

FEELINGS AND BEHAVIORS OF PREGNANT WOMEN  
AFTER THEIR ESTIMATED DATE TO DELIVER

by

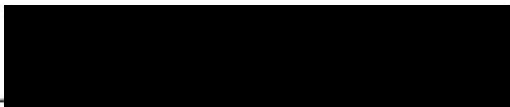
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A Master's Research Project

Presented to  
The Oregon Health Sciences University  
School of Nursing  
in partial fulfillment  
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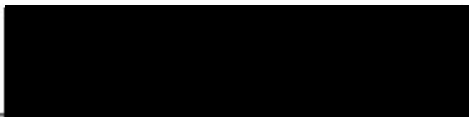
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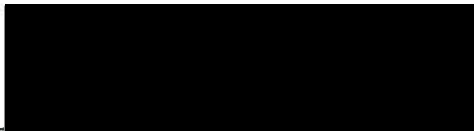
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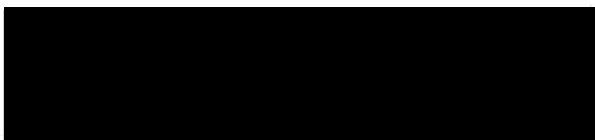
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CHAPTER I

Introduction

Pregnant women in the United States are frequently asked, "When are you expecting?" or "What is your due date?" The usual response is the estimated date of delivery (EDD) calculated by the maternity care provider. The EDD may become a problem to the American woman. In a social climate that values personal control, is it any wonder that the words "estimated date of delivery" are sometimes transformed into the "expected due date"?

When the baby does not come when it is "due", this author has noted that some expectant mothers appear to exhibit anxious feelings and/or behaviors. Among those noted are increased body discomfort, spells of crying, fear that something is wrong with the baby or the mother herself, and guilt about doing something that should or should not have been done.

Estimating the date for delivery is not always easy. Although pregnant women's accurate menstrual data (written basal body temperature and menstrual records) may be the "ideal basis" for clinical prediction of EDDs (Nichols, 1985), these data are accurate within two weeks for only about 90% of the population (Anderson, Johnson & Flora, 1981; Hibbard, 1971). Unfortunately, some women forget

the date of their last menstrual period (LMP). Additionally, the accepted 280-day gestational period has frequently been found to be several days longer even when the LMP is certain or the date of conception is known (Anderson, 1972; Park, 1968; Saito, Yazawa & Hashiguchi, 1972).

In addition to the difficulty nurses and doctors encounter in estimating a date for delivery, Rubin (1970) found that pregnant women during the third trimester have a tendency to question the EDD. Without regard to the accuracy of the EDD, expectant mothers tend to move the EDD forward. They do not want to wait until the EDD (Rubin, 1970). Could there be an increased psychic investment in the expected due date by pregnant women which may set the stage for increased negative feelings and behaviors when the scheduled date is passed? It is generally accepted that women experience more anxiety during pregnancy. This study is designed to see if anxious feelings and behaviors differ or are more intense after the EDD is passed.

If pregnant women experience more anxious feelings after the EDD, the body may be affected by these feelings. Numerous studies support White's (1951) theory that an intimate relationship exists between the mind and body. When the mind is affected the body sympathizes or when the

body is affected the mind sympathizes. For example, Ascher (1978) found that anxiety was accompanied by sympathetic nervous system hyperactivity. In Lederman, Lederman & Work's (1979) study, the relationship between the mind and the body is evident. For example, pregnant women who experienced increased anxiety during labor had high levels of circulating catecholamines and experienced weaker contractions and longer labors.

Anxiety is defined by Peplau (1979) as an internally experienced form of discomfort that provides energy which is transformed into anxiety-reducing behaviors (Peplau, 1979). Anxiety pertains to acquired sociocultural needs and arises from interpersonal transmission and unmet expectations related to acquired needs. Effects of anxiety as a feeling or experience of pregnant women are evident in all of the literature reviewed pertaining to the maternity experience. However, anxiety experienced by pregnant women who have passed their EDD has been addressed directly in only three studies found in the literature.

The purpose of this study is to see if anxious feelings and behaviors differ or intensify after the EDD is passed. If, indeed, pregnant women experience increased anxiety after the EDD is passed, nurses need to know. With nurses more aware of the potential for increased anxiety in

clients who pass their EDDs, measures could be initiated to decrease the anxiety.

#### Literature Review

Historically, pregnancy has been recognized as a time of psychobiological crises (Breen, 1975; Bibring, 1959; Deutch, 1945) or psychological challenge (Benedek, 1960). Some researchers have addressed the psychological experience of pregnant women during the last trimester or last month (Colman & Colman, 1971; Grossman, Eichler & Wimchhoff, 1980; Lederman, 1984; Leifer, 1977; Rubin, 1984; and Thompson, 1980). Other researchers have focused on anxiety experienced by pregnant women after the EDD (Affonso & Harris, 1980; Campbell, 1986; and Shearer & Estes, 1985). However, none of the literature reviewed compared differences in anxiety experienced by pregnant women during the time period shortly before the EDD to the time period after the EDD. This study compared anxiety related feelings and behaviors of pregnant women before their EDDs with the same anxiety related feelings and behaviors of pregnant women after their EDDs. The literature review covered the feelings and behaviors of pregnant women during the last trimester and during the time period following the EDD.

Feelings and Behaviors in the Third Trimester

Thompson (1980) studied anxiety ratings of 80 black women in Columbia, South Carolina at 20 and 36 weeks gestation. The subjects rated on a scale of 1 - 20 how they felt about 18 items dealing with their attitudes toward themselves, their pregnancies and their deliveries.

Thompson found that at 36 weeks the women were especially anxious about two items, labor and their sexual attractiveness. On almost all of the other items, the women's responses at 36 weeks gestation showed more apprehension and less confidence than their responses at 20 weeks. Thompson also found that women who had had complications during a previous pregnancy were more anxious by 36 weeks gestation about labor, delivery, possible birth defects, and their personal appearance. In contrast, the women who had experienced previous normal pregnancies responded consistently about attitudes towards themselves, their babies and labor at 20 and 36 weeks gestation.

Grossman, Eichler and Wimchhoff (1980) studied the effect of psychological, physiological, sociocultural and marital variables on the outcome of pregnancy. They reported on research about the feelings and behaviors that pregnant women (both primigravidas and multigravidas) experience during the first trimester and the eighth month

of pregnancy. A research session consisted of each couple having a half-hour taped interview with one of the researchers followed by each subject answering questionnaires measuring anxiety, conscious motivation and life changes. During the eighth month session subjects were also given a 30-item list of physical and emotional symptoms from which to check the frequency they had experienced the items during each trimester of their pregnancies.

Grossman, Eichler and Wimchhoff found that couples in the eighth month experienced excitement, fatigue and anxiety. The majority of the couples expressed the feeling that the pregnancy seemed to be lasting a long time. They also felt that the limitations it imposed were increasing as their tolerance for those limitations was decreasing. Almost all subjects were looking forward to the delivery, not only because they would finally meet their baby, but also because the pregnancy would then be over. Most of the women were making final preparations, both practical and emotional, for the birth. While differences were found in how various individuals were coping with their pregnancies, anxiety levels were found to be approximately the same during the first trimester and the eighth month.

Colman and Colman (1971) used a descriptive method to

study the psychological experience during each trimester of pregnancy. Thirty multigravid women and their partners were the subjects who shared their experiences in a recorded discussion group led by the researchers. The third trimester was found to be an increasingly anxious time. The women reported that they did not usually receive the support they needed from their practitioners and/or husbands. The practitioners and/or husbands said that they assumed that since the women had been through a pregnancy and birth experience before, the next time would be easier. However, the women responded by saying that even though they had been through labor and delivery, they knew that things could go wrong. They also remembered what it was like to care for a demanding newborn.

Rubin (1984) studied women's subjective maternity experience. Cross-sectional sampling of 6,000 patients was done "weekly or daily from the first missed menstrual period through pregnancy, delivery and the sixth week postpartum" (p. viii). Subjects were selected to include "normative and deviations from norm in age, parity, OB history, complications of pregnancy, the condition of the newborn as well as marital status, race, nationality, education and social class" (p. viii). In addition to the cross-sectional sampling, 100 women served as longitudinal

subjects through the entire childbearing experience (pregnancy, childbirth and the neomaternal experience). The primary question was, "How does this woman feel about herself in this situation at this time?" (p. viii). No interview or observation schedules were used except during labor. A sample of this schedule was not given by Rubin in the published report. Data about how a woman behaved or reported that she felt about herself in that situation at that time were collected by nursing faculty and staff while giving nursing care.

Rubin found that during the month before the EDD pregnant women found ways to cope with the pregnancy. However, signs of increased anxiety were noted in the subjects who frequently increased their housekeeping activities and social interactions in order to crowd out a growing sense of danger to themselves and their children and to exhaust themselves so they would be able to sleep. Also, subjects were reported to have a sense of disaster, sleeplessness, and disrupted or disquieting sleep, all of which may be feelings and behaviors associated with anxiety.

In Rubin's study the number of interviewers, how interviewers were selected, and interrater reliability were not reported. Although the study was conducted in a



natural setting, exactness may have been lost because observation schedules were not tape recorded and then transcribed. However, data recordings were made from recall immediately after an observation session.

Leifer (1977) used a descriptive design to investigate the intrapsychic developmental tasks which occur during pregnancy. Her 19 subjects were caucasian, middle-class, primigravidas, aged 22 - 33 years. Each woman was interviewed during each trimester of pregnancy, on the third postpartum day, two months postpartum and seven months postpartum. The 4-hour interview schedules included open-ended and structured questions.

Leifer found that women in the 36th or 37th week of gestation were actively engaged in preparations for the baby and markedly uninterested in the external world. Anxiety was evident in the emotions of mothers-to-be. The subjects said that their emotions were closer to the surface and they were more vulnerable. The women experienced marked mood swings and an inability to cope with stress. Many of the women reported tension and irritability when faced with minor frustrations.

Lederman (1984) used a prospective descriptive design to study psychosocial adaptation during pregnancy. Of the 32 married, middle-class primigravidas, 30 were white and

two were black. Three semi-structured interviews were held during the last trimester of pregnancy. The available literature and Lederman's experience as a maternity nurse served as the basis for selecting the psychosocial variables (acceptance of pregnancy, identification of a motherhood role, relationship with the mother and with the husband, preparation for labor, and fear of loss of control and self esteem in labor). The interview schedules were developed to provide content on each of the variables and were reviewed by several nurses and psychologists.

Lederman reported that pregnant women during the final trimester were confronted with fears and anxieties and pursued nesting behavior. The mothers-to-be read and fantasized about labor but dreaded the pain of childbirth. Thoughts that particularly increased anxiety in the women were reported as relatively high apprehension about becoming a mother, high fear of pain in labor, and anxiety about conforming to medical policy. The pregnant women wanted to be too busy to think about labor and delivery and kept busy to ward off depression. They wanted their pregnancies to end and were impatient to see their babies.

#### Feelings and Behaviors After the EDD

Much research has been done on the psychology of pregnant women during the last trimester and last month of

pregnancy. However, only three articles could be found on feelings and behaviors of pregnant women after their EDD.

Shearer and Estes (1985) retrospectively studied the experiences of 32 women who had passed their EDD by 12 to 31 days. An interview guide based on the authors' clinical experiences included one anxiety-related question: "Did you, your friends and family, or the doctor feel worried or wish for induction?" Five different people conducted telephone interviews from two days to six months after a subject's childbirth experience. The authors do not report whether or not the interviewers were tested for interrater reliability. However, they do report that the one anxiety-related question was not posed uniformly. The method of retrospective recall used for this data collection may have lessened the probability of anxious responses since all women had already encountered and passed through the anxiety-provoking situation before they were contacted for the survey.

Shearer and Estes concluded that mothers were not especially anxious about being overdue. However, one woman in the study said that she tried everything she could think of to start labor, including castor oil, spicy food, sex, hot baths and nipple stimulation. Another woman said that the waiting was much worse than the birth.

Affonso and Harris (1980) used a descriptive design to study the psychological impact of postterm pregnancy. Their 35 selected pregnant subjects had passed their EDD by at least two weeks, and a "fair number" were Mexican-Americans. The authors did not report when the mothers were interviewed. Affonso and Harris developed their own interview guide which asked the subjects about their feelings, fears and responses to their postterm pregnancy and postterm baby.

Affonso and Harris (1980) found that pregnancy extending beyond 42 weeks tended to: (1) make pregnancy lose its positive qualities due mainly to feelings of fatigue, frustration and anger; (2) generate in the mother more negative, critical perceptions of herself regarding her body image, her sense of responsibility (and thus guilt), and her degree of self confidence in managing situations; (3) engender many fears concerning the baby's well-being, normalcy and future development; and (4) impose considerable stress on the expectant mothers' interpersonal relationships with important others. These researchers concluded, however, that these findings did not apply to the "fair number" of Mexican-American women in their sample "since Mexican-American women are less likely to focus on a specific EDD" (p. 144).

Campbell (1986) studied feelings, behaviors and reactions of pregnant women who were 3 to 21 days beyond their EDD. The convenience sample of 30 subjects came from a health department prenatal clinic. Half of the subjects were primigravidas, about half (57%) of the women had graduated from high school, and about half (47%) of them were married. A 16-item true/false questionnaire identifying anxiety-related feelings and behaviors was administered during a weekly antenatal visit conducted after the EDD. A "true" response indicated that the subjects experienced that anxious feeling or behavior.

Campbell found that half of the items drew a "true" response from 57% - 77% of the subjects. Items which subjects reported experiencing the most included memorizing what the nurse or doctor said, sleeping difficulty, asking other mothers about delivery experiences, rearranging baby clothes, overexerting physically, feeling more uncomfortable, being ready for the doctor to induce, and feeling that the pregnancy would last forever. Campbell noted that five of these eight items showed attempts to adjust to anxiety.

In Campbell's (1986) study there was no comparison group of non-overdue women, and the true/false tool was not tested for validity or reliability. The true/false design

of the questionnaire did not permit expressions of intensity of pregnant women's feelings.

Several problems have been noted in the literature relating to the experience of pregnant women during the third trimester or last month. None of the studies had a comparison or control group so the characteristics that differentiate women in the last month from overdue women are not specified. Only one study had a large number of subjects (Rubin, 1984). The subjects in this study were primarily white, middle-class women. The generalizability of the findings is, therefore, limited. The other studies had only small numbers of selected subjects who were usually white, middle-class primigravidas. One study had only black subjects (Thompson, 1980). These studies do consistently indicate that pregnant women experience anxious feelings and behaviors during the last month of pregnancy.

During pregnancy, anxiety related feelings and behaviors are described by all of these researchers. Words researchers used that mirror anxiety include stressed, crises, concerns, disquieting, negative feelings, vulnerable, emotional, fears and depression (Affonso & Harris, 1980; Campbell, 1986; Colman & Colman, 1971; Grossman, Eichler & Wimchhoff, 1980; Lederman, 1984;

Leifer, 1977; Rubin, 1984; Thompson, 1980). Webster's New Collegiate Dictionary (1981) defines anxiety as "fearful concern or interest, painful or apprehensive uneasiness of mind, a sense of apprehension and fear often marked by physiological signs." Each of the descriptive words used by researchers operationally indexes some aspect of the definition of anxiety.

#### Summary

Investigators of the psychology of pregnant women during the last trimester have found that women experienced fatigue but that the women also increased their activities by going shopping, cleaning house, and engaging in preparations for the baby. This increased activity served to fill time, crowd out fear of impending labor and delivery, and tire the pregnant women in order to promote better sleep. During the month approaching the EDD women experienced "psychological disequilibrium with intense feelings of satisfaction alternating with feelings of psychological upheaval" (Leifer, 1984, p. 74, 75). Expectant women described pregnancy as seeming long, time as dragging, and they would have preferred to move their EDD forward.

Reports on feelings and behaviors of pregnant women who have passed their EDD were conflicting. Shearer and Estes

(1985) reported that mothers were not especially anxious about being overdue, but Affonso and Harris (1980) and Campbell (1986) found that after the EDD was passed pregnant women were fatigued, uncomfortable, and showed signs of increased anxiety. The timing of data collection for these three studies may be critical. Shearer and Estes (1985) collected their data retrospectively while the Affonso and Harris (1980) and Campbell (1986) studies collected data concurrently with the women's post-EDD experiences.

Several similarities were found in the literature between feelings and behaviors of pregnant women during the time periods before and after the EDD. Experiences in common during these two time periods included fatigue, sleeping difficulties, feeling physically uncomfortable, overworking in spurts, and wanting labor and delivery to be sooner. While Affonso and Harris (1980), Campbell (1986), and Shearer and Estes (1985) all identified feelings after the EDD, it is not known if these feelings were different from feelings subjects might have experienced in the month before the EDD. Longitudinal information is needed on whether there are differences in the actual feelings experienced and their intensity for pregnant women before and after their EDD. Also needed is data to indicate



whether this is a problem requiring nursing concern.

If pregnant women do indeed experience increased anxiety after they pass their EDD, nurses need to know. Nurses serve as part of the expectant families' support system. They are in a unique position to converse with clients, recognize signs of increased anxiety and perhaps intervene to help reduce anxiety.

#### Conceptual Framework

The concept of anxiety described in Peplau's (1957) framework for nursing interventions was selected to guide this study. Anxiety arises from two sources, interpersonal transmission and unmet expectations related to acquired needs. Anxiety arises when expectations that are held and are active and operative at a particular time are not met. It is at this point that acute discomfort is experienced, followed almost immediately by anxiety-relieving behaviors and then usually by justification or rationalization for those behaviors (see Table 1).

Not all unmet expectations evoke anxiety. Development of anxiety may be influenced by the strength of the acquired need, the degree of awareness of it, and the competence of an individual to observe and accommodate to discrepancies between what is wanted and what occurs.

Table 1

Theory of Anxiety Development (Peplau, 1979)

---

1. Expectations are held and are active and operative.
  2. Those expectations are not met.
  3. An acute, extreme bodily discomfort is experienced.
  4. Behaviors that relieve, reduce or prevent more anxiety are evolved or such automatic behaviors that worked similarly in the past are evoked. Patterns of response include somatization, acting out, introspection and investigation.
  5. The relief behaviors are justified and rationalized.
- 

Peplau (1979) defines anxiety as energy. It is not directly observable. What can be noticed are its antecedents and the transformations of the energy into behavior. The most common relief behaviors include restlessness, irritability and anger, although apathy, fantasy and somnolent detachment are also frequently seen.

General response tendencies to anxiety as described by Peplau (1979) include four major patterns: (1) somatization--using a bodily organ to express the problem symbolically; (2) acting out--using externally directed behaviors such as pacing, fighting, crying and irritability; (3) introspection--using a highly private

mode of thought in order to attempt in a solitary way to solve the problem; and (4) investigation--talking with others to describe, analyze, formulate and validate the meaning of various aspects of anxiety-producing experience. The goal of investigation is a learning product--one that may emerge which will provide enough foresight to prevent anxiety in similar situations in the future. Only this fourth pattern has growth-provoking usefulness, but it requires sustaining the discomfort in order to use the energy of anxiety while learning something new, rather than seeking immediate relief from anxiety.

Although Campbell (1986) did not stipulate her conceptual base, it is surprising how well her instrument fits Peplau's framework. This author chose to use Peplau's categories to help interpret the Campbell tool (see Table 2). In applying Peplau's (1979) concept of anxiety to this study, nurses could expect that a pregnancy that goes beyond the EDD will result in increased body discomfort, increased irritability, withdrawal from friends, and a search to validate the meaning of the longer-than-expected pregnancy.

#### Statement of the Problem

Researchers recognize that stress and emotions have physiological effects (Ascher, 1978); Levinson & Shnider,

Table 2.  
Application of General Response Tendencies to Anxiety Used  
by Peplau (1979) to Anxious Feelings and Behaviors of  
Pregnant Women After the EDD is Passed as Used in Campbell's  
(1986) Tool.

General Response Tendencies to Anxiety	Feelings and Behaviors of Pregnant Women After the EDD is Passed
1. Somatization	<p>I have been more uncomfortable in the past week.</p> <p>I have had more problems sleeping in the past week.</p> <p>My appetite has changed in the past week</p> <p>*I have felt more fatigued (tired).</p>
2. Acting Out	<p>I have been more irritable in the past week.</p> <p>I have cried more easily in the past week.</p> <p>I have overexerted myself with such things as housecleaning/shopping.</p> <p>I have rearranged baby clothes over and over.</p> <p>I have felt I would be pregnant forever.</p>
3. Introspection	<p>I have felt afraid that something was wrong with me or the baby.</p> <p>I have been more withdrawn from family and friends in the past week.</p> <p>I have hated to hear the phone ring, because I wanted to avoid talking to people.</p> <p>I have felt guilty about doing something I felt I shouldn't have done during my pregnancy.</p>
4. Investigation	<p>I have tried at least one of the things that people think help induce labor.</p> <p>I am ready for the doctor to induce labor.</p> <p>I have memorized what the doctor and nurse said. I tried to reassure myself by going over their comments.</p> <p>I have asked other mothers I know about their delivery experiences to find something to reassure me that delivery would be soon.</p>

\*Added by this researcher due to Affonso and Harris's (1980) findings

1979; Thompson, 1980), and that adaptation to pregnancy is accompanied by the expectant mother's intense feelings of satisfaction alternating with feelings of psychological upheaval (Colman & Colman, 1971; Deutch, 1945; Lederman, 1984; Leifer, 1977; Rubin, 1970). Some investigators of the psychological experience of pregnant women propose that when the EDD is passed, subjects experience increased negative feelings and behaviors (Affonso & Harris, 1980; and Campbell, 1986). However, Shearer and Estes (1985) found that mothers are not anxious about being overdue.

Comparing the review of the literature about pregnant women's feelings and behaviors during the third trimester to the literature about the time period after the EDD suggests several similarities such as fatigue, discomfort, and wanting to give birth. What is not clear is whether women whose pregnancies extend beyond the EDD experience different feelings or whether they experience an intensification of the same feelings that accompany the normal third trimester.

Many of the services that nurses perform for childbearing families are intended, at least in part, to reduce anxiety. If, indeed, pregnant women experience increased anxiety after the EDD is passed, nurses need to know. With this knowledge, nurses would be alert to the

possibility of increased anxiety in clients who pass their EDDs, recognize feelings and behaviors related to increased anxiety, and initiate measures to promote emotional comfort.

#### Research Questions

1. Are there differences in feelings and behaviors of pregnant women who are 263 to 280 days gestation compared with pregnant women who are 281 to 294 days gestation when subjects' EDDs are based on accurate menstrual history or sonograms done before 27 weeks gestation?

2. How intense are the feelings and behaviors of pregnant women who are 263 to 280 days gestation compared with pregnant women who are 281 to 294 days gestation when subjects' EDDs are based on accurate menstrual history or sonograms done before 27 weeks gestation?

CHAPTER II

Methods

This chapter begins with the study's design, setting and subjects. The instrument is then explained, and the procedures are presented.

The purpose of this study is an attempt to see if pregnant women whose pregnancies extended beyond the EDD experienced different anxiety related feelings and/or more intense feelings than experienced by pregnant women during seventeen days before the EDD.

Design

The study employed a non-experimental, prospective and comparative design. Two groups of pregnant women completed questionnaires relating to anxious feelings and behaviors during pregnancy. One group of pregnant women had not yet passed their EDD and the other group of pregnant women had passed their EDD. This cross sectional sample of subjects was chosen due to the constraints of time, money and access to pregnant women who had passed their EDD. Thus, the cumulative effect of the passage of time on pregnant women's feelings and behaviors could not be known. However, the use of two different samples at different points in pregnancy

removed the effect of previous testing that would have been present if one sample had been tested two or more times.

### Setting and Subjects

A convenience sample was selected from seven physicians' clinics in a small city in the northwest United States. The majority of the population (>90%) were white, middle socioeconomic class and English speaking. The sample consisted of 22 subjects who were 17 days or less prior to their EDD (Group I) and 23 subjects who had passed their EDD (Group II) by one to twelve days. All subjects met this study's criteria for low risk (see Table 3). They also had to be able to read and write English at least at a fourth-grade level. The EDD for each subject was based on accurate menstrual history or an ultrasound done before 27 weeks gestation. If EDDs based on accurate menstrual history differed more than one week from EDDs based on ultrasound findings, the subject was excluded from this study.

This researcher had observed that when the EDD has passed by approximately two weeks, some care providers have a tendency to show increased concern for the baby. The increased concern by the practitioner may



Table 3  
Subjects' Inclusion Criteria

---

Group I: Pregnant women 263 - 280 days gestation

Group II: Pregnant women who are 281 - 294 days gestation

Subjects in both groups will:

1. Have an EDD based on accurate menstrual history or an EDD based on a sonogram before 27 weeks gestation (History and sonogram must agree within one week)
2. Be able to read and write English at least at a fourth grade level
3. Be low risk according to the following criteria:
  - a. older than 17 and younger than 36 years of age
  - b. have no history of:
    - i. neonatal death
    - ii. stillbirth
    - iii. an infant with a congenital anomaly
    - iv. pre-eclampsia/pregnancy induced hypertension
    - v. cesarean delivery
    - vi. symptomatic heart disease
    - vii. renal disease
    - viii. diabetes
    - ix. epilepsy
    - x. preterm labor/birth
  - c. have no known genetic defects
  - d. have no known alcohol, narcotic or intravenous drug abuse
  - e. have no history of syphilis during this pregnancy
  - f. have no rubella in the first trimester
  - g. have no acute hepatitis in the third trimester
  - h. have no known uterine problems (e.g., placenta previa or other last trimester uterine bleeding)
  - i. have no known fetal factors of:
    - i. intrauterine growth retardation
    - ii. multiple gestation
    - iii. isoimmunization requiring transfusion

---

4. Have no planned cesarean section.

---

may trigger increased anxiety in the mother-to-be and thereby affect the results of this study. Therefore, clients who had passed their EDD by more than 14 days (two weeks) were not included in this study. The item "I think my doctor is worried about my baby" was included for descriptive purposes to discern whether this clinical phenomenon was operating with these two samples.

An additional independent variable, gestational age, divided the subjects into two groups. Group I included subjects who were from 263 - 280 days gestation, including the EDD. Group II subjects were from 281 - 294 days gestation. These two groups of subjects were considered comparable as subjects lived in the same small city, attended the same private physician's clinics and had the same risk inclusion criteria (see Table 3).

### Instrument

This section first gives definitions of terms frequently used in this study. Second, the tool is explained and the variables presented. The tool's fit with the conceptual framework is then discussed.

### Definitions

For the purpose of this study, the EDD is defined as the date calculated by Nagele's rule or a delivery date estimated from an ultrasound performed between 10 to 27 weeks gestation. Nagele's rule states that the EDD is calculated by taking the first day of the last normal menstrual period, counting back three months, and adding one week (Nichols, 1985).

Gestational age, in this study, is defined as the duration of pregnancy expressed in the number of days or weeks from the first day of the last normal menstrual period. The usual human gestational period is 280 days or 40 weeks (Nichols, 1985). In the absence of accurate menstrual records, dating estimated by ultrasound before 27 weeks gestation has been accepted by the American College of Obstetrics and Gynecology (ACOG) as a guideline for establishing dates for cesarean sections (ACOG Guidelines, 1987). Therefore, in the absence of accurate menstrual history, EDDs by ultrasound before 27 weeks gestation are accepted as sufficiently accurate for calculating EDDs in this study.

The study was similar to Campbell's (1986) study of women's feelings and behaviors after the due date,

and permission to use Campbell's 16-item tool was obtained. Campbell's tool was designed to measure whether or not anxious feelings or behaviors were experienced by pregnant women who had passed their EDD.

While Campbell (1986) does not report the conceptual underpinnings of her tool, it appears that Peplau's (1979) concept of the feeling of anxiety is operationalized by the tool. The tool indexes behaviors that relieve, reduce or prevent more anxiety. The four general response tendencies to anxiety proposed by Peplau are somatization, acting out, introspection and investigation. These responses relieve, reduce or prevent more anxiety.

The items in Campbell's tool were placed by this researcher into four groups: somatization, acting out, introspection and investigation. The four groups of items were considered to be four subscales, each representing one of Peplau's (1979) general response tendencies to anxiety (see Table 2). Somatization is unconsciously using a body organ to symbolically express an emotional problem. Examples of somatization during pregnancy may include action of the stomach in appetite changes, nausea/vomiting, or the brain in sleepiness or sleeplessness. On the other hand, acting

out is directing the problem externally by crying, acting irritable or overexerting oneself.

Introspection uses autistic invention as a highly private mode of thought to attempt in a solitary way to solve a problem. One may use introspection by withdrawing from family and/or friends, by being afraid that something is wrong with oneself or one's baby, and/or by feeling guilty about something done during one's pregnancy. Investigation refers to a process that may provide insight to prevent further anxiety in similar situations in the future. It is attempting to reduce anxiety by doing something about the cause of the anxiety. For example, pregnant women may seek reassurance from other women who had similar experiences, memorize what doctors or nurses say, or ask care providers about induction.

Campbell reported neither estimates of reliability nor validity on her true/false tool. Therefore, the content of the tool was critiqued by three doctorally prepared maternity nursing professors for content validity. Subsequent modifications were made in the tool based on the comments as well as on the review of the literature. Affonso and Harris (1980) found fatigue to be a major factor experienced by women who

pass their EDD. Therefore, the item "I have felt more fatigued (tired)" was added to Campbell's tool (see Appendix A). The original Campbell item, "I have felt afraid that something was wrong with me or the baby" indexes two ideas within one item. Therefore, this item was made into two items: "I have felt that something was wrong with me," and "I have felt that something was wrong with the baby."

Because the literature shows a gradual increase in the intensity of anxious feelings during pregnancy, Campbell's (1986) true/false design was adapted using present tense verbs and a Likert-type response scale. The Likert-type scale on the adapted Campbell tool has five levels of intensity for each item in the tool (see Appendix A). Response level "1" represents not feeling or behaving at all like the listed item. Responses "2", "3", "4", and "5" represent the gradually intensifying feelings or behaviors like the listed items. Response "2" represents feeling like the listed item just a little, response "3" represents feeling like the listed item moderately, response "4" represents feeling like the listed item fairly strongly, and finally, response "5" represents feeling like the listed item very strongly.

Most of the questions in the original and adapted tool were phrased negatively. Because this approach may bias subjects to respond negatively, "Not feeling that way at all" was given as the first option for responding.

Item scores in each subscale were summed and averaged to give a mean score for each subscale. The potential range of mean scores for each group on each subscale was 1 - 5. The potential range of mean scores for each group on each item was 1 - 5 depending on subjects' responses to items in the scale.

This tool was designed to be efficient in the use of subjects' time. Approximately 10 - 15 minutes was needed to complete it.

#### Demographic Variables

This study employed the same demographic variables that were used in Campbell's (1986) study--parity, age, race, highest grade completed in school, and marital status (see Appendix A). Other items added included: (1) How many overdue births have you had? (2) How many days overdue? and (3) Is your family income a source of worry to you? These items were added because of their potential to increase anxiety. Changes in pregnant women's anxiety could be due to these items rather than

passing the EDD. The statement, "I think my doctor is worried about my baby" was also included because care providers' concern for the baby may have the potential to increase anxiety in pregnant women.

The tool was pretested on three subjects to clarify wording and directions. Because all subjects were able to understand the instructions and complete the questionnaires without difficulty, no changes were made on the instrument. However, not all study subjects understood the first demographic question relating to parity. One subject wrote "this one" next to the questionnaire's "How many full term births have you had?" One subject used an arrow to point from "overdue births" to "full term births". Another subject wrote "1st one" next to "overdue births" and three subjects wrote "This one" next to "overdue births."

#### Procedure

Written permission was requested from eleven physicians to have to access their clients (see Appendices B and C). Seven physicians consented. Their office managers supplied a list of clients who had EDDs in March and April, 1988. The office receptionists inserted a research packet (see Appendices



A, D, E, F and G.) into the listed clients' charts, When clients arrived for their regularly scheduled visits, the receptionist gave the packets to the clients as instructed when each arrived for the prenatal visit.

The receptionist first handed the introductory letter and consent form (see Appendix D and E) to the designated client. When a client returned a signed consent to the receptionist, the receptionist gave the client the remainder of the research packet (see Appendices A, F and G). As the receptionist gave the remainder of the research packet, she was requested to say to the client, "This is for you personally. You are requested to follow the directions carefully. Please do not discuss its contents with anyone until you have returned it to me. Thank you." When the client had signed the consent to participate in this study, completed the questionnaire, put the questionnaire in the envelope and sealed it, she returned the research items to the receptionist. The receptionist attached the sealed envelope to the signed consents and placed them in a collecting folder.

Every four to seven days completed research packets were collected. The charts of consenting and

participating clients were screened for inclusion criteria. Questionnaires from non-eligible clients were destroyed and placed in the office garbage container. This procedure negated the possibility of ineligible potential subjects feeling bad or wondering why they were not able to participate in the study. The sealed envelopes from eligible clients were taken for data analysis and the signed consents were left at the physicians' offices where they were used as a checklist of clients who had participated.

When a minimum of 20 subjects for each group had answered all of the questions on the questionnaire, data collection was closed. The signed consents and collecting folders were picked up and all participating physicians were informed by letter that the data collection phase of the research was complete.

## CHAPTER III

## Results

The findings of the study are reported in this chapter. The sample is described first followed by an analysis of the tool. Findings relevant to the two research questions are presented. Finally, other relevant data are introduced.

Demographic Variables

Forty-five pregnant women participated in the study. All subjects were selected from seven physicians' clinics in a small city in the northwest United States. The independent variable, gestational age, divided the subjects into two groups. Group I consisted of 22 pregnant women who were from 3 - 17 days (mean=10.8, median=12, mode=12 days) before their EDD, and Group II had 23 pregnant women who had passed their EDD by one to 12 days (mean=4.1, median=3, mode=1 days). All subjects met the criteria for inclusion in the study, signed consents and completed the questionnaire.

Demographic data are summarized in Table 4. There were no significant differences in the demographic variables between subjects in Group I and Group II. Other variables with differences between the groups

Table 4  
Distribution of Demographic Variables

<u>Variable</u>	<u>Group I</u> n=22 (%)	<u>Group II</u> n=23 (%)
<u>Parity</u>		
Primigravidas	10 (45)	10 (43)
Full term births	12 (55)	13 (57)
Abortions	3 (14)	2 (9)
Miscarriages	6 (29)	7 (30)
Overdue births	3 (14)	13 (57)
<u>Age</u>		
18 - 21	4 (18)	3 (13)
22 - 25	7 (32)	7 (30)
26 - 30	7 (32)	6 (27)
31 - 36	4 (18)	7 (30)
<u>Race</u>		
White	19 (86)	21 (91)
Black	0	0
Mexican/Spanish	1 (5)	2 (9)
Indian	2 (9)	0
<u>Marital Status</u>		
Married	18 (81)	20 (87)
Divorced	1 (5)	0
Living With	2 (9)	1 (4)
Single/Separated	1 (5)	2 (9)
<u>Education</u>		
10 - 11 years	2 (10)	5 (22)
12 years	10 (45)	4 (17)
> 12 years	10 (45)	14 (61)
<u>Income Worries</u>		
Not at all	7 (32)	12 (52)
Just a little	6 (27)	0
Moderately	6 (27)	11 (48)
Very much	3 (14)	0
<u>Doctor Worried</u>		
Not at all	16 (73)	22 (96)
Just a little	4 (18)	1 (4)
Moderately	2 (9)	0
Fairly/Very Strongly	0	0

were the number of overdue previous births, years of education, income worries, and whether they thought the doctor was worried about the baby.

The ages of the subjects ranged from 18 to 36 years with a mean age of 25.5 years. Forty of the women were white, three were Mexican-American, and two were Indian. Thirty-eight of the women were married. Subjects' education ranged from 10 - 17 years (mean=13 years). Twenty-four (53%) of the women had at least one year or more of college. Only seven (16%) had less than a high school education. Nineteen (43%) of the women responded that they were not at all worried about their family income, but 43% of Group I and 48% of Group II were moderately/very much worried about their incomes.

Of the demographic data relating to the women's pregnancies, Group I and Group II were similar in the number of primigravidas and the number of women who had experienced abortions or miscarriages. However, in Group I only three (14%) of the subjects had experienced overdue births (range=9 - 30 days, mean=17.7 days), but 13 (57%) of the women in Group II had experienced overdue births (range=2 - 28 days, mean=10 days).

All but one subject in Group II (post-EDD) responded that they thought their doctor was not at all worried about their baby. The remaining woman responded that she thought her doctor was just a little worried about her baby. On the other hand, six subjects in Group I thought their doctor was worried about their baby--four responded "just a little" and two "moderately."

#### Analysis of the Tool

Internal consistency was tested using Cronbach's alpha (see Table 5). A Cronbach's alpha of 0.86 on the adapted Campbell tool was considered adequate for a research tool (Nunnally, 1978). However, of the four subscales indexing responses to anxiety (as

Table 5

#### Cronbach's Alpha for Scale and Subscales of Reactions to Anxiety

Scale/Subscales	Cronbach's Alpha
Somatization	0.82
Acting Out	0.65
Introspection	0.69
Investigation	0.59
Group I Whole Tool	0.89
Group II Whole Tool	0.80
Whole Tool	0.86

conceptualized by Peplau, 1979), somatization and introspection were the only subscales that reached at least an adequate level of internal consistency for an immature scale. Since all of the subscales of reactions to anxiety did not reach adequate reliability, the reader should be advised that the results of this study should be considered with caution, especially for particular subscales.

#### Findings Related to the Research Questions

The first research question: "Are there differences in feelings and behaviors of pregnant women who are 263 to 280 days gestation compared with pregnant women who are 281 to 294 days gestation when subjects' EDDs are based on accurate menstrual history or sonograms done before 27 weeks gestation" was addressed by the t-test. A t-test was performed on the two groups' mean scores on the total scale and on the four subscales thought to index reactions to anxiety as conceptualized by Peplau (1979).

For the total scale (t=-1.48, df=43, p=.15), the two groups were not significantly different (see Table 6). Moreover, the anxiety-related feelings and behaviors of pregnant women who were 263 - 280 days gestation were not significantly different from

Table 6

t-Test Results for Subscales of Reactions to Anxiety

Subscale	Group I n=22	Group II n=23	t-Value	df	p
Somatization					
Mean	3.09	3.55	-1.57	43	0.12
SD	1.07	0.90			
Acting Out					
Mean	2.53	2.97	-1.78	43	0.08
SD	0.87	0.81			
Introspection					
Mean	1.78	1.74	0.20	43	0.84
SD	0.75	0.69			
Investigation					
Mean	2.13	2.48	-1.32	43	0.19
SD	0.86	0.93			
Scale					
Mean	2.36	2.65	-1.48	43	0.15
SD	0.75	0.57			

pregnant women who were 281 - 294 days for any of the subscales, somatization, acting out, introspection or investigation (see Table 6). In three of the four subscales (somatization, acting out and investigation), Group II had higher mean scores, but none reached statistical significance. The introspection subscale had somewhat lower mean scores for Group II, again not statistically significant.

Because all of the subscales did not reach



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acceptable alpha levels, a t-test was done on each item of the adapted Campbell tool. The groups' mean scores for each item are compared in Table 7. The three items which reached statistically significant differences

Table 7

Difference Between the Groups by Items

Item	Group I Mean	Group II Mean	<u>t</u>	<u>df</u>	<u>p</u>
Somatization					
3.	3.09	3.48	-1.04	43	0.31
5.	3.05	3.78	-1.83	43	0.07
16.	2.55	2.74	-0.56	43	0.58
18.	<u>3.68</u>	<u>4.22</u>	-1.51	43	0.14
Total	x=3.09	x=3.55			
Acting Out					
6.	3.05	3.44	-1.03	43	0.31
13.	2.36	3.45	-2.59	43	0.01*
15.	2.05	1.91	0.34	43	0.74
17.	2.68	2.70	-0.04	43	0.97
19.	<u>2.50</u>	<u>3.39</u>	-2.23	43	0.03*
Total	x=2.53	2.97			
Introspection					
1.	2.00	1.70	1.10	43	0.28
2.	1.55	1.44	0.41	43	0.69
4.	2.14	1.74	1.05	43	0.30
7.	1.50	1.78	-0.99	43	0.33
8.	<u>1.73</u>	<u>2.04</u>	-0.89	43	0.38
Total	x=1.78	1.74			
Investigation					
9.	2.50	2.61	-0.25	43	0.80
11.	1.91	2.83	-2.07	43	0.04*
12.	1.91	2.22	-0.95	43	0.35
14.	<u>2.18</u>	<u>2.26</u>	-0.20	43	0.84
Total	x=2.13	2.48			

\*Significantly different items,  $p \leq 0.05$

between the groups include: "I am ready for the doctor to induce labor" (item #11, subscale=investigation), "I feel like I am going to be pregnant forever" (item #13, subscale=acting out), and "I feel like crying more easily" (item #19, subscale=acting out). In each case, Group II means were significantly higher than Group I. None of the women in Group II were without fatigue, discomfort, and problems sleeping while only 9% - 18% of the women in Group I were without fatigue, discomfort and problems sleeping. Four other items had higher scores, though not statistically significant, for Group II than Group I (see Table 8). The items referred to fear for the baby (item #1), fear for self (item #2), feeling guilty (item #4), and rearranging baby clothes (item #15). It is interesting that three of the four items were in the introspection subscale of anxiety reactions. One was in the acting out subscale. These differences were not statistically significant, however.

The second research question asked, "How intense are the feelings and behaviors of pregnant women who are 263 to 280 days gestation (Group I) compared with pregnant women who are 281 to 294 days gestation (Group II) when subjects' EDDs are based on accurate menstrual

history or sonograms done before 27 weeks gestation?"

This research question was addressed by descriptive analyses of intensity of response for the two groups (see Table 8) and scatterplots (see Figures 1, 2, 3, and 4).

The second research question is related to the first research question in that intensities are related to differences. In addition to differences between groups, the distribution of scores across the intensity range for Group I was compared to that of Group II. Table 8 shows all items arranged in order of descending differences between the groups in level of anxiety. The distribution of responses is shown in Tables 9, 10, and 11 in the discussion section where they will also be compared with literature predictions.

To determine if intensity of response was different for the two groups, a crosstabs procedure was attempted with the chi square statistic. Due to small sample size, some cells were empty or had less than five cases, making this an inappropriate analytic technique for answering the question about differences in intensity.

The mean score for the whole scale was less than 3.0. Only one subscale (somatization) had a mean score

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Table 8

Mean Scores of All Items in Order of Descending Differences  
Between Groups

Item #	Content	Subscale	Group I Mean	Group II Mean
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Mean Scores Higher in Group II

13	(Pregnant forever)*	Acting Out	2.36	3.44
11	(Doctor induce labor)*	Investigation	1.91	2.83
19	(Crying easily)*	Acting Out	2.50	3.39
5	(Problems sleeping)	Somatization	3.05	3.78
18	(Uncomfortable)	Somatization	3.68	4.22
3	(Fatigued)	Somatization	3.09	3.48
6	(Irritable)	Acting Out	3.05	3.44
8	(Avoids people/phone)	Introspection	1.73	2.04
12	(Memorize caregivers words)	Investigation	1.91	2.22
7	(Withdrawn)	Introspection	1.50	1.78
16	(Appetite changing)	Somatization	2.55	2.74
9	(Try inducing labor)	Investigation	2.50	2.61
14	(Ask other mothers)	Investigation	2.18	2.26
17	(Overexert)	Acting Out	2.68	2.70

-----  
Mean Scores Higher in Group I

4	(Guilty feelings)	Introspection	2.14	1.74
1	(Afraid for baby)	Introspection	2.00	1.70
15	(Rearrange baby clothes)	Acting Out	2.05	1.91
2	(Afraid for self)	Introspection	1.55	1.44

\*p<.05

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of more than 3.0. The mean score for only one item reached more than 4.0 (#18, Group II). The only item that showed intensity responses scattered across the range for both groups was item #17, overexerting oneself. Four items in Group I (#3, 5, 6, 18) and five items in Group II (#3, 5, 6, 13, 19) reached mean scores of more than 3.0. The highest individual mean score reached only 3.78. Six individual mean scores in Group I reached 3.0 or more, and eight individual mean scores in Group II reached 3.0 or more. On the other hand, seven individual mean scores for Group I were less than 1.9 and three individual mean scores for Group II were less than 1.9.

Scatterplots of subjects' mean scores for the subscales of reactions to anxiety were constructed to show how intensity of anxiety related feelings and behaviors related to number of days before or after the EDD. Subjects from both groups were combined to examine intensity of response related to gestational length (see Figures 1, 2, 3 and 4). Although the scores were scattered, the scatterplots for somatization, acting out and investigation indicated a slight, but steady, increase in intensity for anxiety related scores as the length of

Figure 1

Scatterplot of All Subjects' Mean Scores for Somatization Related to Length of Gestation

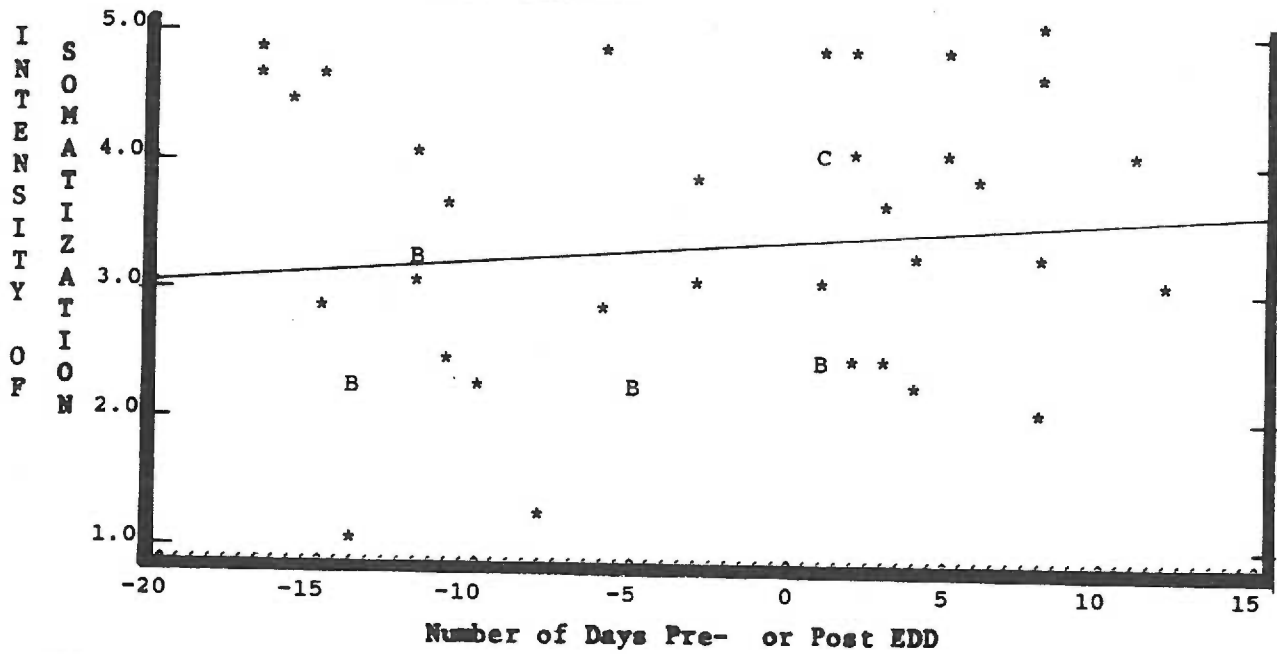
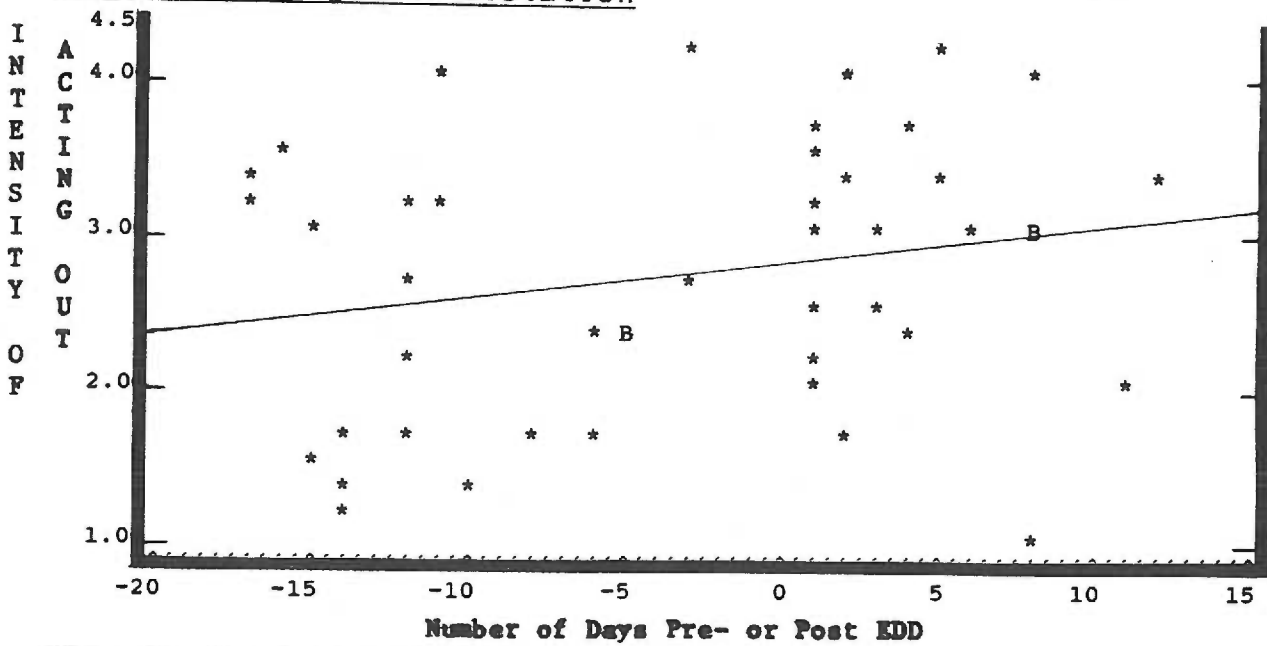


Figure 2

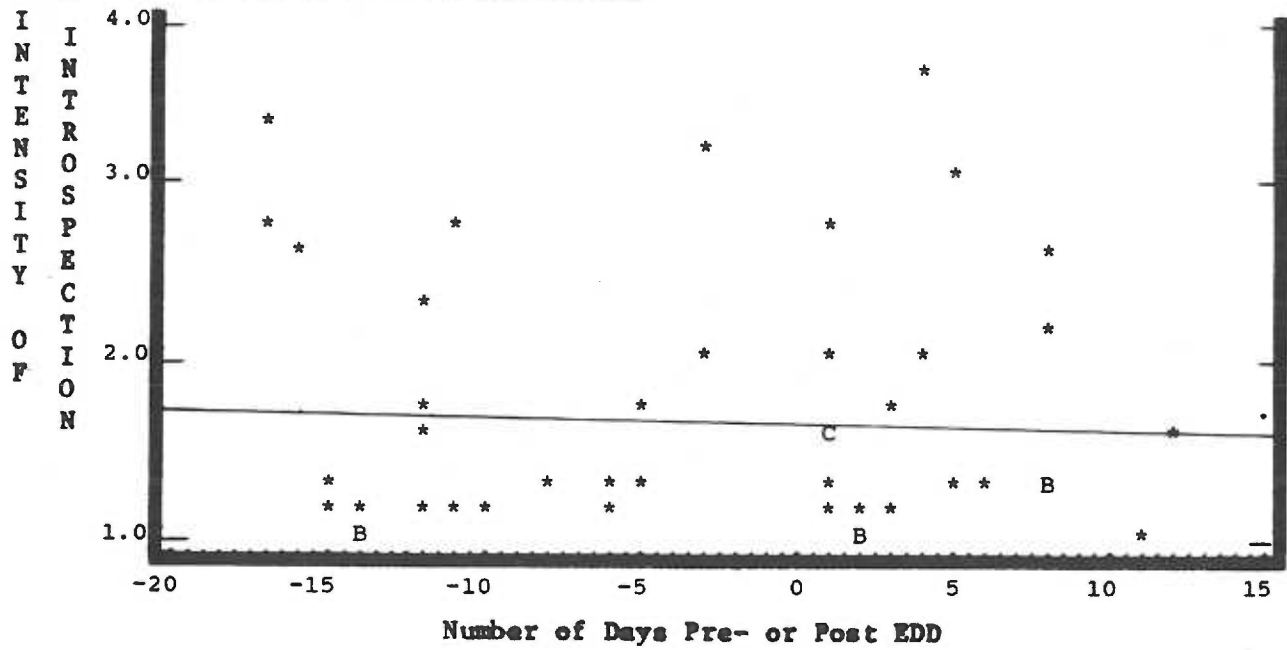
Scatterplot of All Subjects' Mean Scores for Acting Out Related to Length of Gestation



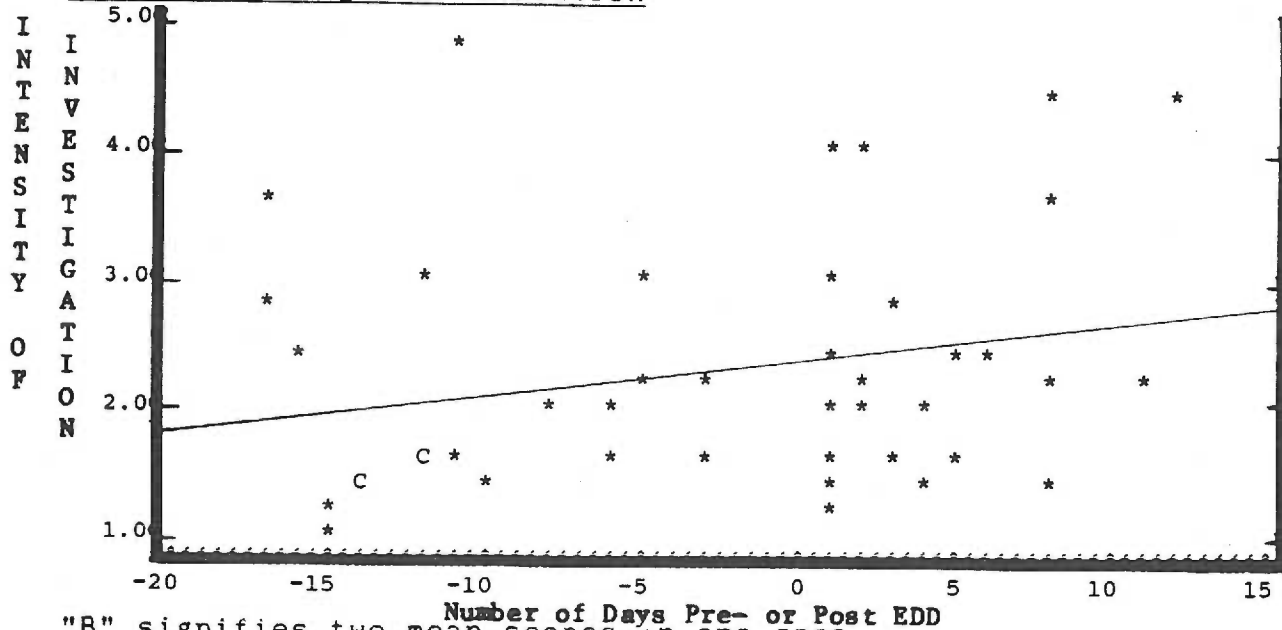
"B" signifies two mean scores in one spot  
 "C" signifies three mean scores in one spot

Figure 3

Scatterplot of All Subjects' Mean Scores For Introspection Related to Length of Gestation



Scatterplot of All Subjects' Mean Scores For Investigation Related to Length of Gestation



"B" signifies two mean scores in one spot  
 "C" signifies three mean scores in one spot

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gestation increased. The scatterplot for the introspection subscale showed a slight decrease in the intensity of responses for anxiety related feelings/behaviors as the length of gestation increased.

In summary, the four subscales of reactions to anxiety indexed no significant difference in the mean scores of subjects before and after their EDD. Group II women responded with statistically significant higher mean scores than Group I subjects for three items: (#13) feeling like they were going to be pregnant forever, (#19) crying more easily and (#11) wanting their doctor to induce labor. Group I had higher mean scores for four items, but for the other 14 items Group II subjects had higher mean scores. While Cronbach's alpha was adequate for the total scale, the low coefficient alphas on two subscales could have confounded the results.

Intensity of response, while related to difference between groups, had a noticeably different distribution on the above three statistically significant items as well as four other items: feeling more uncomfortable, irritable, fatigued and having more sleeping problems. Items with low intensity scores for both groups included: (#1) feeling afraid for the baby or (#2) herself, (#4) feeling guilty, (#7) withdrawing from family and friends, (#8) avoiding



conversations with people, (#12) memorizing what doctors and nurses said, (#14) asking other mothers about delivery experiences, and (#15) rearranging baby clothes.

Other Findings

Because this study had a small sample for each group, it is not possible to draw any conclusions with respect to the demographic data. However, it is interesting to note that all of the subjects with the lowest individual mean scores on the tool (mean = 1.38 to 1.94) were multiparas. On the other hand, about half of the primigravidas in the study had the highest individual mean scores on the tool (mean = 3.0 to 3.78). Also, more subjects in Group I (7) than Group II (3) had low (mean = 1.37 to 1.94) individual mean scores on the tool, and more subjects in Group II (9) than in Group I (6) had high (mean = 3.0 to 3.78) individual mean scores on the tool.

## Chapter IV

## Discussion

The purpose of this study was to examine and compare the feelings and behaviors of pregnant women before and after their EDD. In a cross-sectional sampling, 22 subjects who were approaching their EDD and 23 subjects who had passed their EDD were selected in a small city in the northwest United States. Peplau's (1979) theory of reactions to anxiety was used as the conceptual framework for the measurement tool. The study was similar to an investigation by Campbell (1986). This chapter discusses the reliability of the tool and the findings as they relate to the two research questions.

Reliability of the Tool

The tool as a whole had adequate internal consistency but acceptable internal consistency was not reached by two of the subscales of reactions to anxiety: acting out ( $\alpha = 0.65$ ) and investigation ( $\alpha = 0.59$ ). Although these subscales did not have adequate internal consistency, the Cronbach alphas were at a level that may indicate some promise of improved internal consistency with further scale development. A possible explanation for the lack of internal

consistency for all of the subscales may be that this tool was not intentionally developed from the Peplau (1979) conceptual framework. It may be that a perfect fit with Peplau's theory of reactions to anxiety does not exist. On the other hand, it may be that the tool does apply, but re-evaluation of placement of items into each subscale may be necessary. Item #12 (memorizing what doctors and nurses say) lowered the Cronbach's alpha score for the whole tool and for the investigation subscale when considering all subjects together as well as by group. The wording of the item may not be clear. For example, subjects may not have considered themselves memorizing what doctors and nurses said even though they may have reported to family and friends what was said by care providers during a prenatal appointment. Additional items in each subscale may also strengthen the reliability. Nevertheless, the reader should be advised that this effort was still exploratory and that this tool needs more work and testing if it is to be used with the same theoretical backing.

#### Results Compared to the Literature

There were 18 items in the tool after removing the new contrast item, "I think my doctor is worried about

my baby." Fifteen of the 18 items were similar to the original items in Campbell's (1986) tool. One of Campbell's items was adapted by this researcher by dividing it into two items (feeling afraid for the baby and feeling afraid for herself), giving a total of 17 items from Campbell. Another item (feeling fatigued) was added because it was described by Affonso and Harris (1980) as clinically significant for their sample of 35 pregnant women who had passed their EDD by at least two weeks. Eight of the Campbell items on this tool are similar to phenomena described by Affonso and Harris (items #1, 2, 3, 4, 6, 7, 8, 19) as being clinically noticeable or demonstrating high levels of anxiety for their subjects when they were listed as scale items. None of these eight phenomena described by Affonso and Harris were found to be true for more than 50% of Campbell's subjects when they were listed as scale items. Campbell reported that eight other items (items #5, 11, 12, 13, 14, 15, 17, 18), not described by Affonso and Harris, received "True" responses from more than 50% of her 30 subjects, all of whom had passed their EDD by 3 - 21 days. Two remaining items from Campbell's original tool were not "True" for more than 50% of Campbell's sample nor were

they clinically described in the Affonso and Harris study. Using the distribution of responses for Group I and Group II, the results of this study are compared with results from Affonso and Harris' and Campbell's studies in Tables 9, 10 and 11.

The distribution of anxiety responses by group on items predicted by Affonso and Harris (1980) to be scored high intensity are found in Table 9. The three highest intensity responses were grouped (moderately to very strongly), and the two lowest intensity responses were grouped (not felt to slightly felt) for discussion of these comparisons. Affonso and Harris predicted that prolonged pregnancy tended to cause pregnancy to lose its positive qualities. If feeling like crying more (Group II=57%; Group I=22%) is considered to be indicative of pregnancy losing its positive qualities, the results of this study agree with the Affonso and Harris prediction. On the other hand, the results of this study do not agree with those described by Affonso and Harris about intensity of response to some phenomena by post-EDD women. However, fatigue and irritability were clinically significant characteristics of Affonso and Harris' subjects. This study agreed with the Affonso and Harris study that subjects after their EDD felt moderately to very

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Table 9

Distribution of Responses Per Group on Items Indexing Phenomena Predicted by Affonso and Harris (1980) to be Scored With High Intensity After the EDD

Item #/(Subscale)	Mean	Not Felt	Just a Little	Moderately	Fairly Strongly	Very Strongly
1. (Afraid for baby/Introspection)						
Group I	2.0	36%	41%	13%	5%	5%
Group II	1.7	48	35	17	0	0
2. (Afraid for self/Introspection)						
Group I	1.6	73	9	13	0	5
Group II	1.4	70	17	13	0	0
3. (Fatigued/Somatization)						
Group I	3.1	9	36	14	18	23
Group II	3.5	0	26	21	31	22
4. (Guilty/Introspection)						
Group I	2.1	41	26	14	14	5
Group II	1.7	65	18	4	4	9
6. (Irritable/Acting Out)						
Group I	3.1	9	32	18	27	14
Group II	3.4	9	13	30	22	26
7. (Withdrawn/Introspection)						
Group I	1.5	68	18	9	5	0
Group II	1.8	57	17	17	9	0
8. (Avoid talking to people/Introspection)						
Group I	1.7	64	14	14	4	4
Group II	2.0	48	17	22	9	4
19. (Crying/Acting Out)*						
Group I	2.5	23	41	14	9	13
Group II	3.4	13	13	17	35	22

\*p<0.05.

Table 10

Distribution of Responses Per Group on Items Found by Campbell (1986) to be Scored With High Intensity After The EDD

Item #/Subscale	Mean	Not Felt	Just a Little	Moderately	Fairly Strongly	Very Strongly
5. Problems sleeping/Somatization						
Group I	3.1	18%	27%	14%	14%	27%
Group II	3.8	0	17	26	17	40
11. Doctor to induce/Investigation*						
Group I	1.9	55	18	14	9	4
Group II	2.8	35	13	17	5	30
12. Memorized doctor/nurse words/Investigation						
Group I	1.9	50	14	32	4	0
Group II	2.2	30	35	26	0	9
13. Pregnant forever/Acting Out*						
Group I	2.4	36	32	4	14	14
Group II	3.4	5	26	22	17	30
14. Asking mothers/Investigation						
Group I	2.2	36	32	18	5	9
Group II	2.3	39	22	26	0	13
15. Rearrange baby clothes/Acting Out						
Group I	2.1	50	28	4	4	14
Group II	1.9	52	22	13	9	4
17. Overexert/Acting Out						
Group I	2.7	14	36	23	23	4
Group II	2.7	22	30	13	26	9
18. Uncomfortable/Somatization						
Group I	3.7	9	5	27	27	32
Group II	4.2	0	13	13	13	61

\*p < 0.05

Table 11

Distribution of Responses Per Group on Items Not Predicted by Affonso and Harris (1980) or Campbell (1986) to be Scored With High Intensity

Item #/Subscale	Mean	Not Felt	Just a Little	Moderately	Fairly Strongly	Very Strongly
16 Appetite Change/Somatization						
Group I	2.6	23%	23%	36%	14%	4%
Group II	2.7	9	43	26	9	13
9 Try to Induce Labor/Investigation						
Group I	2.6	32	32	9	9	18
Group II	2.5	31	17	26	13	13

strongly fatigued (three highest intensity responses account for 74%) and irritable (78%), but the pre-EDD subjects responded that they also felt moderately to very strongly fatigued (55% of responses) and irritable (59%). It may be that there were too few subjects in this study who had passed their EDD by enough days to show as large a difference between the groups in the amount of fatigue and irritability as might be expected from the results of the Affonso and Harris study. On the other hand, it may be that passing the EDD does not make a difference.

The responses from this study do not support Affonso and Harris' (1980) finding that women after their EDD experience increased concern for their baby's wellbeing, have a more "negative perception" of themselves or



## Feelings After the EDD

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experience an increased sense of guilt (see Table 9). Almost none of the subjects in either group responded with strong intensity that they were afraid something was wrong with the baby or themselves (0 to 5%=fairly/very strongly). Contrary to Affonso and Harris' prediction, fewer women in Group I (41%) than in Group II (65%) were without guilt for anything they had done during their pregnancy. It may be that when Group II women accomplished their "expected" number of days (EDD), they felt as if they have completed their pregnancy obligation and felt both relief from guilt and confidence about the baby's wellbeing.

Affonso and Harris' prediction of increased stress in interpersonal relationships with important others also failed to be supported by findings from this sample. For the item, feeling like wanting to withdraw from significant others, "not felt" was the response by 68% of the subjects in Group I and only 57% of the subjects in Group II. Also, 64% of Group I subjects and only 48% of Group II subjects responded that they did not feel like talking to people. Only 0% and 4% of all subjects in both groups felt strongly about withdrawing and avoiding talking, respectively. Perhaps Affonso and Harris' clinical predictions were rooted in the Mexican/American subjects whose customs may

permit freer expression of these feelings for pregnant women than for white women living in the northwest United States. It may also be that the education level of this study's sample encouraged searching for more knowledge by talking with others.

Campbell's (1986) study found that eight items on the tool elicited "true" responses from at least 50% of her subjects. These items were considered by this author to predict intensity of anxiety and are compared by a distribution of responses in this study (see Table 10). With significantly higher mean scores for the subjects in Group II on items #11 and #13, this study agreed with Campbell's results that pregnant women after their EDD feel like they are going to be pregnant forever and are ready for the doctor to induce labor.

This study confirmed Campbell's finding that women past their EDD would experience discomfort (#19) and have sleeping problems (#5), but did not confirm the idea that these items would have more intensity after the EDD than before the EDD. All of Group II subjects responded that they felt more uncomfortable (87% responded with moderate to very strong intensity) and had sleeping problems (82% responded with moderate to very strong intensity). However, Group I subjects also responded with moderate to

very strong intensity for discomfort (86%) and sleeping problems (55%); thus, there was no statistically significant difference between the groups in this study. It may be that even before the time period sampled by this study discomfort and sleeping problems had intruded on the pregnancy experience.

Only 0% and 9% of Groups I and II, respectively, responded fairly/very strongly to memorizing what the doctor and nurse said. Contrary to Campbell's findings, fewer women in Group II than Group I responded that they asked other mothers about delivery experiences, rearranged baby clothes, and overexerted themselves. Possibly the women who had passed their EDD were tired of talking to other women about their delivery experiences and were anxious to get on with their own experience. Concerning the self-report about rearranging baby clothes, it may be that they had experimented with every place to put baby clothes and were ready to use the clothes.

Appetite changes (item #16) and trying to induce labor (item #9) were not predicted by the literature to be felt intensely. More subjects in Group I than Group II scored that they did not have changes in their appetite. It is possible that Group II subjects' appetite changes may be related to eating smaller meals due to less stomach

capacity from the pressure of the full uterus.

At least 68% of all subjects responded that they felt ("just a little" to "very strongly") like trying at least one of the things that people think will help to induce labor. This finding is consistent with the pre-EDD literature which reports that near the end of pregnancy women want to move their EDD forward (Lederman, 1986; Leifer, 1977; Rubin, 1984). More subjects in Group II than Group I responded with moderate to very strong intensity that they wanted to try at least one of the things that people think help to induce labor. However, most of the women after their EDD responded moderately to very strongly that they were ready for the doctor to induce labor. It may be that pregnant women before their EDD consider methods of induction suggested by friends as not reliable, but after the EDD they are willing to try anything.

#### Results Related to Sampling

The three samples used by Affonso and Harris, Campbell and this study differed in a number of variables. The subjects had passed their EDD by at least two weeks in Affonso and Harris' study, by three to 21 days in Campbell's study, and by one to 12 days in this study. Although Affonso and Harris did not report the education level of their subjects, Campbell reported that 57% of her

subjects had graduated from high school. In this study at least 84% of the subjects had finished high school and at least 54% had some college education. Mexican/Americans accounted for a "fair number" of Affonso and Harris' sample, however, no numbers were given. Black women made up 60% of Campbell's sample and none of the sample in this study. Whites constituted 89% of the subjects in this study. The differences in the subjects may have influenced the results of each study.

Another sample issue may have influenced the ability of this study to answer research question #2. There was insufficient sample size to occupy some of the cells created by the crosstabs procedure; this led to ruling out chi square as a statistic to determine if intensity differed by group.

#### Major Research Findings

According to the four subscales of reactions to anxiety, there were no significant differences in the feelings and behaviors of pregnant women who were 263 to 280 days gestation compared with pregnant women who were 281 to 294 days gestation. However, Group II subjects responded with significantly higher mean scores than Group I subjects for three items: (1) feeling like they were going to be pregnant forever, (2) crying more easily and

(3) feeling ready for the doctor to induce labor.

When questioning why so few items were found with a significant difference between the groups, an answer may be that this tool was not sensitive enough to measure anxiety accurately or that there were differences between subjects that were unrelated to EDD. A pre-posttest design may have more accurately detected any changes in feeling after the EDD and would have controlled for these differences unrelated to the EDD.

Another reason for not finding more items with a significant difference may be that pregnant women before and after their EDD experience similar physical changes. Physical changes may be the basis for physical discomforts rather than a symptom of increased anxiety. Physical changes include the heaviness of the baby on the woman's body parts which may cause frequent urination, backache, difficulty finding a comfortable position for sleep, and fatigue. Braxton-Hicks contractions may also cause discomfort, difficulty sleeping and fatigue.

The literature relating to feelings and behaviors of pregnant women during pregnancy indicates that anxiety increases as pregnancy progresses (Colman & Colman, 1971; Grossman, Eichler & Wimchhoff, 1980; Lederman, 1986; Leifer, 1977; Rubin, 1984; Thompson, 1980). Although 14

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items of the 18-item tool received slightly higher mean scores in Group II as to Group I, statistically significant differences were found in only three items. This means that the only significant differences between feelings and behaviors of pregnant women before compared to after their EDD on the items tested are in feelings that they will be pregnant forever, crying more easily and wanting the doctor to induce labor.

For findings related to intensity of the items, the whole scale had a mean score of less than 3.0 for both groups, and only the somatization subscale had a mean score of more than 3.0. Feeling more uncomfortable was the only item (#18) which reached an intensity score of more than 4.0 for both groups. Only four items in Group I and five items in Group II reached a score of more than 3.0. The highest individual mean score for the scale was 3.8. More subjects in Group II (9) than Group I (6) had individual mean scores of more than 3.0 for the tool, and more subjects in Group I (7) than Group II (3) had individual mean scores of less than 2.0 for the tool. It appears that none of the subjects experienced all the feelings listed in the scale very intensely and major differences between Groups I and II could not be demonstrated.

Chapter V

Summary, Conclusions, Limitations and Recommendations

This chapter includes a summary of the findings of the study and conclusions which may be derived from the findings. The limitations of the study and recommendations for further research are also discussed.

Summary

The literature recognizes that pregnant women experience increased anxiety as the estimated date of delivery (EDD) approaches. However, the scant literature relating to anxiety experienced by pregnant women after their EDD does not compare feelings and behaviors of pregnant women to the experience before the EDD. The purpose of this study was to determine if women whose pregnancies extended beyond the EDD experienced different anxiety-related feelings and/or greater intensity of the feelings experienced by pregnant women during the few weeks before the EDD. The present investigation attempted to add empirical knowledge to the studies that addressed the anxiety experienced by pregnant women who had passed their EDD.



This research asked:

1. Are there differences in feelings and behaviors of pregnant women who are 263 to 280 days gestation compared with pregnant women who are 281 to 294 days gestation when subjects' EDDs are based on accurate menstrual history or sonograms done before 27 weeks gestation?

2. How intense are the feelings and behaviors of pregnant women who are 263 to 280 days gestation compared with pregnant women who are 281 to 294 days gestation when subjects' EDDs are based on accurate menstrual history or sonograms done before 27 weeks gestation?

To answer these questions, an adapted form of Campbell's (1986) instrument was used. The main modifications were changing Campbell's True/False tool into a 5-point Likert scale and changing the verbs in each item from the past tense into the present tense. The items on the tool were placed into the four subscales of reactions to anxiety conceptualized by Peplau (1979): somatization, acting out, introspection, and investigation.

The tool was tested for internal consistency by Cronbach's alpha. The tool as a whole had adequate

internal consistency ( $\alpha=0.856$ ) and two of the subscales, somatization ( $\alpha=0.815$ ) and introspection ( $\alpha=0.694$ ), had adequate internal consistency. The subscales of acting out ( $\alpha=0.652$ ) and investigation ( $\alpha=0.585$ ) did not reach adequate internal consistency. Because only two of the subscales demonstrated an acceptable Cronbach's alpha, t-test comparisons were done for each item as well as for each subscale.

There was no significant difference between the groups for the whole scale nor for the subscales of reactions to anxiety. The mean scores for subjects in Group II were significantly higher than Group I for only three items. These items included: feeling like the pregnancy would last forever ( $p=0.014$ ), crying more easily ( $p=0.039$ ), and wanting the doctor to induce labor ( $p=0.051$ ). Feeling like the pregnancy would last forever and crying more were in the acting out subscale. Wanting the doctor to induce labor was in the investigation subscale.

### Conclusions

This study suggests that pregnant women who pass their EDD may feel more like they are going to be pregnant forever, may cry more easily, and may have

more sleeping problems than pregnant women approaching their EDD. This study did not demonstrate appreciable differences in intensity of feelings and behaviors of items tested for pregnant women before their EDD compared to after their EDD. More research needs to be done in this area before definitive conclusions can be made.

#### Implications for Nursing

The results of this study have several implications for nursing. Nurses need to know that most women near the end of their pregnancy feel uncomfortable, fatigued, irritable, and have problems sleeping. Also, nurses need to be alert for post-EDD clients feeling more like crying, wanting the doctor to induce labor and feeling that the pregnancy will last forever. Many of the services that nurses perform for childbearing families are intended to reduce anxiety. Because prenatal visits are frequent and the visits are private, nurses are in a unique position to observe for increased anxiety, address problems, and intervene to help reduce anxiety.

Although it is not within the scope of this study to say what should be done to help reduce anxiety in women who have passed their EDD, it seems logical that

nurses could talk with clients about their feelings of anxiety and initiate measures to promote emotional comfort. It is obvious that this kind of sensitive visit cannot be rushed or hurried. Therefore, it may be important to provide more antepartum clinic time for clients who have passed their EDD.

#### Limitations

There are several limitations to this study. The small, non-random sample size and homogeneity of the population under study limit generalizations which can be made from any of the findings. In addition, there were some variables not controlled. These include the pregnant woman's social support, her relationship with her mother (Lederman, 1986), and if the pregnant woman's perceived EDD agreed with her care provider's EDD (Shearer & Estes, 1985). These items have previously been found to be associated with increased anxiety during pregnancy.

There are several possible explanations for the findings of this study. First, the sample size may not have been large enough to discriminate differences between the groups. Second, 57% of the subjects in Group II had passed their EDD by only one to three days, and only 22% of the subjects had gone more than

one week past their EDD. It is unknown what effect a longer time period after the EDD would have on pregnant women's anxiety related scores.

Third, the location for answering the tool and anticipation of the doctor's appointment may have influenced the scores. It was unknown if subjects experienced increased anxiety due to the doctor's upcoming visit, or if subjects experienced relief from anxiety due to expected reassurance from the practitioner and office personnel while at the doctor's clinic. Noticeably absent in this tool is any reference to whether pregnant women seek reassurance from health professionals after the EDD is passed.

Fourth, this tool is open for scrutiny. While Cronbach's alpha was adequate for the total scale, only two subscales of responses to anxiety conceptualized by Peplau (1979) reached an adequate level of internal consistency. Therefore, the conceptualization may not be consistent and the results by its use inconclusive. The results of this study must be viewed with caution.

Many questions may be asked regarding the validity and reliability of this tool. Does this tool measure what it is designed to measure--responses to anxiety according to feelings and behaviors of pregnant women

after the EDD is passed? Does the wording precisely say to women what it is intended to say? Do the scale items fit in the categories of the conceptual framework into which they were placed? Did each category have sufficient items to test that subscale of anxiety? Does the negative bias present in wording of all the items influence subjects' scores? Do subjects think there is a socially acceptable "right" answer? Is there any cultural bias inherent which could affect test scores? Answers to these questions are not known and would constitute a set of research questions for an interesting subsequent study.

#### Recommendations for Future Research

The following are suggestions offered for future research:

1. Further development and testing of the tool with the same conceptual backing.
2. A similar study done in another population with a larger sample size.
3. A similar study controlled for the number of days past the EDD (e.g. more than one week past the EDD).
4. A similar study with a test-retest design (e.g. test before the EDD, four to six 4 - 6

days after the EDD, and 10 - 14 days after the EDD).

5. A similar study controlled for parity.
6. A similar study, then follow subjects to see if there is a correlation between the intensity of scores and complications of labor, delivery or fetal outcomes.
7. A study to see if husband's/partner's ratings of his wife's/partner's anxiety correlates with the pregnant woman's ratings of her own anxiety when the EDD is passed.

Many questions remain about women's reactions to the passing of their EDD. In a day when high technology can be used for predicting delivery dates, psychosocial variables are not as predictable. A woman's reaction to when high technology proves unreliable of her gestational length is a phenomenon of interest to nursing care. While the natural forces creating gestational length are not now amenable to interventions, the pregnant woman's psychological response may be very subject to nursing input. When nurses have a better understanding of women's experiences and reactions to the EDD, appropriate nursing care can be designed to increase emotional comfort and reduce anxiety.

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## Appendix A

## Questionnaire

## Page 1

To begin this study, some background information is needed. Please answer all of the questions completely, do not miss any. Thank you.

Today's Date: \_\_\_\_\_

When is your estimated date to deliver? \_\_\_\_\_

1. How many:

full term births have you had? \_\_\_\_\_

premature births have you had? \_\_\_\_\_

abortions have you had? \_\_\_\_\_

miscarriages have you had? \_\_\_\_\_

overdue births have you had? \_\_\_\_\_ How many days overdue? \_\_\_\_\_

2. Have you ever had a baby who (Circle One):

was deformed? Yes No

was retarded? Yes No

died? Yes No

3. What is your age? \_\_\_\_\_

4. What is your race (ethnic group)? \_\_\_\_\_

5. What is the highest grade in school you have completed? \_\_\_\_\_

6. What is your marital status (Check One):

- Married
- Divorced
- Separated
- Living With
- Single
- Widowed

7. Is your family income a source of worry to you? (Check One):

- Not at all
- Just a little
- Moderately
- Very much

Directions: Using the following number code, circle the number that most nearly represents your feelings now.

"1" = I do not feel that way at.

"2" = I feel that way just a little.

"3" = I feel that way moderately.

"4" = I feel that way fairly strongly.

"5" = I feel that way very strongly.

	NOT FELT	JUST A LITTLE	MODERATELY	FAIRLY STRONGLY	VERY STRONGLY
1. I feel afraid that something is wrong with the baby.	1	2	3	4	5
2. I feel afraid that something is wrong with me.	1	2	3	4	5
3. I feel more fatigued (tired).	1	2	3	4	5
4. I feel guilty about doing something I felt I should not have done during my pregnancy.	1	2	3	4	5
5. I have more problems sleeping.	1	2	3	4	5
6. I feel more irritable.	1	2	3	4	5
7. I want to be more withdrawn from family and friends.	1	2	3	4	5
8. I hate to hear the phone ring because I want to avoid talking to people.	1	2	3	4	5
9. I feel like trying at least one of the things that people think help induce labor.	1	2	3	4	5
10. I think my doctor is worried about my baby.	1	2	3	4	5
11. I am ready for the doctor to induce labor.	1	2	3	4	5
12. I memorize what the doctor and nurse said. I try to reassure myself by going over their comments.	1	2	3	4	5
13. I feel like I am going to be pregnant forever.	1	2	3	4	5
14. I feel like asking other mothers I know about their delivery experiences, to find something to reassure me that delivery will be soon.	1	2	3	4	5
15. I rearrange baby clothes over and over.	1	2	3	4	5
16. My appetite is changing.	1	2	3	4	5
17. I overexert myself with such things as housecleaning and shopping.	1	2	3	4	5
18. I feel more uncomfortable.	1	2	3	4	5
19. I feel like crying more easily.	1	2	3	4	5

Route 2, Box 25A  
Walla Walla, WA 99362  
January 12, 1988

Dear Doctor

I am currently enrolled in The Oregon Health Sciences University's MSN program and doing the finishing touches, the research project. My committee advisor has suggested that I do the data collection where I work. To get sufficient subjects by the end of March, I need to work with as many doctors who offer maternity care as possible.

My research is about anxious feelings and behaviors of pregnant women who are still undelivered after their EDD. Pregnant women undelivered by within two weeks before the EDD will serve as the control group.

Enclosed is a copy of my research abstract proposal for your perusal. Upon your consent to access your patients, I will need consent from potential subjects (pregnant women whose EDD is within two months) to check their charts for their EDD and inclusion criteria. Consenting eligible patients would then be given a research packet (introduction letter, consent, questionnaire and envelope). See "Procedure" on the second page of the Abstract and an enclosed copy of the questionnaire.

If this meets your approval, will you please sign the enclosed doctor's consent form. Will you please send me this signed form in the stamped self-address envelope enclosed as soon as possible. Thank you.

Any suggestions you have will be appreciated. Thank you for your consideration to assist with this research project.

Sincerely yours,

Beverly A. Thompson, R.N.

## Appendix C

Page 2

I, Doctor \_\_\_\_\_, do hereby consent to  
Name (Please Print)

have Beverly Thompson, R.N. access my patients during  
February and March, 1988 for the purpose of data collection  
according to the plan outlined in her school's approved  
master's research proposal.

Date: \_\_\_\_\_

\_\_\_\_\_  
Signature

I, Doctor \_\_\_\_\_, do not want my  
Name (Please Print)

my patients to participate in this study.

Date: \_\_\_\_\_

\_\_\_\_\_  
Signature

## Appendix D

Dear Mother-to-be,

I am a registered nurse living in Walla Walla. Presently I am working on a research project for my Masters of Science in Nursing degree from The Oregon Health Science University in Portland.

This project is designed to gather information on how women feel in the final days of pregnancy. To do this study I need a small group of pregnant women. The information from these women will help guide doctors and nurses to better serve other pregnant women.

I first need to check your chart for your due date and whether you are eligible to be part of the study. If you are eligible, this study would involve answering a two-page questionnaire while you are waiting to see the doctor on one of your regularly scheduled visits before delivery.

If you consent to let me look at your chart for this information, please sign the attached form, and return it to the receptionist. Thank you very much.

  
Beverly A. Thompson, R.N.



## Appendix E

Page 2

I, \_\_\_\_\_, do hereby consent  
Name (Please Print)

for Beverly Thompson, R.N. to check my doctor's record for  
my estimated date to delivery and information which  
possibly may lead to including me in Beverly's research  
study.

Date: \_\_\_\_\_

\_\_\_\_\_  
Signature

(Please return the envelope to the receptionist.  
Thank you.)

## Appendix F

You are cordially invited to participate in a study to explore how women feel as pregnancy advances. This study is designed to identify your feelings during a final week of your pregnancy. Knowing your feelings at this time will help doctors and nurses better serve other pregnant women.

This study will take about 10 - 15 minutes to answer the questions on the attached papers. All information received will be kept in strict confidence.

If you choose to participate, read and sign the attached consent form and return it to the receptionist. Your consent form will be kept separate from the questionnaire so that your answers cannot be identified. Complete the questionnaire, put it in the attached envelope, seal it and return it to the receptionist today. If you choose not to participate, simply return these papers to the receptionist.

I appreciate your willingness to take the time and effort to fill out these forms. Thank you.



Beverly A. Thompson, R.N.

## Appendix G

The Oregon Health Sciences University  
CONSENT FORM

I, \_\_\_\_\_, agree to  
(Your Name)

participate in a study which is designed to gather information on how women feel in the final days of pregnancy. I understand that this study titled "Feelings of Pregnant Women Before and After Their EDD" will be conducted by Beverly Thompson, RN, under the supervision of Linda Wheeler, CNM, EdD., The Oregon Health Sciences University, Portland, Oregon.

I understand that this study is being conducted in this doctor's clinic, but it has no connection with my present care. I understand that I will not benefit directly from this study but my participation will help guide doctors and nurses to better serve other pregnant women.

If I agree to participate in this study, I understand that it will take about 10 - 15 minutes to answer the questions on the attached papers. I understand that all information received as a result of this study will be kept confidential. The results of my responses will be added to the results of other women's responses, and the total group's results will be published as a thesis. Neither my name nor my identity will be used for publication or publicity purposes. Nurses other than Beverly Thompson will not see my answers.

Beverly Thompson has offered to answer any questions that I might have concerning my participation in this study. I understand that I am free to refuse to participate in this study and am free to withdraw at any time from the study.

I have read the foregoing and agree to participate in this study.

Date: \_\_\_\_\_ Signature: \_\_\_\_\_

AN ABSTRACT OF THE MASTERS RESEARCH PROJECT OF  
BEVERLY TRUSSELL THOMPSON, R.N., B.S.N.  
FOR THE MASTER OF SCIENCE IN NURSING

DATE RECEIVING THIS DEGREE: June, 1989

TITLE: FEELINGS AND BEHAVIORS OF PREGNANT WOMEN AFTER  
THEIR ESTIMATED DATE TO DELIVER

APPROVED: \_\_\_\_\_  
Linda Wheeler, CNM, EdD Thesis Advisor

The purpose of this study was to examine and compare the feelings and behaviors of pregnant women before and after their estimated date to deliver (EDD). An adapted form of Campbell's (1986) instrument was used. The items on the tool were placed into the four subscales of reactions to anxiety conceptualized by Peplau (1979), somatization, acting out, introspection, and investigation. A convenience sample of 22 low risk pregnant women before their EDD (Group I) and 23 low risk pregnant women after their EDD (Group II) were selected from private physicians' clinics in a small town in the northwest USA.

The following research questions were asked:

1. Are there differences in feelings and behaviors of pregnant women who are 263 to 280 days gestation compared with pregnant women who are 281 to 294 days gestation when

subjects EDDs are based on accurate menstrual history or sonograms done before 27 weeks gestation?

2. How intense are the feelings and behaviors of pregnant women who are 263 to 280 days gestation compared with pregnant women who are 281 to 294 days gestation when subjects EDDs are based on accurate menstrual history or sonograms done before 27 weeks gestation?

According to the t-test, none of the mean scores for the subscales of reactions to anxiety reached significant differences between Group I (pre-EDD) and Group II (post-EDD). Group II subjects' mean scores were higher than Group I subjects' mean scores with statistical significance for the following items: feeling like the pregnancy would last forever ( $p=0.01$ ), crying more easily ( $p=0.04$ ) and wanting the doctor to induce labor ( $p=0.05$ ). From 55% to 59% of Group I subjects and 73% to 82% of Group II subjects responded moderately to very strongly feeling fatigued, irritable, and had more sleeping problems. With a possible mean score range of 1.00 to 5.00, the highest individual mean score for the whole scale was only 3.78.

It appears that none of the subjects experienced all the feelings listed in the scale very intensely and major differences between Group I and Group II subjects could not be demonstrated. Refinement of the tool may be necessary if the tool is to be used with the same conceptual framework.