THE RELATIONSHIP BETWEEN DOMESTIC VIOLENCE DURING PREGNANCY AND THE INCIDENCE OF PRETERM LABOR

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DEDICATION

It is commonly thought that the intense stress of doing a Masters Research Project will shatter the foundation of most friendships. Contrary to this accepted theory, however, we found that this endeavor strengthen our relationship. This project is dedicated to the trust and understanding of true friendship.

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ABSTRACT

This study is a secondary analysis of data collected in a preterm birth prevention study of a high risk population of women. The purpose was two fold: 1) to examine the potential relationship between a woman's perception of stress related to domestic violence during pregnancy and the incidence of preterm labor; and 2) to explore the relevance of a biopsychosocial framework when evaluating the relationship between domestic violence and preterm labor. At 24 weeks gestation the experimental group received printed information regarding preterm birth prevention and began receiving 2-4 weekly phone calls from research nurses during the 24 to 36 week gestation period. The control group received only the printed information at 24 weeks.

The Prenatal Psychosocial Profile (PPP) was administered to both groups at 24 weeks (Time 1). At 36 weeks (Time 2) the experimental group completed the PPP as part of the intervention; the control group completed the instrument by mail. One question on the PPP asked the extent to which current emotional, sexual, or physical abuse was a stressor. Outcome data were obtained from clinical records after delivery.

Data from 386 women were examined. To control for limitations from missing data, only those women from which data were collected at Time 1 and Time 2 (N=282) were utilized for statistical analysis. Among the total sample, 62 reported stress related to abuse: 34 control women and 28 experimental women. Among the 65 women who experienced preterm labor, 16 (25%) also reported stress related to abuse. More control women (N=10; 27.8%) experienced both abuse and preterm labor than experimental women (N=6; 20.7%); however, this was not statistically significant.

Two hundred eighty-two women in the study completed data at both collection periods, forming the analysis group. This group had a preterm labor rate of 12.4% (N=34), which was less than the 17.7% (N=65) that was found in the total sample of 386. This difference resulted from the 86 women who were excluded from the analysis sample because of missing Time 2 data. These women did, however, have a preterm labor rate of 34.9% (=30), which in retrospect could account for the missing data. The analysis sample had a 20.2% (N=57) incidence of abuse stress as compared to 16.8% (N=62) for the total sample of 386 women. Of the 57 (20.2%) women in the analysis group who reported abuse stress, 13 (22.8%) experienced preterm labor.

Converesly, of the 35 (12.4%) women who experienced preterm labor, 13 (37.1%) reported abuse stress.

Within the confines of secondary analysis, all the variables of the conceptual framework were not examined. Most of the available framework variables, however, were found to be supported by the research findings. For example, women who reported abuse stress had significantly higher stress, lower partner support, lower support from others, and lower self-esteem.

From a clinical perspective utilizing "objective" assessment data, it can be suggested that one out of every three women experiencing preterm labor is suffering from abuse stress. Hence, implications for practice and future research revolve around identification of the best screening methods, as well as effective and appropriate intervention for domestic violence.

Chapter 1

Domestic violence has been defined as a cycle of overt and covert physical, sexual, and/or psychological acts with the intention of actual injury (or fear of injury) to another person (Policy statement, American Public Health Assoc., 1993). Such violence against women has been recorded for centuries. There is overwhelming evidence that the consequences of this violence can result in extreme biological, psychological, and/or behavioral changes. These changes are similar or identical to the factors identified in the literature as contributory factors to preterm labor of pregnancy (labor occurring prior to 37 completed weeks of gestation). Research, however, has failed to specifically link the ongoing stress and trauma from domestic violence during pregnancy with preterm labor.

The potential relationship between domestic violence and preterm labor (PTL) is significant because preterm labor can lead to premature birth, a serious maternal/fetal health risk. Preterm birth is the most common single cause of perinatal morbidity and mortality. This is primarily due to the very low birth weight babies, which have a 10% to 44% mortality rate and a 10% to 30% severe handicap rate among the survivors (Bryce, Stanley, & Enkin, 1988). When these small babies survive, they can spend months in the neonatal intensive care unit,

costing hundreds of thousands of dollars. Frequently the parents are unable to pay these bills, which shifts the burden of payment to others (Hewitt & Newnham, 1988). The causes of PTL are not completely understood, which promotes confusion when attempting to link antecedent factors to outcome. Preterm labor is a multi-factorial health risk, and the prevention and/or lowering of its incidence will require a multi-disciplinary approach. The purpose of this study was two fold: 1) to investigate the possible relationship between the incidence of preterm labor and a pregnant woman's perception of stress related to domestic violence; and 2) to explore the relevance of a biopsychosocial framework for explaining the relationship between domestic violence and PTL. This issue is critical for nurses in all clinical settings because of nursing's ability to assess, to evaluate, and to intervene. Once a client has been identified as being in an abusive situation, a nurse can assist her to break the cycle of violence in her life, which may directly or indirectly influence her pregnancy outcome. However, this assistance can only occur if nurses are knowledgeable about the issues.

Review of the Literature

Few studies have focused on outcome variables associated with domestic violence during pregnancy despite the past and current

documentation of the prevalence of domestic violence and its negative impact on women's physical and psychological health. These researchers were unable to identify any published articles focused solely on investigating the relationship or correlation between the incidence of preterm labor and domestic violence. Because the causes of preterm labor are multifactorial, this problem needs to be investigated within a biopsychosocial framework.

Prevalence of Domestic Violence During Pregnancy

The incidence of all violence against women ranges from 1 to 12 million acts per year. Noel and Yam (1992) reported that 33% of the visits by women to emergency rooms are related to domestic violence, but only 5% of these are documented as such. The American Public Health Association (1993) reported that injuries from domestic violence account for 20% of medical care for women and 30% of emergency room visits by women. It is estimated that the incidence of domestic violence during pregnancy affects more women than gestational diabetes, hypertension, or any other significant complication of pregnancy (Bohn, 1990).

Most women must establish some level of trust prior to their disclosing to anyone the existence of domestic violence, which affects

the reliability of the reported incidents. Few studies have investigated the relationship between a woman's disclosure of violence and the data collection method. In one study, only 8% of the pregnant teenagers identified being in domestic violent situations on the initial self-administered history form (McFarlane, Parker, Soeken, Bullock, 1992). Later in their pregnancies, when personally interviewed, 29% of the same group reported domestic violence.

The prevalence of physical, psychological, and/or sexual abuse of women during pregnancy has been reported to range from 4% to 26% (Parker, McFarlane, Soeken, Torres, and Campbell, 1993). It is suggested by Bohn and Parker (1993) that 1 in 50 women may be slapped, kicked, punched, and/or sexually assaulted (battered) during their pregnancy. Findings from interviews with battered women living in shelters revealed 40% to 60% had experienced, or were experiencing, abuse during their pregnancies (Omer & Everly, 1988).

A pregnant woman runs a 28.3% greater risk than a non-pregnant woman of experiencing minor battering during domestic violence, in addition to a 60.6% greater risk for the battering to be abusively violent (Gelles, 1988). Helton (1986) and Hillard (1985) reported 11% to 23% of pregnant women disclosed histories of violence prior to their pregnancy; these women were frequently at increased risk for battering during the

pregnancy. Their findings also suggested that the frequency and severity of the violence can increase or decrease during pregnancy.

Demographic Characteristics of Women Abused During Pregnancy

There is no consensus regarding the demographics of women at risk for domestic violence during pregnancy. The only characteristics, however, that have any traceable pattern are those of age and economic status. Younger women appear to be at higher risk for domestic violence. Gelles (1988) reported that age was the primary variable responsible for the prevalence of battering during pregnancy; however, he suggested the generalizability of this data is limited in that the women of childbearing age are predictably younger. Additionally, economic characteristics hold a bias in that low income women are more likely to receive public health care, making them easier to access for research participation than those receiving private health care.

Preterm Labor During Pregnancy

Reports on the incidence of preterm birth range from 6-10% (Herron, Katz & Creasy, 1982) to 45% (Freda, Anderson, Damus, Poust, Brustman & Merkatz, 1990). Freda et al.(1990) suggests that these births contribute to 60 to 80% of perinatal mortality in the United States.

These preterm births are suggested to result equally from idiopathic preterm labor, premature rupture of membranes, and maternal/fetal complications (Star, Shannon, Sammons, Lommel, Gutierrez, 1990).

Preterm labor is broadly defined in the literature as labor occurring in pregnancy prior to 37 completed weeks gestation that causes cervical dilatation (Star, et al., 1990). Various risk factors have been linked to preterm labor. These include: lifestyle/psychological factors such as stress (Freda, et.al.,1990; Star, et al., 1990); behavioral factors such as substance abuse and inadequate weight gain; and biological factors such as infection (Star, et al.,1990). The literature also suggests that early identification, evaluation, and intervention of these risk factors is a critical part of prenatal care aimed at reducing perinatal mortality and morbidity (Star, et al.,1990; Herron et al., 1982; Freda et al., 1990). Domestic violence has been linked to all these risk factors.

Biological Links to Preterm Labor

Physical trauma is a complication of 6%-10% of all pregnancies, with motor vehicle accidents accounting for approximately 50% of the trauma (Pearlman, Tintinalli & Lorenz, 1990). The remaining 50% is reported to be the result of falls, burns, and assaults. The probability of significant problems that result from trauma is reported to increase with

the duration or gestation of the pregnancy (Buchsbaum, 1968). Pregnancy complications from assault have been reported to be 17.1%, as opposed to 7.1% after motor vehicle accidents (MVA's) (Goodwin & Breen, 1989). A causal relationship between abdominal trauma from MVA's and preterm labor has been reported (Bohn & Parker, 1993).

Trauma that does not threaten maternal life has been defined as non-catastrophic (Pimentel, 1991). Injuries from domestic violence frequently fall into this category. Pregnancy complications that can occur after this type of trauma include spontaneous abortions, preterm labor, preterm birth, low birth weight, maternal/fetal injury, and/or fetal death (Bohn & Parker, 1993; Johnson & Oakley, 1991; Pimentel, 1991). It is suggested that the incidence of morbidity from non-catastrophic trauma may be greater with domestic violence due to the possibility of repeated attacks (Goodwin & Breen, 1989).

When preterm labor occurs as a result of trauma, contractions initially respond to tocolytic therapy; however, 50% will have recurrent preterm labor ending in a preterm birth approximately 2 to 4 weeks after the trauma. The abdomen is described as the most targeted sight for trauma during pregnancy, with the battered pregnant woman having more multiple trauma sites than the non-pregnant woman (Stark et al., 1979; Helton & Snodgrass, 1987). Trauma to the uterus can injure the

myometrium, causing a destabilization of decidual lysosomes (Pearlman et al., 1990). This causes a release of arachidonic acid which can induce premature uterine contractions.

Bohn and Parker (1993) report that although few studies have addressed it, the physical act of sexual assault during pregnancy has been linked with the stimulation of preterm labor. This has in turn resulted in miscarriage and stillbirth. The men that batter women are reported to have patterns of multiple sexual partners which increases their risk of having acquired sexually transmitted diseases (STD's) (Amaro et al., 1990). Hence, their sexual battering of the pregnant woman carries risk from physical injury as well as risk from the sexually transmitted infection (Amaro et al., 1990). With the world concern around STD's, and the potential risk from trauma, it is imperative to examine the possible links between sexual assault associated with domestic violence and pregnancy complications. This may be difficult to accomplish because of the ethical considerations related to obtaining human biological data, as well as bias factors of subjective disclosures.

Psychological Links to Preterm Labor

An accepted theory in the literature is that domestic violence causes stress for the pregnant woman. This cyclic stress frequently

occurs on a daily basis and manifests itself in mental and physical consequences. Each of these manifestations will be reviewed.

Mental responses to the stress of domestic violence.

The mental stress that results from domestic violence is significant because of the growing evidence that mental stress is associated with adverse pregnancy outcomes, including preterm labor/delivery (Omer & Everly, 1988; Williamson et al., 1989). Further, the severity of mental stress resulting from domestic violence has been reported. Hilberman & Munson (1978) identified 50% of the 120 pregnant women from a rural health clinic who had been referred for psychiatric evaluation were victims of domestic violence. Predictably, depression and suicidal ideation are common among abused and battered women during pregnancy (Amaro et al.,1988; Hillard, 1985; Hilberman & Munson, 1978). In Hillard's (1985) study of 742 women, 11% reported abuse; with that abuse came an increase in emotional problems along with 20% of the women having attempted suicide.

Physical responses to the stress from domestic violence.

Omer & Everly (1988) suggest that stress can induce the onset of uterine contractions. This is believed to occur in two different ways. First is the direct result of acute stressful events, and the second is

accumulative effects from chronic stress, either of which can result from domestic violence. Omer & Everly (1988) also reported on studies conducted in Germany that linked lower rheobase thresholds to preterm labor. This was reported to cause the body's musculature to overreact under stress. Stress hormones such as catecholamines and norepinephrine have also been noted for their involvement in the stimulation of oxytocin and thus uterine contractions (Omer & Everly, 1988; Patterson, 1984).

Research suggests that stress is related to the increase of the hormone oxytocin and/or the increase of immunosuppressive corticosteroids (Omer & Everly, 1988). A study conducted on 117 pregnant women with preterm labor identified that women experiencing significant stress had a greater sensitivity to increases in oxytocin levels than women who gave birth at term (Takahashi et al., 1980). Stress is suggested to increase immunosuppression, indirectly promoting the potential for preterm labor as a result of infection (Bohn & Parker, 1993). Even though several studies have described the stress related to domestic violence, an obvious need exists to study the relationship between the mental and physical consequences of stress resulting from domestic violence and preterm labor.

Behavioral Links to Preterm Labor

Domestic violence has been identified as directly and/or indirectly causing an increased health risk with its connection to increased smoking, increased substance abuse, late or inadequate prenatal care, psychological disorders (eg: eating disorders), and complicated obstetric and gynecological histories consisting of therapeutic abortions and poor maternal weight gain (Bohn & Parker, 1993; McFarlane et al., 1992; Newberger et al. 1992; Bullock & McFarlane, 1992; Omer & Everly, 1988; White et al., 1986). All of these behaviors have been linked with preterm labor.

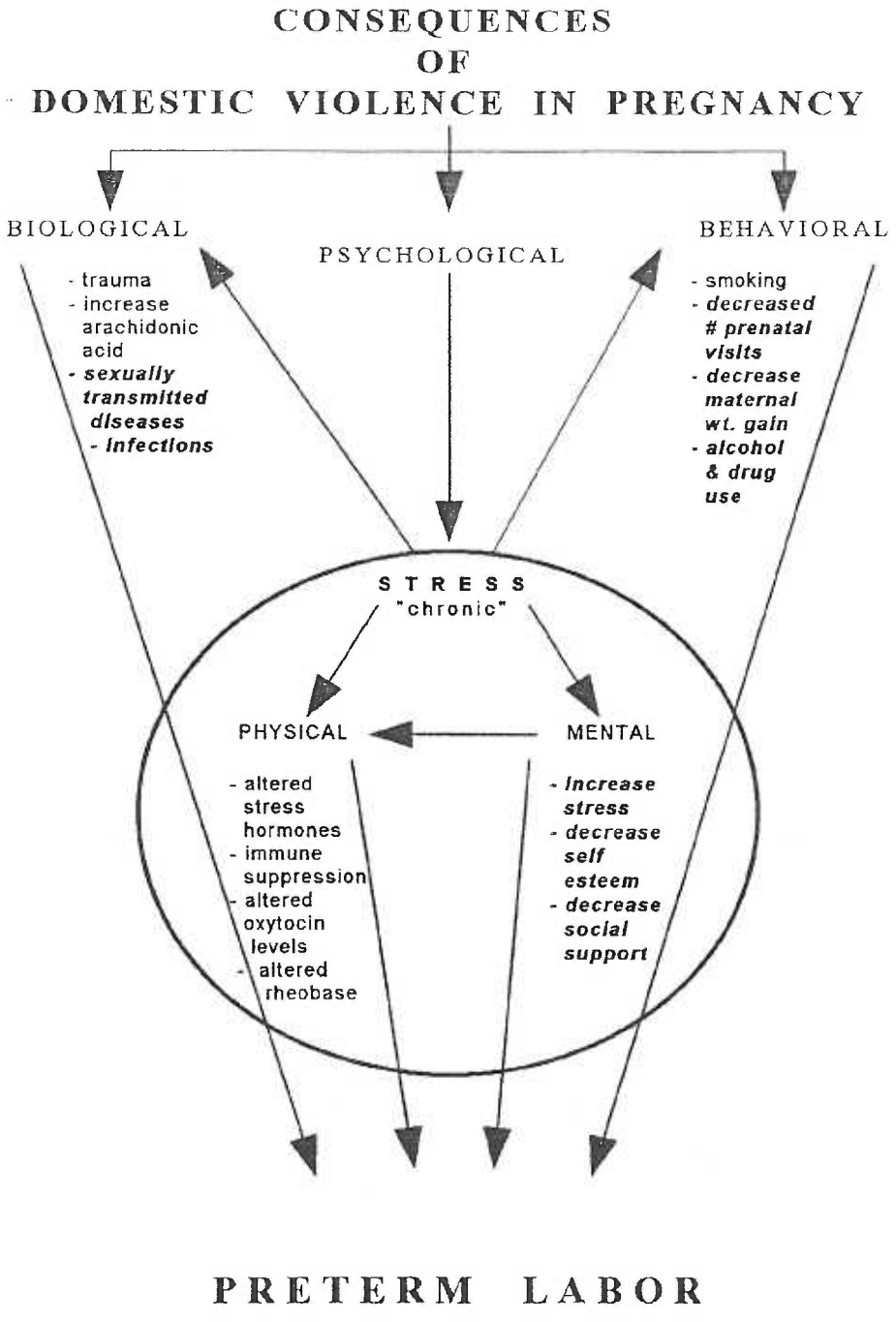
Inadequate prenatal care can limit the early identification of behaviors, such as smoking, that have been linked with the stimulation of preterm labor. Anecdotal reports suggest that when care is late or infrequent, poor weight gain, eating disorders, and substance abuse can go undetected to the point of compromising maternal immunity. These pregnant women are then at increased risk for infection, a potential precursor of preterm labor. Bohn & Parker (1993) suggested that battered pregnant women have a history of seeking care late in their pregnancies and/or missing scheduled appointments. This has been hypothesized to be the result of attempts to hide injuries, intentional isolation by the abuser, and/or depressive withdrawal of the battered

pregnant woman. Research lacks a serious focus on the relationship between preterm labor and the consequences of domestic violence. Components of the physical, psychological, and behavioral consequences of domestic violence have all been individually linked to preterm labor. However, studies interrelating these components are non-existent. Therefore, considering the seriousness of the maternal/fetal health risk from preterm labor and the potential for directly or indirectly influencing pregnancy outcomes, these researchers suggest there is clinical relevance for the investigation of these potential relationships.

Conceptual Framework

The relationship between domestic violence and preterm labor is conceptualized within a biopyschosocial model and is addressed as a multi-factorial problem. Domestic violence can cause direct physical injury from battering and sexually transmitted diseases. It can also cause acute psychological anxiety and depression, as well as physical and mental consequences from the accumulation of chronic stress. Physical injuries, depression, and chronic stress have been identified as influencing unhealthy behavioral responses such as the use of alcohol and/or drugs, poor weight gain, or inadequate prenatal care.

Pregnancy is a time in a woman's life that deserves and demands a safe and healthy environment for the optimum attainment of safe passage. The cycle of domestic violence can severely disrupt this and thus directly or indirectly precipitate preterm labor. This study hypothesizes that there is a relationship between women's perception of stress resulting from domestic violence and the incidence of preterm labor. The relationship between these variables is conceptualized in the following model:


CONSEQUENCES
OF
DOMESTIC VIOLENCE IN PREGNANCY
BIOLOGICAL
PSYCHOLOGICAL
BEHAVIORAL
- trauma
- increase arachidonic acid
- sexually transmitted diseases
- infections
- smoking
- decreased # prenatal visits
- decrease maternal wt. gain
- alcohol & drug use
STRESS
"chronic"
PHYSICAL
MENTAL
- altered stress hormones
- immune suppression
- altered oxytocin levels
- altered rheobase
- Increase stress
- decrease self esteem
- decrease social support
PRETERM LABOR

Research Questions

1. Is there a relationship between a woman's perception of stress associated with domestic violence and preterm labor among pregnant women at risk for preterm labor who received a preterm birth prevention intervention?

1.1 What is the relationship between second trimester perceptions of stress and incidence of preterm labor?

1.2 What is the relationship between third trimester perceptions of stress and incidence of preterm labor?

2. Is there a relationship between a woman's perception of stress related to domestic violence and preterm labor among pregnant women at risk for preterm labor who did not receive a preterm prevention intervention?

2.1 What is the relationship between second trimester perceptions of stress and incidence of preterm labor?

2.2 What is the relationship between third trimester perceptions of stress and incidence of preterm labor?

3. Are there differences between women who report stress associated to domestic violence and those who do not in their stress scale scores on the Prenatal Psychosocial Profile (PPP), the total number of prenatal visits, the number of failed prenatal appointments,

weight gain by 27 weeks, and the total pregnancy weight gain among women at risk for preterm labor who received a preterm birth prevention intervention?

4. Are there differences between women who report stress associated with domestic violence and those who do not in their stress scale scores on the PPP, the total number of prenatal visits, the number of failed prenatal appointments, weight gain by 27 weeks, and the total pregnancy weight gain among women at risk for preterm labor who did not receive a preterm birth prevention intervention?

Chapter 2

This chapter will describe the methods used in this study. First will be the research design; then the sample population, instruments, variables, and procedures will be described . These will be followed by a description of the statistical analysis.

Design

This study was a secondary analysis of data collected in a prospective randomized trial of a preterm birth intervention study entitled "Reducing low birthweight birth through intensive nursing intervention via telephone." The principal investigator was Dr. Mary Lou Moore. These researchers obtained verbal permission by telephone from Dr. Moore to use this data and to make photocopies of the original data.

Sample

Records from 368 participants in the preterm birth prevention study constituted this study sample. Participants in the preterm birth prevention study were primarily African American, low-income women recruited from a publicly funded, prenatal clinic in an urban North Carolina city. They were selected for inclusion in the intervention study if it was determined that they were at risk for preterm labor as measured

by the Risk Scoring Instrument developed by Bowman Gray School of Medicine in 1983, which was derived from the work of Papiernik and Creasy (1969, 1985).

All women determined to be at risk were contacted by a member of the research team at approximately 24 weeks gestation. After informed consent was obtained, women were randomly assigned to either the control or experimental group. The control group received printed information on the symptoms and prevention of preterm labor developed by the Northwest North Carolina Prevention of Prematurity Program (Appendix A). The experimental group received the same literature in addition to 2 to 4 telephone calls per week from 24 to 36 weeks gestation from research nurses involved in the study. As a rule, the nurses and the women would negotiate the best times to call during the week, which was usually daytime hours. The women, however, were encouraged to call their research nurse at any time and were given the nurse's beeper number.

When domestic violence was identified, the only intervention offered by the nurses was psychological support to empower the women to seek intervention from the appropriate community resources. Unless the situation was determined life threatening, the research nurses were instructed not to intervene, as in making a call to the appropriate

resources (e.g. police). Fortunately, this life threatening situation did not arise during the study.

Instruments

Baseline data were collected and reported on the Intrapartal Data Collection Sheet (Appendix B) on the experimental and control women at 24 weeks gestation when assigned to the study group. The Prenatal Psychosocial Profile (PPP) (Appendix C) was administered to both groups at that time (Time 1). Women in the experimental group completed the second PPP (Time 2) at 36 weeks as part of the intervention. Women in the control group completed their second PPP (Time 2) at 36 weeks, by mail. One question from the PPP (Curry, Campbell & Christian, 1994) was used to identify a woman's perception of stress associated with domestic violence. The PPP (Curry et al., 1994) is a composite of its newly developed measure of stress, the Rosenberg Self-Esteem Scale (1965), and the Support Behaviors Inventory (Brown, 1986). The instrument includes four scales: a) self esteem; b) partner support; c) other support; d) stress. All scales have adequate levels of internal consistency reliability, with Chronbach's alpha values ranging from .78 to .95 .

The PPPs' (Curry, et al., 1994) stress scale has 11 items. Question #A18G asks, "To What Extent Are--Current Abuse: Sexual, Emotional, or Physical--A Current Stressor/Hassle For You?" with response options: No Stress, Some Stress, Moderate Stress, Severe Stress. This secondary analysis, however, utilized data in which PPP (Curry, et al., 1994) Question #A18G had been revised to ask "How Often Do You Worry About--Current Abuse: Sexual, Emotional, Physical?" with four response options: Never, Sometimes, Often, All the Time. No statistical data was available as to whether Dr. Moore's reliability alphas were dissimilar to those obtained on the original PPP by Curry, et al.(1994).

Operationalization of Variables

The occurrence of idiopathic preterm labor was determined by systematical evaluation of data from the Intrapartal Data Collection Sheet. Preterm labor which occurred after premature rupture of membranes was excluded from the "idiopathic preterm labor" group. The following criteria were applied to determine if a woman had experienced preterm labor:

1. Gestational age at delivery as calculated by Last Menstrual Period (LMP).
2. Gestational age at delivery as calculated by Sonogram.
3. Documented hospitalization for idiopathic preterm labor (IPTL) with or without tocolytics.
4. Documentation of non-labor related events (eg. motor vehicle accidents) for deliveries occurring prior to 37 completed weeks.

Ultrasound and LMP data were utilized for identification of appropriate estimated date of delivery. In the instances where these two did not coincide, ultrasound dates were used. If the ultrasound was completed after 26 weeks gestation, however, the LMP was utilized to establish gestational age. When questions arose relative to the determination of preterm labor, a discussion between both raters determined the answer.

Each researcher coded 10 charts, then exchanged the same set of charts with the other researcher and coded again. The interrater reliability was calculated at 98%. Once this reliability was established, the remainder of the charts were coded by only one of the researchers. Whole numbers were used for recording lengths of time and gestational

age. All recorded gestational ages reflected only completed weeks; additional days of gestation were dropped from data entry.

Women were defined as having experienced stress related to domestic violence if the response to the PPP Question A18G "How Often Do You Worry About--Current Abuse: Sexual, Emotional, Physical?" was answered as Sometimes, Often, or All the Time. There were 3 possible groupings of answers to domestic violence related stress: 1) 24 weeks (Time 1) only; 2) 36 weeks (Time 2) only; 3) both Time 1 and Time 2.

Procedures

Permission was obtained from Dr. Moore to conduct a secondary analysis of her Preterm Birth Intervention Study. Upon receipt of data, photocopies were made of the Intrapartal Data Collection Sheets and the PPP. All identifying information was removed after photocopying to protect confidentiality. The original data forms were returned by certified mail to Dr. Moore. The data was sorted into experimental and control groups, recoded for use in this study (Appendix D), and then entered into the CRUNCH computer program for analysis. The researchers entered and verified all of the data. Following entry, both researchers conducted verification of the data.

Analysis

The CRUNCH statistical software was used for data analysis. To address Research Questions 1 (experimental) and 2 (control), Chi square was used to examine the association between perceived stress from domestic violence and the incidence of preterm labor. To address Research Questions 3 (experimental) and 4 (control), T-tests were computed for group comparisons of specific variables.

Chapter 3

This chapter will describe the findings of the study. The review of participants will be followed by a description of the findings of the analysis of each research question.

Participants

Data from 368 (total study sample) women were examined. Half of these (N=184) had been assigned to the experimental group and the other half (N=185) to the control group. Of these 368 women, 282 (analysis sample) had completed data collection at both 24 weeks (Time 1) and at 36 weeks (Time 2) of gestation. In an evaluation of the total study sample and the analysis sample, no differences existed in terms of the demographic characteristics collected on the intrapartum data collection sheet (Table 1), with the exception of the incidence of preterm labor and the perceptions of stress associated with domestic violence (abuse stress). The analysis sample of 282 women had a total incidence of preterm labor at 12.4% (35), which was less than the 17.7% (65) found in the total sample of 386. This difference can be accounted for by evaluating the 86 women who failed to complete the Time 2 data collection reports. Data from this group demonstrates a preterm labor rate of 34.9% (N=30) with a mean gestational age at delivery of 36.6

weeks (SD±4.8). These findings account for the differences in preterm labor rates between the total and the analysis sample groups.

The analysis sample of 282 women had a total (Time 1 and Time 2) incidence of abuse stress of 20.2% (N=57) as compared to 16.8% (N=62) for the total study sample of 368. The subset of 86 women not completing Time 2 data collection probably accounts for this discrepancy with a reported incidence of Time 1 abuse stress at 5.8% (N=5).

In consideration of the difficulties which occur because of missing data, only data from the 282 women (analysis sample) were used to answer the research questions. No differences between the experimental and control groups were found in this sample. Demographic characteristics of the analysis sample are displayed in Table 2.

Findings

The findings related to the research questions will be presented first. Then a description of other pertinent findings will be discussed.

Research Question 1 asked: Is there a relationship between a woman's perception of stress associated with domestic violence and preterm labor among women at risk for preterm labor who received a preterm birth prevention intervention? This question examined the

relationship between Time 1 and Time 2 perceptions of abuse stress and preterm labor, utilizing chi square statistics.

There was an overall incidence of preterm labor of 11.1% (N=16) among experimental women. Although there were differences in the incidence of preterm labor between women who did and women who did not report abuse stress, they were not statistically significant. For the women who reported abuse stress at Time 1, the incidence of preterm labor was 17.6% (N=3) in contrast to 10.2% (N=13) for women not reporting abuse stress, $X2(1,N=144)= 0.83$, $p=.36$ (Yates correction). At Time 2, those reporting abuse stress had an 18.2% (N=4) incidence of preterm labor compared to 9.8% (N=12) for women not reporting abuse stress, $X2(1,N=144)= 1.31$, $p=.25$ (Yates correction).

Research Question 2 asked: Is there a relationship between a woman's perception of stress related to domestic violence and preterm labor among pregnant women at risk for preterm labor who did not receive a preterm birth prevention intervention? This question examined the relationship between Time 1 and Time 2 perceptions of abuse stress and preterm labor, utilizing chi square statistics.

The control sample had an overall incidence of preterm labor of 13.8% (N=19). Although there were differences in the incidence of preterm labor between women who did and women who did not report

abuse stress, no statistical significance was found. For women reporting abuse stress at Time 1, the incidence of preterm labor was 25% (N=5) in contrast to 11.9% (N=14) for women not reporting abuse stress, X2(1, N=138)= 2.49, p=.12. At Time 2 women reporting abuse stress had a preterm labor rate of 23.8% (N=5) in contrast to 12.0% (N=14) for women not reporting abuse stress, X2(1, N=138)= 2.10, p=.15.

The third Research Question asked: Are there differences between women who report stress associated with domestic violence and those women who do not in their stress scale scores on the Prenatal Psychosocial Profile (PPP), the total number of prenatal visits, the number of failed prenatal appointments, weight gain by 27 weeks, and the total pregnancy weight gain among women at risk for preterm labor who received a preterm birth prevention intervention? T-tests were utilized to analyze this research question.

Women in the experimental group who reported abuse stress had significantly higher overall stress scores at Time 1 (M=21.6, SD=5.13) than women without abuse stress (M=18.0, SD=3.89), t(144)= -3.35, p<.002. Women in the experimental group who reported abuse stress had significantly higher overall stress scores at Time 2 (M=22.4, SD=5.64) than women without abuse stress (M=18.0, SD=4.26), t(144)= -3.89, p<.001. Women in the experimental group who reported abuse

stress had significantly less weight gain at the end of the third trimester (M= 23.8 lbs, SD=19.3) than women without reports of abuse stress (M= 32.3, SD=17.2), t(132) = 2.17, p<.03. No significant differences were found in total number of prenatal visits, number of failed prenatal appointments, or weight gain at 27 weeks of pregnancy.

The fourth Research Question asked: Are there differences between women who report stress associated with domestic violence and those who do not in their stress scale scores on the PPP, the total number of prenatal visits, the number of failed prenatal appointments, weight gain by 27 weeks, and the total pregnancy weight gain among women at risk for preterm labor who did not receive a preterm birth prevention intervention? T-tests were used to analyze this research question.

Women in the control group who reported abuse stress had significantly higher overall stress scores at Time 1 (M=21.5, SD=5.23) than women without abuse stress (M=17.8, SD=4.10), t(138)= -4.10, p<.0001. Women in the control group who reported abuse stress had significantly higher overall stress scores at Time 2 (M=22.5, SD=5.02) than women without abuse stress (M=18.0, SD=4.64), t(138)= -4.55,

p<.0000. There were no statistically significant differences between these two groups with regards to total number of prenatal visits, number of failed prenatal appointments, weight gain at 27 weeks, or total pregnancy weight gain.

Other Findings

The relationship of abuse stress reported at Time 1, Time 2, or Time 1 and 2 and the incidence of preterm labor was evaluated for all 282 women. Overall, women reporting abuse stress (N=57) had a preterm labor rate of 22.8% (n=13) compared to a 9.8% (n=22) for women without reported abuse stress: X2 (1,N=282)= 7.10, p<=.007 (odds ratio 2.76), Table 3. Among the 35 (12.4%) women experiencing preterm labor, there was an impressive incidence of abuse stress at 37.1% (N=13), X2(1,N=282)= 7.10, p=.008, Table 4.

In an evaluation of the relationship of preterm labor and domestic violence within the control and the experimental groups, only the control women continued to show significant differences in preterm labor rates with relation to abuse stress (odds ratio 3.21), X2(1,n= 138)= 4.07, p<.04 (Yates correction). Table 3 outlines specific incidence of preterm labor in relation to abuse stress for these different groups.

Finally, t-tests were used to examine the differences between total scale scores on the PPP at Times 1 and 2 for women who did and women who did not report abuse stress (Table 5). At both Time 1 and Time 2 women reporting abuse stress had significantly higher stress, lower partner support, lower support from others, and lower self-esteem. The most striking mean scale score differences at both data collection times were stress and self-esteem. Items at Time 1 with the most significant differences ($p<.001$) were current pregnancy, problems relating to family, problems relating to friends, and feeling overloaded. Items at Time 2 with the most significant differences ($p<.0001$) were current pregnancy, problems relating to family, and feeling overloaded.

Chapter 4

A discussion of the research findings will be presented in this chapter, along with the identified limitations of the data analysis. A brief summary of the research will precede the implications for practice and future research.

Discussion

This study proposed a conceptual framework which outlined a comprehensive set of variables stemming from domestic violence which could contribute to preterm labor. To provide support for the conceptual framework, selected variables were analyzed, including: the incidence of preterm labor in women with reported stress from domestic violence and those without reported abuse stress; life stressors; self-esteem; social support; number of prenatal visits or failed prenatal visits; and mean pregnancy weight gains.

Psychological stress has been associated with domestic violence, as well as with preterm labor (Omer & Everly, 1988). Research has yet to investigate a link between the stress that a woman of domestic violence experiences and the incidence of preterm labor. Research Questions 1 and 2 (experimental and control groups respectively) examined the relationship between the incidence of preterm labor and a

woman's perception of stress associated with domestic violence (abuse stress), measured and analyzed at 24 weeks (Time 1) and 36 weeks (Time 2). Even though there were no statistically significant findings in these research questions, the increased incidence of preterm labor in the abuse stress group is clinically significant (Table 8). Combining both experimental and control groups, women reporting abuse stress had significantly higher incidence of preterm labor than those without abuse stress (p=.008). Within the experimental group, women reporting abuse stress were twice more likely to have preterm labor than those without abuse stress (p=.17, odds ratio=2.2). Within the control group, women with abuse stress were three times as likely to have preterm labor than those without abuse stress (p=.02, odds ratio=3.2).

The current literature supports preterm labor as one cause of preterm delivery, accounting for approximately 30% of the incidents (Star, et al., 1990). This research focused on preterm labor as the outcome variable. In addition, a significant association between preterm labor and preterm delivery existed for this sample. The incidence of preterm labor was 12.4% (N=35) with a preterm delivery incidence of 8.9% (N=25), p<.0000. Women having preterm labor delivered earlier (M= 35.0 weeks gestation) than those without preterm labor (M= 39.1), $t(282)$= 6.97, p<.0000. Of those women with preterm labor 51.4%

(N=18) delivered prior to 37 completed weeks of gestation. However, of those women with preterm delivery, 72% (N=18) had preterm labor.

Research Questions 3 and 4 evaluated the consequences of domestic violence on specific pregnancy outcomes. Research Questions 3 and 4 (experimental and control groups respectively) analyzed the differences between women with abuse stress and those without abuse stress in regards to specific variables: stress, total prenatal visits, number of failed prenatal visits, weight gain at the end of the second trimester, and total pregnancy weight gain.

Current literature overwhelmingly recognizes the heightened stress women of domestic violence experience (Bonn & Parker, 1993; McFarlane et al., 1992; Williamson, 1989). The PPP tool was used to quantify life stress, as well as social support and self-esteem, in the presence or absence of domestic violence. The findings in this study further support the current literature. Women with reported stress from domestic violence also suffer from: poor self-esteem; less social support from their partner and others; and more life stress. These factors are likely to compound the biological, psychological, and social difficulties that abused women face.

Current literature states that late prenatal care and noncompliance with prenatal appointments has been directly or indirectly correlated with

poor pregnancy outcome (Bohn & Parker, 1993; McFarlane et al., 1992); however, the number of prenatal visits or failed prenatal appointments did not correlate with domestic violence in this study. This study was not able to identify women entering care late or those not completing care to term. Both control and experimental groups had similar numbers of prenatal visits and number of failed prenatal appointments. With regard to preterm labor, it must be remembered that women delivering prematurely will have fewer prenatal appointments than those delivering at full term; thus those women experiencing preterm labor had less prenatal visits (M=8.6) than those without preterm labor (M=10.6), $t(282)= 3.60$, $p<.0004$.

The current literature suggests that women who experience domestic violence more often have poor weight gain or eating disorders (Bohn & Parker, 1993). In this study, those women without abuse stress, both control and experimental groups, had similar weight gains. However, women experiencing abuse stress gained less than those without abuse stress. This finding is supported by the current literature. Among the abuse stress women, those in the experimental group gained less than those in the control group. This is opposite of the expected finding. The significance of mean weight gain differences between the women reporting abuse stress and those without reports of abuse stress

is unknown. Accurate prediction regarding possible causes or the significance of these findings would be difficult.

Limitations

There are limitations to be considered. Participants of this study were primarily low income single women on public medical assistance. Only those women considered to be at risk for preterm labor were inducted into the study, which reduced the generalizability of the findings. Other limitations involve those arising from secondary data analysis, including inability to readily corroborate data and inability to collect data on all variables of the conceptual framework, for example changes in oxytocin levels.

Limitations also exist with regards to measuring the incidence of domestic violence on the basis of a single item from the PPP. Because the true incidence of domestic violence (within this population) was unknown, there was no way of verifying the extent to which the PPP question was measuring the actual incidence of abuse. Consideration should be given to investigating more sensitive, accurate measurements of domestic violence. Different wording or presentation of questions addressing violence issues may yield more disclosure.

Summary

This research sought to investigate the relationship between women's perception of stress related to domestic violence and the incidence of preterm labor. The conceptual framework proposed a comprehensive set of variables stemming from domestic violence which could contribute to preterm labor. Selected variables were analyzed in this study. Stress related to domestic violence was associated with an increased incidence of preterm labor. The abuse stress women had higher overall life stressors, lower social support, and less self-esteem.

Implications for Practice

Since domestic violence reaches across all socioeconomic and ethnic levels, eradication must involve all levels of health care providers as well as community involvement. Educational programs for all health care providers must include the impact and issues of domestic violence, as well as methods for assessment and intervention techniques. Each individual provider must be capable of addressing abuse issues with ease, compassion and knowledge (McFarlane 1992).

Clinicians must recognize that women are not likely to reveal abuse on initial health care visits; rather, disclosure often comes as a relationship with their practitioner evolves. Practitioners must be alert to

ongoing assessment if they are to best identify domestic violence; therefore, continual screening of women for domestic violence cannot be overemphasized. Issues of abuse should be addressed at the initial visit and at key points within antepartal or well-woman care. Clinicians can use standard interview questions or self-administered questionnaires to screen clients for abuse. A specific question might be: "Have you ever been hit, slapped, kicked, or otherwise hurt?" (McFarlane 1992). Domestic violence resource referral cards should be given to all women. and be as readily available in the clinics as are condoms.

It is the responsibility of each health care provider to be knowledgeable of the cycle of domestic violence. In order to best identify and assist the victims, a provider must: foster a relationship with a woman to facilitate disclosure; empower a woman to raise her self-esteem and guide her to seek resources; know the available resources in the community; and make appropriate referrals (Noel 1992).

This study discovered that over one-third of the women presenting with preterm labor were victims of domestic violence. Keeping this in mind, any clinician assessing women with preterm labor should also consider and address the possibility of domestic violence.

Future Research

Research on the potential relationship between abuse and preterm labor and/or birth needs to be replicated with larger and more diverse groups. In order to continue validation of the conceptual framework, research identifying the significance of specific variables should continue. Triangulation of methods should be used to determine the most optimal approach to domestic violence screening. There should be a move towards further intervention studies based on the relative success of this and similar research. Further research should also focus on whether nursing intervention for women of domestic violence can impact the incidence of preterm labor. Finally, research is needed which assists the clinician in differentiating preterm labor from benign uterine contractions.

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Appendix A

Preterm Labor: A Guide for Women and Their Families

Northwest North Carolina
Prevention of Prematurity Program

Preterm Labor:
A Guide for Women and Their Families

Pregnancy and preparation for childbirth and parenting brings changes for all expectant families. When an expectant mother is told that she is "at increased risk for preterm labor," additional changes may be recommended. This booklet is written for women who have been identified as being "at increased risk for preterm labor" and their families.

What is preterm labor?
What does it mean to be at increased risk for preterm labor?

Preterm labor is labor 3 or more weeks before your baby is due. A preterm baby is a baby born 3 or more weeks before the expected date of birth.

Some women, because of factors in their health history, or in their pregnancy, are somewhat more likely to have preterm labor. For example, a woman who has had a previous preterm baby, or a woman expecting twins, is at increased risk for a preterm birth in this pregnancy.

Does being "at increased risk" mean a woman will have a preterm baby?

Certainly not. And by following the specific advice of her physician, nurse-midwife or nurse her chances of having a preterm baby can be decreased even more.

How are mothers identified as "at increased risk" for preterm labor?

When a woman has her first prenatal examination, her physician, nurse-midwife or nurse will ask her a number of questions about her health. Her answers to these questions will determine if she is at increased risk. Her risk will be evaluated again in the sixth month of pregnancy so that events during her pregnancy can be considered.

How can families help a mother at increased risk of preterm labor?

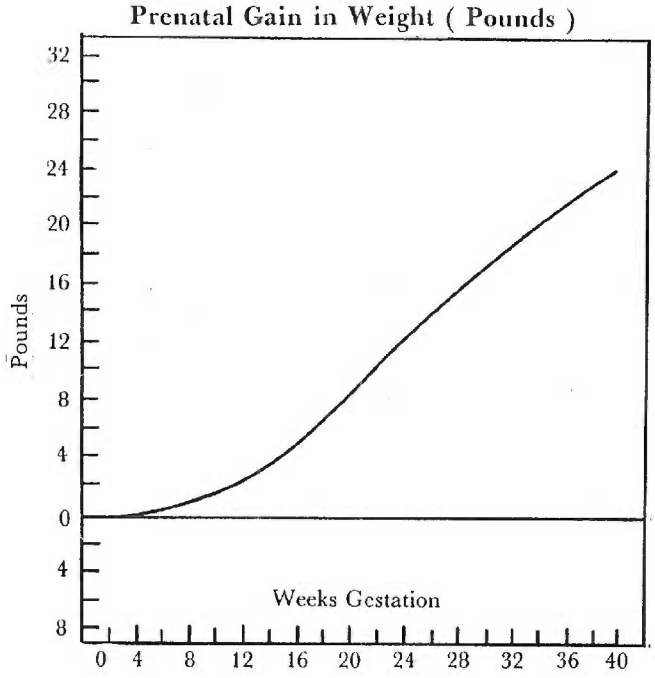
Family support is very important. Here are some ways families can help.

1. **Rest.** The pregnant woman at increased risk for preterm labor needs extra rest, especially in the last 3 months. Her doctor or nurse will tell her how much extra rest she needs. In the last 3 months of pregnancy, she may need several extra hours of rest in bed each day. This means she may need to reduce her hours at work or school, and also reduce what she has been doing at home. The family will need to plan together what tasks can be shared and what tasks may be postponed.

   When a pregnant woman has to spend a lot of time in bed, she may become bored or sad. Her family can be aware of this and everyone, including the pregnant woman, should talk about ways to make this time as pleasant as possible.
2. **Activities.** Some activities should be stopped when women are at risk for preterm labor.
   a. sports such as jogging, running, tennis.
   b. frequent trips up and down stairs.
   c. heavy lifting, including children and grocery bags.
   d. heavy cleaning, including moving furniture, scrubbing floors, hanging curtains.
3. **Nutrition.** A well balanced diet that includes the following foods is important for every pregnant woman. The foods listed are examples.

Milk and Milk Products:
4 servings (milk, cottage cheese, cheese, yogurt, pudding)
Protein Foods:
4 servings (eggs, meat, fish, nuts, peanut butter, pinto beans, kidney beans)
Fruits and Vegetables:
4 servings (oranges and other citris fruits, leafy green vegetables, potatoes, carrots, broccoli)
Grain Products:
4 servings (whole grain breads, rice, oatmeal, grits, cornbread, macaroni, spaghetti)
Remember: Four groups and four servings from each group. Some pregnant women find three small meals plus three nutritious snacks easier to eat than three big meals.

A steady gain in weight is important during pregnancy. During the first 3 months, a gain of 3 pounds is satisfactory. In the next 6 months, a weight gain of approximately ¾ pound/week is ideal. Total weight gain should be 26 pounds. The graph on page 24 will help you follow your weight gain.



Even if you are overweight when you become pregnant, you should gain weight during pregnancy. If you are underweight, gaining more than 24-26 pounds in a gradual steady way is appropriate. Ask the doctor, nurse or nutritionist how much you should gain.

4. **Smoking.** Smoking has been linked to both preterm birth and to low birthweight. Family support for the woman who is trying to stop smoking is very important.
5. **Travel.** Women at risk for preterm birth should not take trips of more than one hour.
6. **Sexual Activity.** Sexual intercourse and breast stimulation may cause uterine contractions. Her doctor or nurse will tell a woman if she needs to limit intercourse and breast stimulation during a part of her pregnancy. Remember that sexual partners can still express affection for one another by words and by touch. Talking about your feelings and frustrations is important for both women and their partners.
7. **Preparation for Breast Feeding.** Because the activities involved in preparation of the breasts for breast feeding may cause uterine contractions, these activities (nipple rolling and breast massage, for example) should be postponed until the end of the 37th week. Postponing breast preparation will not interfere with the ability to breast feed.
8. **Childbirth Classes.** Women who are identified as at risk for preterm labor early in pregnancy may want to attend childbirth classes in the 5th or 6th month of pregnancy, rather than waiting until later. If you attend childbirth classes later in pregnancy, avoid the physical exercises. You can participate in relaxation and breathing exercises; you will find them useful even before labor begins.
9. **Weekly Check-Ups.** Women at risk of preterm labor need more frequent check-ups at the doctor's office or health department. After the 6th month, a woman may be seen weekly. While frequent visits may seem bothersome, they are very important so that any changes can be found quickly and the mother can receive the necessary care to prevent preterm labor.

10. **Stress.** The special care and changes in family life that are important when a pregnant woman is at risk for preterm labor can be hard for families as well as pregnant women. In addition, some families may have other events in their life that occur during pregnancy —— illness of another family member, loss of a job, concerns about finances, or the need to move, for example, that may seem overwhelming. Family members need to talk about their feelings with each other. Many times talking with your doctor, nurse, a social worker, your pastor, or even a good friend, can help. These people may know of resources in the community which are available to help your family with some kinds of problems.

Uterine Contractions: One Sign of Preterm Labor

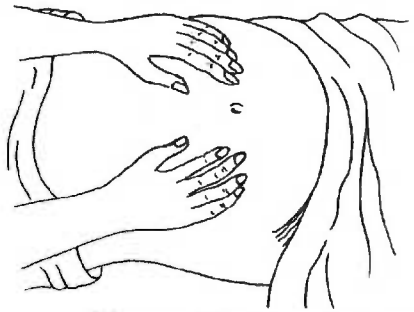
The uterus is the largest muscular organ in a woman's body. Like other muscles, it gets hard when it contracts and is soft when it is relaxed.

When the uterus contracts regularly during pregnancy, the cervix may begin to open (dilate) and the baby may be born too early.

Sometimes contractions feel like the baby is "balling up" inside of the womb. At other times, the contractions, because they are painless, may go unnoticed. For this reason, mothers at risk of preterm labor are asked to feel their uterus for contractions twice a day beginning at 26 weeks. Encouragement from her family to remember this important activity is helpful.

How to Feel for Contractions: Instructions for the Pregnant Woman

1. When you are lying down, place your fingers on top of your uterus (womb).
2. A contracting uterus gets hard (tight) and then soft (relaxed).
3. If your uterus is getting hard and then soft, write down the time the contraction starts, how long it lasts, and what time the next contraction begins.



Woman Checking for Contractions.

When to Feel for Contractions

Women are asked to feel their uterus twice a day for half an hour, beginning at 26 weeks of pregnancy. Because women at risk of preterm labor also need a rest period at least twice a day. This rest period is an ideal time to feel for contractions.

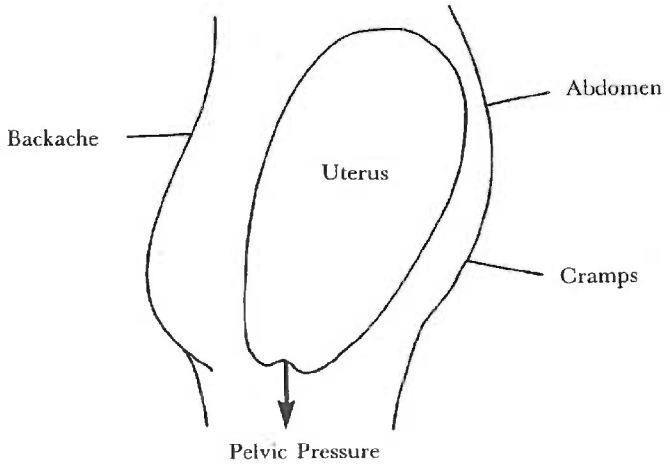
Contractions are Present

If contractions occur more frequently than every 10 minutes, and don't disappear in an hour, follow the directions under the section "What To Do When Signs of Preterm Labor Occur."

Other Signs of Preterm Labor

In addition to contractions, there are other signs that may mean you are having preterm labor.

1. Menstrual-like cramps (constant or come and go; above pubic bone).
2. Low, dull backache (constant or come and go).
3. Pressure (feels like the baby is pushing down; feels heavy).
4. Abdominal cramping (with or without diarrhea).
5. Increase or change in vaginal discharge (mucousy, watery, light blood discharge).
6. Fluid leaking from vagina.
7. Feeling bad.



Warning Signs for Premature Labor.

What to Do When Signs of Preterm Labor Come

If bleeding or fluid leaking from the vagina occurs, a pregnant woman should contact her physician, nurse-midwife or clinic immediately, or go to the hospital immediately.

If one of the other signs of preterm labor occurs, a pregnant woman should do the following:

1. Lie down, tilted toward your left side, for one hour. Drink two or three glasses of water or juice. Many times the signs of preterm labor will go away.
2. If the signs do not go away in ONE Hour:
   a. Call your clinic, physician or nurse-midwife.
   b. Nights and weekends, call: _____
   c. Tell the nurse or physician:
      Your name.
      When your baby is due.
      What signs you are having.
      How often you are having contractions, if you are having them.
   d. You may be asked to come to the office or hospital for further examination.

Appendix B

File#_____

INTRAPARTAL DATA COLLECTION SHEET

1. Last Name, First Name
2. FMH Unit Number _____
3. Patient's Age _____ Patient's Race _____
4. Date of Delivery Admission _____
5. County of Residence _____
6. Form of Hospital Reimbursement_Private_Medicaid_Personal_
7. Marital Status _Single _Married _Divorced _Separated
8. Gravida ___ 9. Para ___ 10. Abortus ___
11. EDC by LMP _____
12. EDC by Sono _____
13. First Sono on (date) _____
14. Gestational Age at First Sono _____
15. Gestational Age by LMP _____
16. Gestational Age by Sono _____
17. Date of First Prenatal Hospital Admission after 20 Weeks
    Related to POL without Tocolytics _____
18. Date of First Admission with Rx of Tocolytics _____
19. Days from First Tocolytic Admission to Delivery _____
20. Cervical Dilatation on Admission _____
21. Date/Time of ROM _____ at _____
22. Date/Time of Onset of UC ___ at _____
23. Date/Time of Delivery _____ at _____
24. Route of Delivery _____Vaginal _____C/S
25. If C/S, Reason _____
26. If Induction, Reason _____
27. Multiple Birth__Twins __Triplets __Quads __Other
28. Birth Weight ___LBS __Ounces __Grams
29. Hgb on Hospital Admission _____

30. Total Days Hospitalized ___Short Stay _____Prenatal Admission____
_____Labor/Birth Admission

31. Comments _____

_____

_____

32. Medical Etiology ___LBW-T ___P-Prom ___Med Probs ___IPL
___PROM >37 Weeks
___Gestational Age <37 Weeks with BW >2500

33. RHC#_____ 34. Height _____ 35. Pregravid Weight ___

36. Body Mass Index (Calculate)

37. Latest Weight: *Calculate Weight Gain

38. 0-13 weeks _____ 1st Trimester _____

39. 14-36 weeks _____ 2nd Trimester _____

40. 27-Birth _____ 3rd Trimester _____

41. Number Prenatal Visits ≤24.0 Weeks _____

42. Failed Appointments ≤24.0 Weeks _____

43. Number of Prenatal Visits ≥24.0 Weeks _____

44. Failed Appointments ≥24.0 Weeks _____

45. Total Prenatal Visits _____

46. Total Failed Appointments _____

47. Father's Age _____

48. WIC Yes/No 49. Food Stamps Yes/No

50. Medications Date Reason

(1)_____ _____ _____

(2)_____ _____ _____

(3)_____ _____ _____

Appendix C

Measure of Self-Esteem

We all have some kind of 'picture' of ourselves we carry with us. In thinking about yourself, would you say you agree or disagree with the following statements? Please check the appropriate box.

Scoring Code
1. Strongly Agree
2. Agree
3. Disagree
4. Strongly Disagree

	Strongly Agree	Agree	Disagree	Strongly Disagree
Feel that you're a person of worth, at least on an equal basis with others.				
Feel that you have a number of good qualities				
All in all, feel that you are a failure.				
Feel you are able to do things as well as most other people.				
Feel you do not have much to be proud of.				
Take a positive attitude toward yourself.				
On the whole,feel satisfied with yourself.				
Wish you could have more respect for yourself.				
Feel useless at times.				
At times think you are no good at all.				
Feel like you have control over your life.				

Measure of Stress

How often do you worry about the following?

	Never	Sometimes	Often	All the Time
Money for food, shelter, health care, transportation. Identify worry(ies)				
Other money worries (bills, etc.)				
Problems related to family (partner, children, etc.)				
Having to move (recent or future)				
Recent loss of a loved one				
Current Pregnancy				
Current Abuse (sexual, emotional, physical)				
Problems with alcohol				
Problems with drugs				
Work problems (laid off, etc.)				
Problems related to friends				
Generally "overloaded'				

Measure of Support

Do you have a husband/partner? How often does he do the following things? (If no husband/partner, omit) How often do other people?

	Partner	Other People
1. Share similar experiences with me	1 2 3 4 5 6	1 2 3 4 5 6
2. Helps keep up my morale	1 2 3 4 5 6	1 2 3 4 5 6
3. Helps me out when I'm in a pinch	1 2 3 4 5 6	1 2 3 4 5 6
4. Shows interest in my daily activities and problems	1 2 3 4 5 6	1 2 3 4 5 6
5. Goes out of his/her way to do special or thoughtful things for me	1 2 3 4 5 6	1 2 3 4 5 6
6. Allows me to talk about things that are very personal and private	1 2 3 4 5 6	1 2 3 4 5 6
7. Let me know I am appreciated for things I do for him/her	1 2 3 4 5 6	1 2 3 4 5 6
8. Tolerates my ups and downs and unusual behaviors	1 2 3 4 5 6	1 2 3 4 5 6
9. Takes me seriously when I have concerns	1 2 3 4 5 6	1 2 3 4 5 6
10. Says things that make my situation clearer and easier to understand	1 2 3 4 5 6	1 2 3 4 5 6
11. Lets me know that he/she will be around if I need assistance	1 2 3 4 5 6	1 2 3 4 5 6

Appendix D

File: A1B2, MERGED FILES

FILTER: None

Created: 01-01-1994 Vars: 154 Bytes: 462442
Modified: 01-06-1994 Obs: 368
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File Pos	Name	Label	Field Width	Prt Fmt	Type	Value Labels
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2	A1G	EXPERIMENTAL/CONTROL	1	0	N	2
		1 EXPERIMENTAL				
		2 CONTROL				
3	AGE	AGE IN YEARS	2	0	N	0
4	A7R	REIMBURSEMENT TO HOSPITAL	1	0	N	4
		1 PRIVATE				
		2 MEDICAID				
		3 PERSONAL				
		4 OTHER				
5	A3P	CURRENT PARTNER STATUS	1	0	N	5
		1 SINGLE				
		2 MARRIED				
		3 DIVORCED				
		4 SEPARATED				
		5 OTHER				
6	A13G	HOW MANY TIMES PREGNANT, INCLUDING THIS?	1	0	N	0
7	A14P	PARITY	1	0	N	0
8	A35	ABORTUS	1	0	N	0
9	B34	PRE-TERM LABOR, YES/NO	1	0	N	2
		1 YES				
		2 NO				
10	C38	GESTATIONAL AGE AT DELIVERY	2	0	N	0
11	C39	PRE-TERM DELIVERY AT LESS THAN 37 WKS?	1	0	N	2
		1 YES				
		2 NO				
12	C57	ROM > 24 HRS?	1	0	N	2
		1 YES				
		2 NO				
13	C61	LENGTH OF LABOR	2	0	N	1
		! NO LABOR				
14	COMPS	COMPLICATION (NOT PTL) INTERPT GESTATN	1	0	N	2
		1 YES				
		2 NO				
15	INFECT	TYPE OF INFECTION	1	0	N	5
		0 NONE				
		1 VAGINAL/CERVICAL				
		2 URINARY TRACT				
		3 1 AND 2				
		4 OTHER				
16	DRUGS	HISTORY OR CURRENT DRUG USE	1	0	N	4
		0 NONE				
		1 HISTORY OF DRUG USE				
		2 CURRENT DRUG USE				
		3 OTHER				
17	C51	C-SECTION?	1	0	N	2
		1 YES				
		2 NO				

FILTER: None

File Pos	Name	Label	Field Width	Prt Fmt	Type	Value Labels
18	C49	ONSET OF LABOR SPONTANEOUS?	1	0	N	2
	1 YES					
	2 NO					
19	C59	MULTIPLE BIRTHS?	1	0	N	5
	0 NO					
	1 TWINS					
	2 TRIPLETS					
	3 QUADS					
	4 OTHER					
20	C36	BIRTH WEIGHT IN GRAMS	4	0	N	0
21	C36LB	BIRTH WEIGHT IN POUNDS	2	0	N	0
22	C36OZ	BIRTH WEIGHT -- OUNCES	2	0	N	0
23	A34C	MOTHER'S HEIGHT <5 FEET	1	0	N	2
	1 YES					
	2 NO					
24	A34B	MOTHER'S WEIGHT <100 OR >200 POUNDS	1	0	N	2
	1 YES					
	2 NO					
25	A34PWT	ACTUAL PREGRAVID WEIGHT (POUNDS)	3	0	N	0
26	A342ND	ACTUAL WEIGHT END OF SECOND TRIMESTER	3	0	N	0
27	B34A	ACTUAL WEIGHT END OF THIRD TRIMESTER	3	0	N	0
28	C35	TOTAL NUMBER OF PRENATAL VISITS	2	0	N	0
29	C62	NUMBER OF FAILED VISITS	2	0	N	0
30	A36	FATHER'S AGE	2	0	N	0
31	A20A	FEEL THAT YOU'RE A PERSON OF WORTH	1	0	N	6
	. MISSING					
	! NOT APPLICABLE					
	1 STRONGLY AGREE					
	2 AGREE					
	3 DISAGREE					
	4 STRONGLY DISAGREE					
32	A20B	FEEL THAT YOU HAVE GOOD QUALITIES	1	0	N	6
	. MISSING					
	! NOT APPLICABLE					
	1 STRONGLY AGREE					
	2 AGREE					
	3 DISAGREE					
	4 STRONGLY DISAGREE					
33	A20C	ALL IN ALL, FEEL THAT YOU ARE A FAILURE	1	0	N	6
	. MISSING					
	! NOT APPLICABLE					
	1 STRONGLY AGREE					
	2 AGREE					
	3 DISAGREE					
	4 STRONGLY DISAGREE					
34	A20D	FEEL YOU ARE ABLE TO DO AS WELL AS MOST	1	0	N	6
	. MISSING					
	! NOT APPLICABLE					
	1 STRONGLY AGREE					
	2 AGREE					
	3 DISAGREE					
	4 STRONGLY DISAGREE					

FILTER: None

File Pos	Name	Label	Field Width	Prt Fmt	Type	Value Labels
35	A20E	FEEL YOU DO NOT HAVE MUCH TO BE PROUD OF	1	0	N	6
		. MISSING				
		! NOT APPLICABLE				
		1 STRONGLY AGREE				
		2 AGREE				
		3 DISAGREE				
		4 STRONGLY DISAGREE				
36	A20F	TAKE A POSITIVE ATTITUDE TOWARD YOURSELF	1	0	N	6
		. MISSING				
		! NOT APPLICABLE				
		1 STRONGLY AGREE				
		2 AGREE				
		3 DISAGREE				
		4 STRONGLY DISAGREE				
37	A20G	ON THE WHOLE, FEEL SATISFIED WITH SELF	1	0	N	6
		. MISSING				
		! NOT APPLICABLE				
		1 STRONGLY AGREE				
		2 AGREE				
		3 DISAGREE				
		4 STRONGLY DISAGREE				
38	A20H	WISH YOU COULD HAVE MORE SELF RESPECT	1	0	N	6
		. MISSING				
		! NOT APPLICABLE				
		1 STRONGLY AGREE				
		2 AGREE				
		3 DISAGREE				
		4 STRONGLY DISAGREE				
39	A20I	FEEL USELESS AT TIMES	1	0	N	6
		. MISSING				
		! NOT APPLICABLE				
		1 STRONGLY AGREE				
		2 AGREE				
		3 DISAGREE				
		4 STRONGLY DISAGREE				
40	A20J	AT TIMES THINK YOU ARE NO GOOD AT ALL	1	0	N	6
		. MISSING				
		! NOT APPLICABLE				
		1 STRONGLY AGREE				
		2 AGREE				
		3 DISAGREE				
		4 STRONGLY DISAGREE				
41	A20K	FEEL LIKE YOU HAVE CONTROL OVER LIFE	1	0	N	6
		. MISSING				
		! NOT APPLICABLE				
		1 STRONGLY AGREE				
		2 AGREE				
		3 DISAGREE				
		4 STRONGLY DISAGREE				

File: A1B2, MERGED FILES

FILTER: None

File Pos	Name	Label	Field Width	Prt Fmt	Type	Value Labels
42	A18A	FINANCIAL WORRIES	1	O	N	4
	1	NEVER				
	2	SOMETIMES				
	3	OFTEN				
	4	ALL THE TIME				
43	A18B	OTHER MONEY WORRIES	1	O	N	4
	1	NEVER				
	2	SOMETIMES				
	3	OFTEN				
	4	ALL THE TIME				
44	A18C	PROBLEMS RELATED TO FAMILY	1	O	N	4
	1	NEVER				
	2	SOMETIMES				
	3	OFTEN				
	4	ALL THE TIME				
45	A18D	HAVING TO MOVE, RECENTLY OR IN FUTURE	1	O	N	4
	1	NEVER				
	2	SOMETIMES				
	3	OFTEN				
	4	ALL THE TIME				
46	A18E	RECENT LOSS OF A LOVED ONE	1	O	N	4
	1	NEVER				
	2	SOMETIMES				
	3	OFTEN				
	4	ALL THE TIME				
47	A18F	CURRENT PREGNANCY	1	O	N	4
	1	NEVER				
	2	SOMETIMES				
	3	OFTEN				
	4	ALL THE TIME				
48	A18G	CURRENT ABUSE: SEXUAL,EMOTIONAL,PHYSICAL	1	O	N	4
	1	NEVER				
	2	SOMETIMES				
	3	OFTEN				
	4	ALL THE TIME				
49	A18HAL	PROBLEMS WITH ALCOHOL	1	O	N	4
	1	NEVER				
	2	SOMETIMES				
	3	OFTEN				
	4	ALL THE TIME				
50	A18HDR	PROBLEMS WITH DRUGS	1	O	N	4
	1	NEVER				
	2	SOMETIMES				
	3	OFTEN				
	4	ALL THE TIME				
51	A18I	WORK PROBLEMS	1	O	N	4
	1	NEVER				
	2	SOMETIMES				
	3	OFTEN				
	4	ALL THE TIME				

FILTER: None

File Pos	Name	Label	Field Width	Prt Fmt	Type	Value Labels
52	A18J	PROBLEMS RELATED TO FRIENDS	1	0	N	4
	1	NEVER				
	2	SOMETIMES				
	3	OFTEN				
	4	ALL THE TIME				
53	A18K	FEELING GENERALLY 'OVERLOADED'	1	0	N	4
	1	NEVER				
	2	SOMETIMES				
	3	OFTEN				
	4	ALL THE TIME				
54	A19A	SHARES SIMILAR EXPERIENCES WITH ME	1	0	N	4
	.	MISSING				
	!	NOT APPLICABLE				
	1	YES				
	6	NO				
55	A19B	HELPS KEEP UP MY MORALE	1	0	N	4
	.	MISSING				
	!	NOT APPLICABLE				
	1	YES				
	6	NO				
56	A19C	HELPS ME OUT WHEN I'M IN A PINCH	1	0	N	4
	.	MISSING				
	!	NOT APPLICABLE				
	1	YES				
	6	NO				
57	A19D	SHOWS INTEREST IN MY DAILY ACTIVITIES	1	0	N	4
	.	MISSING				
	!	NOT APPLICABLE				
	1	YES				
	6	NO				
58	A19E	GOES OUT OF WAY TO DO SPECIAL THINGS	1	0	N	4
	.	MISSING				
	!	NOT APPLICABLE				
	1	YES				
	6	NO				
59	A19F	ALLOWS ME TO TALK ABOUT PERSONAL THINGS	1	0	N	4
	.	MISSING				
	!	NOT APPLICABLE				
	1	YES				
	6	NO				
60	A19G	LETS ME KNOW I AM APPRECIATED	3	1	N	4
	.	MISSING				
	!	NOT APPLICABLE				
	1.0	YES				
	6.0	NO				
61	A19H	TOLERATES MY UPS AND DOWNS	1	0	N	4
	.	MISSING				
	!	NOT APPLICABLE				
	1	YES				
	6	NO				

FILTER: None

File Pos	Name	Label	Field Width	Prt Fmt	Type	Value Labels
62	A19I	TAKES ME SERIOUSLY WHEN I HAVE CONCERNS	1	O	N	4
		. MISSING				
		! NOT APPLICABLE				
		1 YES				
		6 NO				
63	A19J	SAYS THINGS THAT MAKE MY SITUATION CLEAR	1	O	N	4
		. MISSING				
		! NOT APPLICABLE				
		1 YES				
		6 NO				
64	A19K	LETS ME KNOW HE/SHE WILL BE AROUND	1	O	N	4
		. MISSING				
		! NOT APPLICABLE				
		1 YES				
		6 NO				
65	A19AOP	SHARES SIMILAR EXPERIENCES WITH ME	1	O	N	4
		. MISSING				
		! NOT APPLICABLE				
		1 YES				
		6 NO				
66	A19BOP	HELPS KEEP UP MY MORALE	1	O	N	4
		. MISSING				
		! NOT APPLICABLE				
		1 YES				
		6 NO				
67	A19COP	HELPS ME OUT WHEN I'M IN A PINCH	1	O	N	4
		. MISSING				
		! NOT APPLICABLE				
		1 YES				
		6 NO				
68	A19DOP	SHOWS AN INTEREST IN MY DAILY ACTIVITES	1	O	N	4
		. MISSING				
		! NOT APPLICABLE				
		1 YES				
		6 NO				
69	A19EOP	GOES OUT OF WAY TO DO SPECIAL THINGS	1	O	N	4
		. MISSING				
		! NOT APPLICABLE				
		1 YES				
		6 NO				
70	A19FOP	ALLOWS ME TO TALK ABOUT PERSONAL THINGS	1	O	N	4
		. MISSING				
		! NOT APPLICABLE				
		1 YES				
		6 NO				
71	A19GOP	LETS ME KNOW I AM APPRECIATED	1	O	N	4
		. MISSING				
		! NOT APPLICABLE				
		1 YES				
		6 NO				

FILTER: None

File Pos	Name	Label	Field Width	Prt Fmt	Type	Value Labels
72	A19HOP	TOLERATES MY UPS AND DOWNS	1	O	N	4
		. MISSING				
		! NOT APPLICABLE				
		1 YES				
		6 NO				
73	A19IOP	TAKES ME SERIOUSLY WHEN I HAVE CONCERNS	1	O	N	4
		. MISSING				
		! NOT APPLICABLE				
		1 YES				
		6 NO				
74	A19JOP	SAYS THINGS THAT MAKE MY SITUATION CLEAR	1	O	N	4
		. MISSING				
		! NOT APPLICABLE				
		1 YES				
		6 NO				
75	A19KOP	LETS ME KNOW HE/SHE WILL BE AROUND	1	O	N	4
		. MISSING				
		! NOT APPLICABLE				
		1 YES				
		6 NO				
76	B20A	FEEL THAT YOU'RE A PERSON OF WORTH	1	O	N	6
		. MISSING				
		! NOT APPLICABLE				
		1 STRONGLY AGREE				
		2 AGREE				
		3 DISAGREE				
		4 STRONGLY DISAGREE				
77	B20B	FEEL THAT YOU HAVE GOOD QUALITIES	1	O	N	6
		. MISSING				
		! NOT APPLICABLE				
		1 STRONGLY AGREE				
		2 AGREE				
		3 DISAGREE				
		4 STRONGLY DISAGREE				
78	B20C	ALL IN ALL, FEEL THAT YOU ARE A FAILURE	1	O	N	6
		. MISSING				
		! NOT APPLICABLE				
		1 STRONGLY AGREE				
		2 AGREE				
		3 DISAGREE				
		4 STRONGLY DISAGREE				
79	B20D	FEEL YOU ARE ABLE TO DO AS WELL AS MOST	1	O	N	6
		. MISSING				
		! NOT APPLICABLE				
		1 STRONGLY AGREE				
		2 AGREE				
		3 DISAGREE				
		4 STRONGLY DISAGREE				

FILTER: None

File Pos	Name	Label	Field Width	Prt Fmt	Type	Value Labels
80	B20E	FEEL YOU DO NOT HAVE MUCH TO BE PROUD OF	1	0	N	6
		. MISSING				
		! NOT APPLICABLE				
		1 STRONGLY AGREE				
		2 AGREE				
		3 DISAGREE				
		4 STRONGLY DISAGREE				
81	B20F	TAKE A POSITIVE ATTITUDE TOWARD YOURSELF	1	0	N	6
		. MISSING				
		! NOT APPLICABLE				
		1 STRONGLY AGREE				

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OLE, FEEL SATISFIED WITH SELF 1 0 N 6

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200 AT TIMES 1 0 N 6

Mon Mar 12

REE
THINK YOU ARE NO GOOD AT ALL 1 0 N 6

REE
HAVE CONTROL OVER YOUR LIFE 1 0 N 6

REE

FILTER: None

File Pos	Name	Label	Field Width	Prt Fmt	Type	Value Labels
87	B18A	FINANCIAL WORRIES	1	0	N	4
	1	NEVER				
	2	SOMETIMES				
	3	OFTEN				
	4	ALL THE TIME				
88	B18B	OTHER MONEY WORRIES	1	0	N	4
	1	NEVER				
	2	SOMETIMES				
	3	OFTEN				
	4	ALL THE TIME				
89	B18C	PROBLEMS RELATED TO FAMILY	1	0	N	4
	1	NEVER				
	2	SOMETIMES				
	3	OFTEN				
	4	ALL THE TIME				
90	B18D	HAVING TO MOVE, RECENTLY OR IN FUTURE	1	0	N	4
	1	NEVER				
	2	SOMETIMES				
	3	OFTEN				
	4	ALL THE TIME				
91	B18E	RECENT LOSS OF A LOVED ONE	1	0	N	4
	1	NEVER				
	2	SOMETIMES				
	3	OFTEN				
	4	ALL THE TIME				
92	B18F	CURRENT PREGNANCY	1	0	N	4
	1	NEVER				
	2	SOMETIMES				
	3	OFTEN				
	4	ALL THE TIME				
93	B18G	CURRENT ABUSE: SEXUAL,EMOTIONAL,PHYSICAL	1	0	N	4
	1	NEVER				
	2	SOMETIMES				
	3	OFTEN				
	4	ALL THE TIME				
94	B18HAL	PROBLEMS WITH ALCOHOL	1	0	N	4
	1	NEVER				
	2	SOMETIMES				
	3	OFTEN				
	4	ALL THE TIME				
95	B18HDR	PROBLEMS WITH DRUGS	1	0	N	4
	1	NEVER				
	2	SOMETIMES				
	3	OFTEN				
	4	ALL THE TIME				
96	B18I	WORK PROBLEMS	1	0	N	4
	1	NEVER				
	2	SOMETIMES				
	3	OFTEN				
	4	ALL THE TIME				

FILTER: None

File Pos	Name	Label	Field Width	Prt Fmt	Type	Value Labels
97	B18J	PROBLEMS RELATED TO FRIENDS	1	0	N	4
	1	NEVER				
	2	SOMETIMES				
	3	OFTEN				
	4	ALL THE TIME				
98	B18K	FEELING GENERALLY 'OVERLOADED'	1	0	N	4
	1	NEVER				
	2	SOMETIMES				
	3	OFTEN				
	4	ALL THE TIME				
99	B19A	SHARES SIMILAR EXPERIENCES WITH ME	1	0	N	4
	.	MISSING				
	!	NOT APPLICABLE				
	1	YES				
	6	NO				
100	B19B	HELPS KEEP UP MY MORALE	1	0	N	4
	.	MISSING				
	!	NOT APPLICABLE				
	1	YES				
	6	NO				
101	B19C	HELPS ME OUT WHEN I'M IN A PINCH	1	0	N	4
	.	MISSING				
	!	NOT APPLICABLE				
	1	YES				
	6	NO				
102	B19D	SHOWS INTEREST IN MY DAILY ACTIVITIES	1	0	N	4
	.	MISSING				
	!	NOT APPLICABLE				
	1	YES				
	6	NO				
103	B19E	GOES OUT OF HIS/HER WAY TO DO THINGS	1	0	N	4
	.	MISSING				
	!	NOT APPLICABLE				
	1	YES				
	6	NO				
104	B19F	ALLOWS ME TO TALK ABOUT PRIVATE THINGS	1	0	N	4
	.	MISSING				
	!	NOT APPLICABLE				
	1	YES				
	6	NO				
105	B19G	LETS ME KNOW I AM APPRECIATED	1	0	N	4
	.	MISSING				
	!	NOT APPLICABLE				
	1	YES				
	6	NO				
106	B19H	TOLERATES MY UPS AND DOWNS	1	0	N	4
	.	MISSING				
	!	NOT APPLICABLE				
	1	YES				
	6	NO				

FILTER: None

File Pos	Name	Label	Field Width	Prt Fmt	Type	Value Labels
107	B19I	TAKES ME SERIOUSLY WHEN I HAVE CONCERNS	1	O	N	4
		. MISSING				
		! NOT APPLICABLE				
		1 YES				
		6 NO				
108	B19J	SAYS THINGS THAT MAKE MY SITUATION CLEAR	1	O	N	4
		. MISSING				
		! NOT APPLICABLE				
		1 YES				
		6 NO				
109	B19K	LETS ME KNOW HE/SHE WILL BE AROUND	1	O	N	4
		. MISSING				
		! NOT APPLICABLE				
		1 YES				
		6 NO				
110	B19AOP	SHARES SIMILAR EXPERIENCES WITH ME	1	O	N	4
		. MISSING				
		! NOT APPLICABLE				
		1 YES				
		6 NO				
111	B19BOP	HELPS KEEP UP MY MORALE	1	O	N	4
		. MISSING				
		! NOT APPLICABLE				
		1 YES				
		6 NO				
112	B19COP	HELPS ME OUT WHEN I'M IN A PINCH	1	O	N	4
		. MISSING				
		! NOT APPLICABLE				
		1 YES				
		6 NO				
113	B19DOP	SHOWS AN INTEREST IN MY DAILY ACTIVITES	1	O	N	4
		. MISSING				
		! NOT APPLICABLE				
		1 YES				
		6 NO				
114	B19EOP	GOES OUT OF WAY TO DO SPECIAL THINGS	1	O	N	4
		. MISSING				
		! NOT APPLICABLE				
		1 YES				
		6 NO				
115	B19FOP	ALLOWS ME TO TALK ABOUT PERSONAL THINGS	1	O	N	4
		. MISSING				
		! NOT APPLICABLE				
		1 YES				
		6 NO				
116	B19GOP	LETS ME KNOW I AM APPRECIATED	1	O	N	4
		. MISSING				
		! NOT APPLICABLE				
		1 YES				
		6 NO				

FILTER: None

File Pos	Name	Label	Field Width	Prt Fmt	Type	Value Labels
117	B19HOP	TOLERATES MY UPS AND DOWNS	1	0	N	4
		. MISSING				
		! NOT APPLICABLE				
		1 YES				
		6 NO				
118	B19IOP	TAKES ME SERIOUSLY WHEN I HAVE CONCERNS	1	0	N	4
		. MISSING				
		! NOT APPLICABLE				
		1 YES				
		6 NO				
119	B19JOP	SAYS THINGS THAT MAKE MY SITUATION CLEAR	1	0	N	4
		. MISSING				
		! NOT APPLICABLE				
		1 YES				
		6 NO				
120	B19KOP	LETS ME KNOW HE/SHE WILL BE AROUND	1	0	N	4
		. MISSING				
		! NOT APPLICABLE				
		1 YES				
		6 NO				
121	NSTRESSA		2	0	N	0
122	NSTRESSB		2	0	N	0
123	NESTEEMA		2	0	N	0
124	NESTEEMB		2	0	N	0
125	NSUPPA		2	0	N	0
126	NSUPPB		2	0	N	0
127	NSUPPOPA		2	0	N	0
128	NSUPPOPB		2	0	N	0
129	STRESSA		9	1	N	0
130	STRESSB		9	1	N	0
131	PARTNERA		4	1	N	0
132	PARTNERB		9	1	N	0
133	OTHERA		4	1	N	0
134	OTHERB		4	1	N	0
135	ESTEEMA		9	1	N	0
136	ESTEEMB		4	1	N	0
137	RA18G		1	0	N	0
138	RB18G		1	0	N	0
139	ABUSE		1	0	N	2
		0 NO ABUSE				
		1 SOME ABUSE				
140	RINFECT		1	0	N	0
141	AB18G		2	0	N	0
142	NEWABUSE		1	0	N	0
143	RB34		1	0	N	0
144	GESTAGE		1	0	N	0
145	AAB18G		1	0	N	0
146	BAB18G		1	0	N	0
147	STWT		3	0	N	0
148	TTWT		3	0	N	0
149	PARTARE		4	1	N	0
150	PARTBRE		4	1	N	0
151	OTHARE		4	1	N	0

FILTER: None

File Pos	Name	Label	Field Width	Prt Fmt	Type	Value Labels
152	OTHBRE		4	1	N	0
153	ESTARE		9	1	N	0
154	ESTBRE		4	1	N	0

Table 1

Demographic Characteristics of the Total and the Analysis Samples

Characteristic	N (%)	M±SD	N (%)	M±SD
Experimental	184(49.9%)		144(51%)	
Control	185(50.1%)		138(49%)	
Subject Age		21.5±5.3		21.6±5.4
Reimbursement:				
Public funded	331(90%)		259(91.8%)	
Private	37(10%)		23(8.2%)	
Partner Status:				
Single	284(77%)		209(74%)	
Married	66(18%)		59(21%)	
Divorce/Separ	18(5%)		14(5%)	
Father's Age		23.6±6.5		23.9±6.9

Table 2

Demographic Characteristics of the Analysis Sample

	Control 138(49%)		Experimental 144(51%)	
Characteristic	N (%)	M±SD	N (%)	M±SD
Subject Age:		21.6±5.5		21.6±5.2
Reimbursement:				
Public Funded	127(92%)		132(91.7%)	
Private	11(8%)		12(8.3%)	
Partner Status:				
Single	100(72.5%)		109(75.7%)	
Married	31(22.5%)		28(19.4%)	
Divorced/Separ	7(5%)		7(4.9%)	
Father's Age		23.8±6.9		24.1±6.8

Table 3

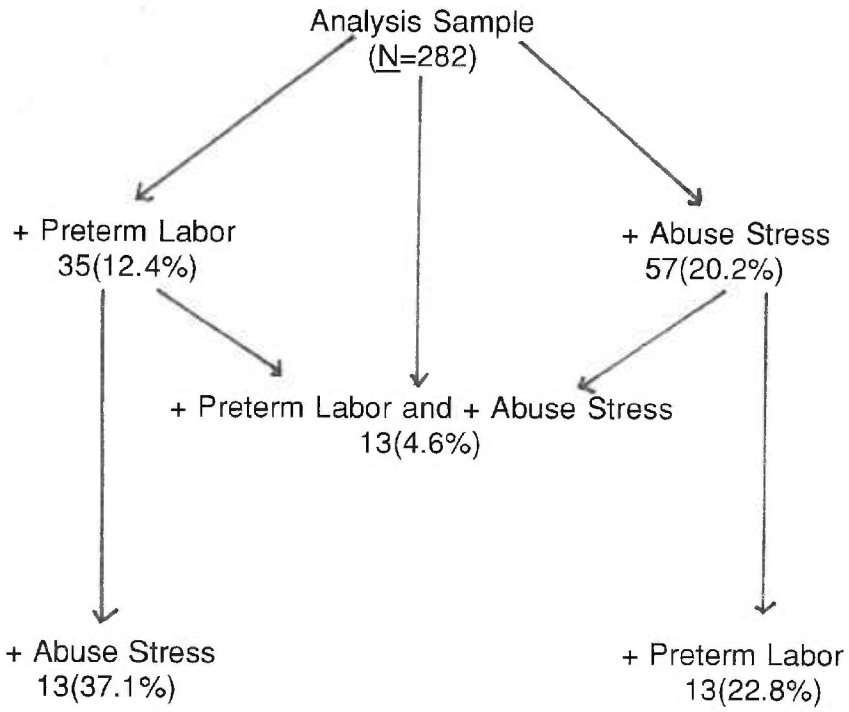
Incidence of Preterm Labor in Relation to Abuse Stress

Group/N	Abuse Stress	No Abuse Stress
Analysis Sample/282		
percentage	22.8% **	9.8%
n	13	22
Experimental Sample/144		
percentage	18.5%	9.45%
n	5	11
Control Sample/138		
percentage	26.7% *	10.2%
n	8	11

Note. *p<.05. **p<.01.

Table 4

Synopsis of Key Variables



X2(1,N=282)= 7.10,p=.008

Table 5
Mean Prenatal Psychosocial Profile (PPP) Scale Scores: Times 1 and 2

Scale		Abuse	No Abuse	
Stress Time 1	M	21.5	17.9	****
	SD	5.13	3.99	
	N	57	225	
Stress Time 2	M	22.5	18.0	****
	SD	5.28	4.44	
	N	57	225	
Esteem Time 1	M	32.4	35.5	****
	SD	5.4	4.4	
	N	57	225	
Esteem Time 2	M	32.0	35.9	****
	SD	5.8	5.0	
	N	57	225	
Partner Support Time 1	M	49.1	56.3	***
	SD	14.7	11.3	
	N	41	180	
Partner Support Time 2	M	47.3	52.6	*
	SD	18.1	13.8	
	N	42	181	
Other Support Time 1	M	51.3	54.9	*
	SD	12.4	11.5	
	N	56	215	
Other Support: Time 2	M	43.1	50.4	**
	SD	12.8	14.4	
	N	43	173	

Note. * $p<.05$. ** $p<.01$. *** $p<.001$. **** $p<.0001$.

Table 6

Item Analysis of Time 1 Stress Scale Scores in Relation to Reported Abuse

Item	Abuse Stress (n=57)	No Abuse Stress (n=225)	
	X ± SD	X ± SD	p level
Financial Worry	2.3 ± .97	2.1 ± .88	ns
Other Money Worry	2.4 ± 1.1	2.1 ± .93	*
Family Problems	2.5 ± .95	2.1 ± .85	***
Having to Move	1.9 ± .98	1.6 ± .85	**
Loss of Loved One	2.1 ± 1.2	1.6 ± .87	**
Current Pregnancy	2.6 ± 1.0	2.1 ± .98	***
Alcohol Problems	1.1 ± .47	1.0 ± .19	ns
Drug Problems	1.1 ± .50	1.0 ± .16	ns
Work Problems	1.5 ± .83	1.3 ± .66	ns
Friend Problems	1.8 ± .88	1.4 ± .58	***
Feel Overloaded	2.1 ± .98	1.6 ± .78	***

Note. * p<.05. **p<.01. ***p<.001. ****p<.0001.

Table 7

Item Analysis of Time Two Stress Scale Scores in Relation to Reported Abuse

	Abuse Stress (N=57)	No Abuse Stress (N=225)	
	X ± SD	X ± SD	p level
Financial Worry	2.6 ± .97	2.1 ± .93	***
Other Money Worry	2.5 ± 1.0	2.1 ± .87	**
Family Problems	2.6 ± .88	2.0 ± .89	****
Having to Move	2.1 ± 1.0	1.7 ± 1.0	**
Loss of Loved One	2.0 ± 1.1	1.5 ± .75	***
Current Pregnancy	2.8 ± 1.0	2.1 ± .91	****
Alcohol Problems	1.2 ± .68	1.1 ± .30	ns
Drug Problems	1.2 ± .70	1.0 ± .21	ns
Work Problems	1.5 ± .83	1.4 ± .81	ns
Friend Problems	1.8 ± .86	1.4 ± .56	***
Feel Overloaded	2.1 ± .91	1.6 ± .79	****

Note. * p<.05. **p<.01. ***p<.001. ****p<.0001.

Table 8

Incidence of Preterm Labor in Relation to Times 1 and 2 Abuse Stress

Group/N		Abuse Stress	No Abuse Stress
Experimental/144			
Time 1	%	17.6%	10.2%
	N	3	13
Time 2	%	18.4%	9.8%
	N	4	12
Control/138			
Time 1	%	25.0%	11.9%
	n	5	14
Time 2	%	23.8%	12.0%
	n	5	14