ANXIETY LEVELS OF PRIMIPAROUS PREGNANT

WOMEN ATTENDING CHILDBIRTH EDUCATION

A THESIS

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We hereby recommend that the _____ thesis _____ prepared under

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The feeling and satisfaction of accomplishment are tremendous for me at this time. My sources of strength to fulfill this accomplishment have been my family, friends, and instructors. They all believed in me and helped me to believe in myself. I thank you all.

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CHAPTER 1

INTRODUCTION

Pregnant women experience an increase in anxiety
during pregnancy and a relationship appears to also exist
between anxiety and complications in labor and delivery.
In addition, studies indicate that women with labor and
delivery complications have high levels of anxiety during
pregnancy (Davids, DeVault, & Talmadge, 1961; Grimm,
1961; Klein, Potter, & Dyk, 1950).

Childbirth education was pioneered in the 1950s
by Dick-Read. Various methods have followed, all believing
that the childbirth education techniques would reduce
anxiety for the pregnant woman. Studies conducted to
evaluate the effectiveness of childbirth education have
measured length of labor or use of forceps. Zax, Sameroff,
and Fornum (1975) measured the effect of childbirth educa-
tion on emotional attitudes and the delivery process
and concluded that anxiety in primiparous women increased
after attending childbirth education classes. Zax et
al. concluded that the anxiety tool used measured per-
sonality or trait anxiety, not the anxiety experienced
in relationship to the pregnancy.

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Spielberger (1966) defined anxiety as a relationship between two concepts, state and trait anxiety. This relationship indicates that situations which pose direct or implied threats to self-esteem produce differential levels of state anxiety in persons who differ in trait anxiety. Numerous studies (Hodges & Spielberger, 1969; Johnson, 1968; McAdoo, 1970; O'Neil, Spielberger, & Hansen, 1969) have been conducted to define and support the relationship between state and trait anxiety. This relationship has not been studied in regards to pregnant women.

The increased anxiety experienced by pregnant women during pregnancy could be their overall response to stressful events in their lives. Therefore, the anxiety measured during pregnancy in the previous studies could be related to the pregnant woman's overall response to stressful events in her life. The relationship between state and trait anxiety has not been researched with pregnant women. In order to explore the possible relationship of state and trait anxiety in pregnant women, the present study was conducted.

Problem of Study

The problem of this study was to determine if a relationship exists between the difference in pretest

and posttest state anxiety and trait anxiety of primiparous pregnant women who attend childbirth education classes.

Justification of Problem

Anxiety is widely regarded as a fundamental human emotion that is an adaptive mechanism for coping with danger. With regard to pregnancy, anxiety has been documented to exist at some level for all pregnant women (Klein et al., 1950; Zax et al., 1975). Women appear to have the highest level of anxiety in the third trimester of pregnancy (Glazer, 1980; Grimm, 1961). Davids et al. (1961) found that women who had complications during labor and delivery had higher levels of anxiety during pregnancy. With the identification of anxiety during pregnancy and its effect on labor and delivery and the newborn, an intervention needs to be implemented to relieve this anxiety.

The various childbirth education methods have focused on relieving the fears and anxieties pregnant women have toward childbirth (Chertok, 1969; Dick-Read, 1955; Vellay, 1965). Zax et al. (1975) studied the effect of childbirth education on emotional attitudes and delivery process. The findings showed an increase in anxiety with primiparous women and a decrease in anxiety with multiparous women.

Zax et al. concluded that the anxiety measured was a personality or trait anxiety, not anxiety experienced during pregnancy. No other studies have been reported measuring the effect of childbirth education on anxiety of pregnant women.

The anxiety experienced during pregnancy by each woman could be affected by an overall response to anxiety in one's life. Spielberger (1966) identified that a relationship existed between state and trait anxiety. State anxieties are subjective feelings experienced at a particular moment, while trait anxiety refers to stable individual differences in activity proneness. High trait anxiety individuals are more vulnerable to stress and tend to experience state anxiety reactions of greater intensity and greater frequency over time than persons who have low trait anxiety (Spielberger & Diaz-Guerrero, 1976). If this relationship does exist, then women who experience high state anxiety during pregnancy should have high trait anxiety levels. Childbirth education, therefore, may not be able to decrease the state anxiety experienced during pregnancy. Women with high trait anxiety scores experience high levels of state anxiety throughout their lives, not just at the time of pregnancy. Yet, those women who have low trait anxiety levels may

experience an elevation in state anxiety during pregnancy
and childbirth education which may be related to the
level of state anxiety. The purpose of the present study
was to determine if a relationship exists between the
difference in pretest and posttest state anxiety and
trait anxiety of pregnant women who attend childbirth
education classes.

Theoretical Framework

The theory used in the present study was the state-
trait theory by Spielberger (1966). This is a clarifica-
tion of the relationship between the concepts of state
and trait anxiety. State anxiety (A-State) is a transi-
tory emotional state or condition of the human organism
that varies in intensity and fluctuates over time. The
level of A-State anxiety should be high in circumstances
that are perceived by an individual to be threatening,
irrespective of the objective danger. State anxiety
(A-State) intensity should be low in nonstressful situa-
tions or in circumstances in which an existing danger
is not perceived as threatening. Trait anxiety (A-Trait)
refers to relatively stable individual differences in
anxiety proneness or to differences between people with
the tendency to respond to situations perceived as threat-
ening with elevations in A-State tendency.

The theory indicates that situations which pose direct or implied threats to self-esteem produce differential levels of A-State anxiety in persons who differ in A-Trait anxiety. High A-Trait individuals will perceive situations or circumstances that involve failure or threats to self-esteem as more threatening than will persons who are low in A-Trait anxiety (Spielberger & Diaz-Guerrero, 1976). High A-Trait individuals also respond to threatening situations with A-State elevations of greater intensity than low A-Trait individuals (Spielberger, 1972).

Pregnant women who experience elevations in anxiety during pregnancy, before childbirth education, could be either low or high A-Trait individuals. After attending childbirth education classes, women who make no change in their state anxiety may have high A-Trait anxiety levels, while women who have a decrease in their state anxiety level may have low A-Trait anxiety levels.

Assumptions

The assumptions of this study were as follows:

1. In situations that are appraised by an individual as threatening, an A-State reaction will be evoked.

2. The intensity of an A-State reaction will be proportional to the amount of threat the situation poses for the individual.

3. Individuals with high A-Trait scores are more strongly disposed than low A-Trait individuals to experience A-State elevations in situations that pose threats to self-esteem.

Hypothesis

The following hypothesis was tested in the present study:

There is no significant relationship between the difference in pretest and posttest state anxiety scores and trait anxiety scores of primiparous pregnant women attending childbirth education.

Definition of Terms

For the purposes of this study, the following terms were defined:

1. Childbirth education--a 6-week series of classes attended by pregnant women in their third trimester. The series of childbirth classes was based on a philosophy stated by Dick-Read (1970) as follows:

> Men and women who are willing to learn their respective jobs for home and family-making never

> regret the effort required. It is the best involve-
> ment for a happy, proud, and successful life. Women
> who are properly prepared and looked after during
> labor experience a deep sense of satisfaction and
> joy in bearing children. It is the right of every
> woman to be given that opportunity of learning how
> to make childbirth a happy event. (p. 35)

The program included instruction on the physical and
emotional well-being throughout pregnancy. It included
the recognition of the father as a vital participant
in childbirth and child care. In regards to the birth
experience, the couples are informed about hospital rou-
tines and physical-emotional sensations of labor and
delivery. Emphasis is placed on the physical comforts
of the mother, which includes breathing techniques, posi-
tioning, and controlled relaxation.

    2. <u>Primiparous pregnant woman</u>--any married female
experiencing a first pregnancy and in the third trimester
of pregnancy.

    3. <u>State anxiety</u> (A-State)--a transitory emotional
state or condition of the human organism that varies
in intensity and fluctuates over time as measured by
the State-Trait Anxiety Inventory (STAI) using the A-State
scale.

    4. <u>Trait anxiety</u> (A-Trait)--relatively stable indi-
vidual differences in anxiety proneness as measured by
the STAI on the A-Trait scale.

Limitations

The limitations of this study were as follows:

1. Age was not controlled.

2. Present level of knowledge regarding labor and delivery was not known.

3. Other aspects of the pregnant woman's life which could affect anxiety were not controlled, such as personal and marital relationships and income.

4. Personality and teaching characteristics of instructors may have affected the level of state anxiety.

Summary

Anxiety during pregnancy has been well documented to exist at some level for all pregnant women. Methods to relieve anxiety have not been evaluated, nor is the concept of anxiety during pregnancy understood for each individual woman.

This study was conducted to determine if a relationship existed between the difference of pretest and posttest state anxiety and trait anxiety of primiparous pregnant women who attended childbirth education classes. Spielberger's (1966) theory of anxiety was used as the framework for this study.

CHAPTER 2

REVIEW OF LITERATURE

The definition of anxiety varies among theorists,
but there is agreement that anxiety is an unpleasant
state.   There are as many methods to measure anxiety
as there are definitions.   Anxiety has been documented
to exist at various levels for all women and higher levels
of anxiety have an effect upon the obstetrical outcome.
Childbirth education is believed to decrease the anxiety
experienced by the pregnant woman.   As a woman's knowledge
about pregnancy and childbirth increases, the fear and
anxiety about the unknowns of childbirth may decrease.
For the purposes of the present study, the review of
the literature will address the topic areas of anxiety,
anxiety during pregnancy, and the effect of childbirth
education.

Anxiety

The nature of anxiety was first conceptualized by
Freud (1936) as a universally experienced, unpleasant
emotional (affective) state.   Anxiety is distinguishable
from other emotions such as anger or depression by a unique

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combination of experimental and physiological qualities
that give it a special, unpleasant character. The experi-
mental qualities associated with anxiety are feelings
of apprehension, tension, or dread. Freud viewed anxiety
as a signal indicating the presence of a dangerous situa-
tion. Freud further stated that the capacity for anxiety
is innate in the organism. It is part of the self-
preservation instinct and is physiogenetically inherited.

May (1950) described anxiety as diffuse apprehensions
that are cued off by a threat to some value which the
individual holds essential to his/her existence. May
viewed the phenomenon of anxiety as feelings of uncer-
tainty and helplessness in the face of danger. The ability
to experience anxiety is innate, but the stimulus condi-
tions which evoke it are learned. May identified a central
difference between fear and anxiety, fear is specific
while anxiety is diffuse, vague, objectless, and is a
threat to the essence of one's personality.

According to Sullivan (1953), anxiety is an intensely
unpleasant state of tension arising from experiencing
disapproval in interpersonal relations. Once aroused,
anxiety distorts the individual's perception of reality.
It limits the range of stimuli that are perceived and

it causes aspects of the personality that are disapproved
to be dissociated.

Anxiety, as identified by Lader and Marks (1971),
is an emotion indistinguishable from fear, except, that
the source of danger is not clear. These authors also
indicated that anxiety at low levels is a useful state
associated with mastery of the environment, but intense
anxiety can interfere with ongoing adaptive behavior.

Anxiety, according to Grinker (1966), has a special
role in the adjustive process of the human organism and
serves as both an indicator of response to stress and
a precursor of further stress responses. Anxiety has
a tendency to feed upon itself and, therefore, it becomes
more intense in nature. As the ineffectiveness of the
psychological and physiological organism becomes clear,
anxiety mounts.

Cattell (1966) viewed anxiety as a response to a
threatened deprivation of an anticipated satisfaction
when the threat does not contain complete cognitive cer-
tainty. Two specific states of anxiety (trait and state)
were identified by Cattell and Scheier (1961). The trait
anxiety factor was interpreted as measuring stable indi-
vidual differences in a unitary, relatively permanent

personality characteristic. The state anxiety factor was to describe a pattern of variables that covaried over occasions of measurement. State anxiety is a transitory state condition of the organism which fluctuates over time.

Spielberger (1966) believed that ambiguity over anxiety arises from the indiscriminate use of the term to refer to two very different types of concepts. Anxiety is most commonly used to denote a complex reaction or response and is a tendency state or condition of the organism that varies in intensity and fluctuates over time. But the term anxiety is also used to refer to a personality trait. This belief led to the development of Spielberger's state-trait anxiety theory to clarify the relationship between state (A-State) and trait (A-Trait) anxiety. To support these concepts, the following studies were undertaken.

In 1968, Johnson studied the effects of interview stress on state and trait anxiety in a sample of 48 Caucasian males in a veteran's administration neuropsychiatric hospital. State anxiety was measured by the Zuckerman Affect Adjective Check List (AACL). The Taylor Manifest

Anxiety Scale (TMAS) was used to measure trait anxiety.
Both tools were administered during the relaxation period
and after the interview session. The subjects were ran-
domly assigned to a stress or control group. The stress
group discussed, during the interview session, earlier
experiences that were traumatic to each subject. The
control group talked about nonstressful topics. With
the stress group, the A-State scores averaged an increase
of 3.2 points between relaxation and the interview session.
The control group's A-State scores remained unchanged.
The A-Trait scores showed no change between relaxation
and interview scores of either group.

Hodges and Spielberger (1969) measured state and
trait anxiety of 72 male undergraduate students in a
psychology course in relation to a performance task.
The Taylor Manifest Anxiety Scale (TMAS) measured the
A-Trait anxiety before the performance task. Subjects
with scores of 18 or greater were designated as the high
A-Trait individuals. The low A-Trait individuals were
subjects with scores of 11 or lower. An equal number
of high and low A-Trait subjects was randomly assigned
to the stress or control group. The Zuckerman Affect
Adjective Check List (AACL) was given before and after

the performance task to measure A-State anxiety. The stress group, given the performance task, was told they had not done well and had to repeat the task. The control group, given the performance task, was told they were doing fine and this task was easier.

In comparing the A-Trait and A-State scores for each group, all of the high A-Trait subjects in the stress group, were classified as having high A-State. All except one of the low A-Trait subjects in the control group were classified as low A-State. A statistical analysis of these data yielded a significant chi-square. This finding indicated that the effect of experimental conditions on A-State was influenced by level of A-Trait (Hodges & Spielberger, 1969).

The effect of state anxiety and task difficulty on computer-assisted learning was measured in a study conducted by O'Neil et al. (1969). The sample consisted of 29 undergraduate psychology students. Anxiety, A-Trait and A-State, was measured using the TMAS and AACL tools. These tools were administered before the learning task. The A-State anxiety was measured periodically during the task. The relationship between A-Trait and A-State was determined by the product moment correlation

coefficient. The computed value of r was .50, $p < .05$. An analysis of variance was done on the A-State scores. The scores differed significantly for pretask, task, and posttask.

Lamb (cited in Spielberger, Gorsuch, & Lushene, 1970) evaluated the effects of different stress situations on measures of state and trait anxiety. The subjects were 50 undergraduate males enrolled in a public speaking class. Anxiety, A-State and A-Trait, was measured using the State-Trait Anxiety Inventory (STAI) at the beginning of class, before a speech, and after the speech. The mean A-State scores were as follows: beginning of class, 38.1; during speech, 43.8; and after speech, 37.8. The A-State scores returned to prespeech levels immediately after the speech. Therefore, the A-State measurement effectively measured increases in anxiety during stressful situations. The mean A-Trait scores for the beginning of class, during speech, and after speech periods were 36.7, 36.0, and 36.6, respectively. The A-Trait scores remained stable and unaffected by the induced stresses.

The effects of success and failure feedback on A-State anxiety for subjects who differed in A-Trait anxiety

was investigated by McAdoo (1970) who studied 275 male undergraduates enrolled in an introductory psychology course. Trait and state anxiety were measured with the use of the State-Trait Anxiety Inventory. The A-Trait scale was given during the first class. Those with scores (49 or greater) in the upper quartile of distribution were designated as high A-Trait. Students with scores (26 or less) in the lower quartile were designated as low A-Trait. A total of 30 subjects was in each group. The high and low A-Trait groups were subdivided into success or failure feedback groups. The A-State scale was administered during the first class, during performance of memory task, feedback, and retest. The A-State scores of both groups differed significantly between the four periods. In the failure feedback group, the A-State scores increased an average of 11.3 points for the high A-Trait group and the low A-Trait group averaged an increase of 3.2 points.

Anxiety was first conceptualized by Freud (1936) as a universally experienced, unpleasant emotional state. Anxiety has been further defined as feelings of certainty, a response to a threat to the human organism, and as a method of adaptation of the human organism to the

environment. Spielberger (1966) believed that anxiety

referred to two different concepts, state and trait anxiety,

and a relationship between the state and trait anxiety.

Subjects who have high trait anxiety levels display higher

state anxiety levels, and low trait anxiety level sub-

jects display low state anxiety levels.

Anxiety in Pregnancy

In 1950 Klein et al. investigated behavior reactions

of women throughout pregnancy, labor/delivery, and post-

partum. These authors defined anxiety as verbalization

of subjective complaints or fears regarding pregnancy

and childbirth. The women stated that their anxieties

were the greatest during the third trimester and mounted

as the end of the pregnancy approached. Klein et al.

believed that although the degree of anxiety varied,

depending upon the emotional makeup of the woman, all

women experience anxiety at some time during the pregnancy

period.

Grimm (1961) investigated psychological tension

in pregnancy and its related effect on complications

in pregnancy and birth. The instrument used was the

Thematic Apperception Test (TAT). The TAT consists of

a series of cards with pictures. Individuals were asked

to describe what they saw in the picture. Within a 1-week period, 200 women were given the TAT. The women were at a different time period of their pregnancy, first, second, or third trimester. Findings showed a rise in the tension index to 53% in the second half of the third trimester. Throughout pregnancy the tension index was 35%. No significant relationship occurred between the psychological tension and length of labor, complications of labor and delivery, or status of the newborn (Grimm, 1961).

Effects of anxiety on pregnancy and adjustment of the offspring were studied by Davids et al. (1961). Anxiety was measured by administering the Taylor Manifest Anxiety Scale (TMAS) during pregnancy and 6 weeks postpartum. The subjects were 48 pregnant women attending a prenatal clinic. Group I consisted of 20 women who completed the TMAS during pregnancy and 6 weeks postpartum. The remaining 28 women (Group II) took the TMAS only during pregnancy. Each group was divided into a normal and abnormal subgroup. The abnormal subgroup was identified as women who had complications during delivery or gave birth to a child with abnormalities. In Groups I and II, the normal subgroup obtained a mean

TMAS score of 16.5 which was significantly lower than the mean of 23.5 in the abnormal subgroup. For Group I, the level of anxiety decreased in both subgroups at 6 weeks postpartum (normal subgroup = 15; abnormal subgroup = 18.3).

Glazer (1980) also formulated a study to identify specific concerns and to determine levels of anxiety of pregnant women. Pregnant women ($\underline{n}$ = 100) were selected from two settings; 52 attended an outpatient prenatal clinic and 48 were patients attending private practice of obstetricians. The instruments used were the Taylor Manifest Anxiety Scale, a concern questionnaire, and a demographic information sheet. The results showed that the anxiety levels of the clinic patients were significantly higher than the private patients. The clinic patients' mean anxiety score was 21.00 ($\underline{SD}$ = 8.01) while the private patients had a mean score of 13.06 ($\underline{SD}$ = 8.21). Using the Spearman correlation coefficients, a significant negative correlation existed between anxiety level and age, education, marriage, and income (Glazer, 1980).

In 1974, Gorsuch and Key determined the relationship of anxiety to abnormalities of pregnancy, parturition,

and postnatal periods. Anxiety was measured by the State-Trait Anxiety Inventory (STAI). The subjects included 111 pregnant women who attended an obstetrical clinic at a large hospital. The sample was divided into two groups: problem-free and abnormalities that occurred in antepartum, intrapartum, or postpartum. The A-Trait scale was given on the first prenatal visit. The trait anxiety levels did not significantly differ for the two groups and there were no relationships identified between state and trait anxiety of individual women. At the third lunar month of pregnancy, the abnormality group showed an average A-State score of 48. The problem-free group's average was 33. By the fourth lunar month, the abnormality group had increased their average to 50 and the problem-free group was at 40.1. It was interesting to note that all the women showed higher levels of anxiety (average A-State score = 51) after the sixth lunar month (Gorsuch & Key, 1974).

Anxiety during pregnancy has been documented to be experienced by women at some time during pregnancy. Grimm (1961) identified elevations of anxiety in the second half of the third trimester. Delivery complications and birth abnormalities were identified in women with

high levels of anxiety during pregnancy (Davids et al., 1961).

Childbirth Education

Dick-Read (1955) was a pioneer in identifying the fears and anxieties concerning childbirth. Dick-Read believed that birth was a natural physiological function and should not give rise to pain. In labor, Dick-Read stated that fears and anxieties trigger a natural mechanism of the body giving rise to tension which leads to pain. This leads to more fear and anxiety. Various childbirth education methods have focused on relieving these fears and anxieties of the pregnant woman (Chertok, 1969; Dick-Read, 1955; Vellay, 1965).

To evaluate the effectiveness of childbirth education, Davis and Morrone (1962) studied 463 primiparous women. Length of labor and use of forceps was compared in women who attended childbirth education (prepared) and women who did not (unprepared). The length of labor was not statistically significant between the two groups, nor did being prepared or unprepared have any influence on the incidence of the use of forceps at delivery.

Halstead and Fredrickson (1978) attempted to evaluate the effect of childbirth education on the outcome of

labor. They randomly chose 201 pregnant women and divided them into two groups: those who had less than 5 hours of childbirth preparation (n = 96) and those who had greater than 5 hours (n = 105). In comparing the length of labor, the less than 5 hour group had a mean average of 8.07 hours (SD = 6.51), while the greater than 5 hour group averaged 8.13 hours

In 1975, Zax et al. evaluated the effect of childbirth education on emotional attitudes and the delivery process. The sample consisted of 114 pregnant women divided into two groups, primiparas (n = 68) and multiparas (n = 46). The Institute Personality and Ability Test (IPAT) measured anxiety levels before and after childbirth education. On the first test, the multiparas were more anxious than the primiparas. The second test revealed that the primiparas were more anxious than the multiparas. The childbirth education classes appeared to have reduced anxiety in multiparas but increased anxiety in primiparas. Zax et al. concluded that the anxiety measured was a personality or trait anxiety, not anxiety experienced in relationship to pregnancy. Zax et al. suggested that a tool be developed to measure anxiety experienced during pregnancy. Childbirth education appeared

to have no effect on length of labor or use of medications during the delivery process.

Childbirth education was pioneered in the 1950s by Dick-Read and various other methods have been developed over the years. Each method holds the belief that childbirth education techniques will reduce anxiety for pregnant women. Zax et al. (1975) measured the effect of childbirth education on anxiety and discovered that in primipara women, anxiety increased. Yet, Zax et al. concluded that the anxiety measured was trait or personality anxiety, not anxiety experienced with regard to pregnancy. Various other studies which were done to measure effectiveness of childbirth education using variables of length of labor or use of forceps, showed no statistical significance.

Summary

Anxiety was first conceptualized by Freud (1936) as a universally experienced, unpleasant emotional state. May (1950) and Sullivan (1953) viewed anxiety as feelings of uncertainty and helplessness in the face of danger. Anxiety (Grinker, 1966; Lader & Marks, 1971) has a special role in the adaptation of the human organism to the environment. Cattell (1966) perceived anxiety as a response

to a threat to the human organism. Spielberger (1966) believed that anxiety referred to two very different types of concepts, state and trait anxiety. Spielberger developed the state-trait anxiety theory to clarify the relationship between state and trait anxiety. Johnson (1968) and Lamb (cited in Spielberger et al., 1970) measured both state and trait anxiety before and after stress periods. State anxiety increased after stress while trait anxiety was unchanged. This finding supported the separate entity of state and trait anxiety. Hodges and Spielberger (1969), McAdoo (1970), and O'Neil et al. (1969) identified a direct relationship between trait and state anxiety. Subjects who were high in A-Trait displayed higher A-State scores under stress, while low A-Trait subjects displayed low A-State scores.

Anxiety during pregnancy was first studied by Klein et al. (1950). The investigators believed that all women experience anxiety at some time during pregnancy. Grimm (1961) identified elevations of tension (anxiety) in the second half of the third trimester. Gorsuch and Key (1974) supported this belief but also found that women who have complications in labor or delivery have elevations of anxiety in their third and fourth lunar

months of pregnancy. Delivery complications and birth abnormalities were identified by Davids et al. (1961). Women with higher levels of anxiety during pregnancy had delivery complications or gave birth to a child with abnormalities. Glazer (1980) discovered that higher levels of anxiety were seen in pregnant women of a younger age, less education, not married, and of low income.

Finally, in a study by Zax et al. (1975) the effect of childbirth education on anxiety was measured and it was found that in primiparous women, the anxiety increased. Zax et al. concluded that the anxiety measures were personality or trait anxiety, not anxiety experienced with regards to pregnancy and recommended that a tool be developed to measure anxiety experienced during pregnancy.

CHAPTER 3

PROCEDURE FOR COLLECTION AND

TREATMENT OF DATA

The research design chosen for this study was quasi-
experimental. Quasi-experiments lack at least one of the
three properties of manipulation, control, or randomiza-
tion which characterize an experiment (Polit & Hungler,
1978). There was no control group or randomization in
this study. The one group pretest-posttest design was
used. It allowed for the collection of information at
specific periods of time and the introduction of an experi-
mental treatment during the course of data collection.
Pretest observations were recorded on a single group of
persons, who later received a treatment, after which
posttest observations were made (Campbell & Stanley, 1963).

Setting

The setting used for this study was a 6-week series
of childbirth education classes (Appendix A) taught by an
instructor of an association of childbirth education.
These classes were held within various buildings located

in a large city in the Southwestern United States. Various
buildings used were schools, libraries, and churches. The
community association of childbirth education required
each instructor to be a registered nurse who had experi-
enced childbirth. Each instructor had completed a course
of teacher instruction given by the association of child-
birth education.

Population and Sample

The population consisted of pregnant women in their
third trimester of pregnancy who attended the childbirth
education classes. Accidental sampling technique was
utilized. It entailed the use of the most readily avail-
able persons for use as subjects in the study (Polit &
Hungler, 1978). The sample consisted of 25 primiparous
pregnant women attending five of the six classes of the
childbirth education series offered by the community
association of childbirth education.

Protection of Human Subjects

This study was conducted in compliance with Category
I of the risk categories of the Federal Regulations for
Protection of Human Subjects and did not necessitate
committee review (Appendix B). Written permission was

obtained from the graduate school (Appendix C) and from the community childbirth education group to conduct the research within their childbirth education classes (Appendix D).

Anonymity of participants was maintained as no names appeared on the questionnaire or in the study and results were reported as group data. Identification numbers were used to match pretests and posttests. The return of the questionnaire by participants constituted consent to participate in this study. Participants were informed of the purpose of this study and the risks and benefits involved by the written presentation read by the childbirth education instructor at the first session of the classes (Appendix E). Each participant was informed of the right not to participate in this study and electing not to participate would have no effect on their attendance or participation in the classes. Another written presentation was read by the childbirth education instructor at the last session of the classes (Appendix F).

Instruments

Two instruments were used to collect data. The instrument used to measure anxiety was the State-Trait Anxiety Inventory (STAI) by Spielberger et al. (1970)

(Appendix G). The STAI is comprised of separate self-reported scales for measuring two distinct anxiety concepts: state anxiety (A-State) and trait anxiety (A-Trait). The STAI A-State scale consists of 20 statements that ask people how they feel at a particular moment in time. The A-Trait scale consists of 20 statements that ask how they generally feel. Subjects respond to each STAI item by rating themselves on a 4-point scale. The A-State scale has four possible responses: 1--not at all, 2--somewhat, 3--moderately so, and 4--very much so. The categories for the A-Trait scale are: 1--almost never, 2--sometimes, 3--often, and 4--almost always. The range of possible scores for each scale varies from a minimum score of 20 to a maximum score of 80.

Some of the STAI items are worded in such a manner that a rating of 4 indicates a high level of anxiety, while other items (i.e., "I feel pleasant") are worded so that a high rating indicates low anxiety. For these items, the scoring weights are reversed. The STAI A-State scale is balanced for acquiescence set, with 10 directly scored and 10 reversed items. The reversed items are 1, 2, 5, 8, 10, 11, 15, 16, 19, and 20. The A-Trait scale has 13 directly scored and 7 reversed items. The

reversed items are 1, 6, 7, 10, 13, 16, and 19 (Spielberger et al., 1970).

Evidence of the concurrent validity of the STAI, A-Trait scale is confirmed through its moderately high (r = .75 to .80) correlations with the Institute of Personality Anxiety Test (IPAT) and the Taylor Manifest Anxiety Scale (TMAS). This was illustrated by a study utilizing college students and neuropsychiatric patients (Spielberger et al., 1970).

Evidence bearing on the construction validity of the A-State scale is available from a sample of 977 undergraduate college students. These students were first administered the A-State scale with the standard instructions (NORM condition). They were then asked to respond according to how they believed they would feel just prior to the final examination in an important course (EXAM condition). Spielberger et al. reported that the mean score for the A-State scale was considered higher in the EXAM condition than in the NORM condition for both males and females.

The test-retest correlations for the A-Trait scales range from .73 to .86. The test-retest scores for the A-State scale range from .16 to .54, as would be expected

for a value measure designed to reflect the influence of situational factors (Spielberger et al., 1970).

The second instrument, the Demographic Questionnaire, was used to collect data regarding the sample. Demographic information obtained was age and marital status. This was recorded on the demographic questionnaire (Appendix H) and the information was used to describe the sample.

Data Collection

At the first class of each childbirth education series, the individual instructor explained the purpose of the study and risks and benefits involved for the pregnant woman. Each woman was given a packet of educational materials for use in the classes. The anxiety scales were placed in the packets. An identification number was printed in the right hand corner of the packet and on the STAI. Instructions on how to take the test were written at the top of the test page. The pregnant women were instructed to complete both the state and trait anxiety scales. Following completion of the test, the instructor collected the questionnaires, placed them in an envelope, and sealed the envelope.

At the last class of the childbirth education series, the pregnant woman was asked to remove the state and trait anxiety scales from her packet. She was instructed to complete only the state anxiety scale. Upon completion of this scale, the instructor collected the question- naires, placed them in an envelope, and sealed the en- velope.

Treatment of Data

Descriptive statistics were used on the demographic data obtained. A product moment correlation coefficient Pearson r was used to show the correlation index between the difference of the pretest-posttest state anxiety scores and the trait anxiety score. The .05 level of significance was used to either reject or accept the hypothesis.

CHAPTER 4

ANALYSIS OF DATA

This study was conducted to determine if there was a significant relationship between the difference of pretest and posttest state anxiety scores and the trait anxiety scores of primiparous pregnant women attending childbirth education classes. The State-Trait Anxiety Inventory (STAI) was used to measure anxiety. A description of the sample studied is presented in this chapter. The analysis of the data and the findings are also described in this chapter.

Description of Sample

The sample consisted of 25 married, primiparous pregnant women who completed a pretest and posttest state anxiety scale and a trait anxiety scale. The age range of the sample was 18-38 years. Eleven women (44%) were in the age range of 24-29 years.

Findings

The hypothesis studied in this investigation was that there is no significant relationship between the difference in the pretest and posttest state anxiety

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scores and trait anxiety scores of primiparous pregnant women attending childbirth education classes. The Pearson product moment correlation coefficient was used to show the correlation index between the difference of the pretest-posttest state anxiety score and the trait anxiety score. The computed value of r was .331, p = .106. The results of the analysis of data indicated that no significant difference was evident, so the hypothesis was accepted. There was no significant relationship between the difference in the pretest and posttest state anxiety and the trait anxiety scores of primiparous pregnant women attending childbirth education classes.

Additional Findings

Upon review of the subjects' scores of the state and trait anxiety scores, the following results are stated (Table 1). The trait anxiety scores of the pregnant women ranged from 22-65. The mean average score of the sample was 38.4. Regarding the state anxiety scores, the pretest range was 23-67 with a mean score of 39.2 while the posttest score range was 21-57 and the mean score was 33.4. The difference between the pretest and posttest state anxiety scores decreased an average of 5.8 points.

Table 1

Pretest-Posttest State and Trait Anxiety
Scores of Sample

Trait Anxiety Scores	State Anxiety Scores		
	Pretest	Posttest	Difference
22	23	21	2
23	27	28	-1
28	28	39	-11
28	32	27	5
29	30	24	6
29	28	24	4
29	33	37	-4
31	40	21	19
32	38	28	10
34	42	52	-10
35	36	29	7
36	35	38	-3
37	41	26	15
38	36	23	13
40	42	26	16
40	49	39	10
41	41	42	-1
41	39	43	-4
45	39	39	0
47	41	23	18
48	33	31	2
50	60	32	28
55	58	45	13
59	44	42	2
65	67	57	10

$\underline{n} = 25$.

In observing the individual trait anxiety scores shown in Table 1, the pretest state anxiety score was similar to the trait score. The majority of posttest state anxiety scores decreased in comparison with the trait score.

The initial (pretest) state anxiety and ending (posttest) state anxiety scores were subjected to a paired t-test analysis. There was a statistically significant decrease in the state anxiety of the participants (t (24) = 3.1, p = .005). The pregnant women's state anxiety scores decreased from the beginning of childbirth education to the completion of the classes. The average decrease in anxiety score was 5.84 points.

Summary of Findings

Analysis of the data indicated that there was no significant relationship between the difference of the pretest-posttest state anxiety scores and the trait anxiety scores of primiparous pregnant women.

As discussed in the additional findings, the pregnant women's state anxiety score decreased from the beginning of childbirth education to the completion. Also, pretest state anxiety scores were similar to the trait anxiety scores. Additionally, those pregnant women

with high trait anxiety scores had similar high pretest state anxiety scores.

CHAPTER 5

SUMMARY OF THE STUDY

This study was conducted to determine if a relation-
ship existed between the difference of pretest and post-
test state anxiety and trait anxiety of primiparous
pregnant women who attended childbirth education classes.
This chapter presents a brief summary of the study followed
by a discussion of the findings. The conclusions based
on these findings, along with the implications, are pre-
sented. Finally, recommendations for further study are
outlined.

Summary

The subjects of this study were 25 primiparous preg-
nant women who attended five of six classes in childbirth
education offered by a community association of childbirth
education. A quasi-experimental study, using a one group
pretest-posttest design was conducted to identify a rela-
tionship between the difference of pretest-posttest state
anxiety and trait anxiety. The theory used in this study
was the state-trait anxiety theory by Spielberger (1966).
This is a clarification of the relationship between the

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concepts, state anxiety and trait anxiety. The theory
indicates that situations that pose direct or implied
threats to self-esteem produce differential levels of
state anxiety in persons who differ in trait anxiety.
High trait anxiety level individuals also respond to
threatening situations with state anxiety level elevations
of greater intensity than low trait anxiety level indi-
viduals (Spielberger, 1972).

A pretest and posttest state anxiety scale was given
to measure differences in state anxiety after attendance
at the first and last class of a childbirth education
series. Trait anxiety was measured with state anxiety
at the first class of the childbirth education series.
The instruments used to collect data were a demographic
questionnaire and the State-Trait Anxiety Inventory (STAI)
by Spielberger et al. (1970). The statistical test used
to analyze the data was the Pearson product moment corre-
lation coefficient. The .05 level of significance was
used to reject the hypothesis.

Discussion of Findings

The results of the present study have shown no signifi-
cant relationship to exist between the difference of
the pretest-posttest state anxiety and trait anxiety

scores of primiparous pregnant women who attended child-
birth education classes. This finding is not consistent
with the study conducted by O'Neil et al. (1969) where
a significant relationship was established between state
anxiety and trait anxiety in primiparous pregnant women.
Hodges and Spielberger (1969) conducted a study which
also yielded a significant statistical relationship between
state and trait anxiety.

The results of the present study also did not sup-
port the concept that individuals with high trait anxiety
have an elevation in state anxiety and those with a low
trait anxiety may have elevations in state anxiety which
may decrease when the stress level is lessened. O'Neil
et al. (1969) stated that some subjects who are high
in A-Trait may not respond with high levels of A-State
because a particular task is not threatening to them.
O'Neil et al. also stated that specific situational factors
may produce high levels of A-State in some subjects who
are low in A-Trait.

Possible explanations of variables which may have
influenced the results of the present study are indicated.
Consideration must first be given to the instrument used.
The tool was designed by Spielberger et al. (1970) to

measure state-trait anxiety and has established relia-
bility and validity with undergraduate students and psy-
chiatric patients. The state anxiety scale has been
used in other studies with pregnant women, but there
are no norm standards for pregnant women using both state-
trait anxiety scales.

In the present study it was also assumed that all
the subjects would have elevations in state anxiety regard-
ing pregnancy at the pretest measurement. Upon reviewing
the raw data, some of the pregnant women had no elevation
on the pretest and posttest state anxiety scores. Previous
studies (Glazer, 1980; Gorsuch & Key, 1974; Grimm, 1961)
have documented that elevations of anxiety were seen
at various periods of the woman's pregnancy.

The sample size of the present study must also be
considered. The total sample size used was 25. Previous
studies (Hodges & Spielberger, 1969; McAdoo, 1970; O'Neil
et al., 1969) utilized from 50 to 273 subjects. These
studies also used only subjects within a high or low
extreme A-Trait score. Subjects in between the extreme
high or low scores contributed to much variability of
the results. In addition, the method of data collection
in the present study may have influenced the results.

The investigator did not present the information regard-
ing the study. The information was presented by the class
instructor. This fact could have possibly affected the
results of the study.

Further analysis of the data using a mean average
and a paired t-test showed a decrease in anxiety in the
primiparous pregnant women after childbirth education
classes. This finding contradicted the findings of Zax
et al. (1975) that anxiety levels of primiparous pregnant
women increased after childbirth education classes.

Upon observation of the pretest state anxiety scores
and the trait anxiety scores, the scores were similar.
With regards to the high trait anxiety scores, these
pregnant women experienced an increase in pretest state
anxiety.

Conclusions and Implications

Within the limitations and the findings of the
present study, the state-trait anxiety theory was not
supported. There was no significant relationship between
the difference of the pretest-posttest state and trait
anxiety scores of primiparous pregnant women who
attended childbirth education classes.

Childbirth education does have an effect on reducing the state anxiety of primiparous pregnant women. This finding supports the philosophy of childbirth education as a method of reducing anxiety. Therefore, health care professionals should encourage pregnant women to attend childbirth education classes.

Recommendations for Further Study

The following recommendations for further study were made:

1. Replicate this study using only primiparous pregnant women with extreme high or low trait anxiety scores.

2. Replicate this study and compare the state-trait anxiety relationships between primiparous and multi-parous women.

3. Conduct a study to develop NORM scores of the State-Trait Anxiety Inventory for use with pregnant women.

APPENDIX A

CHILDBIRTH EDUCATION

Outline of Classes

1st Week: Introduction
             Family Care Unit Philosophy
             Anatomy and Physiology
             Discomforts of Pregnancy--Physical and
               Emotional
             Sexuality
             Exercises
             Breathing Techniques

2nd Week: Nutrition
             Precautions
             Labor Symptoms
             Communication with Medical Staff
             Contraction--Timing
             Relaxation--Paternal and Maternal

3rd Week: Labor Stages--Discuss physical and mental
               changes, coaching techniques, and prob-
               lems that could develop
             Breathing techniques and various positions
               to use

4th Week: Labor Stages--transition and Stage #2
               (pushing)
             Procedures Done--enema, IV, episiotomy
             Practice--exercises, relaxation, and
               breathing techniques

5th Week: Medical Interventions--medications, arti-
               ficial rupture of membranes, fetal heart
               monitor (FHM)
             Cesarean Birth
             Practice--exercises, relaxation, and
               breathing techniques

6th Week: Question and Answer Session
Discuss--breastfeeding, siblings, post-
  partum recovery, and bonding
Have a "mock" labor session

APPENDIX B

Prospectus for Thesis
Approval Form

This proposal for a thesis by Kathryn Kerber

and entitled Anxiety Levels of Primiparous

Pregnant Women Attending Childbirth Education.

has been successfully defended and approved by the members

of the Thesis Committee.

This research is x **is not** **exempt from appro-**

val by the Human Subjects Review Committee. If the research

is except, the reason for its exemption is: in compliance

with Category I of Human Risks and does not necessitate full

committee review.

Thesis Committee: *Faie Watson* **, Chairperson**

Oneida M. Hughes **, Member**

Ruth C. Vaughan-Wrobel **Member**

Date: 1/24/83

_____ Dean, College of Nursing

Date: _____

APPENDIX C

TWU Texas Woman's University

P.O. Box 22479, Denton Texas 76204 (817) 383-2302. Metro 434-1757. Tex-An 834-2133
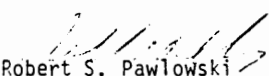
THE GRADUATE SCHOOL

February 14, 1983

Ms. Kathryn Kerber
5435 Merrimac
Dallas, TX 75206

Dear Ms. Kerber:

I have received and approved the Prospectus for your research
project. Best wishes to you in the research and writing of your
project.

Sincerely yours,

Robert S. Pawlowski
Provost

ec

cc Dr. Anne Gudmundsen
   Dr. Gail Watson

APPENDIX D

TEXAS WOMAN'S UNIVERSITY
COLLEGE OF NURSING

AGENCY PERMISSION FOR CONDUCTING STUDY*

THE _Dallas Association of Parent Education_

GRANTS TO _Kathryn Kerber_
a student enrolled in a program of nursing leading to a
Master's Degree at Texas Woman's University, the privilege
of its facilities in order to study the following problem.

_To determine if a relationship exists
between the state anxiety and trait
anxiety of primiparous pregnant
women who attend childbirth education
classes._

The conditions mutually agreed upon are as follows:

1. The agency (may) (may not) be identified in the final
   report.

2. The names of consultative or administrative personnel
   in the agency (may) (may not) be identified in the
   final report.

3. The agency (wants) (does not want) a conference with
   the student when the report is completed.

4. The agency is (willing) (unwilling) to allow the
   completed report to be circulated through interlibrary
   loan.

5. Other_____

_____

Date: _February 28, 1983_   _Linda Kerber (DAPE hip)_
                            Signature of Agency Personnel

Kathryn Kerber   _Gail Watson_
  Signature of Student   Signature of Faculty Advisor

*Fill out & sign three copies to be distributed as follows:
 Original - Student; First copy - Agency; Second copy - TWU
 College of Nursing.

APPENDIX E

ORAL PRESENTATION FOR PRETEST

You have been selected to participate in a study to evaluate how effective childbirth education is for the woman during pregnancy. The person conducting the study is Kathryn Kerber, a registered nurse and a graduate student at Texas Woman's University in Dallas. This community association of childbirth education has given permission to conduct this study.

Enclosed in your childbirth education packet is a self-evaluation questionnaire with an identification number in the right hand corner. No names will be used. This identification number is known only to you. This gives you assurance that you will remain anonymous. The questionnaire has two sides which you are asked to complete at this time. Please read the instructions at the top of the page on both sides. The instructions are different for each scale. This questionnaire takes a total of 10-15 minutes to complete both sides. At the last class, you will be asked to repeat this same questionnaire.

You do have the right not to participate in this study. If you should elect not to participate, it will

not in any way affect your attendance or participation in the classes. The return of the questionnaire will be construed as your informed consent to participate in the study.

Your willingness to participate is most appreciated. An anticipated goal of this study is to provide factual data to support childbirth education classes. If you have any questions regarding the study, please feel free to ask at this time.

APPENDIX F

ORAL PRESENTATION FOR POSTTEST

At this time you are asked to remove the self-evaluation questionnaire from your childbirth education packet. Please read the instructions at the top of the page. You are asked to complete only side one of the questionnaire. The questionnaire takes about 5-7 minutes to complete. Also, include in the upper left hand corner the number of childbirth education classes you have attended.

Your willingness to participate is most appreciated. An anticipated goal of this study is to provide factual data to support childbirth education classes. Results of this study may be obtained by contacting the community association of childbirth education after December 1983.

Thank you for your time and interest.

APPENDIX G

State-Trait Anxiety Inventory

The State-Trait Anxiety Inventory (STAI) may be obtained from the following company:

Consulting Psychologists Press, Inc.

577 College Ave.

P. O. Box 11636

Palo Alto, California   94306

Phone: 415/857-1444

APPENDIX H

Demographic Questionnaire

Although your participation is most appreciated, you do have the right not to participate in this study. If you should elect not to participate, it will not in any way affect your attendance or participation in the classes.

THE COMPLETION AND RETURN OF THIS QUESTIONNAIRE WILL BE CONSTRUED AS YOUR INFORMED CONSENT TO PARTICIPATE IN THE STUDY.

1. _____ Age

2. _____ Marital Status

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