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Comparison of primiparous women's expected and experienced pain in labour

Shelagh Lawrence
Edith Cowan University

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COMPARISON OF PRIMIPAROUS WOMEN'S EXPECTED
AND EXPERIENCED PAIN IN LABOUR

BY

Shelagh Lawrence, RN. RM.

A Thesis Submitted in Partial Fulfilment of the
Requirements for the Award of

Bachelor of Nursing with Honours

at the School of Nursing, Edith Cowan University

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USE OF THESIS

The Use of Thesis statement is not included in this version of the thesis.

Abstract

Pain is a subjective phenomenon and is, in varying degrees, an inherent part of the childbirth experience. However, most Western societies view suffering as unacceptable and as such, regard analgesia as a necessity. Many women do not anticipate the intensity of pain experienced in childbirth and are, therefore, not ready to manage this amount of pain when it occurs. This prospective study compared the expected and experienced labour pain of 99 primiparous women, aged 17-40 years. The relationship between expected and experienced pain and acceptance of pregnancy; identification with the motherhood role; relationship with mother; relationship with husband/partner; preparation for labour (knowledge); fear of pain, helplessness and loss of control in labour; concern for the well-being of self and baby; age, and obstetric history was also investigated. The Prenatal Self Evaluation Inventory was completed at 35-39 weeks gestation. Visual Analogue Scales and the Present Pain Intensity of the McGill Pain Questionnaire assessed 1) the expected pain, prenatally, and 2) the experienced pain, intrapartum (<3cm, 4-7cm and >8cm cervical dilatation) and two hours postpartum. A significant difference was found between expected pain and pain experienced during early and transitional labour. Generally, the level of pain expected was that of active labour and not the intensity of reported pain experienced

in transitional labour. The findings demonstrated positive correlations between expected pain and pain reported in early and transitional labour. A positive relationship was revealed between conflict in the relationship with mother, fear of pain, helplessness and loss of control during labour and expected pain. Women with less preparation for labour were more likely to expect increased pain. There was also a positive relationship between conflict in the acceptance of the pregnancy, concern for the well-being of self and the baby, one or more terminations of pregnancy and experienced childbirth pain. A profile of women more likely to experience increased pain was developed. Caregivers should direct interventions and strategies towards women with this profile in order to prepare women more realistically for childbirth pain.

Declaration

"I certify that this thesis does not incorporate, without acknowledgement, any material previously submitted for a degree or diploma in any institution of higher education; and that, to the best of my knowledge and belief, it does not contain any material previously published or written by another person except where due reference is made in the text."

Signature

Date 20 . 10 . 1993

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Chapter 1

Expected and Experienced Pain in Labour

Introduction

This study sought to investigate the difference and the relationship between primiparas' expected and experienced pain during childbirth and to examine a number of factors which have an impact on the childbirth event. In this chapter the background and significance of the study are discussed. In addition, the purpose of the study and the research questions are presented.

Background

Childbirth is an emotional and physical experience which O'Driscoll and Meagher (1986) suggested may be positive or negative and of a magnitude not often equaled. The event, which culminates in the experience of labour, is a pivotal point in most women's lives and is one of enormous intensity which may have long term effects on women and their partners (Hofmeyer, Nikodem, Wolman, Chalmers & Kramer, 1991; Jimenez, 1980; Thune-Larsen & Moller-Pedersen, 1988). Bennett and Brown (1989) describe labour as a physically demanding process which profoundly affects the personality and emotions of the parturients.

Pain is an integral part of the childbirth experience. Machover (1990) put forward the concept that Western societies often view pain as negative and dysfunctional. Women's expectations of childbirth have been influenced by the views and attitudes of the society to which they have been exposed (O'Driscoll et al. 1986). The expectations of primiparas are shaped by society because, having no personal experience of childbirth, they have nothing on which to base their expectations other than what they hear or read.

Women approach childbirth with many varied ideas on the event and its progress. Arguably, there are two main and contrasting impressions. Firstly, women may approach labour in fear because throughout history it has been seen as a painful experience. Often such impressions have been influenced by their mothers' memories of their own labour (Knight & Thirkettle, 1987). In contrast, other women may have read about an alternative school of thought which originated from Dick-Read and Lamaze that childbirth should be painless and emotionally satisfying (Genest, 1981; Lieberman, 1987; Norr, Block, Charles, Meyering & Meyers, 1977).

Having read books and articles on the subject may lead many couples to anticipate a positive birth experience (Green, Coupland & Kitzinger, 1990). Furthermore, Nicolson (1990) reported the inordinate importance couples place on a positive childbirth experience. However, reality is

often different from expectation. Jacoby (1987), Knight and Thirkettle (1987) and Stolte (1987) demonstrated that women are likely to rate their childbirth experience as unpleasant when it does not follow their expectations.

Significance

There is often a strong relationship between women's view of their labour and postnatal emotional well-being (Green, 1990). In addition, women who consider their childbirth experience and their own management of the event to be satisfying demonstrate increased postnatal coping resources (Nicolson, 1990). Moreover, some women may experience the most severe labour pain yet still regard the event as satisfying (Lieberman, 1987). Other research has shown a relationship between satisfaction with the birth event and greater confidence in mothering, decreased depression (Green et al., 1990) and increased ability to cope during the first year of their baby's life (Oakley & Rajan, 1991). Conversely, a negative childbirth experience may result from pain during labour and this in turn, may affect a woman's self-esteem (Caplice, 1991), decrease emotional well-being (Green, 1990) and be a reliable predictor for unhappiness five days postpartum (Thune-Larsen & Moller-Pedersen, 1988).

In summary, childbirth is an intense, physical and emotional, juncture in many women's lives. This incident may have long lasting consequences. Women approach

childbirth from a number of different perspectives, which may influence the way they experience the event and ultimately their postpartum emotional well-being.

It is, therefore, necessary to research expected and experienced pain so as to enhance our understanding of the variables which influence women's labour pain and this current study was devised in order to fill such a gap in knowledge. This increased understanding and awareness will provide guidance for improved midwifery care, prenatal and intrapartum.

Purpose

This study focuses on a comparison of the expected and experienced labour pain of primiparous women. It also investigates the relationship between primiparas' expected pain and experienced pain and a number of specific variables.

Research Questions

This study investigates the following research questions:

1. Is there a difference between the expected and experienced pain of primiparas in labour?
2. What is the relationship between expected pain and experienced pain?

3. Is expected labour pain related to:

- a) acceptance of pregnancy,
- b) identification of the motherhood role,
- c) relationship with mother,
- d) relationship with husband/partner,
- e) preparation for labour (knowledge),
- f) fear of pain, helplessness and loss of control in labour,
- g) concern for the well-being of self and baby,
- h) age, and
- i) obstetric history?

4. Is experienced labour pain related to:

- a) acceptance of pregnancy,
- b) identification of the motherhood role,
- c) relationship with mother,
- d) relationship with husband/partner,
- e) preparation for labour (knowledge),
- f) fear of pain, helplessness and loss of control in labour,
- g) concern for the well-being of self and baby,
- h) age, and
- i) obstetric history?

Definition of Terms

1. Primipara - a woman who is giving birth to a child for the first time.

2. Primigravida - a woman who is pregnant for the first time.
3. Multipara - a pregnant woman who has given birth to one or more children
4. Onset of labour - when contractions are regular and occur every five to seven minutes.
5. Support persons - persons (such as a partner, mother, relations or friends) who accompany the woman during labour to provide psychological and physical support.
6. Midwife - a registered midwife.
7. Outcome of labour - the outcome of the second stage of labour will be a live birth by:
a) vaginal delivery (spontaneous, instrumental or vacuum extraction) or b) Caesarian Section.
8. Analgesia - pethidine, nitrous oxide and/or epidural anaesthesia.
9. Parturient - a woman in labour.
10. Expectation - anticipation of an event.
11. Tens machine - Transcutaneous electric nerve stimulation is a method of suppressing pain according to the Gate Control Theory.
12. Intrapartal - during labour.

Organisation of Thesis

This introductory chapter provided the background to and significance of the study. The second chapter reviews the literature concerned with pain, expectations of pain and the predictor variables that may influence the manner in which childbirth is experienced. The conceptual framework is described in the third chapter. The fourth chapter presents the design, sample and setting of the study. The data collection instruments, procedure and ethical considerations are also discussed in this chapter. The fifth chapter presents the findings. In the sixth chapter the findings and their importance are discussed. The final chapter sets out the conclusions reached from the findings and highlights the implications for health workers. Further directions for research are also suggested.

Chapter 2

Review of Literature

Introduction

The management and control of pain during labour continues to concern caregivers and pregnant women. Many writers and researchers have discussed and studied this emotive issue. There are a variety of influences on pain and the manner in which each person responds to the situation. These topics and the way in which they affect labour pain will be discussed.

Pain

Pain is a subjective experience resulting in a wide range of individual reactions (O'Driscoll & Meagher, 1986). Research studies have demonstrated the long term effects of underprediction of pain (Arntz & Lousberg, 1990; Arntz, van den Hout, van den Berg & Meijboom, 1991). In their studies of 42 and 62 subjects respectively, an underestimation in one situation was followed by raised expectations and increased fear of pain in subsequent situations. These authors concluded that underestimations have stronger influences on subsequent estimations than overestimations and may have lasting effects on a person's fear of pain.

In addition, raised anxiety followed the underestimation of pain (Arntz & Lousberg, 1990; Arntz et al., 1991). This finding was supported by O'Driscoll and Meagher (1986) who argued that an unpleasant and painful first childbirth may lead to terror in subsequent experiences. Conversely, Niven and Gijbbers (1984) suggested that past experience of pain is strongly associated with decreased pain in childbirth. However, their study was limited by being confined to a small sample of 29 women. Stevens and Rogers (1990) found that an increased tolerance to acute pain was associated with highly pleasurable thoughts and images, whereas thoughts and images of fear decreased the tolerance for pain. This may account for the increased tolerance of pain when the expected outcome is a baby.

A further study reported that 72% of the primiparas described their labour pain as extreme and unbearable (Nettelbladt, Fagerstrom & Uddenberg, 1976). Nicolson (1990) supported this in concluding that a great number of women are frightened by the severity of labour pain. However, the small sample of 24 in the latter study may limit the findings. A further study, which measured the digital pressure (when subjects squeezed the rater's hand) exerted by women during labour pain, demonstrated that women exerted so much pressure during early labour that, even though the pain was worse in the later stages, they were not able to exert any further pressure (Macfarlane, 1977).

Expectations of Pain

Research by Johnson (1972) has shown that a difference between expectations and experiences concerning an unpleasant event results in distress. In addition, she found that accurate expectations about an event reduced distress. Limited research has compared women's expectations of pain with the actual pain experienced in labour. Several researchers have suggested that women with high expectations of pain reported experiencing less pain during labour than those with low expectations (Crowe & von Baeyer, 1989; Green et al., 1990;). Studies by Jacoby (1987) and Stolte (1987) have examined women's expectations of childbirth with their perception of the event. Although the study by Jacoby (1987) consisted of a large stratified sample of 1508 women, both these latter studies were retrospective. These findings, therefore, may not reliably reflect pre-event expectations and may be influenced by incorrect recall and subsequent events. The present study is, on the other hand, prospective.

Many studies have retrospectively examined pain in childbirth, emphasising different aspects and relationships; knowledge and confidence associated with less pain (Crowe & von Baeyer, 1989); women's preferences of the management of their labour (Jacoby, 1987); psychological factors related to painful childbirth (Nettelbladt et al., 1976); factors contributing to enjoyment of the birth experience (Norr et al., 1977) and

comparing the expectations with the actual event (Stolte, 1987).

Research by Crowe and von Baeyer (1989) and Gaston-Johansson, Fridh and Norvell (1988) reported that women's expectations of labour pain were neither realistic nor accurate. This is supported by Stolte (1987) who reported that 73% of women found that their childbirth experience deviated from their expectations. In addition, many women expected totally effective analgesia during labour and felt let down when this did not occur (Stolte, 1987). Evidence has also shown that high levels of pain tend to interfere with childbirth satisfaction (Norr et al., 1977). However, the limitation of this latter study is that it included a sample of only middle to upper middle class women.

Because primiparas have no previous experience, their expectations of childbirth may be based on classes for childbirth preparation and hearsay, for example their mothers' memories of childbirth (Kitzinger, 1987; Knight & Thirkettle, 1987; Stolte, 1987). Green et al. (1990) in their prospective study of 825 women from six different hospitals, reported that expectations of childbirth are related to the fulfilment and satisfaction experienced during and after the event.

Variables Associated With Labour Pain

Anxiety.

Anxiety has been identified as having a positive relationship with, and being a significant predictor of, pain in labour in that raised anxiety has been shown to increase the likelihood of a painful labour (Crowe & von Baeyer, 1989; Lowe, 1989; Nettelbladt et al., 1976; Wuitchik, Hesson & Bakal, 1990; Zuckerman, Nurnberger, Gardiner, Vandiveer, Barrett & den Breeijen, 1963). A number of writers support this view of the relationship between increased anxiety and labour pain. Machover (1990) argued that the emotions and psyche of a woman influences the labour process. O'Driscoll and Meagher (1986) suggested that increased stress raised anxiety levels and as labour was a time of great stress, it was also a time of increased anxiety. Conversely, Lowe (1987; 1989) in studies of 50 and 134 middle to upper middle class women respectively, demonstrated that anxiety did not contribute significantly to increased childbirth pain.

Furthermore, a study by Lowe and Roberts (1988) of 50 middle to upper middle class women has shown evidence that primiparas enter into labour with higher levels of anxiety and lower levels of confidence in their coping skills than do multiparas.

Age.

Contrasting evidence has been found by researchers studying the relationship of age to labour pain. Fridh, Kopare, Gaston-Johansson and Norvell (1988) suggested that older women have less intense labour pain than younger women. This is supported by Knight and Thirkettle (1987) who, in their study of 98 working to middle class women, found that older women were more likely to have more favourable expectations of childbirth. Conversely, Lowe (1989) stated that age had only a weak correlation with pain but acknowledged that, because the age of the youngest in the study was 18 years, the sample may not have been representative of the full age range of childbearing women and this may have affected the findings. Moreover, in another study of 78 subjects, Nettelbladt et al. (1976), found that pain in labour was not related to age. This latter study may not be generalisable to the population because it was conducted in a university town where the education level was generally higher than average. This current study will attempt to add to the knowledge base by investigating the relationship between age and labour pain in a relatively heterogeneous sample of primiparas.

Preparation for Labour.

Preparation and training for childbirth (knowledge) has been found to contribute to women's higher confidence in their ability to handle labour thus resulting in a less

painful labour experience (Fridh et al., 1988; Lowe, 1989; Wuitchik et al., 1990). It has been argued that women who attended prenatal classes are more relaxed, confident and in control during labour and, initially, enjoy a better relationship with the baby (Genest, 1981). Lieberman (1987) indicated that confronting and accepting the intensity of labour pain may lead women to learn coping skills in order to more effectively manage labour. It has also been suggested that prepared women use less analgesia than do unprepared women (Lieberman, 1987). Further research (Fridh et al., 1988) has related the lack of knowledge of the intensity of the pain, firstly, and the management and process of labour, secondly, to primiparas' unrealistic expectations of labour pain.

Obstetric History.

A history of spontaneous abortion or termination of pregnancy and menstrual pain has been shown to increase the likelihood of a painful labour for some women (Fridh et al., 1988). Such an obstetric history was found to be related to increased meaning attached to and emotions affected by the pregnancy. This latter study found that women who reported higher levels of menstrual pain reported correspondingly increased childbirth pain.

Acceptance of the Pregnancy and Identification with the Motherhood Role.

Lederman, Lederman, Work and McCann (1981) found that conflict with the acceptance of pregnancy in late pregnancy is correlated with increased anxiety and higher epinephrine levels during labour. This is also supported by evidence that negative attitudes to the pregnancy and to motherhood are related to raised pain in labour (Nettelbladt et al., 1976). These researchers reported that women with negative or ambivalent feelings towards their pregnancy experienced more pain in labour. Lederman (1984) suggested that identification of the motherhood role is correlated with a woman's acceptance of her pregnancy and therefore, influences pain experienced during labour. Thus, the present research studies the relationship between acceptance of the pregnancy and childbirth pain.

Relationship with Mother and with Husband/Partner.

The relationship of a pregnant woman to her mother is an important factor in the way in which she adapts to pregnancy and motherhood and thus to the progress of labour (Lederman, 1984). The relationship a woman enjoys with her partner during pregnancy may also influence her mental state, increasing or decreasing her anxiety. A supportive partner, often indicative of a good relationship, may reduce anxiety during labour thus increasing tolerance to pain and decreasing the need of analgesia. Positive

feelings of the expectant father towards the pregnancy may be an important factor in reducing the mother's apprehension and anxiety regarding the labour process. These positive feelings have been found to be related to pain in labour (Davenport-Slack & Boylan, 1974; Fridh et al., 1988; Norr et al., 1977). However, these latter findings may be limited by the fact that as the samples consisted of 75 private patients and 249 middle to upper middle class subjects respectively, they may not be representative of all socioeconomic groups in childbearing women.

Control.

The women's subjective assessment, judgments and beliefs concerning their control and coping skills during labour may be related to their experience of pain (Genest, 1981). Studies by Lowe (1989), Simkin (1991), and Wuitchik et al. (1990) showed that women who feel in control during labour, either by maintaining self-control or actively taking part in the decision making process, are more able to cope with labour pain. However, certain limitations should be noted in these studies, in particular Lowe (1989)'s sample were middle to upper middle class and Simkin (1991)'s study was retrospective (20 to 30 years).

Research findings have suggested that adequate information on the progress of labour and procedures performed, as well as feeling in control, also contributed

to women's positive birth experience and influenced emotional well-being (Green, 1990; Green et al., 1990; Oakley & Rajan, 1991) . These studies comprised large sample sizes and diversified populations. The sample of Green (1990) and Green et al. (1990) consisted of 825 working to middle class women from four districts and the sample of Oakley and Rajan (1991) comprised 509 women from a socially disadvantaged population.

Furthermore, women who believe in high levels of self-discipline and self-control have reported more severe pain, whereas those believing that the medical professional was in control of events reported less pain (Scott-Palmer & Skevington, 1981). It is argued, however, by O'Driscoll and Meagher (1986) that women, when they feel they are powerless in the face of the forces taking control of their bodies, may lose control. Therefore, the relationship between control and pain in labour is investigated by this study.

Well-being of Baby and Mother.

Another factor is the mother's concern that the outcome of labour will be a healthy baby and mother. Research has demonstrated this concern to be related to increased anxiety during pregnancy and to also be a predictor of increased levels of pain in labour (Lowe, 1987; Wuitchik et al., 1990).

Summary

Pain is an inherent part of the labour process. There is a wide range of individual reactions to this pain, with many women describing it as very intense. Underestimation of pain may have long lasting effects on a person's fear of pain in subsequent situations. Many women may have inaccurate and unrealistic expectations of labour pain. Those with realistic expectations are most likely to have a positive birth experience, while those with unrealistic expectations will probably regard this event as unpleasant. Women's self-esteem, feelings for their babies and emotional well-being are influenced by whether they had a positive or negative childbirth experience.

There is also evidence that raised levels of anxiety increase pain. Contrasting evidence exists concerning whether age is related to labour pain. Childbirth classes contribute towards women's confidence in their coping skills during labour. However, many women are unprepared for the pain they experience in labour and thus, when encountering the unexpected, they may lose control and be unable to manage the situation. Because women's acceptance of the pregnancy, identification with the motherhood role, relationship with mother and husband/partner are related to anxiety levels, they are also related to pain in labour.

Research studies relate expected pain and actual levels of pain experienced to acceptance of pregnancy, identification with the motherhood role, relationship with mother and husband/partner, preparation for labour (knowledge), fear of loss of control in labour, concern for the well-being of self and baby, anxiety, age, and obstetric history.

This prospective study, in comparing the expected pain with the experienced pain, and in relating expected and experienced pain to these variables, seeks to increase understanding and awareness of the variance of expected and experienced pain. This may lead to the development of intervention and educational strategies for the management of pain during all stages of labour.

Chapter 3

Conceptual Framework

Introduction

The conceptual framework, which is the axis of the study, is described and the assumptions of the study are presented.

Conceptual Framework

As established by the literature review, labour is a physiological and profoundly emotional experience. Pain is an integral part of this experience. Each woman brings her own psychosocial attitudes and physiological experiences to the event. These attitudes and experiences, because they give rise to high or low expectations, contribute to the manner in which the individual experiences the labour process. Many variables, inherent to the individual and occurring during pregnancy and labour, also have a relationship with the intensity of expected and experienced pain during labour.

A conceptual framework was developed from the published literature on the childbirth experience to provide a basis for the analysis of data (see Figure 1).

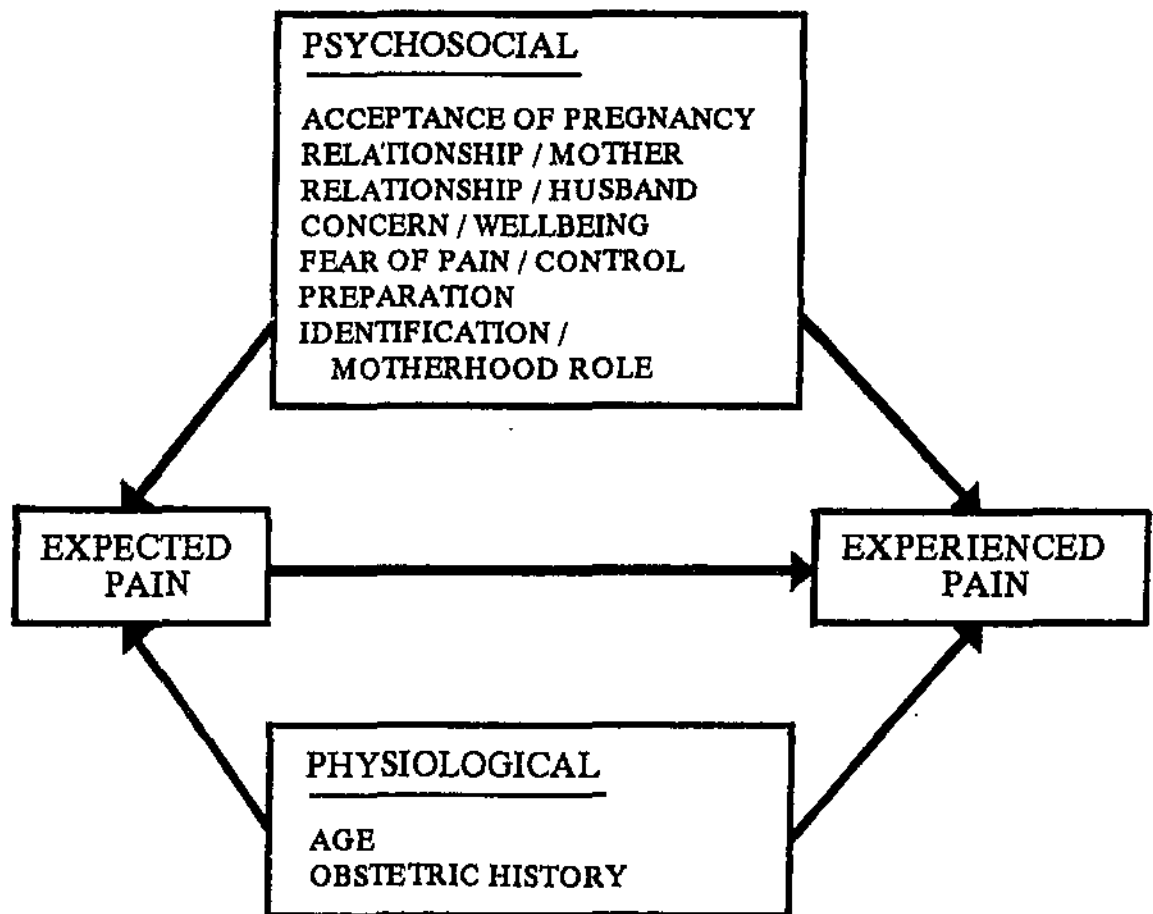


Figure 1. Model of Factors Influencing Expected and Experienced Childbirth Pain.

The model shows the psychological factors and the physiological factors that influence the childbirth experience of pain. These factors impact on both expected pain and experienced pain. In addition, expectations of pain affect the intensity of the experience of pain.

Assumptions

1. Women expect the childbirth experience to be painful to some extent.
2. The experience of pain during childbirth is modified by certain variables.
3. Couples anticipate that the outcome of labour is a healthy mother and baby.
4. Labouring women will accept recommended options of treatment, even if previously rejected, if it is for the well-being of their baby.
5. Study respondents will answer honestly and to the best of their ability.

Chapter 4

Methodology

Introduction

This chapter discusses the design of the study and the sample and setting. The four instruments used are reviewed and their reliability identified. The data collection procedure is described and ethical considerations are outlined.

Design

A descriptive, correlational design was used in order to examine and identify differences and relationships existing between the variables of expected and experienced pain and acceptance of pregnancy, identification of motherhood role, relationship with mother, relationship with husband, preparation for labour, fear of pain, helplessness and loss of control during labour, concern for well-being of self and baby, age and obstetric history.

Sample and Setting

The convenience sample was comprised of 135 primiparous women aged 17-40, fluent in the English language, who attended a metropolitan hospital maternity unit for their prenatal care and childbirth during a

certain three month period. All the women in the sample were public patients.

Data Collection Instruments

The instruments used in this study were:

- a) The Pregnancy Self-Evaluation Inventory (PSEI),
- b) A Demographic Questionnaire,
- c) The Visual Analogue Scale (VAS) and
- d) The Present Pain Intensity (PPI).

Each of these is described below.

The Pregnancy Self-Evaluation Inventory.

The Pregnancy Self-Evaluation Inventory (PSEI), described by Lederman (1984) and included in Appendix D, assessed scores on seven different subscales: a) acceptance of pregnancy, b) identification of motherhood role, c) relationship with mother, d) relationship with husband, e) preparation for labour, f) fear of pain, helplessness and loss of control during labour, g) concern for well-being of self and baby. High dimension scores indicate conflict in that particular dimension and high total scores indicate high anxiety. Lederman (1984) demonstrated that anxiety and stress in labour may be identified by using the PSEI. The reliability of the scales, correlated using Cronbach's alpha, ranged from 0.73 to 0.87, in the original instrument. A previous study used the PSEI to identify

perinatal concerns (Wuitchik et al., 1990). The author's permission for the use of this instrument in the present study was obtained and is included in Appendix H.

Reliability of Prenatal Self Evaluation Inventory.

The reliability of the seven dimensions and the total score of the PSEI in the current study ranged from 0.69 to 0.92 (Cronbach's alpha). Details are presented in Table 1.

Table 1
Reliability of Prenatal Self Evaluation Inventory

Scale	Alpha
Well-being	0.81
Acceptance	0.73
Motherhood role	0.69
Preparation	0.70
Fear/control	0.69
Relationship/mother	0.92
Relationship/husband	0.74
Total score	0.89

The Demographic Questionnaire.

A demographic questionnaire (see Appendix A), developed by the researcher, was designed to obtain information concerning age, obstetric history, occupation

and education. The number of prenatal classes attended, if any, were also recorded.

The Visual Analogue Scale.

The Visual Analogue Scale (VAS), included in Appendix B, was used to assess expected pain and experienced pain. The VAS consisted of a horizontal scale, 10cm long, with "no pain" at one end and "pain as bad as it could possibly be" at the other. The words mild, moderate and severe were placed at intervals along the line. Researchers have demonstrated the reliability of this scale in their studies; Ohnhaus and Adler (1975) with a correlation of 0.81 ($p < 0.001$) between the VAS and a Verbal Rating Scale, and Scott and Huskisson (1976) with a correlation of 0.75 ($p < 0.01$) between the VAS and a Descriptive Pain Scale.

Present Pain Intensity.

Subjective pain was assessed with the Present Pain Intensity (PPI), included in Appendix C, developed from the McGill Pain Questionnaire (Melzack, 1975). The subject was asked to identify one word, from a choice of five, that best described the pain. Each word has a numeric value from one to five and higher scores indicate more intense pain. The reliability and validity of the PPI has been extensively reported in the literature. Hunter, Phillips and Rachman (1979) demonstrated correlations of 0.94 and 0.90 between the first assessment and subsequent

assessments. Furthermore, studies by Graham, Bond, Gerkovich and Cook (1980) and Melzack (1975) both showed a correlation of 0.96 ($p < 0.01$). Graham et al. (1980) showed the correlation between repeated administrations of the PPI and Melzack (1975) between the PPI and the Pain Rating Index of the McGill Pain Questionnaire. A minor adaptation was made to the PPI in the present study to include the words "the contraction" in two of the questions.

Procedure

The subjects were approached personally by the researcher in the prenatal clinic at 35 - 39 weeks gestation. The information letter, (Appendix E), was given to the subjects and their written informed consent was obtained. The consent form is included in Appendix F. Explanations on the method of completing the VAS and PSEI were given to the subjects by the researcher. The PSEI, Demographic Questionnaire and initial VAS were completed at the prenatal clinic visit. This first VAS measured expected pain. The completed PSEI forms were returned to the researcher by the subjects. The signed consent form and the VAS and PPI's to be completed in labour were placed in the subject's hospital notes. Each VAS and PPI was a different colour for easy identification and coding. An orange label with "research" was attached to the front of the notes to enable the subjects to be easily identified on admission to the birth suite.

Every midwife working on the unit was approached personally by the researcher and the study, method and times of data collection were fully explained. In addition, an instruction sheet, (Appendix G), was attached to the front of the VAS and PPI forms in the subjects' notes. The researcher ensured, by a daily check of and reminder to the midwives in birth suite, that the forms were being completed correctly and at the right time.

The subjects completed three VAS and PPI's which measured experienced pain between contractions, during labour. The first VAS and PPI were completed during early labour (<3cm cervical dilatation), the second during active labour (4-7cm dilatation) and the third during the transitional phase of labour (>8cm dilatation). Vaginal examinations were carried out as per the unit's routine management of labour. Within two hours postpartum, the last VAS on experienced pain was completed. The question "How was your labour pain different from what you had expected?" was also asked. Table 2 shows the times when the various scales and questionnaires were completed.

Table 2

Times of Data Collection

	PSEI	VAS	PPI	Demographic Questionnaire
Prenatal	X	X*		X
Intrapartum		XXX**	XXX**	
Postpartum		X**		

* Expected pain ** Experienced pain

Ethical Considerations

The subjects were informed of the purpose of the study and their written consent obtained after all procedures were fully explained to them. Subjects were advised that participation was voluntary and that their consent could be withdrawn at any time during the study. All information given was treated with the strictest confidence. The data were coded and the master list, with the codes and corresponding names, were kept separate from the data, under lock and key. Only the researcher had access to the master list. Subjects were reassured that they would not be identified when the findings are published and that all data would be destroyed after five years.

Summary

The study sample comprised 135 primiparous women, aged 17-40 years, attending a metropolitan public hospital for their prenatal care and childbirth. Four instruments were used in the study. These consisted of the Pregnancy Self Evaluation Inventory; a Demographic Questionnaire; the Visual Analogue Scale and the Present Pain Intensity. Data were collected prenatally at 35-39 weeks gestation; during labour at <3cm, 4-7cm and >8cm cervical dilatation and postnatally, within two hours of childbirth. The reliability of the PSEI ranged from 0.69 to 0.92 (Cronbach's alpha). The subjects gave informed consent and were assured of confidentiality.

Chapter 5

Findings

Introduction

Univariate and multivariate statistical procedures using the Statistical Packages for the Social Sciences (SPSS) were applied to the data. The expected pain and the experienced pain were analysed to identify any significant differences. The extent of the relationship between both expected and experienced pain and the variables of acceptance of pregnancy, identification of motherhood role, relationship with mother, relationship with husband/partner, preparation for labour, fear of loss of control in labour, concern for the well-being of self and baby, age and obstetric history were investigated. The comments from the question "How was your labour pain different from what you had expected?" are discussed. Details and descriptive statistics of demographic and obstetric data are also reported in this chapter.

Demographic data

The majority of the sample ($n = 96$) were in a relationship with a husband/partner as defined by the women themselves. Sixty percent of them attended the prenatal clinic throughout their pregnancy. The remainder attended for one visit early in the pregnancy and then

returned to their family doctor for prenatal care until 36 weeks gestation. After the 36 weeks prenatal visit, the care of the majority of the women was resumed by the prenatal clinic with the remainder returning for their care to the family doctor, who subsequently attended the birth.

One hundred and thirty six women were invited to participate in the study. Of these one woman declined to participate and one withdrew her consent a week after being recruited and before going into labour. Thirty five of the subjects were eliminated from the study for reasons which are detailed in Table 3. Therefore, 99 subjects remained in the study.

Table 3

Reasons for Elimination from Study

Reason	Number
Epidural in early labour	12
Non-elective caesarian section	11
Elective caesarian section	5
In-labour data completed postnatally	3
Transferred to "high-risk" hospital	1
Baby born before arrival at hospital	1
Midwives too busy to complete data	1
Unresponsive after analgesia	1
Total	35

The education level ranged widely from less than an Achievement Certificate (10 completed years of school) to a Master's Degree. TEE(School Leaving) is equivalent to 12 completed years of school. As mentioned in the sample and setting, the age range was 17-40 years, with the mean age being 25.0 years (SD = 4.8 years), whereas those eliminated because they either did not have a labour or did not experience pain due to early epidural had a mean age of 25.5 years (SD = 5.24 years). As shown in Table 4 the age and education level of the two groups, the subjects and those eliminated, was similar. The majority of the women in the study were employed (n = 82).

Table 4

Comparison of Education Range of Sample and Those Eliminated

Number	In Study	Eliminated
Education		
Less than Achievement Certificate	5 (5)*	2 (6)
Achievement certificate	47 (48)	18 (51)
TEE (School leaving)	21 (21)	3 (9)
Trade/Apprentice	6 (6)	2 (6)
Certificate	7 (7)	4 (11)
Diploma	8 (8)	5 (14)
Undergraduate degree	4 (4)	1 (3)
Master's	1 (1)	0
Total	99	35

* percentage in parenthesis

Obstetric Data

The obstetric history of the subjects ranged from a first pregnancy to two terminations of pregnancy. Table 5 shows details.

Table 5

Obstetric History

Number of Pregnancy	Number
Primigravida	64
One termination of pregnancy or miscarriage	24
Two terminations of pregnancy/ or miscarriages	11

Eighty-four of the subjects had attended prenatal classes, the remainder (n = 15) did not attend classes.

Because each woman's labour is individual, the subjects were admitted to hospital at varying stages of labour and progressed at different rates during labour. Therefore, it was not possible for each subject to complete all four sets of data. However, all the subjects completed the third and fourth sets (transitional labour and overall labour pain). Eleven subjects did not complete the first VAS and PPI set, in early labour, because they were admitted to the unit with more than 3cm cervical

dilatation. The second VAS and PPI set, in active labour, was not completed by eleven other subjects because their labour progressed too quickly (see Table 6 for details). The mean value was inserted for missing data as described by Tabachnick and Fidell (1989). The details of the numbers of variables for which mean values were inserted are in Appendix I.

Table 6

Phase-of-Labour Completion of Visual Analogue Scale and Present Pain Intensity

Phase-of-labour	Number
Early labour (<3cm)	88
Active Labour (4-7cm)	88
Transitional Labour (>8cm)	99
Overall (within 2 hours postnatal)	99

In 19 subjects, labour was induced using either a single method or a combination of Prostin E² gel, artificial rupture of membranes (A.R.M.) and intravenous syntocinon infusion. In 26 subjects labour was augmented. Table 7 contains a summary of inductions and augmentations.

Table 7

Summary of Induction and Augmentation of Labour

	Number
<hr/>	
Induction of labour	
Prostin E ² gel	4
Prostin E ² gel, A.R.M. and syntocinon	5
Syntocinon	1
Syntocinon and A.R.M.	9
Augmentation of labour	
A.R.M.	14
Syntocinon	5
A.R.M. and syntocinon	7

The length of labour ranged from 2 hours to 18 hours. The mean length was 8.7 hours (SD = 4.0 hours). During labour, only one subject was not accompanied by a support person. In 21 cases two support people were present and 77 subjects had one person there.

The type of analgesia varied from nitrous oxide, Pethidine, a combination of the previous two, epidural anaesthesia and Tens machine. The epidural anaesthesia, for all subjects except those eliminated because of early labour epidural administration, was administered when the cervix was more than 6cm dilated (active labour). This anaesthesia was no longer effective at 10cm dilatation. The phase of labour when much of the Pethidine was

administered was 4cm cervical dilatation. More than half the doses of Pethidine, (55%), were administered at 3cm, 4cm and/or 5cm cervical dilatation (early and active labour). Details of the type of analgesia are presented in Table 8.

Table 8

Type of Analgesia

Analgesia	Number
Pethidine only	
1 dose	55
2 doses	30
3 doses	3
Epidural	
and 1 dose Pethidine	7
and 2 doses Pethidine	5
Nitrous oxide and Pethidine	14
Nitrous oxide only	5
No analgesia	6
Tens Machine with Pethidine	1
Total	126

The type of childbirth varied from emergency caesarian section, through instrumental to spontaneous vertex deliveries. The details are shown in Table 9.

Table 9

Type of Childbirth

Childbirth	Number
Spontaneous vertex	80
Vacuum extraction	13
Forceps	4
Emergency caesarian section	
8cm cervical dilatation	1
10cm cervical dilatation	1
Total	99

Difference between Expected and Experienced Pain

Research Question 1 asked whether there was a difference between the expected and experienced pain of primiparas in labour.

The difference between expected and experienced pain was investigated with paired two-tailed t-tests. Four tests were performed between expected pain and 1) experienced pain in early labour; 2) experienced pain in active labour; 3) experienced pain during transitional labour and 4) overall experienced pain.

These tests showed that there was a significant difference between the expected pain and the pain

experienced during early labour with experienced pain being less than expected pain, $t(98) = 6.77$, $p < 0.001$. There was also a significant difference between expected pain and experienced pain in transitional labour with experienced pain being more than expected, $t(98) = 8.37$, $p < 0.001$. Expected pain and overall experienced pain (within 2 hours postpartum) showed a significant difference with experienced pain also being more than expected, $t(98) = 4.92$, $p < 0.001$. However, there was no significant difference between expected pain and pain experienced during active labour, $t(98) = 1.15$, $p = 0.244$ (see Table 10).

Table 10

Data Summary of t-tests of Expected Pain and Experienced Pain

	mean	SD	t value
expected pain	75.05	14.28	
experienced pain			
early labour	58.55	22.20	6.77**
active labour	77.81	15.81	1.15
transitional labour	87.41	10.49	8.37**
overall	84.00	13.72	4.92**

** $p < 0.001$

Relationship between Expected and Experienced Pain

Research Question 2 examined the relationship between the expected and experienced pain of primiparas in labour.

This relationship between expected and experienced pain was investigated using two-tailed Pearson's correlations. Analysis was performed between expected pain and 1) experienced pain in early labour; 2) experienced pain during active labour; 3) experienced pain in transitional labour and 4) overall experienced pain.

A significant correlation was demonstrated between expected pain and pain experienced in both early and transitional labour. Details are presented in Table 11.

Table 11

Correlations between Expected and Experienced Pain

Phase of Labour	Correlation Coefficients
Early labour	.26 *
Active Labour	.19
Transitional Labour	.32 **
Overall	.16

*p < 0.05 **p < 0.01

Prediction of Expected Pain

Research Question 3 asked whether there was a relationship between expected labour pain and:

- a) acceptance of pregnancy,
- b) identification of the motherhood role,
- c) relationship with mother,
- d) relationship with husband/partner,
- e) preparation for labour (knowledge),
- f) fear of pain, helplessness and loss of control in labour,
- g) concern for the well-being of self and baby,
- h) age, and
- i) obstetric history

The relationship between expected pain and the nine predictor variables was investigated with the use of standard multiple regression.

The mean, standard deviation, minimum and maximum scores, and the total score of the Prenatal Self Evaluation Inventory which measured seven of the predictor variables are shown in Table 12. The minimum and maximum scores that could be obtained are shown in parenthesis.

Table 12

Data Summary of PSEI Scores

Scale	mean	SD	minimum	maximum
Well-being	18.50	4.90	11(10)	30(40)
Acceptance	20.97	4.80	14(14)	35(56)
Motherhood role	20.47	3.88	15(15)	35(60)
Preparation	20.37	3.94	11(10)	28(40)
Fear/control	20.94	3.76	12(10)	32(40)
Relationship/ mother	15.92	6.59	10(10)	40(40)
Relationship/ husband	14.79	4.13	10(10)	33(40)
Total score	131.74	18.57	97(79)	181(316)

Using standard multiple regression, a significant relationship between expected pain and relationship with mother ($r = .332$, $r^2 = .1105$ $F = 1.68$, $df = 9$, $p < 0.05$) was demonstrated. Higher scores in this dimension on the PSEI was related to higher scores on the expected pain VAS. It was also found that there was a relationship, approaching significance, between expected pain and a) fear of loss of control and b) preparation for labour in that higher scores in this dimension was related to higher scores on the expected pain VAS. Details are shown in Table 13.

Table 13

Relationship between Expected Pain and Variables

Variable	Multiple Regression Analysis			
	SE B	Beta	df	Sig T
Relationship				
with mother	.195	-.195	9	.0318*
Preparation	.352	-.185	9	.0577
Fear/control	.408	.191	9	.0779

*p < 0.05.

Experienced Pain

Relationship between Experienced Pain and the
Predictor Variables.

Research Question 4 asked whether there was a relationship between experienced labour pain and:

- a) acceptance of pregnancy,
- b) identification of the motherhood role,
- c) relationship with mother,
- d) relationship with husband/partner,
- e) preparation for labour (knowledge),
- f) fear of pain, helplessness and loss of control
 in labour,
- g) concern for the well-being of self and baby,
- h) age, and

i) obstetric history

The relationship between experienced pain and the nine predictor variables was investigated with standard multiple regression.

Acceptance of the pregnancy was found to have a relationship approaching significance to reported pain experienced in early labour ($r = .211$, $r^2 = .044$, $F = .636$, $df = 9$, $p > .05$). High scores in this dimension were related to high scores on the early labour VAS. Experienced pain in active labour showed a relationship approaching significance with concern for well-being of self and baby ($r = .286$, $r^2 = .081$, $F = 1.210$, $df = 9$, $p > .05$). More concern for well-being of self and baby was related to high scores of the active labour VAS.

In addition, obstetric history demonstrated a significant relationship with experienced transitional labour pain ($r = .309$, $r^2 = .095$, $F = 1.432$, $df = 9$, $p < .01$). This relationship was shown by subjects with one or more terminations of pregnancy having higher scores on the transitional labour VAS. Table 14 contains the data summary of analysis using standard multiple regression.

Table 14

Relationship between Experienced Pain and Variables

Variable and Phase of Labour	Multiple Regression Analysis			
	SE B	Beta	df	Sig T
Early labour				
Acceptance	.469	-.177	9	.0871
Active labour				
Well-being	.337	.209	9	.0614
Transitional labour				
Obstetric history	1.414	.244	9	.0096**

** p < .01.

Intensity of Experienced Pain.

The intensity of experienced pain was investigated with the Present Pain Intensity from the McGill Pain Questionnaire. The mean and standard deviation of the PPI scores were computed. The range of the three PPI's, early, active and transitional labour, were 16, 18 and 21 respectively. The minimum and maximum score obtainable is shown in parenthesis. Details are presented in Table 15.

Table 15
Data Summary of Present Pain Intensity

	Early	Active	Transitional
Mean	17.91	19.71	20.46
SD	3.55	3.67	3.80
Minimum	11(6)	10(6)	9(6)
Maximum	27(30)	28(30)	30(30)

The percentage of subjects choosing each of the five words describing pain during the three phases of labour, when the contractions were at their worst and at their least, are presented in Figures 2, 3 and 4.

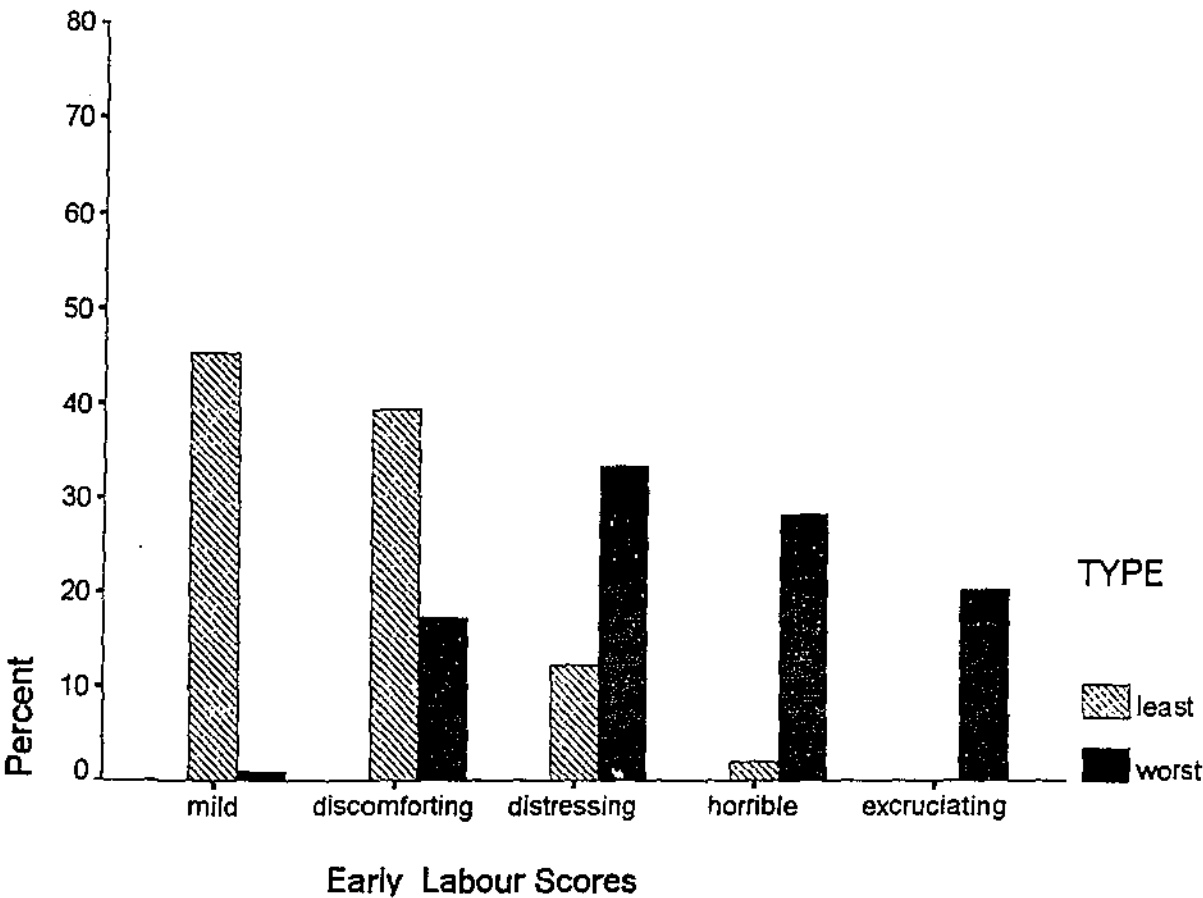


Figure 2. Present Pain Intensity Options Chosen When Contractions at Worst and Least in Early Labour.



Figure 3. Present Pain Intensity Options Chosen When Contractions at Worst and Least in Active Labour.

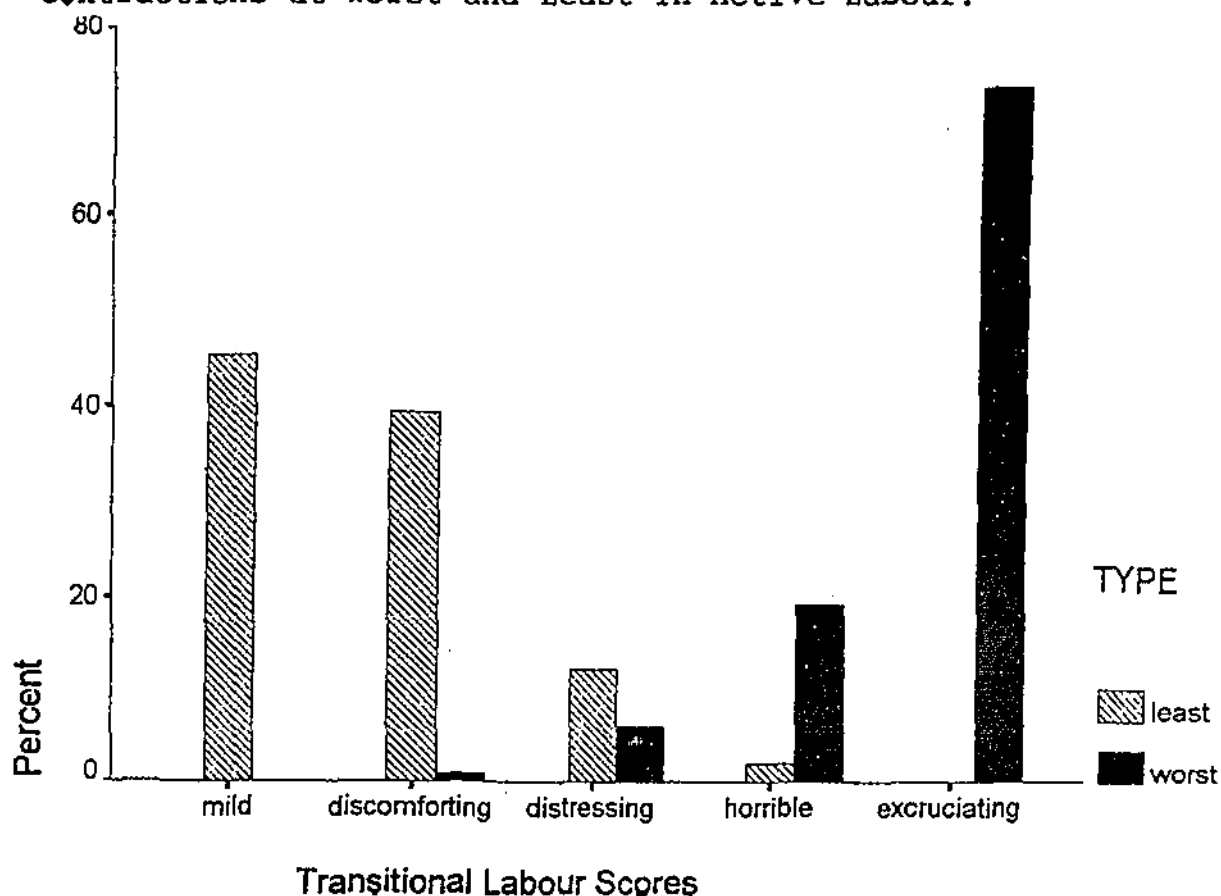


Figure 4. Present Pain Intensity Options Chosen When Contractions at Worst and Least in Transitional Labour.

Expectations of Pain

The question "How was your labour pain different from what you had expected?" was answered within two hours after labour. Fourteen subjects (14%) stated it was the same as they had expected; 13 women (13%) said the pain was less than they had expected and 72 (73%) women thought that the pain was worse than they had anticipated.

In addition, varying and sometimes contrasting comments were made concerning the labour pain. Three subjects said that there was less time between contractions than expected, "no time to catch my breath". Conversely, two women said that the breaks between contractions enabled them to manage the pain better. The pain experienced in the second stage of labour was also found to be different to expectations, with two women saying that pushing was "excruciating" and three feeling that the second stage was not as bad as they had expected.

Another topic was the position and type of the pain. Four women stated that they experienced more back pain than expected and two subjects reported that the pain was "totally" different from expectations.

Various other differences were mentioned. Three women found that they coped with the pain much better than they had expected and two subjects felt that the labour was longer than anticipated. Other comments included that the pain started more strongly than expected; labour was "hard

work"; "expected severe pain but it was much worse" and that attending the prenatal classes had helped because "excellent suggestions" for pain relief were given.

Summary

The significant difference between expected pain and pain experienced during early labour showed that experienced pain was less than expectations, whereas the significant difference between expected pain and experienced pain in transitional labour and overall (postnatal) showed that the reported pain was more intense. There was, however, no significant difference between expectations and experiences of pain during active labour, although the reported pain was slightly more than expectations. In addition, there was a significant correlation between expected pain and pain experienced during early and transitional labour.

Analysis of the relationship between expected pain, experienced pain and the predictor variables showed a relationship between expected pain and three variables: relationship with mother, fear of loss of control during labour, and preparation for labour. Furthermore, there was a significant relationship between experienced pain and three variables: acceptance of the pregnancy during early labour, concern for well-being of self and baby during active labour, and obstetric history during transitional labour.

The majority of subjects (73%) stated that the pain was worse than expected. Diverse comments were made concerning labour pain including statements on the type and position, as well as the time between contractions.

Chapter 6

Discussion

Introduction

The conceptual framework on which this study was based describes the relationship between, and the factors which may influence, expected and experienced pain. Expected and experienced pain were examined to determine whether there was a difference and a relationship between them. The nine predictor variables were investigated to discover whether there was a relationship between them and expected and experienced pain.

Relationship with mother, preparation for labour, and fear of pain, helplessness and loss of control in labour were found to explain some of the variance in expected pain. However, expected pain was found to have no association with acceptance of the pregnancy, identification of the motherhood role, relationship with the husband/partner, concern for the well-being of self and baby, age and obstetric history.

Acceptance of the pregnancy, concern for the well-being of self and baby, and obstetric history were found to explain some of the variance of experienced pain at different times during the three phases of labour. No

association was found, however, between experienced pain and identification of the motherhood role, relationship with mother, relationship with husband/partner, preparation for labour, fear of pain, helplessness and loss of control in labour and age.

Each of the above mentioned variables and their relationships to one another will now be discussed.

Comparison of Expected and Experienced Pain

The present study found a significant difference between expected pain and experienced pain in early and transitional labour as well as overall the labour. Experienced pain in early labour was less than expected. However, pain experienced in transitional labour and overall pain was reported to be more intense than expectations. However, there was found to be no significant difference between expected pain and pain experienced in active labour.

It was evident from the findings that women do not anticipate the severity and intensity of pain during the later phase of labour. This is consistent with other research findings (Nicolson, 1990; Niven & Gijsbers, 1984). The fact that the intensity of pain reported during early labour was less than expected may have been affected by the women who were eliminated from the study because they had epidural anaesthesia. Many of these women may have had

epidurals because of the increased intensity of their experienced pain.

The results showed that the level of pain experienced in active labour was not significantly different from the anticipated level. This finding may have been affected by the fact that more than half the analgesia was administered to the women during the later phase of early labour and the beginning of active labour. Thus, at the time data for the active phase of labour was being collected, the effect of the analgesia may have resulted in decreased levels of experienced pain.

The assumption that pain experienced during labour increases in intensity with the progress of labour is confirmed by the results of this study. This is demonstrated by the increase in the mean VAS scores from early labour through active labour to transitional labour. This finding is supported by other research studies (Gaston-Johansson et al., 1988; Scott-Palmer & Skevington, 1981).

The present study showed that the level of overall labour pain reported by the subjects within two hours of childbirth was less than that actually reported during transitional labour. This supports the hypothesis that retrospective recall of labour pain is not always accurate (Stolte, 1987). These findings, however, are not supported by Lowe and Roberts (1988) who concluded that there was no

significant difference between in-labour report and postpartum recall of pain. It may be that once labour is over and a woman is holding a baby in her arms she may feel that the outcome was worth the pain and thus begin to discount the pain experienced.

Relationship between Expected and Experienced Pain

The findings showed a relationship between expected pain and pain experienced during early and active labour. However, there was no relationship found between expected pain; pain experienced in active labour and overall pain. This demonstrates that women who expect more intense pain are more likely to experience higher levels of pain in early and transitional labour. These results are contrary to those of Knight and Thirkettle (1987) who concluded that there was no correlation between expected and experienced pain. High expectations of pain may be related to fear of pain. In addition, previous episodes of underestimation of pain causes fear of pain. This fear of pain may result in increased intensity of experienced pain.

Intensity of Experienced Pain

The investigation of the intensity of experienced pain showed broad ranges of the PPI scores during the three phases of labour. These ranges and the size of the standard deviation at each phase reveal a considerable individual variation in the intensity of labour pain. The

increase of the mean scores over the three phases of labour adds further evidence of the increase in pain intensity with the progress of labour. This is consistent with the research findings of Lowe and Roberts (1988).

Expected Pain and Relationship with Mother

The analysis, using multiple regression, of the relationship between expected pain and relationship with mother was found to be significant. High scores on the PSEI indicate conflict in that dimension. Therefore, women who experience more conflict in the relationship with their mothers are more likely to expect an increased level of pain. This evidence supports that of Lederman (1984). There is, however, no other research with which to compare this finding.

Expected Pain and Preparation for Labour

The results demonstrated an almost significant relationship between expected pain and preparation for labour. It was revealed that women who are better prepared for labour are more likely to expect less intense pain. This finding is consistent with the conclusions of several other researchers (Crowe & von Baeyer, 1989; Davenport-Slack & Boylan, 1974; Lowe, 1987; 1989) who support the relationship of more preparation for labour and decreased levels of pain. Women who have more preparation for and knowledge of the process of labour may have less fear of

labour because of this preparation and knowledge.

Decreased fear may be related to expectations of less intense pain.

Expected Pain and Fear of Pain, Helplessness and Loss of Control in Labour

Fear of pain, helplessness and loss of control during labour was found to have a weak relationship with expected pain. High scores with the PSEI indicate more fear in this dimension. Thus, women with more fear of pain, helplessness and loss of control in labour are more likely to expect increased pain. No previous research has investigated the relationship between expected pain and fear of pain and loss of control. However, researchers have found a relationship between pain experienced during different phases of labour and fear of pain and loss of control in labour. Lowe (1987; 1989) reported a relationship between fear of pain and loss of control and increased pain in early and active labour. Wuitchik et al. (1990) demonstrated that fear of pain and loss of control was related to an increased level of pain in early labour.

Experienced Pain and Acceptance of the Pregnancy

An almost significant relationship was found between experienced pain during early labour and acceptance of the pregnancy. High scores indicate more conflict in this dimension. Women having conflict with the acceptance of

the pregnancy were shown to be more likely to experience increased levels of pain during early labour. These findings are consistent with research by Nettelbladt et al. (1976). In addition, Wuitchik et al. (1990) reported that a relationship existed between pain experienced in active and transitional labour and acceptance of the pregnancy.

Experienced Pain and Concern for the Well-being of Self and Baby

Higher levels of concern for the well-being of self and baby was found to be related to increased intensity of pain experienced during active labour. This was also the phase, active labour, during which expected pain equaled experienced pain. Wuitchik et al. (1990) also reported that women with higher levels of concern for the well-being of self and baby were more likely to experience increased pain during transitional labour.

Experienced Pain and Obstetric History

A relationship was found between experienced pain during transitional labour and obstetric history. Thus, women with a history of termination of pregnancy or miscarriage are more likely to experience an increased intensity of pain in transitional labour. These findings are supported by Fridh et al. (1988).

Expected and Experienced Pain and Age

No relationship, however, was found between age and expected or experienced pain. This is contrary to the findings of other researchers (Davenport-Slack & Boylan, 1974; Fridh et al., 1988; Knight & Thirkettle, 1987) who reported that older women experience less intense pain.

Expected and Experienced Pain and Relationship with Husband/Partner

The present study found no relationship between expected or experienced pain and the relationship with the husband/partner. Conversely, Fridh et al. (1988) and Norr et al. (1977) noted that conflict with the husband was related to increased labour pain.

Expected and Experienced Pain and Identification with the Motherhood Role

No relationship was found in the present study between identification with the motherhood role and expected or experienced pain.

Profile of Women Expecting and Experiencing Increased Labour Pain

A profile of women more likely to expect and experience increased labour pain was developed from the findings. These women would have higher levels of conflict

in their relationship with their mothers; be less prepared for labour; experience an increased fear of pain, helplessness and loss of control during labour; have increased conflict with the acceptance of the pregnancy; increased concern for the well-being of self and the baby; a history of one or more terminations of pregnancy and expect higher levels of pain during labour.

Findings and the Conceptual Framework

The conceptual framework demonstrated the relationship of the psychosocial and physiological factors that influence expected and experienced labour pain. The findings of this study have shown evidence of the impact of some of these variables on expected pain and experienced pain. The relationship between expected and experienced pain was also demonstrated. In addition, the findings have shown the interrelationship between the psychosocial and physiological factors; namely, that women with a history of one or more terminations of pregnancy may also be more likely to have increased concern for well-being of self and baby and be more likely to experience increased pain. Another interrelationship is between preparation for labour and fear of pain, helplessness and loss of control during labour. Women with less preparation for labour are more likely to have increased fear of pain.

Limitations

The generalisability of this study is limited by the fact that the data were collected at one maternity unit. The area that this maternity unit services may not be representative of the general population. It is acknowledged that there may have been the risk of subjects being given inadvertent verbal or nonverbal cues by the midwives when they were scoring their pain. The findings may have been affected by the women eliminated from the study because they had epidural anaesthesia. There are also other variables that may impact on pain in labour. However, it would be beyond the scope of the study for all variables to be included.

Summary

In this study primiparas' pain experienced during transitional labour was generally more intense than anticipated. The expected level of pain was similar to the amount of pain experienced during active labour. Labour pain appeared to increase in intensity with the progression of labour. The overall pain, scored within two hours of childbirth, was of a lower level than that of reported pain transitional labour and thus raises the question of accurate retrospective recall of pain. There is a wide range of individual variation in experienced pain. Women who expected higher levels of pain experienced more pain. A profile of women more likely to experience increased

childbirth pain was developed from the current findings. The findings of the study were related back to the conceptual framework and the interrelationships between obstetric history and concern for the well-being of self and baby; preparation for labour and fear of pain, helplessness loss of control in labour was reported. Figure 5 presents an explanatory model of the relationship between the psychosocial and physiological factors, expectations of pain and its actual experience during childbirth.

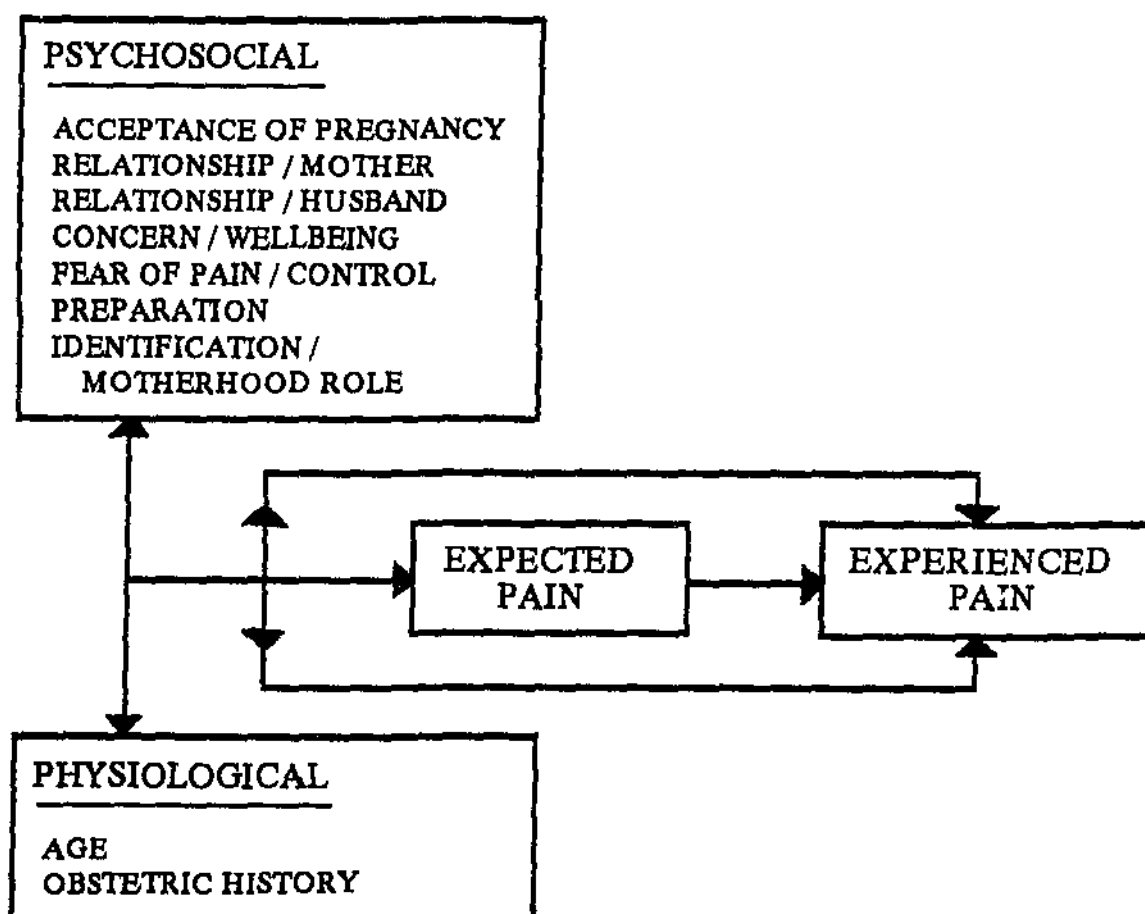


Figure 5. Model of Factors Influencing the Childbirth Experience.

Chapter 7

Conclusions, Implications and Recommendations

Introduction

The conclusions arising from the findings of the study are reported and discussed. Implications for midwifery care and recommendations for further research are also highlighted.

Conclusions

Some of the findings of this study are consistent with previous research studies. The interaction of psychosocial and physiological factors on expected and experienced pain and the influence these factors exert on the process of childbirth was demonstrated. The findings suggest that many women do not anticipate the intensity of childbirth pain and are, therefore, unprepared for this occurrence. Many women have unrealistic expectations of childbirth pain even though they may have attended preparation for childbirth classes.

Women should, therefore, be more specifically prepared for the intensity of childbirth pain. This education should include psychological preparation for the management of pain in order to empower women to feel more in control and better able to cope with labour pain. Educators and

caregivers should recognise the fears and concerns of pregnant and labouring women and direct interventions towards addressing these fears and concerns.

Implications and Recommendations

This study has demonstrated the need to review the strategies used in current childbirth preparation classes so that women will have more realistic expectations of childbirth pain.

Pain during labour is only one of many factors that influence the manner in which women view their childbirth experience. However, it is a critical factor and one towards which intervention is frequently directed. A more comprehensive understanding of the variables related to childbirth pain will enhance the development of new, and ensure the effectiveness of current, prenatal and intrapartal interventions.

Increased awareness and knowledge of the psychosocial and physiological factors influencing labour will ensure that caregivers recognise women with the profile developed from the findings. Women should be assessed continually throughout pregnancy to indicate when intervention is needed in order to change unrealistic expectations. Caregivers should actively utilise interventions to ensure that parturients' experiences of childbirth pain are within their expectations.

It is recommended that further research be conducted in order to identify any differences in women who have epidural anaesthesia during early labour.

Although childbirth is a universal experience, there has been minimal attention paid to the interaction of the psychosocial and physiological factors during the event. Further research is needed to increase the understanding of the variables that influence the variance of labour pain. The concept of pain in labour, studied in an open-ended manner such as phenomenology, would identify the factors that impact on the childbirth experience and thereby enhance midwifery knowledge. In addition, a comparison between the pain experienced by women who had a spontaneous onset of labour and those women whose labour was either induced or augmented, would also add to this knowledge. A further recommendation is to study women from non-English speaking backgrounds to ascertain whether their expectations of and response to pain are different from English speaking women. This understanding will contribute to the practice of holistic care of women in childbirth.

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Appendix A

Demographic Questionnaire

Age: _____

Obstetric History: _____

Number of prenatal classes attended: _____

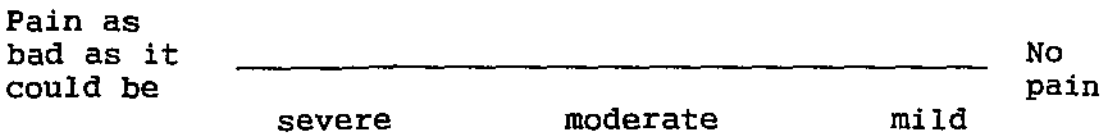
Occupation: _____

Education (circle number next to answer):

- | | |
|-----------------------------------|---|
| Less than Achievement Certificate | 1 |
| Achievement Certificate | 2 |
| TEE (Leaving) | 3 |
| Trade/Apprentice | 4 |
| Certificate | 5 |
| Diploma | 6 |
| Undergraduate Degree | 7 |
| Master's | 8 |
| PhD | 9 |

Appendix B

Visual Analogue Scale



Appendix C

Present Pain Intensity

How Strong is Your Pain?

People agree that the following 5 words represent pain of increasing intensity. They are:

1.	2.	3.	4.	5.
Mild	Discomforting	Distressing	Horrible	Excruciating

To answer each question below, write the number of the most appropriate word in the space beside the question.

1. Which word describes your pain right now? _____
2. Which word describes it at its worst (the contraction)?

3. Which word describes it when it is least (the contraction)?

4. Which word describes the worst toothache you have ever had?

5. Which word describes the worst headache you have ever had?

6. Which word describes the worst stomach-ache you have ever had?

PRENATAL SELF-EVALUATION QUESTIONNAIRE II

Directions

The statements below have been made by expectant women to describe themselves. Read each statement and decide which response best describes your feelings. Then circle the appropriate letter next to each statement.

	(4) Very Much So	(3) Moder- ately So	(2) Some- what So	(1) Not at All
1. This is a good time for me to be pregnant.	A	B	C	D
2. I like to watch other parents and children together.	A	B	C	D
3. I can tolerate the discomforts that I've had during pregnancy.	A	B	C	D
4. My husband and I talk about the coming baby.	A	B	C	D
5. My husband has been critical of me during the pregnancy.	A	B	C	D
6. I feel that rearing children is rewarding.	A	B	C	D
7. I feel it is necessary to know a lot about labor.	A	B	C	D
8. I can cope well with pain.	A	B	C	D
9. It's hard for me to get used to the changes brought about by pregnancy.	A	B	C	D
10. My husband is understanding (calms me) when I get upset.	A	B	C	D
11. I can perform well under stress.	A	B	C	D
12. I think my labor and delivery will progress normally.	A	B	C	D
13. There is little I can do to prepare for labor.	A	B	C	D
14. My mother shows interest in the coming baby.	A	B	C	D
15. I have confidence in my ability to maintain composure in most situations.	A	B	C	D
16. I am worried that the baby will be abnormal.	A	B	C	D
17. I think the worst whenever I get a pain.	A	B	C	D

	Very Much So	Moder- ately So	Some- what So	Not at All
18. Realizing that labor has to end will help me maintain control in labor.	A	B	C	D
19. I look forward to caring for the baby.	A	B	C	D
20. My mother is happy about my pregnancy.	A	B	C	D
21. My mother offers helpful suggestions.	A	B	C	D
22. I have enjoyed this pregnancy.	A	B	C	D
23. My husband is interested in discussing the pregnancy with me.	A	B	C	D
24. I have a good idea of what to expect during labor and delivery.	A	B	C	D
25. I understand how to work with the contractions in labor.	A	B	C	D
26. I look forward to childbirth.	A	B	C	D
27. I suspect the doctors and nurses will be indifferent to my concerns in labor.	A	B	C	D
28. It's easy to talk to my mother about my problems.	A	B	C	D
29. I have doubts about being a good mother.	A	B	C	D
30. I dwell on the problems the baby might have.	A	B	C	D
31. My mother looks forward to this grandchild.	A	B	C	D
32. I am glad I'm pregnant.	A	B	C	D
33. I like having children around me.	A	B	C	D
34. It will be hard for me to balance child care with my other commitments and activities.	A	B	C	D
35. My husband helps me at home when I need it.	A	B	C	D
36. I find it hard to talk to my husband about any changes in sex drive during this pregnancy.	A	B	C	D
37. I feel good when I'm with my mother.	A	B	C	D
38. I am preparing myself to do well in labor.	A	B	C	D
39. I feel sure that I will lose control in labor.	A	B	C	D
40. I can count on my husband's support in labor.	A	B	C	D

	Very Much So	Moder- ately So	Some- what So	Not at All
41. I am afraid that I will be harmed during delivery.	A	B	C	D
42. I feel that babies aren't much fun to care for.	A	B	C	D
43. My husband feels I burden him with my feelings and problems.	A	B	C	D
44. When we get together my mother and I tend to argue.	A	B	C	D
45. It will be difficult for me to give enough attention to a baby.	A	B	C	D
46. I think the baby will be a burden to me.	A	B	C	D
47. I feel prepared for what happens in labor.	A	B	C	D
48. I know some things I can do to help myself in labor.	A	B	C	D
49. When the time comes in labor, I'll be able to push even if it's painful.	A	B	C	D
50. I think about the kind of mother I want to be.	A	B	C	D
51. I am anxious about complications occurring in labor.	A	B	C	D
52. I feel that the stress of labor will be too much for me to handle.	A	B	C	D
53. I think I can bear the discomfort of labor.	A	B	C	D
54. I am concerned that caring for a baby will leave me little time for myself.	A	B	C	D
55. My mother reassures me when I have doubts about myself.	A	B	C	D
56. I feel well informed about labor.	A	B	C	D
57. I am worried that something will go wrong during labor.	A	B	C	D
58. It's difficult for me to accept this pregnancy.	A	B	C	D
59. My mother encourages me to do things in my own way.	A	B	C	D
60. I think my husband would say we have made a satisfactory sexual adjustment during this pregnancy.	A	B	C	D

	Very Much So	Moder- ately So	Some- what So	Not at All
61. This has been an easy pregnancy so far.	A	B	C	D
62. I wish I wasn't having the baby now.	A	B	C	D
63. I worry that I will lose the baby in labor.	A	B	C	D
64. If I lose control in labor it will be hard for me to regain it.	A	B	C	D
65. My mother criticizes my decisions.	A	B	C	D
66. I'm having a problem adjusting to this pregnancy.	A	B	C	D
67. I am worried that my baby may not like me.	A	B	C	D
68. I focus on all the terrible things that could happen in labor.	A	B	C	D
69. This pregnancy has been a source of frustration to me.	A	B	C	D
70. I can count on my husband to share in the care of the baby.	A	B	C	D
71. I am confident of having a normal childbirth.	A	B	C	D
72. I feel that childbirth is a natural, exciting event.	A	B	C	D
73. I feel I already love the baby.	A	B	C	D
74. I have found this pregnancy gratifying.	A	B	C	D
75. I believe I can be a good mother.	A	B	C	D
76. I have regrets about being pregnant at this time.	A	B	C	D
77. I find many things about pregnancy disagreeable.	A	B	C	D
78. I feel I will enjoy the baby.	A	B	C	D
79. I am happy about this pregnancy.	A	B	C	D

Appendix E

Information Letter

Dear

I would appreciate your help in a study I am doing into the comparison of women's expectations of pain during labour and their actual pain experienced. I am doing this study for two reasons. Firstly, during my years as a midwife I have wondered whether the actual pain is more or less than expected and secondly, as part of my Honours degree in Nursing.

Should you be willing to help, you will need to complete the following three steps.

1. Fill in a questionnaire about 1-4 weeks before the baby is due. The midwife in the prenatal clinic will explain how to complete the questionnaire.
2. In labour you will mark a scale to show the amount of pain you have and give one word to describe the pain. This will be done three times during labour - early, middle and late labour. It will only take less than a minute to do this each time.
3. Two hours after the baby is born you will be asked to answer the question on whether the labour was different from what you had expected and mark a scale to show the overall amount of pain you experienced in labour.

The information you give will be given a number and will be treated with the strictest confidence. Only I will have access to your name and corresponding number. In the research report that is subsequently published, no reference will be made to you by name.

The study has been approved by Osborne Park Hospital and Edith Cowan University.

If you agree to participate in the research study please sign the consent form below. If you sign the form, you may still, at any time during the study, change your mind and withdraw your consent, without affecting your treatment.

Yours sincerely,

Shelagh Lawrence

Midwife, Honours student and researcher.

Appendix FConsent Form

I agree to participate in the above mentioned study. I have received a copy of the information form. I understand what is involved in the study. I realise that I can withdraw my consent at any time and I have been assured that the information I give will be kept confidential.

Signature: _____

Witness : _____

Date : _____

Appendix G

INSTRUCTION SHEET

Please ensure that the primipara completes three questionnaires, between contractions, during labour: 1) 3cm or less, cervical dilatation; 2) 4cm - 7cm dilatation, and 3) 8cm or more, dilatation. Vaginal examinations will be carried out as per the unit's routine management of labour. Within two hours postpartum, the last questionnaire on experienced pain will be completed. The question "How was your actual labour pain different from what you had expected?" will also be asked. If the woman comes in more than 3cm dilated please write that on the first questionnaire then carry on with the others in their order. If the woman's labour progresses very quickly and goes from 3cm to 8cm between V.E.'s leave the questionnaire 4cm - 7cm and carry on with the other questionnaires. Thank you for your co-operation.

When completing the Visual Analogue Scale please use only a vertical line
e.g.

Pain as bad as it could be	<hr/>			No pain
	severe	moderate	mild	

Appendix H

The University of Texas Medical Branch at Galveston



School of Medicine
Graduate School of Biomedical Sciences
School of Allied Health Sciences
School of Nursing

Marine Biomedical Institute
Institute for the Medical Humanities
UTMB Hospitals

January 22, 1993

Shelagh M.F. Lawrence



Dear Shelagh Lawrence:

I received your FAX dated January 8th, and I'm happy to grant you permission to use my Prenatal Self-Evaluation Questionnaire in your research study. Enclosed please find copies of the questionnaire, the scoring key, and a table from chapter nine of my book entitled: Psychosocial Adaptation in Pregnancy.

The process of administering, scoring, and interpreting my questionnaire is actually straightforward and easily understood. At this point, it might be helpful for you to review pages 188-198 of my book. The questionnaire is a paper and pencil instrument, and takes approximately 10 minutes for subjects to complete.

As an illustration, let's assume that you have just administered my questionnaire to a subject and would like to determine her score on Scale #1, Well-Being of Self and Baby. As you can see from page two of the scoring key, this scale includes question numbers: 12, 16, 17, 30, 41, 51, 57, 63, 68, and 71. Let's also assume that her answers to these questions are as follows: #12-A, #16-B, #17-D, #30-D, #41-C, #51-A, #57-A, #63-D, #68-B, and #71-C. This subject's score on Scale #1, Well-Being of Self and Baby, is $1+3+1+1+2+4+4+1+3+3 = 23$ (note the reverse scoring procedure on questions #12 and #71).

Now, examine the copy of table #4, taken from the ninth chapter of my book. As you can see, the mean score for the Well-Being of Self and Baby Scale is 16.5, with a standard deviation of 4.8. A score of 23 is 6.5 points and approximately 1.355 standard deviations above the average score. For all of the questionnaire's seven scales, the higher the score, the higher the subject's conflict/anxiety about that particular dimension; the lower the score, the lower the subject's

conflict/anxiety about that particular dimension. Consequently, the score we just obtained in our example would be interpreted to mean that the subject has a significantly greater amount of conflict/anxiety, regarding the well-being of herself and her baby in labor, than did an average subject from our study sample.

I hope that this information adequately explains how to administer, score, and interpret the Prenatal Self-Evaluation Questionnaire. If you have any questions, please do not hesitate to call me at the University of Texas Medical Branch in Galveston, Texas, U.S.A. My office telephone number is (409) 772-6570. Best of luck with your research, and I would appreciate your apprising me of the findings once the study has been completed.

Sincerely, *o*



Regina Lederman, Ph.D., F.A.A.N.
Professor and Director of the
Graduate Program, School of Nursing
and Professor, Department of Preventive
Medicine and Community Health,
Division of Sociomedical Sciences

Appendix I

Variables and Numbers with Mean Values Inserted

Variable	Number of mean values inserted
VAS	
early labour	11
active labour	11
PPI	
early labour	11
active labour	11
PSEI	
Relationship/mother	3
Relationship/husband	3