bleeding" and "blurred vision". The third questioned the subject's knowledge of good dental care during pregnancy and the answers were,"a toothbrush with medium

to soft bristles", the "use of dental floss" and "downward stroke on upper teeth and upward stroke on lower teeth". The fourth question concerned body mechanics and the correct answer was, "using your legs to do the work in lifting". The fifth question concerned breathing techniques in early labor, the answer was,"slow deep chest breathing". The sixth question asked for the reasons for relaxing during labor to which the correct responses were, "will allow your uterus to work more freely and efficiently", and "involves practice before going into labor". The seventh question called for the signs of true labor which were, "contractions regular in interval" and "bloody show from the vagina". Number eight concerned the value of panting during delivery when asked to, to which the correct response was, "uncontrolled pushing could cause the mother to tear". The ninth question wanted the subject to determine which anesthetics produce a loss of feeling. The correct responses were, "caudal" and "paracervical".

Design and Data Collection Procedure

In essence two different types of information were needed to test the two related but separate research problems. Both types of information were obtained from a patient questionnaire. The first problem focused on the relationship between knowledge retention concerning pregnancy, labor and delivery, and prenatal education. Section

D, the multiple-choice section of the patient questionnaire, attempted to evaluate the knowledge retention of fifty postpartum patients. Nine questions were asked and a positive score was given for each completely correct answer.

The second problem posed by the researcher queried the effect of prenatal education upon attitude. That is: "How effective is prenatal education in terms of the subject's favorable attitude formation towards the labor and delivery experience?" Sections B and C of the patient questionnaire were designed to elicit this information.

The responses to the open-ended statements were treated in the following manner. The completed sentences were typed individually on 3X5 cards and randomly assigned numbers by shuffling fifty cards. Each of the five sentences was grouped in an individual card set. No card was typed if the subject failed to answer a question. The cards were placed in five packets and shuffled. Placed on top of each packet were three cards marked, "more favorable", "less favorable", and "neutral". Three impartial sorters were asked to analyze these data. The sorters were requested to sort through each of the five piles just once, each time placing a card under the heading she felt was appropriate. The sorter used her own judgment to determine favorableness of response and was given no specific

guidelines. The pile was then restacked in order and returned to the researcher who tabulated the responses and reshuffled prior to giving the cards to the next sorter.

Since Tanzer (1972) found that women who had a strongly positive attitude towards pregnancy were likely to give a positive response to open-ended statements and vice versa, it was hoped that in this study patients would respond in a like manner.

The twenty-five attitude statements found in section C of the patient questionnaire were developed in accordance with the literature suggesting rules for criteria for evaluating attitude. A clear concise summation by Jahoda, Selltiz, and Deutsch (1966) described the process:

> 1. items must elicit responses which are psychologically related to the attitude being tested,
> 2. the scale must differentiate among people who are at different locations along the dimension being measured.

The following steps were taken to institute the research study at the selected hospital. A conference together with a copy of the data collection tool and a covering letter (see Appendix C, p.60) requesting permission to carry out the study was held with the Director of Nurses and Director of Maternal-Child Health at the selected county hospital. Verbal permission was initially obtained from the physician in charge. Willingness to participate

was indicated.

The investigator explained her study to the obstetrical head nurse, who, in turn introduced her to the staff of the postpartum floor. It was agreed that the investigator would check through the Kardex each day for new postpartum patients. Each patient meeting the sample criteria was given a copy of the data-collecting tool and a pencil. She was given brief verbal instructions (see Appendix D, p.62). An additional sheet was completed by the investigator from data found in the patient's chart.

The procurement of fifty usable questionnaires required the collection of an additional ten to replace those in which patients had not followed instructions properly or did not complete the questionnaire. The data were collected in a three-month period from June to August of 1973.

Limitations

1. No controls were placed on the number of pregnancies of participating subjects.
2. No information was obtained as to whether or not subjects had attended prenatal classes during previous pregnancies.
3. Information concerning length of labor, amount and kind of medication given during labor and anesthetic for delivery was deleted in the reporting of this study. This

information was not uniformly available due to irregularity in charting and improper or poorly formed research definitions.

4. The sample population was not limited to those who had attended either all or none of the series of five prenatal classes.

Because of the above stated limitations of the study, the conclusions drawn were not generalized beyond the study sample. The results of this investigation therefore demonstrates associations relevant to the selected facility. The reader is referred to the recommendations (p.41) for suggested changes in the conduct of a subsequent investigation.

CHAPTER III

RESULTS

Knowledge Retention

The questions in part D of the patient questionnaire concerned the subject's knowledge of pregnancy, labor and delivery. The format for this section was multiple-choice questions. Each question had the possibility of one or more correct choices. Each question was scored as either all right or all wrong, with nine being a perfect score. (see Appendix B, p.52 for actual test and Methodology Chapter II pp.17-18 for correct answers)

On the basis of points obtained by each subject on part D, the means and standard deviation for the attender and non-attender groups were calculated. As may be seen in Table 3, the mean score for the attenders was higher than the mean score for the non-attenders on the multiple-choice section of the patient questionnaire ($t = 2.20$, $p < .05$).

Table 3. Knowledge Retention Concerning Pregnancy, Labor and Delivery: Results of Multiple-Choice Questions, Mean, Standard Deviation, and Test of Significance

Group	n	Mean	Standard Deviation	t-test
Attenders	25	4.60	1.85	t = 2.20
Non-Attenders	25	3.55	1.61	df = 48
				p .05

Attitude Towards Labor and Delivery

Two tests were used to evaluate a woman's attitude towards her labor and delivery; 1) five open-ended statements which the subject was asked to complete and, 2) a series of twenty-five statements to which she was to respond in a positive or negative manner.

Open-Ended Statements

The responses to these statements were sorted by three judges. (see Methodology Chapter II pp. 19-20 for detailed explaination) Examples of women's responses to the open-ended statements follow. Only statements upon which there was 100% agreement among the judges are included in these examples.

Women who scored "favorable" on the sentence, "My labor and delivery was _____," used the words, "easy",

"great", "beautiful", and "exciting", while women whose responses were judged as "less favorable" used the terms "awful", "horrible", "painful", "long", and "scary". "Neutral" responses were given when terms such as "normal" and "brief" were used.

Response to the statement, "During labor I wish I had _____", were considered "more favorable" if the respondent used such expressions as, "taken deeper breaths", "known more about relaxing", or "practiced my breathing more often". Several women with favorably rated responses indicated that they wished their husbands had been with them during labor. "Less favorable" scores went to subjects who answered "no pain", "it over with", or "I wished I was dead". The response was judged as"neutral" when responses such as "a drink of water", or "a backrub", were given.

More favorable ratings went to those subjects who in responding to the statement, "I knew I was in labor when _____", gave appropriate clinical definitions such as, "I had a vaginal discharge and regular contractions", "the pains were regular", or "the contractions started after my water broke". "Less favorable" responses were attributed a patient who said she knew she was in labor only when the the doctor told her so, or she never knew she was in labor, or those giving vague definitions of pain such as "I hurt". One response was scored as neutral in which the subject

stated, "I got to the hospital".

The prenatal classes were, for the most part, rated favorably by the subjects with such terms as "helpful", "useful", "great", "very good", "excellent", "worth taking", "fine", and "beneficial". No responses were scored "neutral" and the only response rated as "less favorable" was "I found the classes repetitive of what women should have read on their own".

Responses to the final open-ended statement, "My mother said that labor and delivery would be _____", were scored as "more favorable" if women used such terms as "easy", "short", or "beautiful". Less favorable ratings were accorded women who used words such as "rough", "hard", "traumatic", "awful", or "hell". Subjects who indicated that their mothers had not told them anything concerning labor and delivery received a neutral score for this statement.

Only those responses in which at least two of the sorters agreed were used upon the final tabulation of responses. (see Appendix E, Table 8, p.64 for agreement of the sorters on each of the statements) Because of this procedure and because not all subjects responded to each statement, the number of subjects responding to each statement varies. (see Table 4, p. 27) A chi-square test of significance was used to see if the observed frequencies of "more favorable", "less favorable", and"neutral" responses

to each question were greater than could have occurred by chance.

Table 4. Open-Ended Statements: Number of Subjects in Each Group Responding More Favorable (M), Neutral (N), or Less Favorable (L) to each of the five Statements

Statement Number	Attenders				Non-Attenders			
	n	M	N	L	n	M	N	L
1	24	15	5	4	22	5	7	10
2	15	7	3	5	20	6	3	11
3	12	3	7	2	16	7	4	5
4	24	21	3	0	17	9	7	1
5	19	9	6	4	18	6	4	8

Because of the restriction upon the chi-square test, limiting its use to only situations where the expected value is greater than five, this significance test could only be performed on the first statement. The result of the one chi-square test was statistically significant ($p < .05$). Therefore, it seems that subjects attending prenatal classes have a more favorable attitude towards their labor and delivery. This supports our first proposition.

The researcher realized that the chi-square test tests only the significance and not the intensity of the assoc-

iation. It must be noted moreover that the association does not necessarily indicate a causal relationship. For purposes of this research in which the sample is not randomly chosen, nor the controls rigid, this researcher acknowledges that the determination of an association is as much as can be expected from the data.

Attitude Survey

The attitude survey was a series of twenty-five statements to which the subject responded by checking one of four boxes marked, "strong yes", "yes", "no", or "strong no" for each item. Each item was scored by the investigator in the following way: the most positive answer received 4 points, the next most positive 3 points and down to 1 point for the least positive answer. An empty space received a zero and that response was deleted from the tabulation. The mean score, standard deviation and results of a significance test for the entire attitude survey are presented in Table 5, p29.

The attitude survey was also broken down into four parts which were as detailed in the Methodology Chapter II (pp. 16-17):

1. feelings about one's self during labor and delivery
2. feelings about the particular hospital and

staff at the facility where labor and delivery occurred
3. feelings about the pain which may have occurred during labor and delivery
4. feelings about the worth or knowledge concerning labor and delivery

The mean score and standard deviation and results of the test of significance of the differences between the attender and non-attender groups in each of the four areas are presented in Table 6, p. 30.

Table 5. Attitude Rating Section of Patient Questionnaire: Mean Score, Standard Deviation, and t-test for each Group

Group	n	Mean	Standard Deviation	t-test
Attenders	25	3.17	.34	t = 2.27
Non-Attenders	25	2.91	.38	df = 48
				p .05

Since the t-test was significant at $p < .05$, this would suggest that patients attending at least Class I, III, and V of the prenatal classes had a more positive attitude towards their labor and delivery.

Table 6. Individual Sections of Attitude Rating Scale: Mean Scores, Standard Deviations and Test of Significance for Each Group

Section	Attenders			Non-Attenders			t-test	p
	n	$\bar{x}$	SD	n	$\bar{x}$	SD		
Pain	25	2.89	.22	25	2.54	.58	12.67	.05
Self	25	3.25	.34	25	2.93	.32	3.30	.05
Hospital	25	3.32	.36	25	3.24	.38	1.90	NS
Knowledge	25	3.14	.27	25	2.90	.44	2.40	.05

A significant difference ($p < .05$) was found in each of the three areas of pain, knowledge and self. That is, as determined by the responses to the twenty-five attitude statements:

1. patients attending prenatal classes felt that knowledge concerning labor and delivery was significantly more worthwhile than those not attending classes
2. patients attending prenatal classes felt significantly better about themselves than those not attending classes
3. patients attending prenatal classes felt that any pain which may have occurred during labor and delivery was significantly less unpleasant than those not attending classes

This research violated one of the assumptions necessary for most tests of significance including the t-test. This violation was the failure to obtain a random sample. Even though the t-test is a robust test, one that is relatively

insensitive to the violations of its mathematical assumptions, the violation of the requirement for a random sample cannot be easily thrust aside. This researcher did feel however that the similarity of the sample to Niswander and Gordon's (1972) study was sufficient to allow a comparison in both the knowledge retention and attitude statement sections of this research.

CHAPTER IV

DISCUSSION

The major weaknesses in the conduct of this investigation are threefold. 1) As a clinical investigation it was not feasible to randomly assign subjects to groups, 2) nor was it possible to control for the effect of different instructors teaching prenatal classes, and 3) the questionnaire was newly developed by the investigator for the purposes of this study and was therefore not a standardized test.

Knowledge Retention

There was a significant difference in scores on the knowledge retention section of the patient questionnaire between attenders and non-attenders of prenatal classes ($p < .05$). The information tested in the multiple-choice questions was material presented in the prenatal classes and to which, therefore, the attenders had been exposed. Members of the non-attender group had not necessarily been exposed to the information. However, the mean score on the multiple-choice test for the non-attender group was 3.55. This seems to indicate that pregnant women knew some facts

concerning pregnancy, labor and delivery, and that this information has probably been learned outside structured prenatal classes. What these possible sources of information are, outside of the hospital and clinic, were not ascertained by this study.

The highest percentages of correct answers in both groups were noted for those questions having only one correct response. This may be due to confusion in understanding the directions for the multiple-choice section or to the fact that there was a greater possibility of error when there was more than one correct response. On four items, the differences in response between the two groups were slight. The reasons for these occurrences were not ascertained. For three questions, the incidence of correct answers was very low, which may be due to poor item construction, or lack of dissemination of the information in class. It is possible that patients just did not feel some information worth remembering. Although statistical computations indicated a general difference in responses between the two groups, in only five of the nine questions was there a large difference in correct responses between the two groups. These five questions in which the attenders scored noticeably higher were concerned with the labor and delivery experience and the warning signs of danger in pregnancy.

That is, the attenders for the most part understood the value of relaxing both during labor and delivery, and many knew the specific signs of labor. Considerably more attenders than non-attenders had more knowledge of anesthetics and the warning signs of danger in pregnancy. (See Appendix E, Table 14, p.70 and Methodology Chapter II, pp.17-18) It would seem that these differences in scores on a test of factual knowledge concerning pregnancy, labor and delivery were, in part, a result of attending prenatal classes.

Attitude Towards Labor and Delivery

Within the limitations of this study, it can be said that attenders of prenatal classes had a better attitude towards their labor and delivery in general, as measured by the attitude survey, than non-attenders of prenatal classes ($p < .05$). Specifically, the attenders had a more positive attitude towards themselves and the worth of knowledge, together with an evaluation of any pain they may have experienced as being less unpleasant than the non-attenders.

Attitude was measured through the utilization of two tests, five open-ended atatements, and twenty-five attitude statements, each specifically concerned with pregnancy, labor and delivery. Four of the open-ended statements could

not be statistically manipulated because of the limitations placed upon the chi-square test. The sample size was too small since the sorting process did not force the sorters to classify a statement as either positive or negative. Furthermore, one statement, "I knew I was in labor when _____", was answered in most cases with factual information and therefore should not be labeled as an attitude statement. There was a trend for attenders to answer more favorably than non-attenders in each item, but other than a simple score count, this information could not be manipulated. Responses obtained for the item, "My labor and delivery was _____", did meet the criteria for chi-square testing and a significant difference (p .05) was found. Tanzer (1972) in her use of open-ended statements found both a change for the better in overall attitude during pregnancy which was greater for her experimental group who attended classes, and a significant difference in final attitude evaluation between her two groups, the attenders scoring more positively.

On the attitude rating scale section of the questionnaire, it was found that attenders had a significantly better overall attitude ($p < .05$). As stated earlier, to this author's knowledge, no studies have been done which have evaluated attitudes of patients who have attended

prenatal classes other than specific "natural childbirth" classes. Hence, these findings can only be compared to the findings of investigations of "natural childbirth" education. The findings of this investigation accord with two studies of "natural childbirth" (Tanzer, 1972; Brenner, 1972). As Tanzer stated concerning the findings of her investigation:

> It was the course (Lamaze Classes) itself which brought about the stronger, more positive attitude towards pregnancy. Taking the course did not change the many other psychological variables that were measured; neither did it affect any physiological factors that were measured. Only the attitude toward pregnancy and childbirth was changed -- and for the better.

In this study also, it was found that in the attitude rating scale, in three of the four general areas, namely those dealing with pain, knowledge and self, there was a significant difference ($p < .05$) between the attender and non-attender groups. The attitude area dealing with the hospital and staff was not rated differently by the two groups.

Those attending prenatal classes felt better about themselves in terms of labor and delivery. This is in accord with Portnuff's (1954) observation that those participating in organized prenatal education "... appeared to have a sense of well being not seen to as great an extent in unprepared mothers". Tanzer (1972) found "an enhanced sense of self felt by many of the women in the natural

childbirth group".

Patients attending classes reported a more positive attitude towards any pain they may have experienced, a finding which was also reported by Tanzer (1972) in her study of natural childbirth education. In addition, Read (1953), contended that the understanding of what is happening to one's body during labor and delivery and knowing how to relax during that time, successfully lessens the discomfort or pain a woman experiences.

Finally, attenders had a more positive attitude towards knowledge concerning pregnancy, labor and delivery than non-attenders. Redman (1972) discussed the readiness of pregnant women, especially in the latter stages of pregnancy, to learn about pregnancy, labor and delivery. The findings of this study would seem to indicate that those patients actually exposed to information through attendance at prenatal classes develop good feelings about receiving factual information. This idea is further substantiated by the higher mean score of the attender group on the multiple-choice knowledge retention test.

It would seem then that the specified prenatal classes are worthwhile to patients and do meet their stated objective of "providing the patient with information that will help the patient with pregnancy, labor and delivery and also postpartum" (Moore-Nunnally, 1972).

These results indicate the value of continuing such classes at the selected clinical facility. Tanzer (1972) stated her findings more strongly in saying, "natural childbirth must become available in hospital clinics. Such programs must be structured to meet the needs of various ethnic groups, educational levels and job schedules." While the classes studied were not "natural childbirth" per se, this statement does seem appropriate.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

The purpose of this investigation was to explore the effect of prenatal education upon the attitudes and knowledge of patients attending required classes at a public prenatal clinic. The study sample consisted of fifty postpartum patients, twenty-five of whom had attended at least three specified classes, and twenty-five of whom had not attended the specified classes. Subjects were selected upon their availability and other specific criteria. In order to determine the effect of prenatal education, two research questions were posed. The first question asked: "What is the relationship between prenatal education and the patient's knowledge retention concerning pregnancy, labor and delivery?" The second question was: "How effective is prenatal education in terms of the subject's favorable attitude formation towards the labor and delivery experience?"

The data collecting tool was investigator devised and consisted of four parts; nine multiple-choice knowledge

questions, five open-ended statements regarding attitudes; twenty-five statements of attitude defined specifically in four areas, pain, knowledge, hospital and staff, and self; and a chart audit form together with additional questions for determining certain patient information.

The procedure for this study was as follows: development, pretesting and revision of the data collecting tool, and then actual data collection over a three-month period using the revised questionnaire.

Conclusions

Due to the limitations of the study and a newly developed and unstandardized questionnaire, it must be recognized that valid generalizations to other facilities cannot be made from these findings. Acceptable inferences drawn from the study include:

1. Prenatal patients attending the specific prenatal classes scored higher postpartum on the multiple-choice questions developed in this investigation to test knowledge retention, than patients not attending prenatal classes.
2. Patients attending prenatal classes, have a more positive attitude towards themselves in relation to the labor and delivery experience than those not attending prenatal classes.

3. The attitude towards pain in labor and delivery is more positive in patients attending prenatal classes than those not attending.
4. The attitude towards knowledge concerning labor and delivery is more positive in patients attending prenatal classes than those not attending.
5. Those attending prenatal classes respond more favorably than those not attending when asked to complete a sentence concerning labor and delivery.

Recommendations

As a result of this investigation, it is recommended that the following areas be considered for further study:

1. It is recommended that prior to replication of this study, the patient questionnaire should be revised in the following manner:

   First, open-ended statements should be used only if the subject is forced to answer in a "more favorable" or "less favorable" manner. Statements such as,"I knew I was in labor when _____", demand factual material and are not attitude measures.

   Second, two statements in the attitude survey

need clarification. These statements are, "I wish I had been asleep during labor and delivery.", and "I wished I had practiced my breathing exercises more often." These statements did not clearly discriminate what patients were thinking when they responded.

Third, in the multiple-choice section of the patient questionnaire, the first two questions concerning ovulation and dental care ought to be omitted since they do not directly concern the labor and delivery experience. Knowledge of this material will have no direct bearing upon labor and delivery.

Fourth, the directions for subjects should clearly indicate that there may be more than one correct answer for the multiple-choice questions.

2. The study should be repeated with only primiparous patients who have attended either all or none of the prenatal classes as subjects. More information relating to the length of labor, amount and kind of medication and anesthesia, type of delivery and Apgar score of the infant should be collected in order to compare with data already collected concerning the physiological benefits of natural childbirth.
3. It would seem important to investigate the reasons for attending or not attending "required" prenatal classes since these reasons may be strongly related

to attitudes and knowledge of pregnancy, labor and delivery.

4. Subjects attending a public prenatal clinic should be chosen at random and followed throughout pregnancy, delivery, and the postpartum period to ascertain knowledge gain and attitude change concerning pregnancy, labor and delivery.
5. A comparative study to explore the difference between public and private prenatal educational programs on knowledge retention and attitudes of patients could be performed.

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APPENDICES

APPENDIX A

CONTENT AND INSTRUCTORS OF PRENATAL CLASSES

Table 7. Content and Instructors of Prenatal Classes

Class Content	Instructors
Class I Introduction to the clinic system Anatomy and physiology of the male and female reproductive systems Signs and symptoms of pregnancy Fetal development Onset of labor Hygiene during pregnancy	Perinatal nurse specialist Student nurses
Class II Diet in pregnancy Breast and bottle feeding the infant	Perinatal nurse specialist Dietician Student nurses
Class III Body mechanics Breathing and relaxation exercises for labor and delivery Emotional aspects of pregnancy	Physical therapist trained in childbirth education Perinatal nurse specialist Student nurses
Class IV Family planning and birth control Baby care and Preparation	Family planning research nurse Perinatal nurse specialist Student nurses Social worker
Class V Tour of the obstetrical unit Stages of labor Delivery Anesthetics for delivery The hospital stay	Chief Obstetrical Resident Perinatal nurse specialist Student nurses

Underlined sections in the content for Class I, III and V indicate the most pertinent information from each class as related to this research project.

Student nurses are in their junior year at a university school of nursing affiliated with the facility.

APPENDIX B

PATIENT QUESTIONNAIRE AND CHART AUDIT FORM

Dear Mother,
I am interested in finding out what you know and how you feel about your labor and delivery. Your name will not be used so please be frank in your answers.

Martha B. Aguiar RN
Graduate Nursing Student

PART A

Please circle the last year of school which you completed:

Grade School	1	2	3	4	5	6	7	8
High School	9	10	11	12				
College	13	14	15	16				
Graduate	17	18	19					

Please circle the numbers of any prenatal classes offered at the clinic which you attended:

Class I Class II Class III Class IV Class V

PART B OPEN-ENDED STATEMENTS

Please finish the following statements with the first thing that comes to mind.

1. My labor and delivery was _____

2. During labor I wish I had _____

3. I knew I was in labor when _____

4. The prenatal classes offered at the clinic are _____

5. My mother said that labor and delivery would be _____

PART C ATTITUDE SURVEY

Answer each item in terms of your own labor and delivery. Read each of the statements below and rate each one with a 'strong yes', 'yes', 'no', or 'strong no'. Please check (x) in the space provided which reaction comes closest to saying how you feel about each statement.

	STRONG YES	YES	NO	STRONG NO
1. I wish I had been asleep during labor and delivery.				
2. The doctor was always there when I needed him.				
3. I feel badly about my labor and delivery.				
4. My husband should be proud of me.				
5. Nothing seemed to help the pain.				
6. I am not afraid to have another baby.				
7. I was not sure of where to go when I came to the hospital in labor.				
8. I was interested in reading the pamphlets given to me in the clinic.				
9. The pain I felt was not unbearable.				
10. I would like to take care of my baby while in the hospital.				
11. The delivery room frightened me.				
12. The nurses were attentive.				
13. I asked questions about my progress during labor and delivery.				

	STRONG YES	YES	NO	STRONG NO
14. I was well prepared for my labor and delivery.				
15. I wish that men had babies so we women would not have to go through labor and delivery.				
16. If women have some idea of what labor is like, they'll have an easier time.				
17. I lost control of myself during labor and delivery.				
18. There is really nothing a women can do to help herself during labor and delivery.				
19. I wish I had practiced my breathing exercises more often.				
20. No matter what anyone says, childbirth is a very painful experience.				
21. If I become pregnant again, I will go to pregnancy classes.				
22. No one told me anything during my labor and delivery.				
23. The doctors and nurses helped relieve my discomfort.				
24. I wish I had had my baby in a private hospital.				
25. The breathing techniques were a waste of time.				

PART D MULTIPLE-CHOICE QUESTIONS

The following items or incomplete statements concern pregnancy, labor and delivery. Please circle the word or words that complete the statement or answer the question.

1. Your ovary releases an egg _____ days before a menstral period.

   A. 6

   B. 10

   C. 14

   D. 18

   E. 22

2. Warning signs of danger during pregnancy are:

   A. vaginal bleeding

   B. occasional headaches

   C. pain in lower abdomen

   D. blurred vision

3. Good dental care during pregnancy should include:

   A. a toothbrush with medium to soft bristles

   B. dental flossing between teeth before brushing

   C. downward stroke on upper teeth and upward stroke on lower teeth

   D. brushing once each day, preferably before bed

4. Good body mechanics:

   A. includes using your legs to do the work in lifting

   B. includes rising from bed to one's feet in one quick motion

   C. are only important during pregnancy

   D. includes using your back to do the work in lifting

5. Breathing techniques used in early labor when contractions are mild include:

   A. tapping out a song with the fingertips

   B. shallow, rapid breathing

   C. slow, deep chest breathing

   D. breathing in through the mouth and out through the nose.

6. Learning to relax during labor:

   A. is only important for people planning natural childbirth

   B. will allow your uterus to work more freely and efficiently

   C. involves practice before going into labor

   D. is something that comes naturally to most women

7. Signs of true labor are:

   A. contractions starting in front

   B. contractions regular in interval

   C. contractions stop when you move around

   D. bloody show from the vagina

8. It is important to use Level C breathing or panting in the delivery room because:

   A. uncontrolled pushing could injure the baby's eyes

   B. the breathing causes the medication to work faster

   C. the breathing prevents dizziness

   D. uncontrolled pushing could cause the mother to tear

9. Anesthetics which cause a loss of feeling but do not put you to sleep during labor and delivery include:

   A. caudal

   B. paracervical

   C. inhalation or general anesthesia

   D. morphine

CHART AUDIT FORM

Unit Number

Age

Gravida Para Ab

Gestation at first clinic visit

Number of total clinic visits

Delivery Date Delivery time

Questionnaire Date Questionnaire time

Length of Labor

Medication

Method of Delivery

Anesthetic

_____ Number of questionnaire

APPENDIX C

LETTER REQUESTING PERMISSION TO CONDUCT THIS INVESTIGATION

May 1, 1973

Ms. _____
Director of Nursing
Ms. _____
Supervisor, Maternal-Child Health

Dear _____,

As a graduate student in the Master's Program at the University of Oregon School of Nursing, an investigative field study is a required part of my studies.

I am interested in evaluating the prenatal classes instituted by _____, Perinatal Nurse Specialist, in August of 1972. This study will be aimed at finding out women's feelings about their labor and delivery and their knowledge of pregnancy, labor and delivery.

The data collection tool will be a patient questionnaire and brief chart audit form which are attached to this letter. I have developed the questionnaire myself and will need to pretest and probably revise it prior to its final administration. I plan to administer the final questionnaire to fifty patients, 25 who have taken the classes and 25 who have not.

Patients will be asked to participate only if they have the following qualifications:

1. availability and willingness to participate
2. delivery had occurred with the previous 48 hours
3. delivery was vaginal
4. subject was married and living with spouse
5. the baby was to be kept by the mother
6. the baby was healthy at the time of administration of the questionnaire
7. subject had made at least four visits to the prenatal clinic

My hopes are that women who attended the classes will both feel better about their labor and delivery and have more cognitive knowledge of pregnancy, labor and delivery.

Permission to institute this study would be greatly appreciated as well as any comments you may have concerning the questionnaire, sample population, or value of the study.

Sincerely,

Martha B. Aguiar

APPENDIX D

VERBAL INSTRUCTIONS GIVEN TO EACH SUBJECT RECEIVING THE QUESTIONNAIRE

Hello, my name is Martha Aguiar. I am a registered nurse going to school at the University of Oregon School of Nursing. As part of my school work, I am studying women's feelings and knowledge about their pregnancy, labor and delivery. If you are willing to participate, I would like you to complete this questionnaire, which has instructions to explain each part. Please leave the completed questionnaire on your bedside table, and I will be back to pick it up in several hours when you have had enough time to complete it. Thank you.

APPENDIX E

TABLES OF RAW DATA

Table 8. Agreement of Three Sorters on the Scoring of the Open-Ended Statements: Individually by Statement and Total Scores

Item	Possible Answers	Actual Answers	100% Agreement	2/3 Agreement	100% Disagreement
1	50	47	20	26	1
2	50	43	7	28	8
3	50	46	4	24	18
4	50	41	27	14	0
5	50	39	20	17	2
Total	250	216	79	108	29

Table 9. Attitude Rating Section of Patient Questionnaire Individual Tabulation of Points Scored

Subject Number	Attenders							Non-Attenders						
	4	3	2	1	0	T	A	4	3	2	1	0	T	A
1	10	14	1	0	0	84	3.36	9	9	2	5	0	72	2.88
2	5	20	0	0	0	80	3.20	8	15	1	1	0	80	3.20
3	14	10	1	0	0	88	3.52	7	15	3	0	0	79	3.16
4	11	13	1	0	0	85	3.40	7	14	3	0	0	90	3.60
5	7	10	6	2	0	72	2.88	8	8	4	5	0	69	2.76
6	8	10	4	3	0	73	2.92	8	10	4	3	0	73	2,92
7	11	9	2	3	0	78	3.12	9	11	3	2	0	77	3.08
8	9	16	0	0	0	84	3.36	7	11	4	1	2	70	2.80
9	3	13	8	1	0	68	2.72	3	8	9	4	1	58	2.40
10	10	9	6	0	0	79	3.16	10	5	8	2	0	73	2.92
11	14	8	3	0	0	86	3.44	10	13	1	0	1	81	3.38
12	15	10	0	0	0	90	3.60	11	13	1	0	0	85	3.40
13	11	12	2	0	0	84	3.36	5	13	6	1	0	81	3.24
14	14	10	0	0	1	86	3.58	9	10	4	1	1	74	3.13
15	14	7	4	0	0	86	3.40	7	7	6	3	2	61	2.15
16	4	13	6	2	0	69	2.76	1	14	6	4	0	72	2.88
17	1	13	11	0	0	65	2.60	2	5	12	5	1	52	2.17
18	12	6	5	2	0	78	3.12	5	12	6	2	0	70	2.80
19	0	18	6	1	0	67	2.68	6	11	4	2	2	67	2.91
20	3	12	6	4	0	64	2.56	2	9	7	5	2	54	2.35
21	5	11	7	5	1	68	2.83	5	9	7	2	2	63	2.74
22	10	10	2	2	1	75	3.13	7	9	5	4	0	69	2.76
23	10	13	1	0	1	81	3.38	7	15	1	1	1	76	3.17
24	11	13	1	0	0	85	3.40	6	12	4	2	1	70	2.92
25	17	8	0	0	0	92	3.68	10	11	1	0	3	75	3.14

T = total score
A = average score

Table 10. Attitude Rating Section of Patient Questionnaire Feelings About Self: Individual Scores of Attenders and Non-Attenders

Subject	Attenders							Non-Attenders						
	4	3	2	1	0	T	A	4	3	2	1	0	T	A
1	2	2	1	1	1	17	2.83	3	1	2	1	0	18	2.57
2	3	4	0	0	0	24	3.43	1	2	2	2	0	16	2.29
3	6	0	1	0	0	26	3.71	0	4	2	1	0	17	2.43
4	4	3	0	0	0	25	3.57	4	1	2	0	0	23	3.29
5	0	7	0	0	0	21	3.00	5	1	1	0	0	25	3.57
6	2	4	1	0	0	22	3.14	0	5	2	0	0	19	2.71
7	5	2	0	0	0	26	3.71	0	5	2	0	0	19	2.71
8	5	2	0	0	0	26	3.71	1	6	0	0	0	22	3.14
9	5	0	2	0	0	24	3.43	2	4	1	0	0	22	3.14
10	5	2	0	0	0	26	3.71	1	4	1	0	1	18	3.00
11	3	2	1	0	1	20	3.33	3	1	1	2	0	19	2.71
12	5	1	0	1	0	24	3.43	2	5	0	0	0	23	3.29
13	1	5	1	0	0	21	3.00	1	4	2	0	0	20	2.86
14	0	6	1	0	0	20	2.86	0	4	2	1	0	17	2.43
15	3	3	1	0	0	23	3.29	2	3	1	1	0	20	2.86
16	6	1	0	0	0	27	3.86	2	2	3	0	0	20	2.86
17	4	2	1	0	0	24	3.43	0	5	0	0	2	15	3.00
18	3	0	2	2	0	18	2.57	2	2	2	1	0	19	2.71
19	0	6	1	0	0	20	2.86	2	5	0	0	0	23	3.29
20	0	6	1	0	0	20	2.86	1	5	1	0	0	21	3.00
21	1	3	3	0	0	19	2.71	2	3	0	2	0	19	2.71
22	3	3	1	0	0	23	3.29	1	4	2	0	0	20	2.86
23	4	0	2	1	0	21	3.00	2	4	0	1	0	21	3.00
24	4	2	1	0	0	24	3.43	5	1	1	0	0	25	3.57
25	3	2	2	0	0	22	3.14	3	1	3	0	0	21	3.00

T = total score
A = average score

Table 11. Attitude Rating Section of Patient Questionnaire Feelings about Hospital and Staff: Individual Scores of Attenders and Non-Attenders

Subject	Attenders							Non-Attenders						
	4	3	2	1	0	T	A	4	3	2	1	0	T	A
1	7	0	0	0	0	28	4.00	2	4	1	0	0	22	3.14
2	1	6	0	0	0	23	3.14	2	5	0	0	0	23	3.29
3	3	4	0	0	0	24	3.43	2	5	0	0	0	23	3.29
4	4	2	1	0	0	24	3.43	2	4	1	0	0	22	3.14
5	0	7	0	0	0	21	3.00	4	1	1	1	0	22	3.14
6	4	3	0	0	0	25	3.57	0	6	1	0	0	20	2.86
7	7	0	0	0	0	28	4.00	0	7	0	0	0	21	3.00
8	2	5	0	0	0	23	3.29	0	7	0	0	0	21	3.00
9	4	3	0	0	0	25	3.57	0	6	1	0	0	20	2.86
10	5	1	0	0	1	23	3.83	5	1	0	0	1	23	3.80
11	3	3	1	0	0	23	3.29	3	2	0	2	0	20	2.86
12	5	0	1	1	0	23	3.29	4	0	2	0	1	20	3.33
13	1	6	0	0	0	22	3.14	1	5	1	0	0	21	3.00
14	0	7	0	0	0	21	3.00	3	3	0	1	0	22	3.14
15	2	5	0	0	0	23	3.29	2	5	0	0	0	23	3.29
16	7	0	0	0	0	28	4.00	4	3	0	0	0	25	3.57
17	3	3	1	0	0	23	3.29	0	6	0	0	1	18	3.00
18	3	4	0	0	0	24	3.42	5	2	0	0	0	26	3.71
19	0	6	1	0	0	20	2.86	2	0	1	4	0	14	2.00
20	2	4	1	0	0	22	3.14	1	6	0	0	0	22	3.14
21	2	4	1	0	0	22	3.14	5	0	0	2	0	22	3.14
22	4	2	1	0	0	24	3.43	0	5	2	0	0	19	2.91
23	1	3	1	2	0	17	2.43	3	2	2	0	0	22	3.14
24	2	4	1	0	0	22	3.14	7	0	0	0	0	28	4.00
25	4	1	0	2	0	21	3.00	1	4	2	0	0	20	2.86

T = total score
A = average score

Table 12. Attitude Rating Section of Patient Questionnaire Feelings about Pain: Individual Scores of Attenders and Non-Attenders

Subject	Attenders							Non-Attenders						
	4	3	2	1	0	T	A	4	3	2	1	0	T	A
1	2	1	0	1	0	12	3.00	2	0	2	0	0	12	3.00
2	0	3	1	0	0	11	2.75	1	0	0	3	0	7	1.75
3	2	2	0	0	0	14	3.50	1	2	1	0	0	12	3.00
4	1	1	2	0	0	11	2.75	1	2	1	0	0	12	3.00
5	0	2	2	0	0	10	2.50	0	1	0	3	0	6	1.50
6	1	3	0	0	0	13	3.25	0	4	0	0	0	12	3.00
7	2	2	0	0	0	14	3.50	0	3	0	1	0	10	2.50
8	2	1	1	0	0	13	3.25	0	3	1	0	0	11	2.75
9	0	3	1	0	0	11	2.75	1	3	0	0	0	13	3.25
10	2	2	0	0	0	14	3.50	0	1	3	0	0	9	2.25
11	0	3	1	0	0	11	2.75	2	0	2	0	0	12	3.00
12	0	2	1	1	0	9	2.25	1	1	1	0	1	9	3.00
13	0	2	2	0	0	10	2.50	0	1	3	0	0	9	2.25
14	0	3	1	0	0	11	2.75	2	0	0	2	0	10	2.50
15	2	2	0	0	0	14	3.50	1	2	1	0	0	11	2.75
16	1	3	0	0	0	13	3.25	1	2	0	1	0	11	2.75
17	2	1	0	1	0	12	3.00	0	2	1	0	1	8	2.00
18	0	2	2	0	0	10	2.50	1	1	1	1	0	11	2.75
19	0	2	1	1	0	9	2.25	2	1	0	1	0	12	3.00
20	0	2	1	1	0	9	2.25	1	0	2	1	0	9	2.25
21	0	3	1	0	0	11	2.75	1	0	1	2	0	8	2.00
22	1	1	2	0	0	11	2.75	0	2	2	0	0	10	2.50
23	3	1	0	0	0	15	3.75	0	2	0	2	0	8	2.00
24	1	1	2	0	0	11	2.75	2	1	0	1	0	12	3.00
25	1	1	1	1	0	10	2.50	2	0	1	0	1	11	2.75

T = total score
A = average score

Table 13. Attitude Rating Section of Patient Questionnaire Feelings about the Worth of Knowledge: Individual Scores of Attenders and Non-Attenders

Subject	Attenders							Non-Attenders						
	4	3	2	1	0	T	A	4	3	2	1	0	T	A
1	5	0	1	0	0	22	3.67	2	3	1	0	0	19	3.17
2	0	3	3	0	0	15	2.50	3	1	1	1	0	18	3.00
3	5	1	0	0	0	23	3.83	2	2	1	1	0	17	2.83
4	1	4	1	0	0	18	3.00	4	0	1	0	1	18	3.60
5	0	4	2	0	0	16	2.67	3	1	2	0	0	19	3.17
6	1	4	1	0	0	16	2.67	2	4	0	0	0	20	2.33
7	4	2	0	0	0	22	3.67	0	4	2	0	0	18	3.00
8	1	4	1	0	0	18	3.00	0	3	2	0	1	13	2.60
9	3	3	0	0	0	21	3.50	0	4	2	0	0	16	2.67
10	5	1	0	0	0	23	3.83	1	4	1	0	0	18	3.00
11	1	5	0	0	0	19	3.17	1	3	1	0	1	15	3.00
12	4	1	0	0	1	19	3.80	1	2	2	0	1	12	2.40
13	0	4	2	0	0	16	2.67	0	3	3	0	0	15	3.00
14	2	4	0	0	0	20	3.33	2	2	1	1	0	17	2.83
15	1	4	0	1	0	17	2.83	2	2	0	2	0	16	2.67
16	4	1	0	1	0	20	3.33	0	4	2	0	0	16	2.67
17	3	0	3	0	0	18	3.00	0	1	1	0	4	5	2.50
18	4	1	1	0	0	21	3.50	2	3	1	0	0	19	3.17
19	0	4	2	0	0	16	2.67	2	2	2	0	0	18	3.00
20	1	5	0	0	0	19	3.17	2	3	1	0	0	19	3.17
21	1	3	2	0	0	17	2.83	1	0	2	3	0	11	1.83
22	1	4	0	1	0	17	2.83	0	6	0	0	0	18	3.00
23	1	1	3	1	0	14	2.33	4	1	1	0	0	21	3.50
24	2	3	1	0	0	19	3.17	3	0	1	0	2	14	3.50
25	4	1	1	0	0	21	3.50	0	5	1	0	0	17	2.83

T = total score
A = average score

Table 14. Knowledge Retention Section of Patient Questionnaire: Responses of Attenders and Non-Attenders on Individual Questions

Question Number	Attenders n = 25		Non-Attenders n = 25	
	RIGHT	WRONG	RIGHT	WRONG
1. ovulation	18	7	17	8
2. warning signs	7	18	3	22
3. dental care	7	18	6	19
4. body mechanics	18	7	17	8
5. breathing	11	14	13	12
6. relaxing	16	9	9	16
7. labor signs	12	13	6	19
8. panting	20	5	15	10
9. anesthetics	6	19	2	23

ABSTRACT

AN ABSTRACT OF THE FIELD STUDY OF

MARTHA B. AGUIAR

For the degree of MASTERS IN NURSING

Date of receiving this degree: June 7, 1974

Title: THE EFFECT OF PRENATAL EDUCATION UPON THE KNOWLEDGE AND ATTITUDES OF FIFTY POSTPARTUM PATIENTS

Approved : [redacted] Field Study Advisor

This investigation was initiated to determine the effect of prenatal education upon patients attending required prenatal classes as part of their care at a selected medical school affiliated public prenatal clinic.

The sample consisted of fifty postpartum patients each meeting the following criteria:

1. availability and willingness to participate
2. delivery had occurred within the previous 48 hours
3. delivery was vaginal
4. subject was married and living with spouse
5. the baby was to be kept by the subject
6. the baby was healthy at the time of administration of the data collecting tool
7. subject had made at least four visits to the prenatal clinic at the selected county hospital

The subjects were selected on the basis of attendance or non-attendance at specified prenatal classes. One group was composed of attenders and the other group non-attenders.

Specifically, two questions were asked in relation to prenatal education: "What is the relationship between prenatal education and knowledge retention concerning pregnancy, labor and delivery?" "How effective is prenatal education in terms of the subject's attitude towards the labor and delivery experience?"

A questionnaire and a chart audit form were devised to elicit information concerning knowledge retention and attitudes towards labor and delivery.

Due to the lack of more rigid sample controls and the use of a newly developed and unstandardized questionnaire, valid generalizations cannot be made from the results. However, the results suggest, 1) patients attending prenatal classes will score higher on the multiple-choice exam for knowledge retention, 2) patients attending prenatal classes have a more positive attitude towards themselves, and 3) towards the worth of knowledge concerning pregnancy, labor and delivery. 4) Attenders felt that any pain which may have occurred during labor and delivery was significantly less unpleasant than non-attenders, and 5) those attending prenatal classes responded more favorably when asked to complete a sentence concerning labor and delivery.

As a result of this investigation, it was recommended that the study be repeated with certain changes in the

questionnaire and utilizing only primiparous patients who have attended either all or none of the prenatal classes at the selected institution. Investigation is warranted into the reasons for attendance and non-attendance at "required" prenatal classes. A comparative study of patients attending private and public prenatal classes is needed to determine the effects of different classes upon knowledge and attitudes concerning labor and delivery. The infleunce upon attitudes towards labor and delivery by having a friend or relative in the labor and/or delivery room should be explored. And last, subjects receiving prenatal care at a public institution ought to be chosen at random and followed throughout pregnancy, delivery and postpartum stages to ascertain knowledge gain and attitude change concerning pregnancy, labor and delivery.