PSYCHOLOGICAL AND SPIRITUAL TRAITS IN ADULTS BORN VIA LABOR CESAREAN SECTION

by

Steven James Curley

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Transpersonal Psychology

Institute of Transpersonal Psychology

Palo Alto, California

May 18, 2009

Approved by:

Patricia G. Campbell, Psy.D., Committee Chairperson

LeAnna DeAngelo, Ph.D., Committee Member

Marti Glenn, Ph.D., Committee Member
Abstract

Psychological and Spiritual Traits in Adults Born via Labor Cesarean Section

by

Steven James Curley

This study concerning birth investigated the adult psychological and spiritual effects of those individuals born via labor cesarean section utilizing quantitative and qualitative research methods. A labor cesarean section is defined as a cesarean section performed after the onset of labor. A demographic questionnaire, the Symptoms Checklist-90-Revised, the Spirituality Assessment Scale, and a birth questionnaire were completed by 64 adults, 57 women and 7 men. The participants, aged 18 to 58 years, were divided into 3 groups: the vaginally born \((n = 20)\), the nonlabor cesarean born \((n = 20)\), and the labor cesarean born \((n = 24)\). A comparison of the 3 birth groups’ data from the Symptoms Checklist-90-R and the Spirituality Assessment Scale was made using one-way analysis of variance. The qualitative data from the birth questionnaire were analyzed using a grounded theory method. The quantitative analysis revealed reduced mean scores on the Somatization \((p = .043)\), Obsessive-Compulsive \((p = .014)\), and Anxiety \((p = .049)\) subscales of the Symptom Checklist-90-R as compared to the vaginally born group. A post hoc Bonferroni analysis found the difference between the 3 groups on these 3 subscales to be due to the vaginal group. However, due to the multiple comparisons of this study the experiment-wise error rate may be inflated leading to an increased chance of Type I errors. No correlation was found between labor cesarean birth and adult spirituality. The qualitative analysis (grounded theory) did not reveal any differences between the 3 birth groups. These results contradicted the work of other researchers in
this field and suggested that further research is needed on the possible long-term psychological and spiritual consequences of birth.
Acknowledgments

There have been many people who have helped make this dissertation possible. I would like to thank my committee members for their support and help in completing this dissertation. I would also like to thank all of the participants who generously donated their time and information. I thank my parents James and Janet Curley for their generous support and my sister Jill Mulcare for her help in recruiting participants. I would like to thank all my friends for their support, patience, and humor through all of this. I also thank Arthur Hastings, Ph.D. for his generosity and guidance. Lastly, I would like to thank Mary Culberson, Ph.D. for helping me to engage in the inner work needed to complete this dissertation and for helping me to find meaning in this process. Thank you all.
Table of Contents

Abstract ....................................................................................................................... iii
Acknowledgments ........................................................................................................... v
List of Tables ................................................................................................................. x
List of Figures ................................................................................................................ xi
Chapter 1: Introduction ....................................................................................................1
  Method ................................................................................................................ 2
  Relevance ............................................................................................................ 3
  Dissertation Overview .......................................................................................... 6
Chapter 2: Literature Review ........................................................................................... 7
  Prenatal and Perinatal Psychology ............................................................................. 7
    Sigmund Freud ................................................................................................. 8
    Otto Rank ......................................................................................................... 9
    Stanislav Grof ................................................................................................. 10
    David Cheek ................................................................................................. 16
    David Chamberlain ....................................................................................... 17
    William Emerson ......................................................................................... 19
    Jane English ................................................................................................. 22
    Marilyn Dickie ............................................................................................ 23
    Dennis McCracken ....................................................................................... 25
    Leslie Feher ................................................................................................. 26
    Bertil Jacobson and others ............................................................................ 29
  Prenatal Research ................................................................................................. 35
<table>
<thead>
<tr>
<th>Tables</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>80</td>
</tr>
<tr>
<td>2</td>
<td>84</td>
</tr>
<tr>
<td>3</td>
<td>85</td>
</tr>
<tr>
<td>4</td>
<td>87</td>
</tr>
<tr>
<td>5</td>
<td>89</td>
</tr>
</tbody>
</table>

Descriptive Statistics of Participants by Birth Group

Descriptive Statistics for All Participants on All Scales and Subscales

Descriptive Statistics for Vaginal, Nonlabor Cesarean, and Labor Cesarean Birth Groups on All Scales and Subscales

ANOVA Analysis of Symptom Checklist-90-R and Spiritual Assessment Scale Differences Between Birth Types

Post hoc Bonferroni Analysis of Differences Between Birth Groups on Select Symptom Checklist-90-R Subscales
## List of Figures

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
</table>
Chapter 1: Introduction

This dissertation explored some of the potential psychological and spiritual consequences of being an adult born via labor cesarean section (c-section) as theorized by such researchers as Grof (1973, 1985) and English (1993). The levels of psychological symptoms and spirituality were examined for adults born by labor cesarean section and compared to those in vaginally born adults and those born by nonlabor cesarean section. For the purposes of this study a labor cesarean section is defined as one that is performed after the onset of labor. A nonlabor cesarean section is one performed before the onset of labor.

This work was guided by two questions that are based upon the work of such theorists and researchers as Grof (1972, 1973, 1985), Chamberlain (1999a, 1999b), Emerson (1998), English (1993), Cheek (1986, 1992), Jacobson et al., (1987), Wade (1998), and others. Is there a correlation between adult psychological symptoms and being born by labor cesarean section? What correlation, if any, exists between being born by labor cesarean section and one’s adult spirituality? This researcher explored these questions as a means to contribute in some small way to the fields of perinatal psychology and transpersonal psychology.

An aspect of the current project was to shift from the anecdotal to the quantitative in order to confirm or contradict the anecdotal work. To do this, this researcher examined the levels of psychological symptoms and spirituality with three groups: the labor cesarean born, the nonlabor cesarean born, and the vaginally born. The intent of this research was to see if the labor cesarean group differed significantly from the vaginal and nonlabor cesarean groups. The work of Grof (1973, 1985), Emerson (1998), English
(1985, 1993), Dickie (1988), Chamberlain (1999a, 1999b), Jacobson et al. (1987), and others suggests that there may be differences among these three populations due to birth circumstances. This research study used quantitative and qualitative methods to this end.

**Method**

The author utilized a demographic questionnaire, the Symptoms Checklist-90-Revised (Derogatis, 1994), the Spirituality Assessment Scale (Howden, 1992), and a birth questionnaire in order to collect data on any possible correlation between the manner in which one is born and later psychospiritual functioning. The Symptoms Checklist-90-R was used to measure psychological symptoms. The Spiritual Assessment Scale was employed to assess spiritual functioning. The birth questionnaire included open-ended questions in order to add a qualitative element to the study with the intention of illuminating the quantitative data.

The quantitative data were analyzed using one-way analysis of variance (ANOVA) performed with the assistance of the statistical program SPSS. The qualitative data were analyzed using a version of grounded theory (Auerbach & Silverstein, 2003). This process included the use of the textual analysis program HyperResearch 2.8. Additional analysis of the qualitative data was conducted using one-way ANOVA and SPSS.

This researcher chose to investigate this topic for several reasons. Grof and his Holotropic Breathwork were my first introduction into the fields of transpersonal psychology and perinatal psychology. I have found his work to be meaningful and helpful in my own life. This work also led me to pursue a doctorate in transpersonal psychology. Completing a dissertation that is in part based upon his work was a way to come full
circle in my graduate career as well as to contribute to an area of study from which I have benefited.

Relevance

Little is known of the origin of the cesarean section, but it has existed for centuries.

According to ancient sources, the procedure takes its name from a branch of the ancient Roman family of the Julii, whose cognomen Caesar (Latin *caedere*, to cut) originated from a birth by this means, *[sic]* some modern historians doubt this is true. (Cesarean section, 2002, p. 42)

The first recorded cesarean section occurred in 1610 C. E. (Cesarean section, 2002). During the first half of the 19th Century the mortality rate for mothers undergoing the procedure was 75%. Improved surgical techniques, anesthesia, antibiotics, blood transfusions, and improved antiseptic conditions have made cesarean section a much safer procedure (Cesarean section, 2002). In the late 20th Century medical malpractice suits have helped dramatically increase the cesarean section rate, that is, obstetricians are performing more cesareans out of fear of litigation against them (Cesarean section, 2002).

Using the latest available data (2007) for the United States, the Center for Disease Control found that cesarean births dropped sharply from 1989 to 1996 (see Figure 1), but have risen 53.6% since that time (Hamilton, Martin, & Ventura, 2009; Martin et al., 2007). “The preliminary cesarean delivery rate rose 2 percent *[sic]* in 2007 to 31.8 percent *[sic]* of all births, marking the 11th consecutive year of increase and another record high for the United States” (Hamilton et al., p. 3). According to Martin et al., the upward trend is due to the steep increase of primary (first) deliveries and the reduction of vaginal birth after previous cesarean deliveries. As a relatively new phenomenon in human existence, it is of psychological and practical interest to determine if this
phenomenon has psychological or spiritual consequences for the adults born in this way.

In the history of psychology, the idea that birth, be it by cesarean section or not, is psychologically significant is not new. Otto Rank (1929) postulated that birth trauma could cause psychological difficulties and that cesarean section could prevent such difficulties. Stanislav Grof (1972, 1973) found a great deal of perinatal material recalled and relived during LSD psychotherapy sessions and formulated a theory on how the biological, psychodynamic, and transpersonal aspects of the birth experience provide a template that shapes our lives. Jane English (1985), one of Grof’s students, wrote a book concerning the lifelong imprint that nonlabor cesarean birth may leave on those who were born in this way. David Chamberlain (1999a, 1999b) and David Cheek (1986) have used

Figure 1. Cesarean Delivery Rate (percentage of all births) 1989-2007. From data contained in Martin et al., 2007 and Hamilton et al., 2009.
hypnosis as a means to validate the impact of birth on patients and as a way to work through the effects of these impacts. Much of the work of Grof, Chamberlain, Cheek, and English has been anecdotal. Others have begun to look at the subject through a quantitative research lens. Researchers such as Feher (1990), Dickie (1988), Jacobson et al. (1987), and others have built upon the work of Rank, Grof, and English and have begun to apply more empirical research methods to the subject.

The topic has transpersonal relevance. Much of Grof’s (1973) work explored the archetypal and spiritual nature, that is, the transpersonal aspects of the birth process. Wade’s (1996) work with memory and consciousness suggested the existence of transcendent memory and consciousness (memory and consciousness independent of the body). Her work implies an increased relevance of pre and perinatal experience. Wade pointed out that if transcendent consciousness exists, it is possible to be impacted by events that occurred even before our nervous systems were fully developed. If this is true it is possible that birth circumstances may have an impact on adult psychospiritual functioning.

Birth is an important motif that occurs in all of the world’s religions and spiritual traditions.

The mystery associated with birth forms a central motif in every religion. The motif may be appreciated in its irreducible physical form or may become a highly abstract symbol or ritual. Religiously, birth is not regarded as merely a physiological process, or even a ritualized physiological event, but is associated with the evolution and transcendence of spiritual powers or the soul. Transmuted through myth, ritual, and symbol, the concept of birth becomes a major cipher for understanding existence and expressing wonder at creation. (Gross, 1987, p. 227)

As an important spiritual motif that is imbedded in the world’s religious traditions birth is worthy of further spiritual research and exploration. This study intended to do just that.
Dissertation Overview

Chapter 2 explores the literature on prenatal and perinatal psychology, medical research related to cesarean births, research concerning the functioning of neonates, as well as research on the spiritual relevance of birth. Chapter 3 discusses how participants were recruited and selected for this study, and describes the instruments used in this study. Logistical and ethical concerns are also addressed in Chapter 3. Chapter 4 details the treatment of the data and presents the results of the study. Chapter 5 discusses the results and how they relate to the work of those cited in Chapter 2. The results are also discussed in a way that points to future areas of research. Lastly, Chapter 5 speaks to the limitations and delimitations of the study.
Chapter 2: Literature Review

Is there a relationship between being born by labor cesarean section and adult mental health and adult spirituality? This literature review will report on what has been done in the field of psychology in regards to this question. A brief history of perinatal psychology will be presented followed by a survey of the existing, relevant research in the field. The literature review will show what research has come before this study and will give a sense of what has not yet been studied in this field, all in order to demonstrate the rationale for having conducted this study.

Prenatal and Perinatal Psychology

It is the field of perinatal psychology to which the proposed study belongs, however, much of prenatal psychology is relevant to perinatal psychology and is therefore included in this chapter. Prenatal and perinatal psychology (i.e., the psychology of gestation and birth respectively) are relatively new areas of study. Freud (1900/1953, 1910/1957, 1916/1963, 1926/1959) may have been the first in the psychology field to address birth’s impact on the psyche. Otto Rank (1929), the Viennese psychoanalyst, elaborated on the work of Freud. His book, The Trauma of Birth, may have been the first work devoted entirely to the subject of how birth trauma manifests in the adult psyche. Stanislav Grof’s (1972, 1973) studies of LSD in the 1950s and 1960s unexpectedly brought perinatal material into psychotherapy and consciousness research. In using hypnosis, others discovered insights into pre and perinatal consciousness and its link to adult consciousness (Chamberlain, 1999a, 1999b; Cheek, 1986, 1992; Emerson, 1998). Jane English (1993) has researched the experiences of those born by nonlabor cesarean section and how their birth experiences have impacted their lives. Leslie Feher (1987,
1990) examined longitudinal data collected by others to see how birth may impact personality. Jacobson et al. (1987) looked at birth circumstances and adult suicide behavior. Additionally, Wade (1996, 1998), Wilber (2000a, 2000b, 2000c), and McCarty (2004) have discussed possible spiritual aspects of birth. Thus, beginning with Freud, birth has been a subject that is interdisciplinary in nature with a variety of perspectives contributing to its study.

*Sigmund Freud.* Freud (1900/1953, 1926/1959) saw birth as the prototypical experience of anxiety. Freud believed anxiety is a reaction to danger states and saw birth as the first danger state we, as humans, face. He related this anxiety to the physical trauma of birth and its inherent sense of danger and postulated that it served a role in preparing the fetus’ lungs for breathing (Freud, 1926/1959).

Freud (1926/1959) was critical of Rank’s theory (see below) that the birth trauma was the genesis of neurosis. Freud did not see the separation from the mother during birth as the source of birth anxiety (see above). Freud argued that the fetus, being completely narcissistic, was not yet aware of the mother as an object. Thus, by definition, it would be impossible for separation anxiety to occur. Freud asserted that Rank’s theory overlooked hereditary constitutional and phylogenetic factors. Lastly, Freud stated that Rank’s theory had not yet been supported by observation or clinical experience.

Freud (1910/1957, 1916/1963) did not explicitly mention cesarean section in his writings on birth, but he did allude to it. In both works Freud supposed that the character Macduff in Shakespeare’s *Macbeth* is free of anxiety due to his being cut from his mother’s womb rather than being born vaginally. Lacking the prototype for anxiety,
Macduff does not experience it. Perhaps cesarean birth has a positive psychological consequence. This study attempted, in part, to investigate this hypothesis.

Freud’s work in this area was largely speculative and anecdotal. It was based on his experiences with his patients and was arrived at without using modern research methods. Freud used his clients’ adult problems to extrapolate back to the birth experience without testing his hypotheses. By using his clients as his source of data he used a self-selected rather than a randomly selected group, that is, those seeking psychoanalysis. In doing this he skewed his sample with those suffering from psychopathology. No work was done with a normal population. Given these flaws in Freud’s methodology, it is left to others to prove or disprove his theories. Despite this, Freud (1910/1957, 1916/1963) did bring the concept of birth as an event with psychological consequences for the adult (i.e., anxiety) into being. This researcher’s study follows in the work of Freud to investigate some of the possible consequences of birth on adult life.

Otto Rank. Rank was a protégé of Freud until Rank’s work on birth trauma created a rift between them. Rank (1929) theorized that the trauma of birth was the original or prototypical trauma to which all people must learn to adjust or risk neurosis or psychosis. He postulated that the repression of the birth trauma as well as the repression of the memory of the primal pleasure of the womb was a psychological necessity in order for life itself to move forward. Rank continued to elaborate this motif by tracing art, civilization, mythology, religion, and philosophy as adjustments stemming from the anxiety of birth and the desire of humans to return to the pleasure of the womb. He also linked conversion disorders, hysteria, and sexual disorders to difficulties in adjusting to
birth anxiety. Rank saw psychoanalysis as an effective means of helping patients complete an adjustment to birth anxiety. The patient’s mother fixation was transferred to the analyst. When treatment ended the patient ideally recapitulated his or her own birth, reliving the birth anxiety in a more abreactive and healthy way.

Rank (1929) did not directly discuss cesarean section, but he does refer to it with regard to hero myths. In the hero myth, the hero is cut out of the womb, often prematurely and goes on to accomplish tremendous feats, even as a child. Rank was of the opinion that this was due to the hero being spared birth anxiety and the necessity of overcoming an early neurotic period. This may point to a possible psychological benefit of being born by cesarean section, and it is a phenomenon that was explored in this study.

Rank’s (1929) work is theoretical in nature and based on his clinical work. Rank’s work suffers from the same flaws as Freud’s work. He did not conduct studies to validate his findings and this is a weakness in his work. It remains for others to see if his theories are supported or not. However, Rank was the first in the field of psychology to give such importance to birth and the first to have developed an encompassing theory that linked birth with adult mental health and psychological processes.

*Stanislav Grof.* Grof (1972, 1973, 1987) (see also the *Spirituality* section of this chapter) has built upon the work of Rank and is one of the major theorists in the field of perinatal psychology. I have written in greater detail of Grof’s work as it is one of the lenses through which the results of this study will be viewed.

Grof was trained as a psychiatrist and psychoanalyst and was one of the first researchers in the United States who conducted psychotherapy sessions using LSD. His experience with this work led him to formulate the varieties of transpersonal experience
(Grof, 1972, 1973). One category of these experiences is the perinatal (Grof, 1972, 1973).

Grof (1972) used the records of 3,300 LSD psychotherapy sessions, 2,000 of which he conducted himself, as the basis for his observations on the varieties of transpersonal experiences. The perinatal material from these sessions showed patterns from which Grof developed his concepts of COEX systems and Basic Perinatal Matrices (Grof, 1973).

Grof (1973) developed the concept of the COEX system to explain the Freudian aspects of the perinatal experiences he saw in the LSD psychotherapy sessions. Grof writes,

A COEX system can be defined as a specific constellation of memories consisting of condensed experiences (and/or fantasies) from different life periods of the individual. The memories belonging to a particular COEX system have a similar basic theme or contain similar elements, and are accompanied by a strong emotional charge of the same quality. (p. 22)

Each COEX system evolves its own defense mechanisms and is associated with specific clinical symptoms. These COEX systems become part of the personality structure of the individual. The character, number, extent, and intensity of these COEX systems vary widely from person to person. Later Grof (1987) deepened his concept of COEX systems to include pre and perinatal experiences, past life experiences, transpersonal phenomena, and the collective unconscious. If Grof’s conception of the COEX system is correct, then it is easy to see how one’s birth experience would impact one over the course of an individual’s life.

In addition to the COEX system, Grof (1972, 1973) developed the concept of the Basic Perinatal Matrices (BPMs). The BPMs organize the psychological and spiritual aspects of the birth process into four matrices or categories. Each matrix is associated
with a physical stage of birth and has distinct emotional, psychological, and transpersonal elements unique to it. These attributes may be positive, negative, or both. The experiences of the BPMs create or add to already existing COEX systems which in turn, have an impact on adult psychospiritual functioning.

The first Basic Perinatal Matrix (BPM I) is associated with intrauterine life prior to the birth process (Grof, 1972, 1973, 1987). Undisturbed intrauterine existence may be experienced biologically (i.e., physically), in which one’s needs are met without effort. On a spiritual level, BPM I is the experience of Cosmic Unity. Intrauterine disturbances may also be experienced on the biological and transpersonal levels. Examples of intrauterine disturbance include abortion attempts, the mother’s use of drugs, alcohol, or tobacco, the ingestion of toxins, and extreme emotional or physical trauma to the mother or fetus. Transpersonally, these may be experienced as demonic presences, evil forces, or negative karma (Grof, 1973).

BPM II is associated with the first stage of labor in which the uterine contractions have begun but the cervix has not yet dilated (Grof, 1973). Grof likens the psychological and spiritual experience of BPM II to Hell with its unending and total suffering. There is a sense of being trapped and feeling utterly hopeless. Life seems meaningless and cruel in this matrix. “BPM II seems to represent the basis for recording of all future extremely unpleasant situations, in which the passive and helpless individual is victimized and endangered by an overwhelming and destructive external force” (Grof, 1973, p. 30).

The third matrix, BPM III, is associated with the second clinical stage of delivery in which the child is moving through the birth canal (Grof, 1973). This matrix, like all the matrices, may be experienced both biologically and/or psychospiritually.
Psychospiritually, this matrix is one of a terrific struggle of death and rebirth. Characteristic of BPM III is a “volcanic ecstasy, a highly sensual and dynamic experience in which agony fuses with pleasure” (Grof, p. 30). The matrix has three distinct aspects: the sadomasochistic, the sexual, and the scatological. “As a memory matrix, BPM III is related to all future experiences of the individual involving intense sensual and sexual elements; to wild, hazardous, and exciting adventures; as well as to scatological exposures” (Grof, p. 30).

Lastly, associated with the final exit from the birth canal and the severing of the umbilical cord is BPM IV (Grof, 1973). In BPM IV one may relive the actual birth, including any obstetrical interventions (e.g., cesarean section, use of forceps, and the like). Spiritually, the experience comes in the form of a symbolic death and rebirth. The symbolism is often religious or mythological in nature and includes elements of liberation, salvation, redemption, or a victory over an enemy. This matrix is the prototype for all experiences of major personal success and of the cessation of instances of prolonged danger, such as the end of wars, accidents, and disease. These matrices may contribute to adult spiritual functioning. This study looked at possible differences in spiritual functioning, one aspect of these matrices, between the birth groups (vaginally born, nonlabor cesarean born, labor cesarean born).

In these articles Grof (1972, 1973) pointed to links to a wide array of future psychopathology due to unresolved birth issues, usually due to some sort of biological, psychological, or spiritual trauma. Grof (1987), following the work of Freud and Rank, postulated that anxiety has as one of its sources the life-threatening aspects of birth. Thus, any birth trauma would be a source of anxiety in the moment and possibly in the future.
Grof theorized that depression may have its roots in the birth experience.

The fact that the closed system of the birth canal prevents any external expression of the biological fury involved provides a natural theoretical basis for Freud’s concept of depression as aggression turned inside and using the subject as target. This connection can be clearly illustrated by the fact that the extreme outcome of both depression and aggression is murder. Homicide and suicide differ only in the direction the destructive impulse takes. Thus also depression has its perinatal prototypes. For inhibited depression, it is the no-exit situation of the second perinatal matrix and for agitated depression, the third matrix, which allows some limited expression of aggression. (Grof, 1987, p. 465)

It is this aspect of Grof’s work that sets the stage for research, including this study, into any possible effects labor cesarean birth may have on the psychological health of individuals as adults.

Much of Grof’s theory is focused on vaginal birth, but he did briefly discuss cesarean birth in some of his works.

The child born in this way [refers to nonlabor cesarean section] entirely bypasses BPM II and III. It must still face the crisis of separation from the mother, the cutting of the umbilical cord, and possibly the effects of anesthesia. The emergency Caesarean is usually performed after many hours of traumatic delivery, when it becomes obvious that to continue would be dangerous for the mother or child. In this case the overall trauma is regularly far greater than associated with normal delivery. (Grof, 1985, p. 253)

Grof (1985) did not have much clinical experience with nonlabor cesarean born adults, but he did have some impressions of them that he said needed to be validated with further research. Grof believed nonlabor cesarean born people to be very open to the transpersonal realm, unless they had had negative experiences postbirth to undo this proclivity. Grof also observed that the nonlabor cesarean born do not seem well suited to struggle or have the stamina for long-term projects. Grof felt that these people lacked a sense of their place in the world as well as a sense of what could be reasonably expected from others. The nonlabor cesarean born tend to reach out for what they want and ask for
more if they get what they want according to Grof. He observed that the extreme pattern for some nonlabor cesarean born people is to “oscillate between indiscriminate and excessive demands and painful withdrawal” (Grof, p. 254).

Grof (1988) included some of Jane English’s artwork concerning her experiences of nonlabor cesarean birth in his work (see Jane English section). In terms of cesarean birth affecting adult functioning he made this general statement:

Uncomplicated birth seems to be the blueprint for coping with all later difficult situations in life. Various complications, such as prolonged and debilitating delivery, the use of forceps, or heavy anesthesia appear to be correlated to specific problems in dealing with future projects of all kinds. The same is true for induced birth, premature delivery, and Caesarean section. (Grof & Bennett, 1993, p. 78)

Most of Grof’s work was not specifically aimed at cesarean birth but he does point it out as a phenomenon to be explored further (Grof, 1985). His work with birth in general does provide ample reason to continue to research how birth may or may not impact adult life. This study was an effort to continue his work.

The research Grof conducted drew upon a large body (3,300) of LSD psychotherapy sessions. Grof conducted 2,000 of these sessions himself. The remaining 1,300 sessions were conducted by researchers in the United States and Europe. Grof examined the records of these 3,300 sessions (Grof, 1972). The large number of sessions aided in establishing the reliability of the anecdotal data. His conclusions were based on his training, experience, and the experiences of his patients. Grof’s work had the same problems as the work of Freud and Rank in this area. His assertions were based on purely anecdotal data. He did not validate his findings with any quantitative studies. Grof’s sample was skewed in that it relies on adults who were being treated for mental health
problems. There was no comparison group from the population at large. Grof did not specify the demographic information of the sample he used for his work.

Grof’s (1972, 1973, 1985, 1987, 1988, 1993) work, while anecdotal and not empirically tested, does provide a clear, specific, and fairly comprehensive theory of how birth may influence adult psychology and spirituality. His work formed a significant portion of the rationale for this study as well as a means to interpret the results, or at least serve as a source for comparison.

David Cheek. While Grof based his work on psychedelic psychotherapy sessions, David Cheek worked as a clinical psychologist using hypnotherapy to work with birth trauma. Cheek (1986) wrote of prenatal and perinatal imprints that have a psychological impact on the individual well into adulthood. Cheek defined imprinted memories:

In humans an experience associated with injury or great emotional stress can occur at any time in life. It and the emotional and physiological responses to the original stimulus will last without fading and can harmfully influence the individual throughout a life time. The maladaptive physiological and emotional reactions to the original experience can be mollified with hypnotic techniques but the original memory will remain unchanged. It will be reported in its original form with a subsequent age-regression when this is carried out at a sub-verbal level of association. (Cheek, 1986, p. 97)

Cheek (1986) suggested that birth trauma or traumatic prenatal experiences can create these imprinted memories, which then have adverse psychological effects in the individual until these memories are addressed in a therapeutic manner. What sort of imprint, if any, does cesarean birth leave? What are the adult consequences of having such an imprint? These are questions to be explored by this study.

In a second study, Cheek (1992) used hypnosis to regress four patients to their time as prenates. He compared the results with reports with their parents. Interestingly, the patients were able to remember events that occurred outside the womb while they
were in utero. In the study, Cheek cites examples of patients being able to remember a
dress their mother wore while pregnant with them, arguments that their parents had, and
emotions the mothers felt. The study is interesting in that it gave anecdotal evidence of
prenatal consciousness as well as clairvoyant abilities. In terms of spirituality, a
transcendent basis for consciousness and memory are suggested by the study’s results.

Cheek’s (1986, 1992) work was based on his clinical experience with clients, was
anecdotal in nature, and did not use a control group. He did not always mention how
many clients his work was based upon. His findings were in agreement with the reports
(1998), and English (1985, 1993), and had the same weaknesses as well. Cheek’s work
contributes to the body of anecdotal work that suggests that birth may have a relationship
to adult psychological functioning. His work also points to transcendent consciousness in
prenates (see also Spirituality section). Cheek’s work also added to the rationale for this
researcher’s study of birth and its potential consequences in adult life.

David Chamberlain. David Chamberlain, like Cheek, was a clinical psychologist
who worked with birth trauma using hypnotherapy. Chamberlain had also served as the
editor of the Journal of Prenatal and Perinatal Psychology and Health. Chamberlain
(1999a) did a study on the reliability of birth memory. He looked at 10 participants aged
9-23 years and their mothers aged 32-46 years. He hypnotized the participants and
allowed their birth memories to emerge. He then compared the participants’ reports of
their births with their mothers’ accounts of the births. Chamberlain found that while the
birth memories were subject to human errors like other memories, the birth memories of
the subjects were congruent with the mothers’ reports. The points of agreement between
the memories of the participants and their mothers greatly outnumbered the contradictions. The 10 pairs were in agreement 76.5% to 100% of the time with an average of 93.4%. He attributed the contradictions to misperception, attempts to fill in gaps of knowledge, and attempts to repress painful material. Although this study suggests that children have access to accurate memories of their births through hypnosis, the small sample size (10 pairs) detracts from the possible significance of the study. Further study is needed to establish this claim. The study relied on the mothers’ claim that they had never shared any of their memories of birth with their children. There is no reason to believe that the mothers’ consciously misinformed Chamberlain, but even as Chamberlain (1999a) points out, human memory is subject to error. Basing a study on this assumption, then, may detract from the possible significance of the study. However, the study lends anecdotal evidence to the reliability of perinatal memory accessed via hypnotic regression. The study added credence to conducting this research project as well by giving evidence that events during birth leave an imprint, in this case memory. What is significant enough to be remembered may have an impact on adult functioning.

Chamberlain (1999b) provided an overview of work done with birth memories and added his own experience as a psychologist who used birth memories in psychotherapy and hypnotherapy. Chamberlain (1999b) posited that many painful physical and emotional states seen in clients are actually traumatic birth or prenatal memories emerging into consciousness. He stated that, “whenever the ominous trio of despair, guilt, and low-esteem appear together, I begin to suspect I am dealing with a replay of a very early, very bad situation which at the time must have seemed beyond solution” (Chamberlain, 1999b, pp. 68-69). It should be noted that there are a myriad of
possible causes for despair, guilt, and low self-esteem, and that Chamberlain makes no attempt to discern a perinatal cause from any other type of cause.

Chamberlain (1999a, 1999b) based his assertions on the work of others as well as his own clinical experience. Evidence that he presented is primarily anecdotal. His conclusions were consistent with the work of Rank, Grof, Cheek, English, and Emerson but have not been empirically validated with other quantitative studies. Chamberlain (1999b) did not mention the number of people his findings were based upon. His population was skewed in that it consisted of people who were being treated for mental health problems and was self-selected. His work (1999a, 1999b) was based on his clients’ memories, but he did not present any corroborating evidence, such as birth records. Chamberlain’s work adds to the collection of anecdotal work which my study aims to explore further.

William Emerson. Emerson (1996, 1998), like Cheek and Chamberlain, is a psychotherapist in private practice who works with prenatal and perinatal trauma. Emerson (1998) observed hundreds of births, kept objective records of these births, and followed these people for 20 years. He has also spoken with medical and psychological practitioners about birth and its effects on their patients. Using these sources, Emerson created theories about how obstetrical interventions could impact individuals psychologically. Emerson, like Grof, provided specific theories as to how birth circumstances affect adult psychological functioning. For this reason, I will discuss Emerson’s work in greater detail than some of the other researchers cited in this study.

Emerson (1998) stated that obstetrical interventions are relevant to later life. He suggested that obstetrical traumas “exert their effects through unconscious aspects of the
psyche” (Emerson, 1998, p. 14). He went further to say that obstetrical traumas are usually activated during life experiences that are symbolically similar to the obstetrical traumas. These traumas are often recapitulated in the individual’s life as a way of externalizing the trauma to make it conscious and therefore bring about a catharsis and healing of the trauma. Emerson (1998) suggested that prenatal traumas shape the way the individual experiences and reacts to obstetrical traumas. He believed that many obstetrical traumas are similar to prenatal traumas and therefore activate them. However, Emerson (1998) asserted that even without prenatal trauma or subsequent trauma in postnatal life, obstetrical trauma could have a lasting impact in and of itself. This assertion makes Emerson’s work particularly relevant to my study, by having proposed that birth circumstances can have lifelong consequences. This study explored one aspect of this assertion.

Emerson (1998) believed that labor cesarean sections were more traumatic than nonlabor cesarean sections because they usually involved real or perceived birth complications and distresses. In the short term, Emerson stated that trauma from obstetrical interventions could interfere with mother-infant bonding. Anesthesia could result in the infant being drugged and not fully aware and therefore unable to bond well. Cesarean birth can involve hurried, insensitive, or even painful touch, which possibly may result in tactile defensiveness. Tactile defensiveness is the often unconscious aversion to touch (Emerson, 1998). As touch is an important part of mother-infant bonding, this may possibly interfere with the bonding process.

Emerson (1998) claimed that people born by cesarean section often recapitulate their birth experiences in a variety of ways. The tactile defensiveness mentioned above
can manifest as an avoidance of touch or touch may be allowed but anxiety is experienced. He stated that unconscious tactile defensiveness may appear as sexual or intimacy difficulties in adults. Sexual activity or intimacy may activate unconscious traumatic birth memories. According to Emerson (1998), other cesarean born people may recapitulate the birth trauma in the form of sports injuries or masochistic sexual behavior. Others may recapitulate the trauma by inflicting pain on others (sadism).

He described what he called the “invasion-control complex” (Emerson, 1998, pp. 28-29).

Researchers have found that babies, if they are not interrupted, initiate the birth process through their own endocrine system. In addition, there is a natural rhythm to the initiation and pacing of the birthing process, much of it organized by the biology of babies. Conversely, inductions and augmentations interrupt the natural rhythms, timings, and pacings of the birth process and interfere with “who is in charge.” When babies’ natural rhythms are altered by drugs, they initially feel shocked, confused and frightened. They subsequently feel (in increasing order of traumatization) interrupted, interfered with, intruded upon, invaded, and/or controlled. (Emerson, pp. 28-29)

Emerson (1998) suggested that those born via cesarean section recapitulate this interruption, interference, intrusion, invasion, and control. Some may place themselves in life situations where they will be interrupted or interfered with in some way. Others may be hypervigilant to situations where they will be interrupted or controlled and avoid them assiduously. Still others may seek to interfere with, intrude upon, or control others as a way of dealing with their birth trauma. This study examined if this theme of invasion and control and its recapitulation appears in the data collected by my proposed study.

Emerson’s (1996, 1998) work was based upon a sizeable amount (Emerson does not give an exact number, suggests in the hundreds) of anecdotal data from his own practice and the work of others. However, like the work of other theorists mentioned in
this chapter (Freud, Rank, Grof, English, Chamberlain, Cheek) Emerson did not validate his findings with quantitative studies. Additionally, Emerson’s population may be skewed in that much of his work is based on people seeking psychotherapy (as with the other theorists). Still, Emerson’s work, and especially that which was supported by birth records, adds to the body of work relevant to my study. Emerson’s work provided reason for this follow up study as well a potential lens through which to examine the data.

Jane English. Jane English is another of the anecdotal researchers who has done work related to the relationship between birth and adult functioning. While her work is anecdotal she does specify certain traits and patterns of those born by nonlabor cesarean section that my study addressed. English holds a doctorate in physics rather than psychology. In working with Grof in a personal capacity she became interested in the psychological and spiritual impact of cesarean birth on individuals. English’s research has focused within the field of perinatal psychology on cesarean birth, primarily nonlabor cesarean births (1985, 1993), and explored some of Grof’s (1985) work. She used her own life experience as a nonlabor cesarean born woman, the experiences of cesarean born others, and perinatal theory to develop a preliminary set of characteristics or issues that she claimed are not unique to the nonlabor cesarean born, but are more prevalent in them. These characteristics and issues span the somatic, behavioral, psychological, and spiritual domains of human existence (see Appendix K).

Psychopathologies were not included in this set of characteristics. Finally, she asserted that while cesarean births are quicker than vaginal births, the psychospiritual process of cesarean birth as described by Grof (1972, 1973, 1985) may take years to complete. That is, English (1985, 1993) theorized that without going through the birth
canal the individual lacks the normal experience of Grof’s third and fourth Basic Perinatal Matrices and must somehow complete them on his or her own. According to English, this may only occur years after birth.

English (1993) based her theories on her own life experiences, the experiences of other cesarean born adults, and the observations of parents of nonlabor cesarean born children, therapists, doctors, and nurses. She did not mention how many of these people there are or give any other demographic information. Her work was partially based upon Grof’s (1972, 1973, 1985) work which is also anecdotal in nature. Her work relied on the memories of those she interviewed. No empirical studies using a control group were used. However, her work included specific somatic, psychological, and spiritual themes and phenomena attributed to being born cesarean that were explored by my study. Additionally, her work provided a basis for this study and was used in part of the qualitative data analysis of this study.

Marilyn Dickie. While English’s work is based upon personal experience and anecdotal evidence, Marilyn Dickie’s work is more rigorous. Dickie (1988), for her master’s thesis, did the first study that was based upon the work of English (1985). Dickie looked at the functioning of 14 adult women in her study of 7 women born by nonlabor cesarean section and 7 women who were born via normal vaginal birth. The women were aged 25 to 48, were all Caucasian, and were all highly educated. Dickie used a semistructured interview with 79 questions divided into three categories: relationships, transitions, and problem solving. Dickie compared each groups’ answers with what Dickie expected the answers to be according to English’s (1985) hypotheses. Each group’s answers were also compared with one another.
Dickie (1988) found that in the relationship category of questions, the average percentage of cesarean born women who answered as English’s (1985) theory would predict was 75.7%. In contrast, the average of the cesarean-oriented responses by the normal vaginal delivery (NVD) group was 19.7%. The range of percentages of cesarean-oriented responses for the cesarean women was from 57% to 100%, that is, the cesarean born women’s responses corresponded to the expected answers for cesarean born women 57% to 100% of the time. The range of percentages of cesarean-oriented responses in the NVD group was 0% to 25%, that is, the NVD group gave cesarean oriented responses only 0% to 25% of the time. In the transitions category of questions the cesarean born women gave an average of 65.4% cesarean-oriented answers compared with 11.6% for the NVD group. The range of percentages of cesarean-oriented responses in the cesarean born women was 55% to 80%. The range for the NVD group was 8% to 27%. In the problem solving category, 54.3% of responses by the cesarean born group were typical cesarean-oriented responses, with a range of responses from 33% to 66%. The NVD group had an average percentage of cesarean-oriented responses of 13.9%, with a range of 0% to 25%. In the relationship and transitions categories all participants responded as English’s (1985) theory predicted. In the problem solving category all but one participant responded as expected.

Dickie’s (1988) study supports English’s (1985, 1993) work using more rigorous research methods. It is an example of work that examines the anecdotal research of others and explores the work further using quantitative methods. Dickie’s study is limited by its very small sample size. The use of only women, only Caucasians, and only highly educated people are also possible factors that may or may not have affected the results of
the study. No \( p \) values or other measures of significance were calculated in Dickie’s study making it difficult to determine the significance of the study. However, Dickie’s work is an example of a researcher applying more empirical methods to an anecdotally derived theory in order to investigate it further. It therefore serves as a precedent to the type of study that this researcher conducted.

_Dennis McCracken_. Another study based upon the work of English (1985) is a study of cesarean personality traits by McCracken (1989) who completed this work as his doctoral thesis. It is another example of a researcher using quantitative methods, and in this case psychological inventories, to explore a theory based upon anecdotal evidence. Like Dickie’s (1988) work it is an older study and one of the few conducted in this area of research. Forty-two participants were found through the Kaiser Health Maintenance Organization and the Child Health and Development Studies project of the University of California, Berkeley. The participants were divided into two groups: those born by nonlabor cesarean section (\( n = 20 \)) and those born vaginally without assistance, that is, without the use of forceps or vacuum extraction (\( n = 22 \)). The ages of the participants were 22 to 29. The participants were drawn from ethnically, socioeconomically, and educationally diverse populations. However, gender information was not given.

The study (McCracken, 1989) used the NEO Personality Inventory and the Myers-Briggs Type Indicator to assess four personality traits. The traits chosen matched four traits postulated by English (1985, 1993) to be more prevalent in individuals born by nonlabor cesarean section. These traits were conscientiousness, self-esteem, intuitive perceptual behavior, and openness to experience. The data were analyzed with Student’s \( t \) test comparing cesarean born scores with vaginally born scores. The analysis of Pearson \( r \)
correlations between variables was done with both groups. The level of confidence for each analysis was set at $p = 0.05$.

McCracken’s (1989) results showed no significant difference between the cesarean born and vaginally born participants on the four personality traits measured. While this study was inspired by the work of English (1985) it does not support her work.

McCracken’s (1989) study had a small, self-selected sample. The diversity of ethnicity, socioeconomic status, and education may or may not have made comparisons within groups and between groups difficult. The study had the advantage of using well-established psychological instruments and proven statistical analyses. It is an example of an empirical study researching adult consequences of birth and served as a partial model for the current study.

Leslie Feher. Leslie Feher is another of the few researchers to apply quantitative methods to perinatal psychology. Feher (1987) used data collected by the New York Longitudinal Study to conduct a quantitative assessment to see if there is a connection between birth circumstances and personality. Psychopathology was not assessed in the study. The study included 37 participants, 18 men and 19 women. Data on the participants were gathered at ages 3 months, 6 months, and yearly to age 5. Five categories of birth were used: natural, forceps, breech, cesarean, and premature. Five aspects of temperament were used: approach and withdrawal, adaptability, distractibility, attention span and persistence, and intensity of reaction. The participants were assessed by parental interview at ages 3 months, 6 months, and ages 1 through 5 years. The birth categories were compared with one another and the MANOVA technique used to analyze the data.
The hypothesis tested was that there was a significant difference between birth categories for temperament variables over a five year period of time. Twenty-six such differences were found at the .05 level or better using the MANOVA technique. Due to the large number of contrasts the Bonferroni correction was applied and the alpha level was reduced to .01 for years one and five. This lowered the significant contrasts to thirteen. . . . there are no direct trends. (Feher, 1987, p. 14)

Feher concluded from the above results that birth circumstances affect personality. This study addressed limited aspects of personality and did not address psychopathology. Feher’s study made a case for birth circumstances affecting adults but it was limited by its small sample size of 37 participants, and each birth category contained on average 7 participants. Correlations between birth circumstances and personality do not prove a causal relationship. Still, the study was an effort to further explore anecdote-based theory with stronger research methods.

Feher (1990) expanded her 1987 study to look at more variables with a larger sample size. Seventy-one participants with an age range of 21 to 68 were used. Two-thirds of the sample were women. The participants filled out a birth history and the 16 PF Personality Test. This assessment instrument looks at such factors as: cool vs. warm, concrete vs. abstract thinking, affected by feelings vs. emotional stability, submissive vs. dominant, among others. Additional factors were looked at by combining some of the scores from the 16 factors. These additional factors are extroversion (low score indicated introversion), forthright vs. shrewd, self-assured vs. apprehensive, anxiety, tough poise, independence, superego/control, adjustment, leadership, and creativity. Using the birth histories the participants were divided into six birth categories.

Using the Mann-Whitney statistical test, the major condition contrasts include six subjects: natural, drugs or anesthetics, forceps, cesarean, premature, and breech. Seventy-four significant contrasts were found at the .05 level or better. Twenty were at the .01 level and one at the .001 level. In addition there were 29 trends at
better than the .10 level. Although trends are not particularly noteworthy, they do deserve mention if they number five or more (Gerstman, 1989) or if they support the hypothesis (Paul, 1989). (Feher, 1990, p. 163)

The manner in which Feher (1990) analyzed the data creates comparisons of levels of personality traits between the birth category groups. Most of Feher’s results for cesarean personality traits were not significant. However, cesareans were found to be more warm, sober, tender, compulsive, and controlling when compared with the breech group \( (p = 0.035, 0.0138, 0.04, 0.005, 0.006 \) respectively).

Feher (1990) also compared each of the groups with the norms for the 16 PF Personality Test. Cesareans and the naturally born (i.e., no obstetrical interventions or drugs/medications were used) were the warmest groups. Cesareans were more expedient, tougher, suspicious, imaginative, relaxed, anxious, sensitive, and adjusted than average. With these scores, Feher used the profile instructions for the 16 PF Personality Test to come up with the following personality profile for the cesarean born:

This group is the most Sensitive to their environment and those around them. They are strongly influenced by their emotions and have artistic or cultured interests. They too are indecisive but score the highest on Adjustment. Therefore, they are self-confident, assertive, flexible, Relaxed, and have an easy time coping with life. They are high on Creativity and very high in terms of Warmth. This makes them easy going, kindly, and softhearted. They have the highest score on Imagination indicating they can become absorbed in thought, they can be Impractical, and they tend to be Unconventional. They have Dominant personalities but are the most Relaxed group. The latter can lead to poor job performance and less motivation to succeed. They are quite Forthright being genuine and open with others and they are the most Tender-minded group again supporting Sensitivity, artistic orientation but simultaneously they demand attention from others, can be unrealistic and dependent. (Feher, 1990, pp. 202-203)

Feher’s (1990) study looked at a broad range of personality traits and added a quantitative piece to the body of work supporting the argument that how we are born may be involved in how we are as adults. Given the number of categories of birth experience
and personality traits Feher looked at, the sample size for each was small. Correlations do not necessarily equal causations. Feher’s work also did not address psychopathology. Other studies are needed to confirm Feher’s findings and to see if birth circumstances influence psychopathology in adulthood. Feher did conduct two studies that researched the effects of birth circumstances on adult personality and thus provided examples of studies on which to model the current study.

*Bertil Jacobson and others.* The studies mentioned in this section are of a different nature than those previously cited. These studies were the first quantitative efforts to study the relationship between birth circumstances with specific psychopathologies in adults. While the studies are dated they were and are the first and best studies of their kind. Michel Odent (2001), the French obstetrician who pioneered the use of birthing pools, mentions many of these studies in his book, *The Scientification of Love.*

Jacobson et al. (1987) conducted a study that showed a correlation between birth trauma and the means of suicide used as an adult. The study looked at 412 adults born in Stockholm after 1940 who died between 1978 and 1984. All were either alcoholics, drug addicts, or had committed suicide. The groups were 81%, 81%, and 73% men, respectively. The births of the victims were unevenly distributed over six hospitals. This group was compared with a control group of 2,901. Birth records were obtained for all participants. The control group was 25% women and 75% men. The rate of suicide by asphyxiation (drowning, hanging, carbon monoxide poisoning, and strangulation) was four times higher in those individuals who experienced asphyxiation during birth with a $p$ value of 0.00005. Those who committed suicide by mechanical means (hanging, jumping
from heights, firearms, etc.) had over twice the rate of mechanical trauma (breech presentation, forceps delivery, entanglements with the umbilical cord) during birth as the control group with a $p$ value of 0.0001.

The study (Jacobson et al., 1987) also looked at drug addiction. Only cases where the mother was given opiates or barbiturates within 10 hours of delivery were included. Of the mothers of the addicts: more than twice were given opiates than the control group ($p = 0.00002$) and barbiturates were given to the addicts’ mothers about three times as often as to the control group’s mothers ($p = 0.0002$). This study is an example of a piece of research that used rigorous statistical methods with a large sample size to investigate potential relationships between birth factors and adult behavior. As such it set a precedent for the type of research conducted by the present study and served as a model for the present study.

Jacobson, Nyberg, Eklund, Bygdeman, and Rydberg (1988) looked at the use of obstetric medication and eventual amphetamine addiction in the offspring. Of the addict group, 82% were men whereas men were 50% of the control group.

Of 200 current amphetamine addicts born between 1945 and 1966 in Stockholm, proportionately more were born in hospitals where pain medication had been administered in high doses ($p < 0.05$). A blind matched comparison was made between 73 addicts and 109 non-addicted siblings by logistic regression, in which nitrous oxide administration was tested in competition with 12 other natal variables as possible confounders. The risk for amphetamine addiction in offspring was found to increase with duration of intermittent administration of pure nitrous oxide, i.e. it was estimated to be 5.6 times greater (95% confidence intervals 1.6 – 16.9, $p = 0.005$) when nitrous oxide had been given for 4.5 h vis-à-vis 0.25 h. (p. 677)

Jacobson et al. (1990) investigated the use of obstetric medication and opiate addiction in the offspring. The participants were 139 opiate addicts born between 1945 and 1966, and 230 sibling controls born during the same time period. Birth records were
obtained for all participants. The addict group was 74% men, while the control group was 48% men.

In subjects who had subsequently become addicts a significant proportion of mothers had received opiates or barbiturates, or both, compared with unmatched siblings (25% v 16%, $\chi^2 = 5.83$, $df = 1$, $p = 0.02$), and these mothers had received nitrous oxide for longer and more often. After controlling for hospital of birth, order of birth, duration of labour, presentation other than vertex, surgical intervention, asphyxia, meconium stained amniotic fluid, and birth weight the relative risk for offspring subsequently becoming an adult opiate addict increased with the number of administrations of any of the three drugs. When addicts were matched with their own siblings the estimated relative risk was 4.7 (95% confidence interval 1.8 to 12.4, $p$ for trend = 0.002) for three administrations compared with when no drug was given. (p. 1067)

These three studies all used birth records rather than relying on the participants’ memories. They used a relatively large sample size with varying socioeconomic status. These three factors increased the external validity of these studies. The studies may be skewed in that all participants were from Stockholm, Sweden so variation in terms of ethnicity is unknown. All of the study groups were preponderantly men. These gender imbalances may or may not have skewed the results. These two factors weaken the external validity of the study. All three studies add to the body of knowledge of perinatal psychology in a very convincing way and serve as models for this researcher’s study.

It is such correlations between birth trauma or drug administration and adult behavior that are of relevance to cesarean births and adult psychopathology. These studies quantitatively showed that circumstances during birth may have a relationship with adult behaviors. If the use of medication, breathing difficulties, and mechanical trauma are associated with adult behavior, perhaps cesarean section is related to adult behavior as well. Studies, such as this one, raised questions in this researcher’s mind. Is the cesarean section itself traumatic? Is it a relief to the baby? Could it be both? Is this
related to the individual as an adult? Is it the trauma that led to the labor cesarean section that is associated with adult psychological problems? These Swedish studies are congruent with the other works cited here. Further, the work of Jacobson and others cited provides a substantial quantitative basis for studies such as the one conducted here.

Several European studies have looked at possible relationships between unwanted pregnancies and the subsequent adult difficulties suffered by those born under such a condition. Forssman and Thuwe (1981) conducted a longitudinal study of 120 persons born to mothers who wished to abort them but were denied permission to do so. The researchers had a control group of 120 individuals to compare to. This study was conducted in Gothenburg, Sweden. The researchers found that the individuals born to the mothers who sought to abort them had significantly higher levels of psychiatric consultation and hospitalization, and juvenile delinquency ($p < 0.05$). During the ages of 16-21 the unwanted group also was more likely to be on public assistance than the control group ($p < 0.01$). This same study found that by age 35 there were no statistically significant differences between the two groups.

In a similar longitudinal study conducted in Prague, Czech Republic, Kubicka et al. (1995) examined children from unwanted pregnancies and compared them to children of accepted pregnancies. Like Forssman and Thuwe (1981), Kubicka et al. found that the differences between groups narrowed with time. However, at age 30, the unwanted pregnancy group in the Kubicka et al. study still had increased instances of depression ($p < 0.01$), psychiatric care ($p < 0.05$), and less social integration ($p < 0.05$).

Unwantedness of pregnancies and subsequent incidence of schizophrenia was investigated in Finland by Myhrman, Rantakallio, Isohanni, Jones, and Partanen (1996).
Myhrman et al. looked at a birth cohort of 11,017 individuals aged 16-28 years. The cumulative incidence of schizophrenia was found to be 0.7% compared to 1.5% for those in the unwanted group. Using logistic regression analysis the researchers found that for those with complete data, unwantedness was two and a half times more prevalent in those with schizophrenia than in the remaining sample population. Unwantedness was found to be a statistically significant, independent predictor of schizophrenia with an odds ratio of 2.4 and a confidence interval of 95%.

Raine, Brennan, and Mednick (1994) of Denmark, looked at 4269 men concerning birth complications (age 0), early maternal rejection (age 1), and violent crime (age 18). The authors found that while only 4.5% of the group had experienced birth complications, early maternal rejection, and had committed a violent crime they accounted for 18% of all violent crime committed by the study group ($p < 0.0001$).

In an older study in the United States, Salk, Lipsitt, Sturner, Reilly, and Levat (1985) examined 46 prenatal, perinatal, and neonatal factors in 52 adolescents who committed suicide before the age of 20. For each individual in the suicide group, two matched controls were used. Of the 46 factors, 3 were found to differentiate between the suicides and the controls. These were respiratory distress for more than 1 hour at birth, no prenatal care before 20 weeks of pregnancy and chronic disease of the mother during pregnancy. The differences between the suicide group and the controls were found to be significant ($p < 0.005$); the differences between the 2 control groups were not found to be significant.

In another older study, Huttunen and Niskanen (1978) compared 167 Finnish adults whose fathers had died before their children’s births with a control group of 168
adults whose fathers died during the first year of their lives. They found that the study group had a higher incidence of schizophrenia than the control group ($p < 0.05$). The study group also had a higher total incidence of psychiatric and behavior disorders than the control group ($p < 0.025$).

Cnattingius, Hultman, Dahl, and Sparen (1999) looked at preterm birth and birth trauma and the incidence of anorexia nervosa in girls. Cnattingius et al. studied 781 girls who had been hospitalized for anorexia nervosa in Sweden between the ages of 10 and 21. For each individual in this group, 5 individuals born in the same year and hospital were selected as controls for a total of 3905. The researchers analyzed the data using conditional logistical regression. They found an increased risk of anorexia nervosa for those girls with cephalhematoma (bleeding in the skull) with an odds ratio of 2.4 and a confidence interval of 95%. Those girls who were born prematurely ($\leq 32$ weeks of gestation) also had an increased risk of anorexia nervosa with an odds ratio of 3.2 and a confidence interval of 95%.

These quantitative studies were all conducted using empirical methods with control groups for comparison and used large sample sizes which increased their external validity. The studies used medical and legal records as well as other sources of data that do not rely on memory giving them more credibility than some of the other studies listed in this chapter. A weakness of the studies was that many of the samples are from fairly ethnically homogenous cultures such as that of Sweden. A more diverse sample may or may not have yielded different results. All of these studies in this section provided good models for the present study as well as helping establish perinatal psychological research as a valid and worthwhile pursuit.
Prenatal Research

The research discussed up to now has focused on how birth may be related to adult psychological and spiritual functioning. This section, and the one that follows it (Infant Research), are included to help establish that fetuses and newborns are psychologically developed enough to be capable of being affected by their births.

Some research has been done as to the abilities of the prenate or fetus. Kisilevsky and Low (1998) created a review of the literature on fetal behavior and found that the fetus has basic sensory and cognitive abilities. Joseph (2000) wrote a review on fetal brain behavior and cognitive development of the human fetus and his findings agreed with those of Kisilevsky and Low (1998). However, Joseph also asserted that the fetus does not have true emotion, thinking, reasoning, or comprehension abilities. Anand and Hickey (1988) reviewed the literature and found that fetuses have the anatomical and neurochemical capacity to feel pain and to exhibit physiological and behavioral responses to painful stimuli. Giannakoulopoulos, Sepulveda, Kourtis, Glover, and Fisk (1994) looked at the fetus’ response to intrauterine needling and found that the fetus’ cortisol and endorphin levels rise after being needled, suggesting a stress response and that fetuses’ may experience pain during the procedure. These studies seem to suggest that even as fetus, humans have some basic perceptive abilities and may be influenced by and react to external events.

Schaal, Marlier, and Soussignan (1998) did a study in which they found that newborns could recognize amniotic fluid-like odors in maternal milk. The newborns could distinguish their mother’s odor from others and would turn their heads towards their mother’s odor. The authors suggested that this means that fetuses can remember
olfactory stimuli from the womb and that these memories can influence their behavior as newborns. This suggests fetal memory and positive control of behavior. Another study showed that fetuses could habituate to sound in utero, demonstrating rudimentary learning (van Heteren, Boekkooi, Jongsma, & Nijhuis, 2000). DeCaspar and Spence (1986) had mothers read a passage to their third-trimester fetuses for 6 weeks. The newborns were then tested and it was found that the sound of their mothers’ voices reading the same passage was more reinforcing than that of another woman reading the same passage. This suggests fetal auditory capacity, memory, and learning.

These studies suggest that fetuses have more powers of perception, memory, and cognition than previously believed possible. Furthermore, these capacities carry over into neonatal life. Given this, it is possible that birth may have an impact on the neonate and may play a role in the subsequent psychological development and function of the individual.

Paula Thomson is an assistant professor at York University, Toronto, Canada, a full professor at the American Behavioral Studies Institute, a faculty member at the Santa Barbara Graduate Institute, and a clinical psychologist. Thomson (2004) presented her theory on how prenatal trauma may lead to mental health concerns later in life. Thomson contended that prenatal trauma releases stress hormones, which combined with certain genetic predispositions can lead to impaired neurological development of the fetus, and subsequently, the infant and adult. This may result in psychopathology. Thomson cited other research to add credence to her theory, but did not conduct any studies of her own to test her theory.
Alessandra Piontelli. Piontelli (1992) described an interesting study involving twins in her book, *From Fetus to Child: An Observational and Psychoanalytic Study*. In this study Piontelli observed three singletons and four sets of twins periodically in utero and after birth until age 4. Ultrasound was used to observe the participants in utero. Piontelli found that fetal physical behaviors were present in the infants and young children and that the twins’ in utero relationships continued after birth and into childhood.

Piontelli (1992) did not believe that the children remembered their prenatal lives or births but that they did re-create and relive this material as children. Piontelli’s study had a second part in which she did psychotherapy with 6 young children and had their parents describe their children’s births. From what she observed in therapy, Piontelli believed that birth, especially traumatic birth, had an impact on the children she observed.

Piontelli (1992) made it very clear in her book that the studies were observational and more exploratory in nature rather than definitive. She did not assess whether the mothers’ emotions impacted the fetuses nor did she look at how prenatal or postnatal environments may have impacted the participants. She stated that her work did not address the nature vs. nurture argument but she thought that nature and nurture played a role much earlier than previously thought, that is, prenatally. Her studies used very small sample sizes, were observational, and used psychoanalytic interpretation in drawing conclusions. Still, Piontelli provides an interesting exploration into how fetal behavior and birth circumstances may carry into infancy and childhood. If she is correct, then prenatal and perinatal events may have a more significant impact on the individual than previously thought by mainstream medicine and psychology.
Blasco (2007) examined prenatal and perinatal memories in 5 preverbal children. Observers trained in prenatal and perinatal therapy observed video clips of the children with their families in sessions at the Building and Enhancing Bonding and Attachment clinic in Santa Barbara, California. The observers had no prior knowledge of the children’s histories. Blasco chose clips that she believed clearly showed the children communicating prenatal and perinatal experiences. The observers then interpreted the children’s behavior and noted what prenatal and perinatal experiences they believed the children were expressing. The observers’ interpretations were then compared with the actual prenatal and perinatal experiences of the children as reported by the children’s families. Using binomial probabilities, a correspondence of 72% was found between the observers’ interpretations and the histories of the children ($\alpha = 0.05$).

Blasco’s study (2007) is interesting and has some potential weaknesses. The study only looked at 5 participants. The accuracy of the children’s histories relies on the memories of the children’s families. Blasco chose the video clips she felt were meaningful. The observer’s were trained in prenatal and perinatal therapy; other observers from different backgrounds may have come up with alternate interpretations.

Research that suggests the presence of fetal consciousness and memory is relevant to this research project in that it suggests that fetuses and newborns have the ability to be influenced by external events such as birth. However, the above research does not address whether or not cesarean sections are traumatizing.

*Karr-Morse and Wiley.* Karr-Morse and Wiley (1997) wrote a book that uses neurological, psychological, and sociological studies to argue that prenatal, perinatal, and early life circumstances can greatly increase the likelihood that an individual will become
a violent adult. Karr-Morse was a licensed family therapist and was the first executive director of the Oregon Children’s Trust Fund. Wiley was chief of staff to the Oregon Speaker of the House and worked with Karr-Morse in creating the Children’s Care Team. The pair found studies to support the idea that prenatal drug use, malnutrition, birth complications or trauma, and unwanted pregnancy can all contribute to violent behavior in an adult. The work adds to the body of evidence that prenatal and perinatal circumstances may have long-lasting effects in an individual’s life.

Infant Research

In a related vein, much research has been done with the mental functioning of infants. This research is included in this literature review for two reasons: First, to demonstrate that early development affects later functioning. Second, to make the point that infants, and therefore perhaps neonates, possess the cognitive and psychological structures to be imprinted by their births.

In order for a newborn to be impacted by his/her birth circumstances she/he must have the capacity to perceive and process those circumstances. For many years it was thought that the newborn underwent a stage of “normal autism” in which the infant was psychologically isolated from the outside world (Mahler, Pine, & Bergman, 1975, p. 42). Researchers have since found this developmental idea to be untrue. Gergely (2000) provided an overview of the research that refutes Mahler’s concept of normal autism. As the research in this area continues, more and more evidence has been accrued supporting the newborn’s ability to interact with his/her surroundings.

Hsu and Fogel (2003) and Lavelli and Fogel (2002) looked at infant-mother communication during the first months of infant life, finding both individual differences
and change over time. In face-to-face interactions with the mother Lavelli and Fogel (2002) found that infants start with simple gazing and with time move on to concentrated attention, smiling, and cooing. Hsu and Fogel (2003) found three distinct patterns of communication between mother and infant: symmetrical, asymmetrical, and unilateral. The important aspect of these works in terms of my research is that newborns have the ability to communicate and that this ability is present at birth. This suggests the ability to perceive and process visual, auditory, and sensual stimuli, as well as the ability to create a response to these stimuli, adding to the evidence that suggests infants have the cognitive abilities to be impacted by their birth circumstances.

Lavelli and Fogel (2005) examined the attention and emotion in newborns aged 0 to 3 months. They found that by age 2 months newborns have relatively complicated patterns of emotion and attention with their mothers. Axia, Bonichini, and Benini (1999) looked at newborns at ages 3, 5, and 11 months with regard to attention and pain. They found that differences in the control of attention and pain can be detected at a very early age, suggesting that these abilities are innate and may be present at birth and therefore relevant to the experience of birth.

Earlier research, such as Bauer and Mandler (1989, 1992) looked at infants’ ability to recall events in temporal order at ages 1 and 2 years and found that with age, the ability to order and recall events in temporal order increases. Mandler and McDonough (1998) conducted five experiments that investigated the conceptual organization abilities of infants aged 7 to 11 months, and found that these abilities were present in all the participants and increased with age. These studies show an early ability to remember and to categorize. Perhaps these abilities are present to some degree at birth.
Lewis (1993) studied mother-infant interactions at ages 3 to 5 months and found that the socioemotional tone of those interactions was an accurate predictor of the infants’ cognitive competency at age 4 years. The study suggests that the mother-infant relationship can have long-term effects on the child. It is an example of a study that looks at early life phenomena as they relate to functioning later in life and is included in this chapter for that reason.

Hepper, Scott, and Shahidullah (1993) looked at newborns’ and fetuses’ ability to discriminate their mothers’ voices from other voices. They found that newborns aged 2 to 4 days could distinguish their mother’s voice from a stranger’s voice. Some of the newborns could distinguish their mother’s normal speaking voice and their mother’s speaking “motherese.” The fetuses evidenced no ability to distinguish their mother’s voices from those of strangers but could distinguish their mother’s voices played through a speaker on the mother’s abdomens from their mother’s voices produced by speaking. Chen, Striano, and Rakoczy (2004) found that newborns could shape their mouths to the shapes of consonant and vowel sounds spoken to them. Aldridge, Braga, Walton, and Bower (1999) found that newborns have the auditory and visual abilities to read lips in a limited way. These studies point to the idea that newborns come into the world with the abilities needed to receive and express information.

The above works suggest that newborns have audition, vision, memory, sensual function, cognition, and communication abilities that make them aware and able to be impacted by their birth circumstances. Thus, this present research project is clearly a relevant one.
While this study is concerned with psychological and spiritual issues, it is important to remember that birth is also a physiological process that often occurs in a medical setting under the care of medical professionals. Much of the medical literature regarding cesarean birth is understandably focused on the medical aspects of the phenomenon for both mother and child. The focus has been on the different medical conditions that may precipitate a cesarean birth (i.e., breech presentation, previous cesarean section, larger than normal babies, etc.). Other research has looked at how the setting in which cesarean sections take place may affect the medical outcomes for both mother and child. Timing, the use of anesthesia, and the experience level of the obstetrician are other variables that have been looked at to see if they may affect mother-infant outcomes of cesarean sections. These studies focus on medical conditions and interventions and their outcomes, but do not address psychological concerns. This study explores the psychological consequences, if any, of cesarean birth. What follows is a sampling of what research has been done in the medical community concerning cesarean birth.

There has been a variety of work published on cesarean sections. Su, Hannah, Willan, Ross, and Hannah (2004) looked at breech presentation births (a potentially dangerous situation for both mother and infant) and their outcomes using data gathered in 26 countries. The authors found that nonlabor cesarean section decreases perinatal medical problems compared with vaginal delivery for breech presentation babies. Cesarean section during early labor and during active labor also diminished the risk of adverse perinatal outcomes for breech presentation babies (Su et al., 2004). Koo, Dekker,
and van Geijn (1998) found similar results in their study. Pradhan, Mohajer, and Deshpande (2005) found that while vaginal and cesarean section in labor had some increased morbidity and mortality in the short term as compared to nonlabor cesarean section births for breech babies, in the long term the mode of delivery did not affect morbidity or mortality for the children. Bassaw, Rampersad, Roopnarisnesingh, and Sirjusingh (2004) also looked at breech babies and how mode of delivery affected the neonates’ morbidity and mortality. The authors found that “a policy of planned vaginal birth for selected breech fetuses with a low threshold to proceed to cesarean section may be in the best interests of both mother and child” (Bassaw et al., 2004, p. 254). It remains to be seen if medical conditions may be traumatic and may psychologically affect the infant and/or the parents. Perhaps the medical and/or psychological trauma the parents may experience may affect the child’s psychological health and have lasting consequences. However, it may also be true that cesarean section may have positive consequences or no consequences at all. For instance, a cesarean section may spare the mother and child unnecessary suffering and potentially dangerous medical conditions such as anoxia or brain injury.

Raio et al. (2003) looked at mode of delivery for larger than typical babies and how this affected the injury rate of the babies. The authors concluded that each case must be evaluated separately in terms of choosing the mode of delivery and that generalizations were difficult to make on the subject.

Other studies focused more on the circumstances of the mother rather than the infant. Richardson, Czikk, daSilva, and Natale (2005), and Fisler, Cohen, Ringer, and Lieberman (2003) looked at neonatal outcomes in women with a previous cesarean
section with regards to mode of delivery. Fisler et al. (2003) found that infants born after a trial of labor were twice as likely to undergo therapeutic interventions as those born via elective cesarean. However, this applied only to those infants whose mothers had epidurals for the pain of labor. Richardson et al. (2005) found that for those women with no previous cesarean section each mode of delivery had its own low risk to the infant. In those mothers with a previous cesarean section they found less benefit in attempting labor. Joffe, Chapple, Paterson, and Beard (1994) looked at what is the optimal rate of cesarean section in terms of maternal and fetal outcomes. They found that a rate of 10 to 12% or lower is optimal, but that lower birth weight infants benefit from more intervention. Lobel and Stein DeLuca (2007) did a meta-analysis of studies focusing on the maternal, psychosocial consequences of cesarean section. The researchers chose more methodologically sound studies and concluded that women often experience disappointment and distress over their cesarean birthing experiences as compared to mothers who delivered their children vaginally. For example, Saisto, Salmela-Aro, Nurmi, and Halmesmäki (2001) conducted a longitudinal study of 211 pregnant women and found that labor pain and emergency cesarean section were the two most prominent predictors for maternal disappointment in delivery ($p < .001$). However, Durik, Shibley Hyde, and Clark (2000) did a longitudinal study in which mother-infant dyads were sorted into three groups: vaginally born ($n = 74$), planned cesarean ($n = 37$) and unplanned cesarean ($n = 56$). The psychosocial outcomes of each dyad were evaluated at 4 months and 12 months. It was found that the unplanned cesarean group’s mothers showed slightly less positive affect towards their infants at 4 months ($p < .01$), which suggests that the method of birth affects the future relationship of the dyad. Beyond this
finding, there were no significant differences between the groups. The Durik et al. research is an example of a study that compares outcomes with the means of birth and set a precedent for this researcher’s study.

Lobel and Stein DeLuca (2007) also concluded that cesarean born children may receive less positive reactions and less interaction from their mothers with potentially negative developmental consequences. These studies focused on how the mothers’ condition may or may not impact birth and therefore the medical health of the newborns. For example, Cranley, Hedahl, and Pegg (1983) studied 40 women who had given birth vaginally, 39 who had emergency cesarean sections, and 43 who had planned cesarean sections and compared their perceptions of giving birth. The three groups had significantly different perceptions of birth with the emergency cesarean group having the most negative perceptions ($F_{2,119} = 12.68, p < .000$). Cranley et al. also found that 90% of the vaginal group breast fed, 71% of the planned cesarean group breast fed, and only 55% of the emergency cesarean group breast fed ($X^2, 2 df = 12.54, p = .001$), which may suggest that the means of birth has an impact on the future mother-infant relationship.

Rowe-Murray and Fisher (2001) conducted a longitudinal study of first mother-infant contact and maternal emotional well-being with 164 women using the First Contact Index, the Edinburgh Postnatal Depression Scale (EPDS), and the Profile of Mood States (POMS). The researchers compared the spontaneous vaginal birth group with the instrument delivery group and the cesarean born group. They found that instrument delivery and cesarean birth negatively impacted the first mother-infant contact and continued to negatively impact the mothers at 8 months ($p < .001$). These are examples of studies examining phenomena as they relate to the means of birth, similar to my study.
Nystedt, Edvardsson, and Willman (2004) assessed 24 articles on the effect of epidural analgesia on mothers and infants in childbirth. The authors found the use of epidurals to be an effective method of analgesia and that the studies of the possible medical risks for the infants were inconclusive. Psychological risks for the infant were not assessed.

Yamazaki et al. (2003) investigated the neonatal clinical outcomes of elective cesarean section in the 37th and 38th week of gestation. Yamazaki et al. found that the infants born in the first half of the 37th week had significantly more problems than those born after that time. Neonatal medical difficulties may necessitate medical care which impairs mother-infant bonding and may be related to later psychological functioning.

Erlandsson, Dsilna, Fagerberg, and Christensson (2007) studied the impact of skin-to-skin contact between cesarean born neonates and their fathers in the first 2 hours after birth. In the study 29 father-neonate pairs were randomly selected to either have skin-to-skin contact or lie next to one another. The skin-to-skin group neonates were found to be comforted quicker than the control group ($p < .001$). The skin-to-skin group took less time to stop crying, calm down, and become drowsy.

In a more psychological vein Ayers, McKenzie-Mcharg, and Eagle (2007) researched the effectiveness of cognitive-behavioral therapy as a treatment for postpartum posttraumatic stress disorder. The researchers studied two women diagnosed with postpartum posttraumatic stress disorder. In one case the trauma derived from a number of factors including extremely long labor and an emergency cesarean section. In the other case the trauma was caused by extremely long labor, the patient’s asthma, and a forceps delivery with a severe vaginal tear. The authors found that in the two cases
examined, cognitive-behavioral therapy (10, 12 sessions, respectively) was effective in treating the mothers’ posttraumatic stress disorder. Two cases are not a large sample size and this is a weakness of the study.

These last two studies are more psychological in nature than most medical studies but deal with the mothers’ symptoms or the neonates’ symptoms. The medical studies show that while much research is being done concerning birth, it is not focusing on the possible adult sequelae to birth circumstances. The current study explored an area of research that the obstetric research community has not yet studied.

In the *Infant* and *Prenatal Research* sections of this chapter, studies were presented that support the idea that newborns are capable of interacting with their environments. Perhaps the environment in which an individual is born is significant. Some medical studies have looked at how the setting in which birth occurred, influenced neonatal medical outcomes. Joyce, Webb, and Peacock (2004) looked at how the level of neonatal intensive care units and the availability of consulting obstetricians affected birth outcome. Joyce et al. (2004) found that a higher level of consulting obstetricians reduced the birth weight adjusted stillbirth rate. Klein, Spence, Kaczorowski, Kelly, and Grzybowski (2002) researched the effect of physician delivery volume on neonatal and maternal outcomes. Klein et al. (2002) found that physician delivery volume had no effect on neonatal or maternal outcomes. Allcock, Griffiths, and Penketh (2008) examined the anxiety levels of obstetricians and their rates of cesarean section. The researchers found a strong positive correlation between relatively higher anxiety levels and increased rates of cesarean deliveries (Pearson’s correlate = 0.722, *p* < 0.01). Again, these studies are focused on medical, not psychological outcomes. These studies are
typical of the type of research being conducted in the medical community around birth. Perhaps in the future there will be more communication between psychologists researching prenatal and perinatal psychology and obstetricians. This may be more likely to occur as the body of empirical perinatal research grows. This study furthered this aim by adding to the empirical research conducted in the field of perinatal research.

Laubereau et al. (2004) conducted a study that showed that cesarean born infants have higher incidences of diarrhea and food allergies than vaginally born infants. Laubereau et al. hypothesized that vaginal bacteria colonize vaginally born infants leading to healthier immune and digestive systems. Cesarean born infants are not exposed to these bacteria and therefore do not benefit from their effects. This study showed possible negative medical effects of cesarean birth. Biasucci, Benenati, Morelli, Bessi, and Boehm (2008) compared the intestinal bacteria of 23 vaginally delivered neonates with that of 23 cesarean delivered neonates on day 3 of their lives. The researchers found that the cesarean delivered neonates had less diverse intestinal bacteria than the vaginally born neonates. These two studies are not psychological in nature, but did look at effects related to cesarean birth. It was in this line of thinking that the current study was conceived.

These medical studies contribute to our overall understanding of cesarean birth by investigating the many medical variables involved. However, the above studies do not address the psychological or spiritual aspects of the mode of delivery, its possible effects on the neonate, and its possible effects on the resulting adult. Clearly, more psychological research in this area of study is warranted.
Spirituality

Stanislav Grof. The spiritual aspects of birth and their potential lasting consequences are of interest and yet there has been less research done in this area than that done in the psychological and medical realms. Grof (1972, 1973, 1987) continues to be the main theorist in this field. Grof saw the perinatal experience as a gateway to and template of the spiritual, both during birth and throughout the lifespan.

Ken Wilber. Wilber (2000a, 2000b, 2000c) is a major contributor and theorist in the field of transpersonal psychology. Wilber has spent a great deal of time and effort looking at perennial philosophy, that is, the core beliefs of the world’s religious and spiritual traditions. Wilber (2000a) believed that reality is composed of various levels of existence, including matter, body, mind, soul, and spirit. Development occurs through a hierarchical series of stages with each successive stage encompassing the previous ones.

Wilber included birth into his developmental model as what he called “fulcrum-0.” Wilber’s fulcrum-0 contained the substages of fusion with the womb, painful differentiation (birth trauma), and consolidation/integration as a differentiated organism (postuterine existence). Wilber compared fulcrum-0 with Grof’s Basic Perinatal Matrices and concluded that they were similar. Wilber believed the evidence regarding the significance of prenatal and perinatal consciousness and experience to be suspect. Similarly, Wilber believed that Grof overstated birth’s imprint on the individual.

Wilber (1990) discussed what he called the “pre/trans fallacy.” Wilber believed that such theorists as Jung, Grof, and Washburn mistakenly equated preegoic consciousness with transegoic consciousness. Wilber’s point was that regression to a preegoic state is not the same as progressing to a transegoic state and that these states are
fundamentally different psychic structures. This may be a source of Wilber’s belief that prenatal and perinatal consciousness is overstated by Grof.

Grof (1998) disagreed with Wilber’s assessment of Grof’s work and the importance of birth as a transpersonal experience and template for future development. Grof asserted that Wilber misunderstands regression. The Basic Perinatal Matrices are not just a replay of the birth experience but an ongoing interface between the adult Self and the Universe. Grof sees regression and the Basic Perinatal Matrices as important parts of development.

Washburn (1998), another noted transpersonal theorist, also disagreed with Wilber’s notion of the pre/trans fallacy. Washburn (1998, p. 70), following the work of Jung, asserted that the “preegoic” and “transegoic” states of consciousness are different expressions of a common psychic structure. This is relevant to the importance of birth psychology because it suggests the psychospiritual structure present at birth is the same structure present in adult life, thus bridging the two phases of life.

Wilber’s work (1990, 2000a, 2000b, 2000c) is theoretical in nature and based upon the world’s religions, spiritual traditions, and psychologies. Wilber did not base his conclusions on studies he conducted nor did he conduct studies to confirm his theories.

Jenny Wade. Wade (1996, 1998) followed up on the work of Grof, Chamberlain, and Cheek, and included their work in her theoretical exploration of human consciousness. Wade is a professor and researcher specializing in noetics and developmental psychology. Wade (1996) summarized current theory on memory as divided into three categories: local, nonlocal, and transcendent. Local theories of memory assert that memory is associated with an identifiable body structure such as the brain.
Nonlocal theories of memory are based on the idea that memory is associated with identifiable body structures such as cells or molecules but are not reducible to them. The transcendent or nonphysical theories of memory have at their foundation that memory is not dependent on physical structures whether they be organs, cells, or molecules.

It is hard to take seriously claims of prenatal consciousness if one assumes that a fully developed nervous system is necessary for memory and consciousness. However, if other modes of memory are existent, prenatal and neonatal consciousness and memory are plausible. “These non-local theories may account for somatic memories of early trauma before the central nervous system has been completely developed” (Wade, 1996, p. 25).

Wade (1996) believed that it is worth considering transcendent memory theory as an additional source of prenatal memory and consciousness. Transcendent memory theory falls into the realm of the spiritual, making it difficult to study. However, if true, it could account for memories associated with birth, prenatal life, and even conception.

Wade (1998) compared prenatal and perinatal transcendent consciousness with transcendent consciousness associated with near death experiences. Wade’s (1998) article compared the work of others such as Grof, Chamberlain, and Wambach and found that the phenomenologies of prenatal and near death transcendent consciousness were similar. She suggested that accurate recall of events by individuals during times when they did not possess fully developed or functioning nervous systems pointed to a nonphysical source of consciousness and memory.

Wade’s (1996, 1998) work with prenatal memory and consciousness draws upon the work of others cited in this dissertation such as Chamberlain and Cheek. She stated in
her 1996 work that her goal at the time was to open a dialogue regarding the nature of memory and consciousness. Her work was not meant to be the final word on the subject. Wade’s (1996, 1998) works were not empirical studies and do not provide any data beyond what other researchers have produced. It does, however, point to possibilities as to how the phenomena of prenatal and perinatal memory and consciousness may be explained.

Wendy Anne McCarty. McCarty, a former obstetrical nurse who later became a psychologist interested in prenatal and perinatal psychology, was trained by William Emerson. She cofounded the Pre and Perinatal Psychology program at the Santa Barbara Graduate Institute. McCarty (2002) wrote an exploratory paper on basing infant and child therapy on the concept that consciousness is the organizing principle of human experience. McCarty asserted that prenates and infants have a primary consciousness above and beyond the physical and must be treated accordingly (see also the Jenny Wade section). Her paper presents four vignettes of infants being treated in therapy from this perspective.

McCarty (2004) put forth a developmental model based upon the work of Chamberlain, Emerson, Wilber, and others as well her clinical experiences as a nurse and psychologist. Like Wilber, she argued that Western scientific empiricism has ignored spiritual empiricism. McCarty states, “The most important ground upon which to build an integrated model is the fundamental wisdom that our primary nature is as conscious, sentient, non-physical beings that exist prior to and beyond physical human existence” (p. 67). McCarty believes that humans are spiritual beings and capable of being influenced
by events, such as birth, in ways that traditional Western science does not acknowledge as possible.

McCarty’s (2002, 2004) work was primarily theoretical and anecdotal. She has not done studies to confirm her theories that were based upon anecdotal and theoretical work, rather than on empirical studies. She was, however, another member of the field of prenatal and perinatal psychology who has argued for a greater role for the spiritual in how we understand and care for prenates and infants.

These theoreticians do not all agree on the psychological and spiritual significance of prenatal and perinatal experience. However, they have seen fit to include these stages of life in their models and theories. This fact provides a basis for including the spiritual dimension in this study.

**Conclusion**

The common threads of the research presented here are two-fold. First, fetuses and newborns have similar sensual, cognitive, emotional, and spiritual abilities as do adults. The research suggests that newborns are not “normally autistic” as Mahler (Mahler, Pine, & Bergman, 1975, p. 42) suggested, but very much aware of and involved in their births and the sequelae to their births. Second, there are suggestions that prenatal and perinatal experiences may have a significant impact on adult psychospiritual functioning. The studies such as Jacobson et al. (1987, 1988, 1990) concerning birth circumstances and adult suicide and adult drug addiction are particularly compelling in this regard.

To date, much of the work done in the field of perinatal experience and its effects on adult psychological functioning has been anecdotal. Freud (1900/1953, 1910/1957,
Chapter 3: Research Method

What relationships, if any, exist between being born by labor caesarean section and adult mental health and adult spirituality? This study utilized two questionnaires, one psychological instrument, and one spiritual instrument to explore this question.

The choice of methods for this study was influenced by the work of others such as Chamberlain (1999a, 1999b), Cheek (1986, 1992), Grof (1972, 1973), English (1993), Freud (1900/1953, 1910/1957, 1916/1963, 1926/1959), and Rank (1929). Grof, Rank, and English are major theorists in this field, and their work is primarily anecdotal. Their work encompasses a great deal of the human experience and is far too vast for the scope of a dissertation. Other researchers such as Cnattingius et al. (1999), Dickie (1988), Feher (1990), Forssman and Thuwe (1981), Huttunen and Nisksman (1978), Jacobson et al. (1987, 1988, 1990), Kubicka et al. (1995), McCracken (1989), Myhrman et al. (1996), Raine et al. (1994), and Salk et al. (1985) have investigated potential consequences of different aspects of birth by quantitative methods. As seen in the literature review (Chapter 2), both quantitative and qualitative methods have been used to research prenatal and perinatal questions, although not in conjunction with one another. However, Chapter 2 shows that there is precedent for both modes of research.

This researcher chose to use a primarily quantitative method to investigate a small portion of Grof’s (1972, 1973) and English’s (1993) theories. A small qualitative piece was added in the hopes that the qualitative research would illuminate the quantitative portion of this dissertation. This chapter includes information on the general design, recruitment, instruments, and procedures used in this study.
General Design

The general design of this study included quantitative and qualitative methods. Braud and Anderson (1998) described a continuum that exists between quantitative and qualitative research methods. The quantitative portion of this study is correlational in nature. Do any correlations exist between the means of one’s birth (vaginal, nonlabor cesarean, labor cesarean) and the prevalence of psychological symptoms in adulthood? Do any correlations exist between the means of one’s birth and adult spirituality? A demographic questionnaire (see Appendix D) was used to gather descriptive data to provide context for the quantitative data. The Symptoms Checklist-90-Revised (Derogatis, 1994, see Appendix E) was used to measure adult psychological symptoms. The Spiritual Assessment Scale (Howden, 1992, see Appendix F) was used to measure adult spirituality. A birth questionnaire was used to gather data on birth circumstances and adult functioning. The data from the Symptoms Checklist-90-Revised and the Spirituality Assessment Scale was compared with the means of birth to see if any correlations existed.

On the other end of the continuum are the qualitative research methods (Braud & Anderson, 1998). This study used the grounded theory method of qualitative research. Grounded theory was first developed by the sociologists Glaser and Strauss in the late 1960s (Glaser, 1978, 1992; Glaser & Strauss, 1967; Strauss, 1987). While quantitative methods start with a hypothesis and then look toward the data, grounded theory (a qualitative research method) begins with the data and works toward a theory. Strauss and Corbin (1990) explained as follows:

A grounded theory is one that is inductively derived from the study of the phenomenon it represents. That is, it is discovered, developed, and provisionally
verified through systematic data collection and analysis of data pertaining to that phenomenon. . . . One does not begin with a theory, then prove it. Rather, one begins with an area of study and what is relevant to that area is allowed to emerge. (p. 23)

Grounded theory was chosen for this study as a complement to the quantitative portion of this study. Grounded theory appealed to this author’s way of thinking due to its simple yet powerful way of allowing theory to emerge from the data. Additionally, this method seemed similar to the approaches of Grof (1972, 1973, 1987), English (1985, 1993), Freud (1900/1953, 1926/1959), and Rank (1929). These theoreticians used accounts of participants’ experiences derived from psychoanalysis, LSD therapy sessions, and life histories in order to develop theories that may explain the participants’ experiences.

A primarily quantitative study was chosen in order to complement the existing anecdotal work (Chamberlain, 1999a, 1999b; Cheek, 1986; English, 1993; Freud, 1910/1957, 1916/1963; Grof, 1972, 1973; Piontelli, 1992), and to follow in the tradition of the primarily European researchers in the field (Cnattingius et al., 1999; Forssman & Thuwe, 1981; Huttunen & Nisksman, 1978; Jacobson et al., 1987, 1988, 1990; Kubicka et al., 1995; Myhrman et al., 1996; Raine et al., 1994; Salk et al., 1985).

The questionnaire format was chosen as a simple method of gaining research data for the qualitative portion of the study as well as quantitative data to compare with the data gathered using the assessments. Borg and Gall (1989) stated that “with careful planning and sound methodology the mailed questionnaire can be a very valuable research tool” (p. 423). In addition, a questionnaire is an efficient, private, and economical means to gather information from a larger sample (Babbie, 1983). The demographic questionnaire contains questions concerning gender, age, education,
ethnicity, and income. The structure of the questionnaire is intended to start with the relatively impersonal and move to the more personal in order to make the experience of completing the questionnaire less threatening for the participants (Sudman & Bradburn, 1982). The birth questionnaire (see Appendix H) includes questions regarding the participants’ prenatal and birth circumstances as well as open-ended questions concerning adult functioning (see Instruments section).

The Symptoms Checklist-90-Revised and the Spiritual Assessment Scale were selected for their brevity and simplicity. The Symptoms Checklist-90-Revised (SCL-90-R) consists of 90 items, requires only a sixth grade reading level, and can be completed in 12-15 minutes (Derogatis, 1994). It was chosen given the wide array of psychological symptoms attributed to birth trauma (English, 1993; Grof, 1973, 1972; Rank, 1929; e.g., depression, anxiety, sexual difficulties, relationship difficulties, psychosis).

The Spiritual Assessment Scale (SAS) was chosen for its simplicity and short length as well. The SAS is made up of 28 items using a 6-point Likert scale and takes approximately 10 minutes to complete (MacDonald, LeClair, Holland, Alter, & Friedman, 1995). Given the transpersonal nature of Grof’s (1972, 1973, 1987) work, this researcher thought it prudent to include a spirituality assessment. Its inclusion was intended to determine potential spiritual or transpersonal differences, if any, between those born vaginally, those born via nonlabor caesarean section, and those born via labor caesarean section. (For more on the SCL-90-R and SAS, see the Instruments section.)

Participants

There was no specific population that was sought for this study. Adults (those over the age of 18) were sought in order to more easily obtain informed consent.
Additionally, this researcher felt that 18 was the minimum age that self-awareness and self-reflection would be possible in participants. The studies conducted in Europe, such as Jacobson et al. (1987, 1988, 1990) used primarily Caucasian participants as many of these studies were conducted in Sweden (a very ethnically homogenous nation). This researcher had the intention of finding a diverse (age, gender, ethnicity, geographic location, religion) group for this study. However, finding the requisite number of participants in each of the three birth groups, especially the cesarean groups, was extremely difficult. This difficulty led this researcher to focus on merely attaining the required numbers of participants. While there is some diversity in age, religion, education, and income, the participants of this study are primarily Caucasian, younger adults, and overwhelmingly women. For more information on the participants of this study see Chapter 4.

Selection criteria. To ensure that each of the three categories of participants (labor caesarean section, nonlabor caesarean section, and vaginal birth) is represented, stratified random sampling was used. In order for parametric statistical testing to be used, each category required 20 participants (Salkind, 2004). These numbers were chosen to provide for significant quantitative comparisons while making the solicitation of participants possible in a reasonable amount of time. This number of participants also ensured that the qualitative aspect of the study was not too unwieldy.

Participants were required to be 18 years of age or over, as the focus of this study is adults born via labor caesarean section. Minors were ruled out for this reason as well as for the increased difficulty involved in obtaining parental consent for the participation of minors.
Recruitment. Participants were solicited through craigslist.com, a website, online classified advertisements, email messages, flyers, and word of mouth (see Appendix A). Placement of flyers took into consideration the goal of sampling from a diverse population. For example, flyers were posted in shopping centers, community centers, college campuses, and so forth. An email message soliciting participants was sent to the current students of the Institute of Transpersonal Psychology as well as its alumni. Family and friends sent email messages on the author’s behalf soliciting participants. Far and away, craigslist.com was the most successful recruitment method, followed by email solicitation by family and friends. Initially, the solicitations presented the study as one in adult development without mentioning birth to prevent a demand characteristic. However, this process yielded primarily vaginally born participants and very few caesarean born participants. In order to remain within the scope of a dissertation study, the solicitations were changed to target the caesarean born adults needed for the study (see Appendix B).

Selection process. Three groups of at least 20 participants were selected in order to elicit possible varieties of effects of differing means of birth. The three groups were those born vaginally, those born by nonlabor caesarean section, and those born by labor caesarean section. The first two groups served as control groups to the third (the labor caesarean group). All participants were 18 or older with the desired goal of obtaining a large age spectrum. Participants were screened by this researcher for age and suitability for this study once they contacted this researcher and before the first assessment package and consent form were sent to them. This screening consisted of asking if they were 18 or over. The screening was done on an ongoing basis as the participants contacted the
researcher. Those participants who were under the age of 18 or otherwise unsuitable for this study were thanked for their willingness to participate and told that they were ineligible to participate in the study.

Participants were randomly solicited until each of the three groups had at least 20 participants or more to account for those who may not complete the study. Later, when it became clear that the researcher was not going to be able to obtain the necessary caesarean born participants, the recruitment was changed to specifically target those groups (see Appendix B). The group of interest, the labor caesarean group, contained all participants of that group \((n = 24)\), in order to maximize the amount of data for that group.

**Instruments**

*Demographic questionnaire.* The Demographic Questionnaire (Appendix D) is a basic 9-item questionnaire that this researcher created. It was designed to gather the necessary data in a way that facilitated handling the data as well as being easy to complete.

*Symptoms Checklist-90-Revised.* The Symptoms Checklist-90-Revised (SCL-90-R) (Appendix E) is a 90-question inventory using a 5-point rating scale (Derogatis, 1994). The SCL-90-R is a much used instrument for the assessment of psychopathology. Derogatis (1990) published a list of approximately 500 studies using the SCL-90-R from 1975 to 1990 with an addendum of 125 more studies added in 1991. The SCL-90-R was used by permission of the Pearson Assessments Company through their Graduate Student Research Assistance Program and under the supervision of my chairperson, Dr. Patricia G. Campbell, Psy.D. (personal communication, March 27, 2007).
The SCL-90-R assesses individual functioning by screening for a broad range of psychological symptoms and psychopathology using nine scales. These scales are: SOM Somatization, O-C Obsessive Compulsive, I-S Interpersonal Sensitivity, DEP Depression, ANX Anxiety, HOS Hostility, PHOB Phobic Anxiety, PAR Paranoid Ideation, and PSY Psychotism. In addition, the inventory has three general indices: the Global Severity Index (GSI), which measures the average rating of all 90 items; the Positive Symptom Distress Index (PSDI), which averages the ratings for those items for which the participant indicated having experienced; and the Positive Symptom Total (PST), which measures the actual number of symptoms expressed.

The adult nonpatient norm groups were based on 974 individuals, 494 men and 480 women, with 85% of the sample being white. Approximately 60% of the participants were married, and their mean age was 46. The adult nonpatient norm was the norm used for this study. The norms for psychiatric outpatients were based on 425 men and 577 women while the norms for psychiatric inpatients were based on 158 men and 265 women. The norms for adolescent nonpatients (ages 13-19) were based on 327 men and 479 women. This group was white and middle class (Derogatis, 1994).

The internal consistency reliability coefficients for the nine symptom dimensions were developed from two sources: The data from 209 “symptomatic” volunteers (Derogatis, Rickels, & Rock, 1976) and 103 psychiatric outpatients studied by Horowitz, Rosenberg, Baer, Ureno, and Villasenor (1988). Both investigative groups used the coefficient alpha, which is a multipoint variation of the Kuder-Richardson formula 20. This approach to reliability treats the within-form correlations between items as analogous to the correlations between items from alternative forms, with the assumption that the average correlation between existing items is a good estimate of the average correlation between items in a hypothetical alternate form (Nunnally, 1970). Coefficients from both studies were quite satisfactory, ranging from a low of .77 for Psychotism to a high of .90 for Depression in the Derogatis, Rickels, and Rock (1976) study, and from a low of .79 for Paranoid Ideation to a high of .90 for Depression in the Horowitz et al. (1988) study. (Derogatis, 1994, pp. 27-28)
Coefficient alpha, also known as Cronbach’s alpha (or Cronbach’s \( \alpha \)), is a measure of internal consistency reliability. Internal consistency reliability is a measure of how well the parts of the instrument (questions or sets of questions) measure what they purport to measure (Huck, 2008). Possible values for coefficient alpha range from 0.00 to +1.00. As the value of coefficient alpha increases so does the instrument’s internal consistency reliability (Huck). For the purposes of research in the social and psychological sciences a value of 0.70 or higher for Cronbach’s \( \alpha \) is considered acceptable (SPSS FAQ, 2009).

Horowitz, Rosenberg, Baer, Ureno, and Villasenor (1988) evaluated the test-retest reliability of the SCL-90-R using 103 psychiatric outpatients. Test-retest reliability is a measure of how consistently the instrument measures what it supposed to measure over time (Huck, 2008). The test-retest interval was 10 weeks. They found the GSI to have a coefficient of 0.84 while the subscale coefficients ranged from 0.70 to 0.83, indicating good test-retest reliability.

Schmitz, Kruse, and Tress (2001) looked at the SCL-90-R in relation to the General Health Questionnaire (GHQ-12) using 408 adult outpatients. They found that the SCL-90-R could be used to distinguish between true positives and false positives on the GHQ-12.

Criticism of the SCL-90-R has focused on the inventory’s ability to measure multiple significant independent dimensions of psychopathology. Carpenter and Hittner (1995) did a study on the SCL-90-R using 629 dually diagnosed inpatients. Using factor analyses, they found that the original nine symptom dimensions were not valid. Goodness-of-fit and adjusted goodness-of-fit scores for the nine factor model as well as other models ranged from 0.420 to 0.675. These are all below the standard of 0.90 needed
to support the nine factor model. Additionally, Carpenter and Hittner found little factor invariance for the nine dimensions across gender.

Rauter, Leonard, and Swett (1996) did a similar study using 260 involuntary adult inpatients. The principal components analysis found 1 large factor and 15 small factors rather than the original 9. The large factor accounted for 42% of the total variance. The next largest factor accounted for 4% of the variance. The largest factor includes 52 of the 90 items, mostly from the ANX, DEP, O-C, and INT subscales. To a lesser degree the PAR and PSY subscales are included in this factor.

Similarly, Vassend and Skrondal (1999) also found that the SCL-90-R’s original nine dimensional model to be flawed. This Norwegian study had a sample size of 1073 noninstitutionalized adults. Confirmatory factor analysis of a variety of factor models, including the nine factor model of the SCL-90-R’s author, yielded goodness-of-fit scores ranging from 0.62 to 0.83. These scores are below the standard of 0.90 for goodness of fit.

Schmitz et al. (2000) investigated the SCL-90-R using two groups: 447 outpatient adults and 1006 university students. They found the internal consistency of the nine subscales to be good with Cronbach’s $\alpha$ ranging from 0.78 to 0.90. As expected of an effective instrument, the university student sample scored lower on the nine subscales as well as the GSI than the outpatient sample. The SCL-90-R was compared with the Inventory of Interpersonal Problems (IIP-C) and the GHQ-12. The Pearson correlation between the IIP-C and the SCL-90-R total scores was 0.63. The Pearson correlation is a measure of the relationship between two variables. Values may range from -1.0 (perfect negative correlation) to +1.0 (perfect positive correlation; Salkind, 2000). The
correlations between the GHQ-12 and the SCL-90-R subscales ranged from 0.45 to 0.72 indicating moderate to strong relationships (Salkind, 2000). In regards to the nine-factor structure, the goodness-of-fit, adjusted goodness-of-fit, and comparative fit indexes ranged from 0.597 to 0.701. All are below the 0.90 needed to support the nine-factor structure. The authors of the study concluded that the SCL-90-R should be considered a one-dimensional measure of psychological distress rather than a measure of nine independent symptom subscales.

For the purposes of this study, all nine subscales and the three indices were used. There are valid studies that both support the nine factor model of the SCL-90-R and those that contradict the nine factor model (see above). This researcher chose to utilize the SCL-90-R as it was conceived as a means to obtain a more detailed picture of possible relationships between the means of birth and adult psychological symptoms. This choice for detail may or may not be at the expense of accuracy. That question remains for other studies.

The SCL-90-R has been used quite extensively in psychology and medicine. Approximately 750 studies using the SCL-90-R are reported in the SCL-90-R Bibliography (NCS Pearson, 1993). Derogatis (1994) also elaborated on the uses of the SCL-90-R. A portion of those studies will be mentioned here.


The SCL-90-R has also been used in investigating psychotherapy outcomes. Crits-Christoph (1992) used the instrument in a meta-analysis of 11 studies of the efficacy of brief dynamic psychotherapy. Woody et al. (1983) evaluated brief psychotherapeutic interventions compared to standard drug counseling in 110 opiate addicts using the SCL-90-R. In a study with bulimic patients, Garner et al. (1993) compared brief cognitive-behavioral therapy with supportive-expressive therapy over the course of 4 months. Similarly, Fairburn et al. (1991) compared cognitive-behavioral therapy with interpersonal therapy in 75 bulimic patients. Kleinhauz, Eli, Baht, and Shamay (1992) evaluated the effectiveness of behavior modification techniques in treating the dentally phobic using the instrument. Kabat-Zinn et al. (1992) used the SCL-90-R to evaluate a meditation-based group stress reduction program with patients suffering from generalized anxiety disorder and panic disorder. Shannahoff-Khalsa et al. (1999) employed the instrument to investigate the efficacy of yoga meditation techniques in the treatment of obsessive-compulsive disorder. Finally, Monti et al. (2006) utilized the instrument to research the effectiveness of mindfulness-based art therapy with women with cancer.

The SCL-90-R has also been used in the study of psychopharmacology outcomes. Ravaris, Robinson, Ives, Nies, and Bartlett (1980) used the instrument to compare the efficacy of an MAO inhibitor versus a tricyclic antidepressant versus a placebo in 105 depressed patients. Similarly, Cornelius, Soloff, George, and Ulrich (1993) tested the efficacy of phenelzine versus haloperidol versus a placebo in the treatment of borderline
personality disorder in 108 inpatients. Parsons et al. (1989) investigated the effectiveness of phenelzine versus imipramine in outpatients with refractory depression. Ballenger et al. (1988) researched the effectiveness of alprazolam in treating panic disorder and agoraphobia compared to a placebo. The treatment of HIV patients with major depression using fluoxetine was investigated by Levine, Anderson, Bystritsky, and Baron (1990). Perse, Greist, Jefferson, Rosenfeld, and Dar (1987) compared fluvoxamine versus a placebo over 20 weeks in the treatment of obsessive-compulsive disorder. Lastly, Marder et al. (1984) used the SCL-90-R to investigate the cost effectiveness of two different dosage levels of decanoate in outpatients with schizophrenia.

The instrument has also been used in the evaluation of general psychopathology and psychological distress. Waryszak (1982) used the SCL-90-R to track symptomatic distress in psychiatric inpatients in Amsterdam. Kellner, Hernandez, and Pathak (1992) used the instrument to distinguish different aspects of hypochondriasis. Dickson et al. (1992) used the instrument in the study of patients with Somatization.

The SCL-90-R has also been used in the study of depression and anxiety. Rosenberg, Bech, Mellergard, and Ottosson (1991) employed the instrument to discriminate between panic disorder patients with and without depression. Wiessman et al. (1977) used the instrument to distinguish between primary and secondary depressions. Wetzler et al. (1990) used the SCL-90-R to profile depressed patients versus panic patients. Stewart, Quitkin, and Terman (1990) contrasted atypical depression with seasonal affective disorder using the instrument. Katon and Sullivan (1990) studied depression in the chronic medical population using the SCL-90-R. The instrument was used by Cameron et al. (1988) to profile patients with distinct DSM-III anxiety disorders.
Lee and Cameron (1986-1987) used the SCL-90-R to evaluate the relationship between Type A behavior, symptom distress patterns, and family history of coronary heart disease among men and women with anxiety disorders. Lastly Lee, Cameron, and Greden (1985) used the instrument in their study of the relationship between caffeine consumption and the experience of anxiety in patients with anxiety.

Stress has been investigated using the SCL-90-R. Horowitz, Wilner, Kaltreider, and Alvarez (1980) used the instrument to distinguish posttraumatic stress disorder from other anxiety disorders. Davidson, Kudler, Saunders, and Smith (1990) used the SCL-90-R to profile the symptoms and severity of posttraumatic stress disorder in veterans of World War II and the Vietnam War. A longitudinal study of rape victims and nonvictims was conducted using the instrument by Kilpatrick, Veronen, and Resick (1979). Finally, Girodo (1991) used the SCL-90-R to profile the stress levels of undercover law enforcement agents before, during, and after undercover operations.

The SCL-90-R has also been employed to investigate suicidal behavior. Bulik, Carpenter, Kupfer, and Frank (1990) used the instrument to contrast 67 depressed patients with histories of suicidal behavior with 163 depressed patients with no history of suicidal behavior. Coryell (1988) utilized the SCL-90-R to show evidence that panic disorder is associated with an elevated risk of suicide.

Researchers in the field of substance abuse have also used the SCL-90-R. Mercier et al. (1992) studied 712 alcoholics with the SCL-90-R and compared them to the general population. Liskow, Powell, Nickel, and Penick (1991) used the SCL-90-R and the MMPI to establish four subtypes of alcoholics using 360 patients. Dongier, Vachon, and Schwartz (1991) used the instrument to evaluate the effectiveness of using bromocriptine
to treat alcohol dependence. Distress in methadone patients was described utilizing the instrument by Jacobs, Doft, and Kroger (1981). Steer, Platt, Hendricks, and Metzger (1989) used the SCL-90-R to identify three types of heroin addicts in the United States and the Netherlands.

In the area of physical and sexual abuse Swett, Surrey, and Cohen (1990) studied outpatients and compared those who had been abused with those who had not using the SCL-90-R. Bryer, Nelson, Miller, and Krol (1987) used the instrument to categorize patients into various abuse categories with an accuracy rate of 72.2%. The SCL-90-R was used by Nilsen (2003) to assess psychological functioning in undergraduate women in Germany and the United States who had been sexually abused as children.

Altof et al. (1991) used the SCL-90-R to evaluate distress in men treated for erectile dysfunction with different drugs. Turner et al. (1990) did a similar study using the instrument to measure distress in men treated for erectile dysfunction using a vacuum device.

Medical researchers have used the SCL-90-R as well. Snyder, Lynch, Derogatis, and Gruss (1980) looked at distress in patients in family practice to compare those who had communication problems with their doctors with those who did not. Weidner, Connor, Hollis, and Connor (1992) studied distress over 5 years of individuals on a dieting plan designed to reduce serum cholesterol levels. Craig and Abeloff (1974) looked at psychological symptoms in cancer patients using the SCL-90-R. Derogatis (1980) utilized the instrument to show that breast and gynecological cancers have a unique psychological impact on patients. Levine, Raczynski, and Carpenter (1991) used the instrument to study the connection between weight gain or loss and certain SCL-90-R

The SCL-90-R has also been used to evaluate other psychometric measures. Osman et al. (1993) used the instrument to examine the factor structure and properties of the Reasons for Living Inventory. The Leyton Obsessional Inventory was investigated with the SCL-90-R using patients with obsessive-compulsive disorder and other anxiety disorders (Stanley et al., 1993).

The SCL-90-R has been used in a large number of studies to investigate a wide range of topics (see above). These studies utilized the SCL-90-R to evaluate psychological symptoms as a means of examining the effectiveness of various types of psychotherapy, the effectiveness of various drugs or dosages of drugs, or to discern levels of psychological distress in various populations. It is this last use, the evaluation of psychological distress in various populations, that sets a precedent for the SCL-90-R’s use in this study. The current study uses the SCL-90-R to assess psychological distress in three populations: the vaginally born, the nonlabor cesarean born, and the labor cesarean born. This was an important reason why this instrument was chosen for this study. Additionally, its relatively short amount of time to complete as well its ease in scoring made the instrument a good choice for this study.

There are guidelines for the use of the SCL-90-R. Derogatis (1994) advised that global scores be considered invalid if more than 20% of the questions are left unanswered. He also suggested that a scale score be considered invalid if more than 40% of the items are incomplete. Pauker (1985) considered these allowances to be “unusually
This researcher adhered to the 20% standard recommended for global scores and the 40% standard recommended for subscale scores by Derogatis (1994). This, however, was not an issue as all the participants answered all the items on their respective SCL-90-R instruments.

*Spirituality Assessment Scale.* The Spirituality Assessment Scale (SAS) (Appendix F) was designed in response to a lack of measures of spirituality in nursing research (MacDonald et al., 1995). It was used by permission of Judy Howden, Ph. D. (personal communication, April, 25 2006). Developed by Howden (1992), the SAS is designed to assess a conception of spirituality called the “spirituality model” which Howden (p. 6) developed “through the processes of concept analysis, synthesis and derivation . . . as well as theory construction” using various definitions of spirituality found in the philosophical, psychological, sociological, theological, and nursing literature (e.g., Burkhart, 1989; Frankl, 1963; Hungelmann, Kenkel-Rossi, Klassen & Stollenwerk, 1985; Pilch, 1981; Reed, 1987; Sinnott, 1969; Vaughan, 1986) (cited in MacDonald et al., 1995, p. 21).

Howden (1992) defined spirituality as “the dimension of one’s being that is an integrating or unifying factor which is manifested through unifying interconnectedness, purpose and meaning in life, innerness or inner resources, and transcendence” (p. 15). The inventory has four subscales: Unifying Interconnectedness (UI), Purpose and Meaning in Life (PML), Innerness or Inner Resources (IN), and Transcendence (TR). Unifying Interconnectedness is defined as “the feeling of relatedness or attachment to others, a sense of relationship to all of life, a feeling of harmony with self and others, and a feeling of oneness with the universe and/or a universal element or Universal being” (p.
Purpose and Meaning in Life is defined as “the process of searching for or discovering events or relationships that provide a sense of worth, hope, and/or reason for living/existence” (p. 15). Innerness or Inner Resources involves

the process of striving for or discovering wholeness, identity, and a sense of empowerment. Innerness . . . is manifested in feelings of strength in times of crisis, calmness or serenity in dealing with uncertainty in life, guidance in living, being at peace with one’s self and the world, and feelings of ability. (Howden, 1992, pp. 15-16)

Lastly, Transcendence is defined as the “ability to reach or go beyond the limits of usual experience; the capacity, willingness, or experience of rising above or overcoming bodily or psychic conditions; or the capacity for achieving wellness or self-healing” (p. 16).

The SAS consists of 28 questions using a 6-point Likert scale (MacDonald et al., 1995). The questions are distributed as follows: UI (9 items), PML (4 items), IN (9 items), and TR (6 items). The subscales are scored by adding the scores for each item within the subscale. The subscale scores are then added for the total SAS score.

The psychometric properties of the 28 items of the SAS were examined by Howden (1992). Internal consistency is shown to be satisfactory with coefficient alpha values ranging from .72 to .91 for the four subscales; the total SAS obtained an alpha of .92. Subscale-t-total SAS correlations were calculated and resulted in correlations ranging from .78 to .88. Subscale inter-correlations were found to range from .50 to .73. Factorial validity has been provided for the SAS by a principal components analysis which resulted in the extraction of six factors (using a varimax rotation) accounting for 64.8 percent of the total score variance. The PML and TR subscale items formed distinct factors. The UI subscale items made up two of the factors which were interpreted as reflecting connectedness to others and connectedness to life, community and the world. Similarly, the IN subscale items loaded heavily on two factors which were identified as “innerness expressed as harmony, balance, peace and relationship with Supreme Being, and . . . innerness utilized for guidance and strength, particularly in times of difficulty or struggle” (Howden, 1992, p. 124). Finally the external validity of the SAS was examined by Howden (1992) who found that a there is no significant relationship between the total SAS score and a recent experience of a crisis event; b) there is a weak but significant relationship between SAS scores and reported religiousness ($r = .24, p < .001$); and c) there is no relationship between frequency of
attendance of religious events and total SAS scores. (MacDonald et al., 1995, p. 28)

For the purposes of research in the social and psychological sciences a value of 0.70 or higher for Cronbach’s $\alpha$ is considered acceptable (SPSS FAQ, 2009).

MacDonald, Friedman, and Kuentzel (1999) had this to say about the SAS.

Factor analysis of the four SAS subscales (i.e., Unifying Interconnectedness, Purpose and Meaning in Life, Innerness, and Transcendence) along with 10 other instruments showed that the SAS scores loaded primarily on one of the seven factors found. This factor, labeled Existential Well-Being, also housed a strong negative loading from the Ego Grasping Orientation. The SAS Transcendence subscale was seen to produce a secondary loading on a factor identified as embodying spiritual experience, and the SAS Innerness and Unifying Interconnectedness subscales generated secondary loadings on another factor recognized as reflecting non-theistic spiritual beliefs. (MacDonald, Friedman, & Kuentzel, pp. 82-83)

Since its creation other researchers have used the SAS in their studies. The list is not nearly as long as for the SCL-90-R, in part due to the relative newness of the instrument (created in 1992). A study investigating burnout prevention in engineers conducted by van Dierendonck, Garssen, and Visser (2005) used the SAS as part of its assessments. Briggs and Shoffner (2006) used the instrument to test a theoretical model of spiritual wellness in older adolescents and midlife adults. Popkess-Vawter, Yoder, and Gajewski (2005) looked at what role spirituality plays in holistic weight management utilizing the SCL-90-R. Alterman, Koppenhaver, Mulholland, Ladden, and Baime (2004) used the instrument in their study of mindfulness meditation in the treatment of substance abuse patients. MacDonald (2000) utilized the SAS in a study of spirituality and the Five Factor Model of personality as measured by the NEO Personality Inventory. Hare (1998) used the instrument to study spirituality in nurses.

A number of dissertations have included the use of the SAS as well. Beazley

The SAS does not have any validity studies to support its use, nor does it have a long list of researchers who have used it. No norms have been established for the SAS. However, the field of transpersonal psychometrics is relatively new with relatively few measures to choose from. Its ease of use and its brevity, along with its broadness and independence from any particular religion or spiritual discipline made it a good choice for this exploratory study. Additionally, many of the studies cited using the SAS are ones in which spirituality was assessed in various populations. This lends support to the choice to use the SAS in the current study to assess spirituality in the three birth groups.

The SAS was chosen for this researcher’s study for its short length, ease of use, and broad view of spirituality. MacDonald’s (1997) Expressions of Spirituality (ESI) was not used as it contains 98 items instead of the SAS’s 28 and was therefore considered too long. The Spiritual Well-Being Scale (SWBS) developed by Paloutzian and Ellison (1982) is short (20 items) like the SAS and has more norms available than the SAS (Bufford, Paloutzian, & Ellison, 1991). However, it measures spirituality along two axes, Religious Well-Being and Existential Well-Being (Ellison, 1983). This researcher
decided that the SAS’s four subscales might provide for a more nuanced examination of possible spiritual differences than the SWBS. The Spiritual Orientation Inventory has nine subscales (Elkins, Hedstrom, Hughes, Leaf, & Saunders, 1988), but was ruled out as a choice as it takes 30 minutes to complete (MacDonald et al., 1995). This was considered too long a time to ask participants to commit to in addition to the SCL-90-R and the questionnaires. Other transpersonal measures such as the Peak Experiences Scale (Mathes, Zevon, Roter, & Joerger, 1982), Ego Grasping Orientation measure (Knoblauch & Falconer, 1986), the East-West Questionnaire (Gilgen & Cho, 1979), and the Holistic Living Inventory (Stoudenmire, Batman, Pavlov, & Temple, 1985) did not measure spirituality broadly enough or included other nonspiritual components, and thus were not used.

The SAS provides a differentiated view of an individual’s spirituality in a short, easy to use format. Both the SAS total score as well as the subscale scores were used in the quantitative portion of the study in an attempt to have a more detailed picture of any existing relationships between the means of birth and adult spiritual functioning.

*Birth questionnaire.* The birth questionnaire (Appendix H) consisted of 23 questions. The questionnaire began with questions concerning in utero circumstances and birth circumstances followed by questions about their current life. Finally, there were several open-ended questions to elicit psychodynamic or transpersonal themes, if any, related to their births. The birth questionnaire was of my own design. The five open-ended questions in the birth questionnaire were based upon questions found in William Emerson’s *The Evaluation of Obstetrical Trauma: A Questionnaire* (personal communication, February 12, 2007). Emerson’s questionnaire is used by him and those
trained by him in their clinical work in treating what they see as the aftereffects of birth trauma. Emerson’s questionnaire is not publicly available. This researcher could not find any validity studies conducted on it in the literature. Emerson based his questionnaire on the work of Ray and Mandel (1987). Ray and Mandel’s work is a book based upon their experiences with clients and trainees at their rebirthing center. The work did not cite any studies; rather it is an anecdotal work. The questions in my design were based upon the five most-weighted questions from the caesarean-section portion of Emerson’s questionnaire. These questions were chosen based upon their relative relevance to the caesarean born (according to Emerson, 1998), with the intent of eliciting differences between vaginally born and caesarean born adults. To this researcher’s knowledge, Emerson’s questionnaire has not been used in any previous studies. While it would have been preferable to use an established, empirically validated questionnaire, and one that had been used in other studies; to this researcher’s knowledge none were available.

Rather than create questions, this researcher chose to use questions developed by those in the perinatal psychology field (Emerson, 1998; Ray & Mandel, 1987). While the questions were not validated, they were created by professionals rather than a lay researcher (this author).

**Procedures**

*Administering the assessments and questionnaires.* Once potential participants actually volunteered to participate in the study, they were mailed the first of two assessment packages which also included an informed consent form (see Appendices B through F). The participants were instructed how to complete the assessments and how to submit them for evaluation in the cover letters (see Appendices B, G). The assessment
package was estimated to take 30-40 minutes to complete. A self-addressed stamped envelope was included for the assessment package’s return. The participants were asked to complete and return the assessment package within 1 week of receiving it. If the researcher did not receive an assessment package after 2 weeks time, he sent a follow-up letter (Appendix I). Assessment packages returned incomplete were not included in the study. The assessments were presented in the following order: Demographic Questionnaire, SCL-90-R, and SAS.

Upon receipt of the first assessment package the participant was mailed the second of the two assessment packages. The second assessment package consisted of the birth questionnaire (see Appendix H) and a cover letter (see Appendix G). The purpose of the participants completing the birth questionnaire separately from the other instruments was to prevent the data from being affected by demand characteristics. The participants were expected to complete and return the birth questionnaire within 1 week of receiving it. A follow-up letter (see Appendix J) was sent after 2 weeks time if the birth questionnaire had not been returned. Participants who returned incomplete assessment packages or failed to sign the informed consent form were not included in the study.

Confidentiality. All materials submitted by the participants were kept in a locked filing cabinet for confidentiality purposes. Each participant was assigned a code number by the researcher to ensure confidentiality and for use with computer data analysis programs. At the conclusion of the study all materials containing identifying information were destroyed and disposed of properly.
Referrals. While no participants expressed distress caused by their involvement in the study, counseling, psychotherapy, or spiritual guidance were available if so desired. The participants were informed of this in the informed consent form (see Appendix C).
Chapter 4: Results

Participants

The participants of this study were gathered from the United States. Participants were located in California, Oregon, Washington, Michigan, Minnesota, Massachusetts, Connecticut, and Georgia with the majority coming from California. In all, 138 individuals agreed to participate in the study. Of the 138 who agreed to participate, 111 (80.4%) were women and 26 (18.8%) were men. Of the men, 1 (0.72%) was a female-to-male transgender person. Additionally, 1 (0.72%) participant identified as an intersex person. Both the transgender man and the intersex person completed their materials after the vaginally born group was filled and thus, were not included in the data analysis (see section on selection process below). Of the 115 participants who completed the study, 8 provided data that was unusable. Of these 8 participants, 5 did not know how they were born. The remaining 3 participants had scores on the SCL-90-R scores that met the criteria for “attempting to communicate freedom from psychological distress” and were judged to be unusable by the researcher (Derogatis, 1994, p. 58).

This left 107 participants remaining. The vaginally born group contains 20 participants, the nonlabor cesarean group contains 20 participants, and the labor cesarean group contains 24 participants (see the Selection Process section below). The remaining 43 participants’ data (all vaginally born) were held in reserve in case they were needed in the future. The demographic statistics are presented in Table 1.
Table 1

*Descriptive Statistics of Participants by Birth Group*

<table>
<thead>
<tr>
<th>Delivery type</th>
<th>Vaginal</th>
<th>Nonlabor cesarean</th>
<th>Labor cesarean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographic variable</td>
<td>Percentage</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>25.0</td>
<td>5.0</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>75.0</td>
<td>95.0</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-29</td>
<td>35.0</td>
<td>55.0</td>
<td></td>
</tr>
<tr>
<td>30-39</td>
<td>45.0</td>
<td>30.0</td>
<td></td>
</tr>
<tr>
<td>40-49</td>
<td>20.0</td>
<td>5.0</td>
<td></td>
</tr>
<tr>
<td>50-59</td>
<td>0.0</td>
<td>10.0</td>
<td></td>
</tr>
<tr>
<td>60+</td>
<td>0.0</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>32.7</td>
<td>24.3</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High school</td>
<td>10.0</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>Some college</td>
<td>0.0</td>
<td>20.0</td>
<td></td>
</tr>
<tr>
<td>College graduate</td>
<td>60.0</td>
<td>45.0</td>
<td></td>
</tr>
<tr>
<td>Postgraduate</td>
<td>30.0</td>
<td>35.0</td>
<td></td>
</tr>
<tr>
<td>Relationship status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>45.0</td>
<td>50.0</td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>25.0</td>
<td>45.0</td>
<td></td>
</tr>
<tr>
<td>Partnered</td>
<td>15.0</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>Divorced</td>
<td>10.0</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>Separated</td>
<td>0.0</td>
<td>5.0</td>
<td></td>
</tr>
<tr>
<td>Widowed</td>
<td>5.0</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>Ethnic origin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Native American</td>
<td>5.0</td>
<td>5.0</td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>80.0</td>
<td>80.0</td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>0.0</td>
<td>10.0</td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>0.0</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>15.0</td>
<td>5.0</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Vaginal \(n = 20\), Nonlabor cesarean \(n = 20\), Labor cesarean \(n = 24\)
Table 1 (continued)

**Descriptive Statistics of Participants by Birth Group**

<table>
<thead>
<tr>
<th>Demographic variable</th>
<th>Delivery type</th>
<th>Vaginal</th>
<th>Nonlabor cesarean</th>
<th>Labor cesarean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Percentage</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Parental status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have children</td>
<td></td>
<td>15.0</td>
<td>25.0</td>
<td>16.7</td>
</tr>
<tr>
<td>No children</td>
<td></td>
<td>85.0</td>
<td>75.0</td>
<td>83.3</td>
</tr>
<tr>
<td>Religious/spiritual affiliation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Christian</td>
<td></td>
<td>30.0</td>
<td>30.0</td>
<td>33.3</td>
</tr>
<tr>
<td>Jewish</td>
<td></td>
<td>0.0</td>
<td>5.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Hindu</td>
<td></td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Muslim</td>
<td></td>
<td>5.0</td>
<td>5.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Atheist/Agnostic</td>
<td></td>
<td>15.0</td>
<td>20.0</td>
<td>29.2</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td>50.0</td>
<td>40.0</td>
<td>37.5</td>
</tr>
<tr>
<td>Yearly income</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$0-30,000</td>
<td></td>
<td>10</td>
<td>50.0</td>
<td>66.7</td>
</tr>
<tr>
<td>$30,000-60,000</td>
<td></td>
<td>3</td>
<td>40.0</td>
<td>25.0</td>
</tr>
<tr>
<td>$60,000-90,000</td>
<td></td>
<td>6</td>
<td>0.0</td>
<td>8.3</td>
</tr>
<tr>
<td>$90,000+</td>
<td></td>
<td>1</td>
<td>10.0</td>
<td>0.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$41.6k</td>
<td>$29.8k</td>
<td>$35.3</td>
</tr>
</tbody>
</table>

Note. Vaginal n = 20, Nonlabor cesarean n = 20, Labor n = 24. The yearly income mean and standard deviation are based on an arbitrary top income of $105,000 and are therefore approximations. k = $1000.

**Quantitative Portion of the Study**

*Treatment of the data.* The SCL-90-Rs and SASs were hand-scored by the researcher and the data was recorded using Microsoft Excel. For the SCL-90-R, the adult nonpatient norm was used for scoring purposes. The potential relationships between the three birth circumstance categories and the measures of adult psychological symptoms and spirituality were analyzed with the statistical computer software SPSS. A one-way analysis of variance (ANOVA, *p* < .05) was performed for each of the subscales and
totals of the SCL-90R and the SAS (a total of 17 analyses) comparing the means of each group (vaginal, nonlabor cesarean, and labor cesarean). The results of these analyses are presented in Tables 2-4. Additionally, a post hoc Bonferroni analysis of the differences between birth groups on those subscales of the SCL-90-R with significant $p$ values was performed (see Table 5).

Quantitative results. This study set out to see if any relationships exist between being born by labor cesarean section and adult psychological symptoms and adult spirituality. The data from the SCL-90-R and SAS were analyzed by comparing the subscales and totals from each measure across the three groups (vaginally born, nonlabor cesarean born, and labor cesarean born). A one-way analysis of variance (ANOVA) was performed with the 17 subscales and totals of the two measures using the computer statistical program, SPSS. Table 5 shows the descriptive statistics for all participants on the SCL-90-R and SAS. Table 6 shows the descriptive statistics for the SCL-90-R and SAS by birth group.
Table 2

*Descriptive Statistics for All Participants on All Scales and Subscales (N = 64)*

<table>
<thead>
<tr>
<th>Scale</th>
<th>Subscale</th>
<th>M</th>
<th>SEM</th>
<th>SD</th>
<th>Mdn</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Symptom Checklist-90-R</strong></td>
<td>Somatization</td>
<td>54.73</td>
<td>1.11</td>
<td>8.85</td>
<td>53</td>
</tr>
<tr>
<td></td>
<td>Obsessive-Compulsive</td>
<td>56.50</td>
<td>1.25</td>
<td>10.00</td>
<td>56</td>
</tr>
<tr>
<td></td>
<td>Interpersonal Sensitivity</td>
<td>58.97</td>
<td>1.19</td>
<td>9.55</td>
<td>59</td>
</tr>
<tr>
<td></td>
<td>Depression</td>
<td>57.59</td>
<td>1.14</td>
<td>9.12</td>
<td>57</td>
</tr>
<tr>
<td></td>
<td>Anxiety</td>
<td>54.73</td>
<td>1.11</td>
<td>8.85</td>
<td>53</td>
</tr>
<tr>
<td></td>
<td>Hostility</td>
<td>54.59</td>
<td>1.24</td>
<td>9.95</td>
<td>54</td>
</tr>
<tr>
<td></td>
<td>Phobic Anxiety</td>
<td>52.16</td>
<td>1.22</td>
<td>9.78</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>Paranoid Ideation</td>
<td>52.41</td>
<td>1.28</td>
<td>10.21</td>
<td>49</td>
</tr>
<tr>
<td></td>
<td>Psychoticism</td>
<td>57.30</td>
<td>1.31</td>
<td>10.49</td>
<td>58</td>
</tr>
<tr>
<td><strong>Symptom Checklist-90-R</strong></td>
<td>Global Severity Index</td>
<td>57.08</td>
<td>1.22</td>
<td>9.76</td>
<td>56</td>
</tr>
<tr>
<td></td>
<td>Positive Symptom Distress Index</td>
<td>55.48</td>
<td>0.99</td>
<td>7.97</td>
<td>54.5</td>
</tr>
<tr>
<td></td>
<td>Positive Symptom Total</td>
<td>56.39</td>
<td>1.14</td>
<td>9.11</td>
<td>56</td>
</tr>
<tr>
<td><strong>Spiritual Assessment Scale</strong></td>
<td>Purpose and Meaning in Life</td>
<td>19.53</td>
<td>0.40</td>
<td>3.19</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Innerness or Inner Resources</td>
<td>41.30</td>
<td>0.87</td>
<td>6.92</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td>Unifying Connectedness</td>
<td>43.17</td>
<td>0.85</td>
<td>6.78</td>
<td>44</td>
</tr>
<tr>
<td></td>
<td>Transcendence</td>
<td>26.39</td>
<td>0.65</td>
<td>5.18</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>Total Score</td>
<td>130.39</td>
<td>2.39</td>
<td>19.12</td>
<td>131</td>
</tr>
</tbody>
</table>
Table 3

*Descriptive Statistics for Vaginal (n = 20), Nonlabor Cesarean (n = 20), and Labor Cesarean (n = 24) Birth Groups on All Scales and Subscales*

<table>
<thead>
<tr>
<th>Scale</th>
<th>Subscale</th>
<th>Birth type</th>
<th>M</th>
<th>SEM</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptom Checklist-90-R</td>
<td>Somatization</td>
<td>Vaginal</td>
<td>58.10</td>
<td>1.56</td>
<td>6.98</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nonlabor cesarean</td>
<td>51.15</td>
<td>2.39</td>
<td>10.69</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Labor cesarean</td>
<td>54.92</td>
<td>1.57</td>
<td>7.68</td>
</tr>
<tr>
<td></td>
<td>Obsessive-Compulsive</td>
<td>Vaginal</td>
<td>61.00</td>
<td>1.94</td>
<td>8.66</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nonlabor cesarean</td>
<td>51.95</td>
<td>2.28</td>
<td>10.21</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Labor cesarean</td>
<td>56.54</td>
<td>1.94</td>
<td>9.51</td>
</tr>
<tr>
<td></td>
<td>Interpersonal Sensitivity</td>
<td>Vaginal</td>
<td>61.90</td>
<td>2.05</td>
<td>9.16</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nonlabor cesarean</td>
<td>56.55</td>
<td>2.28</td>
<td>10.21</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Labor cesarean</td>
<td>58.54</td>
<td>1.84</td>
<td>9.04</td>
</tr>
<tr>
<td></td>
<td>Depression</td>
<td>Vaginal</td>
<td>60.35</td>
<td>2.11</td>
<td>9.43</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nonlabor cesarean</td>
<td>53.75</td>
<td>1.75</td>
<td>7.81</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Labor cesarean</td>
<td>58.50</td>
<td>1.87</td>
<td>9.15</td>
</tr>
<tr>
<td></td>
<td>Anxiety</td>
<td>Vaginal</td>
<td>59.05</td>
<td>2.42</td>
<td>10.83</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nonlabor cesarean</td>
<td>50.15</td>
<td>2.59</td>
<td>11.57</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Labor cesarean</td>
<td>55.04</td>
<td>2.28</td>
<td>11.17</td>
</tr>
<tr>
<td></td>
<td>Hostility</td>
<td>Vaginal</td>
<td>56.15</td>
<td>2.31</td>
<td>10.33</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nonlabor cesarean</td>
<td>52.55</td>
<td>2.09</td>
<td>9.34</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Labor cesarean</td>
<td>55.00</td>
<td>2.09</td>
<td>10.25</td>
</tr>
<tr>
<td></td>
<td>Phobic Anxiety</td>
<td>Vaginal</td>
<td>52.85</td>
<td>2.62</td>
<td>11.70</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nonlabor cesarean</td>
<td>50.70</td>
<td>1.81</td>
<td>8.11</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Labor cesarean</td>
<td>52.79</td>
<td>1.96</td>
<td>9.58</td>
</tr>
<tr>
<td></td>
<td>Paranoid Ideation</td>
<td>Vaginal</td>
<td>54.95</td>
<td>2.34</td>
<td>10.46</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nonlabor cesarean</td>
<td>50.10</td>
<td>2.14</td>
<td>9.57</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Labor cesarean</td>
<td>52.21</td>
<td>2.14</td>
<td>10.46</td>
</tr>
<tr>
<td></td>
<td>Psychoticism</td>
<td>Vaginal</td>
<td>59.80</td>
<td>2.10</td>
<td>9.39</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nonlabor cesarean</td>
<td>54.20</td>
<td>2.05</td>
<td>9.15</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Labor cesarean</td>
<td>57.79</td>
<td>2.46</td>
<td>12.06</td>
</tr>
</tbody>
</table>

*(table continues)*
Table 3 (continued)

*Descriptive Statistics for Vaginal (n = 20), Nonlabor Cesarean (n = 20), and Labor Cesarean (n = 24) Birth Groups on All Scales and Subscales*

<table>
<thead>
<tr>
<th>Scale</th>
<th>Subscale</th>
<th>Birth type</th>
<th>M</th>
<th>SEM</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Symptom Checklist-90-R</strong></td>
<td>Global Severity Index</td>
<td>Vaginal</td>
<td>59.75</td>
<td>2.11</td>
<td>9.45</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nonlabor cesarean</td>
<td>52.90</td>
<td>2.18</td>
<td>9.74</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Labor cesarean</td>
<td>58.33</td>
<td>1.89</td>
<td>9.25</td>
</tr>
<tr>
<td></td>
<td>Positive Distress</td>
<td>Vaginal</td>
<td>58.25</td>
<td>1.82</td>
<td>8.16</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nonlabor cesarean</td>
<td>52.35</td>
<td>1.64</td>
<td>7.32</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Labor cesarean</td>
<td>55.79</td>
<td>1.57</td>
<td>7.71</td>
</tr>
<tr>
<td></td>
<td>Positive Symptom Total</td>
<td>Vaginal</td>
<td>58.70</td>
<td>1.90</td>
<td>8.52</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nonlabor cesarean</td>
<td>52.95</td>
<td>2.22</td>
<td>9.93</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Labor cesarean</td>
<td>57.33</td>
<td>1.71</td>
<td>8.36</td>
</tr>
<tr>
<td><strong>Spiritual Assessment Scale</strong></td>
<td>Purpose and Meaning in Life</td>
<td>Vaginal</td>
<td>19.60</td>
<td>0.82</td>
<td>3.68</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nonlabor cesarean</td>
<td>19.55</td>
<td>0.75</td>
<td>3.36</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Labor cesarean</td>
<td>19.46</td>
<td>0.56</td>
<td>2.72</td>
</tr>
<tr>
<td></td>
<td>Innerness or Inner Resources</td>
<td>Vaginal</td>
<td>41.85</td>
<td>1.65</td>
<td>7.39</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nonlabor cesarean</td>
<td>42.05</td>
<td>1.57</td>
<td>7.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Labor cesarean</td>
<td>40.21</td>
<td>1.35</td>
<td>6.61</td>
</tr>
<tr>
<td></td>
<td>Unifying Connectedness</td>
<td>Vaginal</td>
<td>42.15</td>
<td>1.85</td>
<td>8.26</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nonlabor cesarean</td>
<td>43.50</td>
<td>1.48</td>
<td>6.62</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Labor cesarean</td>
<td>43.75</td>
<td>1.15</td>
<td>5.65</td>
</tr>
<tr>
<td></td>
<td>Transcendence</td>
<td>Vaginal</td>
<td>26.55</td>
<td>1.10</td>
<td>4.93</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nonlabor cesarean</td>
<td>25.95</td>
<td>1.45</td>
<td>6.49</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Labor cesarean</td>
<td>26.63</td>
<td>0.88</td>
<td>4.30</td>
</tr>
<tr>
<td></td>
<td>Total Score</td>
<td>Vaginal</td>
<td>130.15</td>
<td>4.90</td>
<td>21.92</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nonlabor cesarean</td>
<td>131.05</td>
<td>4.45</td>
<td>19.92</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Labor cesarean</td>
<td>130.04</td>
<td>3.39</td>
<td>16.61</td>
</tr>
</tbody>
</table>

It should be noted that for all groups and across all subscales and indices, the means and standard deviations of the participants of this study were higher than those presented for the nonpatient adult norm group (Derogatis, 1994). According to Derogatis,
the nonpatient norms for the mean raw scores of the SCL-90-R range from 0.14 to 19.22. When the raw scores are converted into standardized scores (as those listed in Table 3), this range becomes 52-55. This study’s participants mean standardized scores were somewhat higher (+4.2-13.4%) on all subscales and indices than the norms with the exception of the Phobic Anxiety and Paranoid Ideation subscales which were somewhat lower (-3.4, -2.9 %; respectively). The means of the SAS subscales and totals were found to be lower than those found in both Howden’s (1992) and Hare’s (1998) studies. The range of mean scores for Howden’s study was 20.4 to 139.2. The range of mean scores for the Hare study was 21.6 to 150.0. The current study’s range of mean scores for the SAS subscales and total was 19.5 to 130.4. For the mean total score this study’s mean score was 13.7% less than in Hare’s study and 6.3% less than in Howden’s study. For more on this see Chapter 5.

SCL-90-R. The results of the ANOVAs for the 9 subscales and 3 indices of the SCL-90-R were mixed (see Table 4). The somatic (SOM), obsessive-compulsive (O-C), and anxiety (ANX) subscales all showed significant differences between the groups. Looking at the SOM subscale, the nonlabor cesarean group showed the lowest mean, followed by the labor cesarean group and then the vaginal group ($p = .043$). Within the O-C subscale the pattern was the same as the SOM group ($p = .014$). As above, the ANX subscale followed this same pattern ($p = .049$). The remaining subscales and indices showed no significant differences between the three groups. These subscales and indices were Interpersonal Sensitivity (I-S), Depression (DEP), Hostility (HOS), Phobic Anxiety (PHOB), Paranoid Ideation (PAR), Psychoticism (PSY), Global Severity Index (GSI), Positive Symptom Distress Index (PSDI), and Positive Symptom Total (PST). The
Hostility (HOS) and Positive Symptom Distress Index (PSDI) subscales approached significance ($p = .058, p = .060$; respectively).

SAS. The results of the ANOVAs for the 4 subscales and the total score of the SAS revealed no significant relationships between the means of birth and spirituality as measured by the SAS (see Table 4). The $p$ values for the 4 subscales and the total score ranged from .627 to .989.
### Table 4

**ANOVA Analysis of Symptom Checklist-90-R and Spiritual Assessment Differences Between Birth Types**

<table>
<thead>
<tr>
<th>Scale</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Symptom Checklist-90-R</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Somatization</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>484.301</td>
<td>2</td>
<td>242.151</td>
<td>3.316*</td>
<td>.043</td>
</tr>
<tr>
<td>Within groups</td>
<td>4454.183</td>
<td>61</td>
<td>73.019</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>4938.484</td>
<td>63</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Obsessive-Compulsive</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>819.092</td>
<td>2</td>
<td>409.546</td>
<td>4.553*</td>
<td>.014</td>
</tr>
<tr>
<td>Within groups</td>
<td>5486.908</td>
<td>61</td>
<td>89.949</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>6306.000</td>
<td>63</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interpersonal Sensitivity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>293.229</td>
<td>2</td>
<td>146.615</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within groups</td>
<td>5450.708</td>
<td>61</td>
<td>89.356</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>5743.938</td>
<td>63</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>467.138</td>
<td>2</td>
<td>233.569</td>
<td>9.984</td>
<td>.058</td>
</tr>
<tr>
<td>Within groups</td>
<td>4774.300</td>
<td>61</td>
<td>78.267</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>5241.438</td>
<td>63</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anxiety</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>795.026</td>
<td>2</td>
<td>397.513</td>
<td>3.174*</td>
<td>.049</td>
</tr>
<tr>
<td>Within groups</td>
<td>7640.458</td>
<td>61</td>
<td>125.253</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>8435.484</td>
<td>63</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hostility</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>135.938</td>
<td>2</td>
<td>67.969</td>
<td>0.680</td>
<td>.511</td>
</tr>
<tr>
<td>Within groups</td>
<td>6101.500</td>
<td>61</td>
<td>100.025</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>6237.438</td>
<td>63</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phobic Anxiety</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>61.729</td>
<td>2</td>
<td>30.865</td>
<td>0.316</td>
<td>.730</td>
</tr>
<tr>
<td>Within groups</td>
<td>5962.708</td>
<td>61</td>
<td>97.749</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>6042.438</td>
<td>63</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paranoid Ideation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>236.729</td>
<td>2</td>
<td>118.365</td>
<td>1.140</td>
<td>.327</td>
</tr>
<tr>
<td>Within groups</td>
<td>6334.708</td>
<td>61</td>
<td>103.848</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>6571.438</td>
<td>63</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* *F*(2, 61) = *p* < .05.

(table continues)
Table 4 (continued)

**ANOVA Analysis of Symptom Checklist-90-R and Spiritual Assessment Differences Between Birth Types**

<table>
<thead>
<tr>
<th>Scale</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Symptom Checklist-90-R</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychoticism</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>323.001</td>
<td>2</td>
<td>161.501</td>
<td>1.490</td>
<td>.223</td>
</tr>
<tr>
<td>Within groups</td>
<td>6612.358</td>
<td>61</td>
<td>108.399</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>6935.359</td>
<td>63</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Global Severity Index</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>529.726</td>
<td>2</td>
<td>264.863</td>
<td>2.953</td>
<td>.060</td>
</tr>
<tr>
<td>Within groups</td>
<td>5470.883</td>
<td>61</td>
<td>89.687</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>6000.609</td>
<td>63</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive Symptom Distress Index</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>351.726</td>
<td>2</td>
<td>175.863</td>
<td>2.940</td>
<td>.060</td>
</tr>
<tr>
<td>Within groups</td>
<td>3648.258</td>
<td>61</td>
<td>59.808</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3999.984</td>
<td>63</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive Symptom Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>364.751</td>
<td>2</td>
<td>182.376</td>
<td>2.290</td>
<td>.110</td>
</tr>
<tr>
<td>Within groups</td>
<td>4858.483</td>
<td>61</td>
<td>79.647</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>5223.234</td>
<td>63</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Spirituality Assessment Scale</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purpose and Meaning in Life</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>0.229</td>
<td>2</td>
<td>0.115</td>
<td>0.011</td>
<td>.989</td>
</tr>
<tr>
<td>Within groups</td>
<td>641.708</td>
<td>61</td>
<td>10.520</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>641.938</td>
<td>63</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Innerness or Inner Resources</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>45.901</td>
<td>2</td>
<td>22.951</td>
<td>0.471</td>
<td>.627</td>
</tr>
<tr>
<td>Within groups</td>
<td>2973.458</td>
<td>61</td>
<td>48.745</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3019.359</td>
<td>63</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unifying Connectedness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>31.059</td>
<td>2</td>
<td>15.530</td>
<td>0.331</td>
<td>.720</td>
</tr>
<tr>
<td>Within groups</td>
<td>2864.050</td>
<td>61</td>
<td>46.952</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2895.109</td>
<td>63</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transcendence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>5.709</td>
<td>2</td>
<td>2.855</td>
<td>0.103</td>
<td>.902</td>
</tr>
<tr>
<td>Within groups</td>
<td>1685.525</td>
<td>61</td>
<td>27.632</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1691.234</td>
<td>63</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Score</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>12.776</td>
<td>2</td>
<td>6.338</td>
<td>0.017</td>
<td>.983</td>
</tr>
<tr>
<td>Within groups</td>
<td>23016.458</td>
<td>61</td>
<td>377.319</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>23029.234</td>
<td>63</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. *$F_{(2, 61)} = p < .05.$*
After the one-way ANOVA analysis, a post hoc Bonferroni analysis was performed for the Somatization, Obsessive-Compulsive, and Anxiety subscales to determine which birth groups demonstrated the differences detected in the ANOVA analysis (see Table 5).

Table 5

*Post hoc Bonferroni Analysis of Differences Between Birth Groups on Select Symptom Checklist-90-R Subscales*

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>(I) Birth Type</th>
<th>(J) Birth Type</th>
<th>Mean Difference (I-J)</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Somatization</td>
<td>Vaginal</td>
<td>Nonlabor Cesarean</td>
<td>6.950*</td>
<td>.038</td>
</tr>
<tr>
<td></td>
<td>Labor Cesarean</td>
<td>3.183</td>
<td></td>
<td>.670</td>
</tr>
<tr>
<td></td>
<td>Nonlabor Cesarean</td>
<td>Labor Cesarean</td>
<td>-3.767</td>
<td>.452</td>
</tr>
<tr>
<td>Obsessive-Compulsive</td>
<td>Vaginal</td>
<td>Nonlabor Cesarean</td>
<td>9.050*</td>
<td>.011</td>
</tr>
<tr>
<td></td>
<td>Labor Cesarean</td>
<td>4.459</td>
<td></td>
<td>.377</td>
</tr>
<tr>
<td></td>
<td>Nonlabor Cesarean</td>
<td>Labor Cesarean</td>
<td>-4.592</td>
<td>.345</td>
</tr>
<tr>
<td>Anxiety</td>
<td>Vaginal Birth</td>
<td>Nonlabor Cesarean</td>
<td>8.900*</td>
<td>.044</td>
</tr>
<tr>
<td></td>
<td>Labor Cesarean</td>
<td>4.008</td>
<td></td>
<td>.724</td>
</tr>
<tr>
<td></td>
<td>Nonlabor Cesarean</td>
<td>Labor Cesarean</td>
<td>-4.892</td>
<td>.462</td>
</tr>
</tbody>
</table>

*Note.* The mean difference is significant at the .05 level.

The results of the Bonferroni analysis shown in Table 5 demonstrate that the participants in the vaginal group reported more Somatization, Obsessive-Compulsive, and Anxiety symptoms. No significant differences were found between the vaginal and labor cesarean groups or between the labor cesarean and nonlabor cesarean groups.

**Qualitative Portion of the Study**

*Treatment of the data.* Responses to the open-ended questions at the end of the birth questionnaire were analyzed using HyperRESEARCH 2.8, a computer program used for the qualitative analysis of text. As was described in Chapter 3, the five questions used are the five most-weighted cesarean birth trauma questions from Emerson’s *The Evaluation of Obstetrical Trauma: A Questionnaire* (W. R. Emerson, personal...
communication, February 12, 2007). For brevity’s sake they are referred to here as “stuck,” “interruption,” “space,” “have,” and “protection.” Please see Appendix H for the full text of these questions. The texts were transcribed into Microsoft Word documents and edited for grammar and spelling (a requirement for use of HyperRESEARCH 2.8). The researcher attempted to use one method of grounded theory (Auerbach & Silverstein, 2003); however, the data did not suggest any themes.

The qualitative data from the birth questionnaire were sorted into data sets by birth group and by question. For example, all responses to the question about being “stuck” from the vaginal group were put in one data set; the responses of the nonlabor group from the “interruption” question were put in another group. Each question had a vaginal data set, a nonlabor cesarean data set, and a labor cesarean data set for a total of 15 data sets.

For each question, the three data sets (vaginal, nonlabor, and labor) were read by this researcher several times. From these readings a sense of the data emerged and was used to create codes to be applied to the data. The same list of codes was used on each of the three data sets for each of the five questions (see Appendix L). For example, the same codes were used to analyze the vaginal, nonlabor, and labor data sets for the response regarding being “stuck,” and a different list of codes were used to analyze the data sets regarding “protection.”

This approach resulted in codes applied to the data. Each code applied in roughly the same patterns and numbers to each birth group. As a result, there was nothing unique in each of the birth groups’ data that could give rise to a grounded theory (see Qualitative Results section).
Given this, the researcher classified the codes as having either a positive or negative tone. Examples of positive codes from the “interruption” question were “ability to tolerate interruption” and “interruption as a pleasant surprise.” Examples of negative codes from the same question include “anger” and “pervasive obstacle in life.” This research defined negative codes as those considered to have a negative impact on one’s life or indicate dysfunctional thinking or behavior. Positive codes were defined as those that demonstrated psychologically healthy behavior or thinking, or had a positive impact on one’s life. These definitions of “positive” and “negative” were the subjective choice of this researcher. Other researchers may have chosen different definitions. Grounded theory research is a fundamentally subjective endeavor (Auerbach & Silverstein, 2003), which encourages such researcher interaction. This researcher then counted the number of instances of positive and negative codes for each question and group. In four of the five questions the vaginal group scored the most negative codes, then the labor group, and then the nonlabor group. These results seemed to mirror the data from the SCL-90-R Somatization, Anxiety, and Obsessive-Compulsive subscales. On these subscales the vaginal group had the highest mean scores indicating the most reported psychological symptoms. The cesarean groups had lower mean scores on these subscales, indicating lower amounts of reported psychological symptoms. The negative coding incidence and the three significant SCL-90-R subscales seemed to be pointing towards a similar pattern between the three birth groups. However, a one-way analysis of variance (ANOVA, \( p < .05 \)) was performed and the pattern was found not to be significant \( (p = .304 - .646) \).

Subsequently, the data sets were analyzed using codes derived from English’s (1993) list of characteristics for nonlabor cesarean born people (see Appendixes K, M).
English’s work was selected for this application because she is a researcher in the field of perinatal psychology who has postulated specific character traits in nonlabor cesarean born people. As such this researcher saw her work as an obvious choice to try to make sense of the textual data. The intention was to see if the nonlabor cesarean group would have more English-derived coding than the other two groups. The same procedures were used as in the first qualitative analysis (see above). Like the first analysis, this analysis produced no theory (see Qualitative Results section and Chapter 5). Like the first analysis the codes could be applied in roughly equal numbers to each of the three birth groups, revealing no obvious patterns to base a grounded theory upon.

Similarly to the first qualitative analysis, a lack of a grounded theory using the codes based upon English’s (1993) work led this researcher to use quantitative analysis to see if anything could be gleaned from the coding. An ANOVA was performed to explore whether the nonlabor cesarean group had a significantly higher incidence of coding than the vaginal or labor cesarean groups. This researcher wondered if the nonlabor caesarean group would have more instances in which English’s characteristics of nonlabor cesarean born individuals applied than the other two groups. The coding instances for each question as well as the five questions taken together were used as the raw data for a one-way ANOVA ($p < .05$) comparing the three birth groups. There were no significant differences between the three birth groups (see Qualitative Results section).

With no grounded theory having emerged in the previous two analyses, the researcher used Emerson’s (1998) work on recapitulation of birth trauma to create codes for further analysis (see Appendix N for the codes). Emerson asserted that many people recapitulate their birth trauma in one way or another in an attempt to heal it. Emerson
includes cesarean section in the category of birth trauma. This researcher wanted to see if
this recapitulation could be seen in the qualitative data. The data was grouped and
analyzed as in the previous analyses. The codes created from Emerson’s (1998) work
could not be applied to the data in any of the questions or birth groups as there was no
clear means of discerning what constituted recapitulation of a birth circumstance versus
the same behavior due to a separate cause. The result was all the groups were equally
unable to be analyzed by this method and therefore no grounded theory emerged.

Finally, the researcher looked at the four quartiles of participants by total score on
the SAS and by GSI on the SCL-90-R to see if any one birth group predominated. If one
group predominated it may have given some insight into how to code the qualitative data.
For example, if the top quartile of the SAS data consisted of primarily nonlabor cesarean
born participants then perhaps coding around positive spiritual experiences would
provide a way to discern between the groups. A difference in the coding between the
groups could then lead to a grounded theory concerning nonlabor cesarean born people
and spirituality. The top and bottom quartiles of the SAS data showed roughly equal
proportions of the 3 birth groups as might be expected given that no significant
differences were found between the groups. The top and bottom quartiles of the SCL-90-
R data displayed unequal proportions of the 3 birth groups. The vaginal group had more
participants in the top quartile (meaning more psychological symptoms) than the other 2
birth groups. Mirroring this, the nonlabor group had approximately three times the
number of participants in the bottom quartile (meaning fewer psychological symptoms)
than either the vaginal or labor groups. This might be expected as the analyses of the
SCL-90-R data showed that the vaginal group had significantly higher mean scores on
the SOM, O-C, and ANX subscales than the cesarean groups. Neither of these views of the quantitative data provided any insight to more productive ways of coding the qualitative data. However, the SCL-90-R data did mirror the results of the SCL-90-R ANOVA results. That is, in the top quartile the vaginal group had the most participants represented, and in the bottom quartile the nonlabor group had the most participants represented. This is a similar phenomenon to the SCL-90-R results where the vaginal group had significantly higher scores on the Somatization, Obsessive-Compulsive, and Anxiety subscales while the nonlabor group had the lowest scores on those same subscales. Therefore, the vaginal group (with the higher subscale scores which add up to a higher GSI score) had more participants in the top quartile (the highest GSI scores). Similarly, the nonlabor cesarean group (with the lowest subscale scores which add up to a lower GSI) had more participants in the bottom quartile (the lowest GSI scores). The level of psychological symptoms in the groups did not provide any insight into how to interpret the qualitative data; it merely helped confirm the results of the SCL-90-R ANOVA.

The choice to use both quantitative and qualitative methods was made in an attempt to provide a more complete view of the possible psychological and spiritual consequences of birth. As seen in the literature review (Chapter 2), both quantitative and qualitative methods have been used to research prenatal and perinatal questions, although not in conjunction with one another. However, Chapter 2 shows that there is precedent for both modes of research.

*Qualitative results.* The most striking aspect of the qualitative data analyses was the lack of any grounded theories emerging from the data. The researcher’s first attempt
at coding and creating a grounded theory resulted in no theory emerging. Having sorted the codes into two categories, positive and negative (see Treatment of Data section); an interesting pattern emerged in 4 of the 5 questions. In the analyses of the data sets from the questions concerning being stuck, interruption, and claiming space the vaginal group had the highest incidence of negative codes, the labor group had the next lowest incidence of negative codes, and the nonlabor group the lowest incidence of negative codes. This paralleled the quantitative results of the SCL-90-R subscales Anxiety, Obsessive-Compulsive, and Somatization where the vaginal group had the highest mean scores, then the labor group, and then the nonlabor group. However, a one-way ANOVA ($p < .05$) found that none of these group differences came close to statistical significance. Thus the pattern cannot be meaningfully commented upon.

Little insight was gained through the analysis of the positive coding. The labor group had about half the positive coding incidence as the other two groups concerning interruption. The nonlabor group had a lower incidence of positive coding regarding the “protection” question. Looking at incidences of positive coding in this first analysis there is no universal pattern that emerges.

The coding using English’s (1993) work provided no grounded theory. The “have” and “stuck” questions had very few incidences of codes applying. With very few codes being applicable no grounded theory emerged from either of these questions. The coding for the “space” and “interruption” questions did provide for varied amounts of coding between the birth groups, but no grounded theory. The last question, “protection,” was interesting in that the vaginal group had nearly twice the amount of coding as the nonlabor group. One would expect the nonlabor cesarean group to have had the most
incidences of coding using codes derived from English’s (1993) work with nonlabor cesarean adults (see Chapter 5 for more discussion).

Because no grounded theory emerged from the qualitative analysis using codes derived from English’s (1993) work, the researcher turned to quantitative research methods as he had with the coding of the first qualitative analysis. A one-way ANOVA ($p < .05$) was run for each of the qualitative questions to see if the differences between birth groups were significant. The researcher wished to see if the nonlabor group had more coding incidences than the labor and vaginal groups as English’s work might suggest.

The “protection” question came up with a significant difference ($p = .014$) between groups. However, a Levene’s test for homogeneity of variance was performed on these data using SPSS. In a Levene test, a significant result (in this case $p < .05$) means that the null hypothesis that the variances are equal must be rejected and the alternative hypothesis that the variances are unequal and therefore not able to be compared must be accepted (Garson, 2009). The Levene test was used as it does not require the same sample size for each group and holds reasonably well even if the normality assumption does not hold (Test for homogeneity of variances, 2005). It was found that the data for both the “stuck” and “protection” questions did not meet the criteria for homogeneity of variance ($p = .010$, $p = .000$; respectively). This meant that the significant difference found for the “protection” question was invalid because the homogeneity of variance needed for the ANOVA to be valid was not present. The “interruption,” “space,” “have” questions and the “TOTAL” for all 5 questions met the homogeneity of variance requirement for ANOVA, but resulted in no significant
relationships. Thus, no meaningful comparisons could be made between the birth groups using the coding derived from English’s (1993) work on nonlabor cesarean-born adults.

From these different approaches to coding the qualitative data and the statistical analysis of qualitative data, neither grounded theories nor any insights into the quantitative data emerged. The qualitative analyses did not lend any support to the theories put forth by the researchers cited in Chapter 2 such as Emerson (1998) and English (1993), in fact they contradicted them. See Chapter 5 for more discussion of these results.
Chapter 5: Discussion

Results

The study was divided into a quantitative section and a qualitative section. In the quantitative section the results of the SAS found no significant difference in either the mean subscale scores or the mean total scores between the three birth groups (vaginally born, nonlabor cesarean born, and labor cesarean born). With the SCL-90-R significant differences were found only in the Somatization (SOM, $p = .043$), Obsessive-Compulsive (O-C, $p = .014$) and Anxiety (ANX, $p = .049$) subscale mean scores. With the SOM subscale the vaginal group had the highest mean score (58.10), then the labor cesarean group (54.92), and then the nonlabor cesarean group (51.15). The O-C and ANX subscales followed the same pattern as the SOM subscale (61.00, 56.54, 51.95 and 59.05, 55.04, 50.15 respectively). The post hoc Bonferroni analysis demonstrated that the participants in the vaginal group reported more Somatization, Obsessive-Compulsive, and Anxiety symptoms. No significant differences were found between the vaginal and labor cesarean groups or between the labor cesarean and nonlabor cesarean groups. These results do not support the work of Grof (1973, 1985, 1993), English (1985, 1993), or Emerson (1998). Please see Chapter 4 for a more detailed look at the quantitative results and the Interpretation section below for more on the significance of these results.

The qualitative results showed no grounded theory emerging from this researcher’s coding of the qualitative data. Codes created by this researcher, codes derived from English’s (1993) work, and codes derived from Emerson’s (1998) work all failed to discern possible differences between the birth groups. With no grounded theory or theories having been developed, this suggested that English’s (1985, 1993) and Grof’s
(1985, 1993) work was incorrect regarding nonlabor cesarean born individuals. This also suggested that Grof (1985, 1993) was incorrect regarding labor cesarean births. Emerson’s (1998) work was contradicted by these results as well. Please see the Interpretation section below.

Quantitative analyses were then conducted to try to discriminate between the groups’ textual responses. Looking at the number of positive and negative coding instances in the author’s coding, it was seen that 4 of the 5 questions showed a pattern where the vaginal group had the most negative coding, then the labor cesarean group and then the nonlabor cesarean group. This pattern is identical to the pattern found in the SOM, O-C, and ANX subscales from the SCL-90-R data. On these three subscales the vaginal group had the highest mean scores, the labor cesarean group had the next highest mean scores, and the nonlabor cesarean group had the lowest mean scores. A one-way ANOVA was performed and no significant differences between the birth groups were found concerning the negative coding. These results do not lend support to Grof’s (1985, 1993) or English’s (1985, 1993) notion that cesarean birth, labor or nonlabor, has an impact on later psychospiritual functioning. The coding using English’s (1993) work was also analyzed using a one-way ANOVA. While some questions did show significant differences initially, a Levene’s test showed that homogeneity of the variances was not such that an ANOVA could be used. Therefore no significant differences between the birth groups were found in regards to English’s (1993) characteristics of nonlabor cesarean born people. The fact that the nonlabor cesarean group did not have a significantly higher incidence of codes derived from English’s work sheds doubt on her
work. Please see Chapter 4 for a more detailed look at the qualitative results and the Interpretation section below for more discussion of these findings.

The quantitative and the qualitative portions of this study did not find any relationships between being born via labor cesarean section and adult psychological symptoms or adult spirituality. The findings did however, dispute the work of Grof (1985, 1993), English (1985, 1993), and Emerson (1998). The findings lent support the work of Freud (1910/1957, 1916/1963) and Rank (1929). Additionally, interesting patterns did emerge that may warrant further exploration in other studies. In the next section these results and their meanings are discussed.

**Interpretation**

SAS. No significant differences were found between the birth groups in either the mean subscale scores or mean total scores of the Spirituality Assessment Scale. Given Grof’s (1985) and English’s (1985, 1993) theory that nonlabor cesarean born individuals may have easier access to the transpersonal, barring any negative conditioning, this researcher expected to see higher SAS mean scores in the nonlabor cesarean group than in either the vaginal or labor cesarean group. This was not the case.

Grof (1985) stated that

The emergency Caesarean is usually performed after many hours of traumatic delivery, when it becomes obvious that to continue would be dangerous for the mother or child. In this case the overall trauma is regularly far greater than associated with normal delivery. (Grof, 1985, p. 253)

This assertion suggested that the labor cesarean group would have lower SAS mean scores than the other birth groups. Again, this is not the case.

It should be noted that the participants’ mean scores on the SAS subscales and total were lower than what was seen in both Howden’s (1992) and Hare’s (1998) studies.
It could be that people drawn to participate in psychological studies are in more distress than average and that this accounts for the lower mean scores. A substantial portion of the participants were beginning students in a graduate transpersonal psychology program that encourages spiritual growth. This is a challenging process that may bring about spiritual distress and thus lower mean scores.

Why were there no significant measured differences in the mean scores? Why did the nonlabor cesarean group have higher mean scores or the labor cesarean group have lower scores? The study’s sample size may have been too small to detect any differences in the population. It is also possible that the SAS itself may not be a sensitive enough instrument to measure what it claims to measure, that is its internal validity may be in question. No published validity studies were found for the SAS beyond the work of its author, Howden (1992). Please see Chapter 3 for more details on the SAS.

It may also be that whatever spiritual differences may exist between the groups may occur earlier in life (before adulthood) and therefore did not appear in a study focusing on adults. In a longitudinal study Forssman andThuwe (1981) investigated the incidence of juvenile delinquency and psychiatric treatment of individuals born to mothers who wished to abort them as compared to a control group. While they found that those who had mothers who wished to abort them had higher rates of juvenile delinquency and psychiatric treatment, they also found that this difference from the control group disappeared by age 35. In a similar longitudinal study Kubicka et al. (1995) reported that individuals born of unwanted pregnancies had more instances of psychological and social differences than those born of accepted pregnancies. While the differences between these two groups did not disappear, they did narrow by age 30.
Perhaps something similar occurred in this study with regards to the SAS mean scores. The mean age of the participants of this study was 30.2. Therefore is possible that any spiritual differences or difficulties are ameliorated before or during early adulthood.

Perhaps if a more validated instrument was used, such as the Spiritual Well-Being Scale (Paloutzian & Ellison, 1982), differences between the three birth groups would have been found. It may be that a more in-depth qualitative study would be able to discern the differences (if any) between the three birth groups. Transpersonal psychology is a relatively new field and the field of transpersonal instrumentation is even newer. It takes time and numerous studies to develop and validate reliable, accurate instruments and research methods. This difficulty may have contributed the SAS results.

Lastly it is possible that Grof (1985) and English (1985, 1993) were incorrect in their theories regarding cesarean birth and its impact on individuals. Their work was anecdotal in nature. Dickie’s (1988) work did support aspects of English’s findings, but Dickie did not research the spiritual trait English (1993) asserted to be true for nonlabor cesarean born people. English believed that nonlabor cesarean individuals have easier access to the transpersonal or spiritual. This researcher’s findings did not support English’s results. The SAS results of the current study did not support the work of Grof (1985, 1993), English (1985, 1993).

*SCL-90-R.* The results from the analysis of the SCL-90-R data showed that three of the subscales showed significant differences between the birth groups. The vaginal group had significantly higher mean scores for the SOM, O-C, and ANX subscales than the nonlabor cesarean and labor cesarean groups. The results of the SCL-90-R analysis were surprising to this researcher in several ways. These results were unexpected
considering the work of Grof (1985). This researcher expected the labor cesarean group to have had higher mean scores on the SCL-90-R than either the vaginal or nonlabor cesarean groups, especially on the Depression (DEP) subscale. As previously mentioned, Grof (1985) stated that labor cesarean births are far more traumatic than other means of birth. According to Grof’s (1973) theory of the Basic Perinatal Matrices (BPMs), the second matrix, BPM II is characterized by intense, meaningless suffering and he likened it to Hell. Grof (1987) also asserted that BPM II is the origin of inhibited or atypical depression. Given that for the labor cesarean born individual, labor consists entirely of BPM II, one might expect that the labor cesarean born adults in this study would have a higher mean score than the other birth groups.

Conversely, this researcher expected to find that the nonlabor cesarean group to have the lowest mean score for the DEP subscale. Grof (1987) stated that BPM II was the prototype for inhibited or atypical depression and that BPM III was the prototype for agitated depression. The nonlabor cesarean born individual avoids both of these matrices, representative of Hell and Purgatory. From Grof’s perspective, one might reasonably expect the nonlabor cesarean group to have the lowest mean score for the DEP subscale.

Also along this line of reasoning, this researcher expected the vaginally born group might have the lowest means scores on the SCL-90-R. According to Grof,

Uncomplicated birth seems to be the blueprint for coping with all later difficult situations in life. Various complications, such as prolonged and debilitating delivery, the use of forceps, or heavy anesthesia appear to be correlated to specific problems in dealing with future projects of all kinds. The same is true for induced birth, premature delivery, and Caesarean section. (Grof & Bennett, 1993, p. 78)

If uncomplicated vaginal birth is such a blueprint, would not the vaginal group’s mean scores on the SCL-90-R be lower than the cesarean group’s mean scores? The results of
the SCL-90-R data analysis did not support Grof’s (1985, 1993) theories regarding the origin of depression; in fact they contradict his work in this area. The results support the theory that cesarean section may be psychologically beneficial to the individual by lessening future neuroses (Freud, 1910/1957, 1916/1963; Rank, 1929).

Freud (1910/1957, 1916/1963) supposed that the character Macduff in Shakespeare’s *Macbeth* is free of anxiety due to his being cut from his mother’s womb rather than being born vaginally. Lacking the prototype for anxiety, Macduff does not experience it. Rank (1929) pointed out that in the hero myth, the hero is cut out of the womb, often prematurely, and goes on to accomplish tremendous feats, even as a child. Rank was of the opinion that this was due to the hero being spared birth anxiety and the necessity of overcoming an early neurotic period. Both Freud and Rank point to a possible psychological benefit of being born by cesarean section. The analysis of the ANX subscale of the SCL-90-R supported this assertion. The vaginal group had a higher mean ANX score than either of the cesarean groups.

The results showed that the vaginal group also had significantly higher mean scores on the SOM subscale than either of the cesarean groups. This is a result that this researcher did not expect. This researcher expected the labor cesarean group to have the highest mean SOM score, then the vaginal group with the nonlabor cesarean group with the lowest mean SOM score. This investigator suspected that an increased amount of physical trauma during birth might predispose individuals to higher SOM scores. Again, Grof’s (1985) assertion that emergency cesarean birth is far more traumatic than normal vaginal birth came to mind. Vaginally born individuals experience the trauma of birth contractions both in BPM II in the womb and in BPM III in the birth canal (Grof, 1973,
The nonlabor cesarean born individual does not experience any contractions and therefore, perhaps less physical trauma. There may be trauma associated with the cesarean section itself (English, 1985, 1993), but this seems relatively brief compared to the length of labor. However, the SOM mean scores partially contradicted this researcher’s expectations. It was the vaginally born that had the highest mean score on the SOM subscale. The post hoc Bonferroni analysis showed no significant difference between the cesarean groups. Perhaps cesarean section, regardless of type, helps protect people from somatization in later life. This remains to be seen.

English (1985, 1993) suggested that being born by cesarean section deprives the neonate from experiencing the psychologically necessary BPM III and BPM IV and that these must be completed later on in life by the individual. Given this assertion, this researcher wondered if this incomplete process would lead to any psychological difficulties that would appear in the SCL-90-R results of the cesarean groups. In other words, might the cesarean groups have higher mean scores for some psychological symptoms than the vaginal group? The answer turned out to be no, the cesarean groups had lower mean scores on all subscales and indices of the SCL-90-R than the vaginal group.

Feher (1990) found the cesarean born individuals in her study to be more compulsive ($p = .005$) and controlling ($p = .006$) than those born via breech vaginal birth. This researcher’s study did not distinguish between normal vaginal birth and breech vaginal birth. In addition, the compulsion and controlling as measured by the 16 PF Personality Test may not be the same as what is measured by the O-C subscale of the
SCL-90-R. It is interesting to note that it was the vaginally born group that had the significantly highest O-C mean score and not either of the cesarean born groups.

While the above interpretations may be true, it should be noted that due to the multiple comparisons involved in the data analysis, the experiment-wise error rate may be inflated resulting in Type I errors, that is rejecting the null hypothesis when, in fact, it is true (Huck, 2008). Therefore, it is likely that the significant results for the SOM, O-C, and ANX subscales are not significant. If this is the case, then no differences were found between the 3 birth groups in terms of psychological symptoms.

Additionally, some research (Carpenter & Hittner, 1995; Rauter, Leonard & Swett, 1996; Schmitz et al., 2000; Vassend & Skrondal, 1999) suggested that SCL-90-R is only valid as a single factor measure of overall psychological functioning and as such only the Global Severity Index (GSI) of the instrument should be used. Therefore the significant results for these subscales may be in error. If the GSI is the only valid aspect of the SCL-90-R then the current study showed no significant differences between the 3 birth groups.

Whether due to Type I error or the possible invalidity of the SCL-90-R subscales, this finding contradicts the work of Grof (1985, 1987, 1993), English (1985, 1993), Emerson (1998), Jacobson et al. (1987), Jacobson et al. (1988), Jacobson et al. (1990), Raine et al. (1994), Salk et al. (1985), and Cnattingius et al. (1999). All of these researchers either postulated that birth circumstances can have a lasting impact on psychological functioning or conducted research that supported this idea. This current study points to the need for further research in this area.

This potential lack of difference between the birth groups may be explained by
the work of Forssman and Thuwe (1981) and Kubicka et al. (1995). These researchers conducted studies that provided evidence that the psychosocial effects attributed to birth diminished or even disappeared by age 30 or 35. The mean age of the participants of the current study was 30.2. Perhaps this decrease of symptomology over time as seen in Forssman and Thuwe, and Kubicka et al. was in effect in this study and accounted for the possible lack of differences seen. If the results of the SCL-90-R are significant and the SCL-90-R subscales are valid, the results contradict previous research. If the results are not significant or the subscales are not valid, the results of previous research is also contradicted. In either case, more research into the psychological impact of birth is warranted (please see Future Research section below).

As mentioned in Chapter 4 all 3 birth groups had mean scores on the SCL-90-R that were somewhat higher than the norms stated for the adult nonpatient population (Derogatis, 1994). The exception to this is the PHOB and ANX subscales which were slightly lower. This study did not categorize participants as to whether they were nonpatients, psychiatric outpatients, or psychiatric inpatients as described by Derogatis. The nonpatient norms were used for all participants. It is possible that some participants would be categorized as psychiatric outpatients or, less likely, as psychiatric inpatients. This could in part account for the higher-than-norm mean scores. A portion of the participants were graduate students of psychology at a school that emphasized personal growth. This can be a stressful process that may have elevated these participants’ scores and thus skewed the results. It is also possible that psychological studies attract participants in psychological stress. This study offered participants their individual results, including their SCL-90-R results. Perhaps more psychologically troubled people
chose to participate in the study in order to gain insight into their difficulties. This could have in part accounted for the higher-than-norm mean scores. As the same norm was applied to all 3 groups, it is unlikely that the use of the nonpatient norm affected the results of the study or the interpretation of those results for the purposes of the study in any way.

Qualitative results. Is there a correlation between adult psychological symptoms and being born by labor cesarean section? What correlation, if any, exists between being born by labor cesarean section and one’s adult spirituality? The qualitative results of this study showed no differences between the three birth groups and therefore showed no correlation between being born by labor cesarean section and adult psychological functioning or spirituality. As previously mentioned none of the attempts at coding the textual data from the five open-ended questions in the birth questionnaire yielded any grounded theories. In all of the coding attempts the codes were equally applicable, or in the Emerson-based (1998) coding equally inapplicable, to all three birth groups. This prevented any grounded theory from emerging that would discriminate differences between the groups (there were no differences to discriminate). There may have been and insufficient amount of textual data to be able to tease out the data (many qualitative studies use a long interview process rather than five short questions to obtain data). A more thorough study with more participants and a more elaborate and extensive data collection method may have produced different results. This however was beyond the scope of this study. It may be that cesarean birth does not create differences in relationship to being stuck, interruption, personal space, possessions and relationships, and protection. As mentioned before any differences may have dissipated with age and
therefore were not detected by these analyses (Forssman & Thuwe, 1981; Kubicka et al., 1995). Still, the current study showed no correlation between a labor cesarean birth and adult psychospiritual functioning.

The quantitative analyses of the qualitative data may point to future research studies regarding means of birth and adult functioning. The ANOVA concerning positive and negative coding produced a pattern in 4 of the 5 questions similar to the SOM, O-C, and ANX subscales of the SCL-90-R with the vaginal group with the most negative coding, then the labor cesarean group, then the nonlabor cesarean group. This did not prove to be statistically significant, but may be worth further research. The pattern suggested that these issues were more difficult for the vaginally born than the cesarean born. If this were true this would call into question the cesarean trauma portion of The Evaluation of Obstetrical Trauma: A Questionnaire (personal communication, February 12, 2007), the cesarean portion of Ray and Mandel’s (1987) work, and Emerson’s (1998) work on the recapitulation of birth trauma. This would be a worthy area of future study.

The above result invites more investigation of Grof’s (1985) thoughts on labor cesarean births being more traumatic than other types of births. The above pattern also supports Freud’s (1910/1957, 1916/1963) and Rank’s (1929) assertions that individuals who are born by cesarean section avoid the prototypical anxiety and neuroses inducing experience of vaginal birth and therefore lead more heroic, healthier, and more productive lives. Given the small sample size of the current study, this would merit more investigation.

The English-derived (1993) coding ANOVAs produced some interesting patterns but none were significant. The question, “protection,” was interesting in that the vaginal
group had nearly twice the amount of coding as the nonlabor group. Using codes derived from English’s work, one would expect the nonlabor cesarean group to have an higher incidence of coding than the other two birth groups. However, due to the lack of significance, one cannot conclude that English’s (1985, 1993) is in error. McCracken’s (1989) study looked at personality traits in nonlabor cesarean born adults and found no significant difference from those seen in a control group of vaginally born adults. McCracken used four personality traits defined by the Myers-Briggs Type Indicator and the NEO Personality Inventory that closely matched those listed in English’s (1993) work. McCracken’s use of a relatively small sample size is a weakness of the study. The results of this researcher’s study supported McCracken’s study. There has been no large scale empirical study to test Grof’s and English’s theories regarding the impact of cesarean birth be it labor or nonlabor. However, this phenomenon may be a starting point for a more nuanced study of her work. Having seen that phenomena correlated with birth circumstances may diminish with time, perhaps a longitudinal study would help determine if there are differences between the birth groups, when they arise, and how long they last.

The Emerson-derived (1998) coding resulted in no codes being applied to the textual material. This was due to the inability to distinguish the recapitulation of birth trauma from any other type of trauma or from other psychological symptoms. This inability to apply the Emerson-derived codes contradicts Emerson’s (1998) work. Further research into how to discern psychological difficulties that originate from birth trauma from those which have other origins seems necessary.
Delimitations and Limitations

This study is delimited in the following ways. The sample size was relatively small given that this was a preliminary exploration and was not intended to be a major clinical study. Only participants aged 18 or over were accepted into the study. No theory from the work of those cited in the literature suggested a specific population to study so the study was not delimited in this way. The study was delimited by the choice to investigate only two aspects of the human experience, psychological symptoms and spirituality. The study only used two instruments, the SCL-90-R and the SAS, and was thus delimited.

A limitation of the study is its small size. This researcher intended to have a diverse sample, but was only able to obtain a sample that was primarily women, younger, and Caucasian. It was unrealistic to expect that any small sample can accurately represent a population. The small sample size likely resulted in a greater degree of error in the estimation of the size of the true effects. This meant that any correlations found in the sample cannot estimate corresponding parameters with precision. Additionally, the power of the statistical test used was small and therefore the likelihood that any significant relationships would be found was small. Another limitation was that the participants are self-selected, increasing the likelihood of the data being skewed. For instance, people who are interested in birth and its effects may already have the belief that their birth has affected them, thus skewing the data. Another possibility is that people who have psychological symptoms are more interested in psychology and more interested in participating in psychological studies. These people would then score higher on the SCL-90-R than the general population and skew the data in this way. Many of the participants
of this study were graduate students in a psychology program that encourages personal exploration and personal work. It would not be unreasonable to expect at least some of these people to score higher on the SCL-90-R due to the stressful nature of psychological learning and growth, or perhaps due to self-selection of distressed people into a field that promises help. These are all possible ways in which the data and therefore the results may be skewed.

The variables that contribute to mental health and spiritual well-being are diverse and cannot possibly be adequately addressed in any one study. Therefore, this study only looked at correlations rather than causality. The work of those cited in Chapter 2 did not deal with causality only correlation, therefore, there were no existing directional hypotheses to either prove or disprove. There was a somewhat limited supply of studies in which to base this study on. This was also a limitation of this study. Additionally, this study only used two assessments: the SCL-90-R which looks at psychological symptomology and the SAS which measures spirituality. There may be others areas of human experience that are affected by the means of birth that were not examined by this study. This study did not take into account medical problems of the mothers or the participants at the time of birth or during gestation. This study did not factor in obstetrical trauma, neonatal experiences, childhood, or adult experiences that may or may not have had an impact on the adult psychological or spiritual functioning of the participants. All of these are limitations of this study.

*Internal and External Validity*

This study was correlational in nature and does not involve any experimentation. As there was no pre and post testing in the study, internal validity is dependent upon how
well the instruments used measure what they were designed to measure. Several studies have found Cronbach α’s for the Symptoms Checklist-90-Revised to range from 0.78 to 0.90 (Derogatis, Rickels, & Rock, 1976; Horowitz, Rosenberg, Baer, Ureno, & Villasenor, 1988; Schmitz et al., 2000). For the purposes of research in the social and psychological sciences, a value of 0.70 or higher for Cronbach’s α is considered acceptable (SPSS FAQ, 2009).

Howden (1992) found the subscales had α’s ranging from .72 to .91 with a Cronbach’s α of .92 for the total SAS that is above the .70 considered acceptable in social science research (SPSS FAQ, 2009). The demographic and birth questionnaires were of my own design and had not been tested for internal validity (please see the sections on the demographic and birth questionnaires). This is a weakness of this study.

The external validity of this study greatly depended upon the participants who choose to be included in the study. The more diverse the sample, the more likely the result may be applied to the population at large. The participants of this study have been primarily women, Caucasian, and younger. This diminishes the external validity of this study as the participants are not entirely representative of the population at large.

Future Research

This study did not result in any correlations being found between being born via labor cesarean and adult psychospiritual functioning but it does point to topics of future research. Grof’s (1985) and English’s (1985, 1993) belief that cesarean birth may interfere with a normal psychospiritual development and lead to later difficulties was not supported. This warrants further research. Grof’s and English’s assertion that the nonlabor cesarean born may be more open to the transpersonal realm of reality was not
born out in this study (the ANOVA on the SAS showed no statistically significant
differences between the birth groups). This merits further research. Is there such a
difference? Does it diminish over time like the differences in the studies conducted by
Forssman and Thuwe (1981) and Kubicka et al. (1995) did?

Grof (1985) believed that labor cesarean birth was far more traumatic than either
nonlabor cesarean birth or uncomplicated vaginal birth. The results of the SCL-90-R
ANOVAs in this study called that assertion into question. A larger more sophisticated
study that measures psychological trauma, correlates it with specific types of birth and
birth trauma, and tracks the trauma over time could help investigate this subject further.
The studies conducted by Forssman and Thuwe (1981) and Kubicka et al. (1995) are
good models for this type of study.

Grof (1987) theorized that inhibited depression may have its origins in BPM II
while agitated depression may originate in BPM III. The current study did not support
this theory. To resolve this question, a study comparing depressed people with
particularly difficult BPM II and BPM III experiences with each other and a control
group may shed more light on this aspect of Grof’s work.

This study lent credence to Freud’s (1910/1957, 1916/1963) and Rank’s (1929)
theories that cesarean birth is actually psychologically beneficial to the individual,
sparing him or her anxiety and a variety of neuroses and psychoses. A larger study with
this as its focus would be very interesting. As the SCL-90-R analyses pointed to the
cesarean born individuals having lower SOM and O-C mean scores than the vaginal
group, a large scale quantitative study on cesarean birth being correlated with lower
instances of somatization disorders and obsessive-compulsive disorders would be another
way to continue with Freud’s and Rank’s work, as well as the work of the current study. The use of measures more specific to somatoform disorders or obsessive-compulsive disorder and obsessive-compulsive personality disorder may sharpen the sensitivity of such a study. To increase the validity of this future study, an increase in the diversity of gender and ethnicity would be in order. A parallel qualitative study centering on the hero archetype may also add insight into Freud’s, Rank’s, and this researcher’s work.

This researcher’s study did not look at the use of forceps, vacuum extraction, the use of anesthesia or other drugs during labor, induced labor, breech birth, premature birth, late birth, the mental health of the mother during labor, and a myriad of other possible factors related to birth that researchers such as Grof (1985), Emerson (1998), Piontelli (1992), Jacobson et al. (1987), and others suggest may impact the individual. Studies with better control of the variables involved would provide for a more discerning examination of what role birth may or may not play in psychological functioning.

Any of these studies conducted in a longitudinal fashion could be enlightening. When do the effects begin? How long do they last? If the effects are ameliorated, how does that happen? Are there positive aspects to birth trauma? What are they and why do they occur?

This study used the SCL-90-R which may or may not be valid as designed (see Chapter 3 for more information). Perhaps another instrument such as the Minnesota Multiphasic Personality Inventory–2 would be a better choice (Butcher, Dahlstrom, Graham, Tellegen, & Kaemmer, 1989). The SAS has not had validation studies conducted on it as of yet. The use of a more validated instrument such as the Spiritual Well-Being Scale (Paloutzian & Ellison (1982) may be in order. It would be interesting if
a study using different instruments were conducted in order to compare with this study. Additionally, this study’s participants were overwhelmingly Caucasian and female. This study could be repeated with specific populations in mind or could compare populations. Men and women could be compared. Does gender matter in this area? Participants of different ethnicities, nationalities, ages, education levels, religion, and income levels could be investigated in relation to birth circumstances.

Another starting point may be to look at the medical research to see if there are studies showing physiological differences in neonates born via different birth modes (vaginal, cesarean, etc.). Physiological differences may point towards psychological differences.

This study points to future research of a qualitative nature as well. A larger and more extensive qualitative study using Emerson’s (W. R. Emerson, personal communication, February 12, 2007) questions may provide more information than this researcher’s attempt. English’s (1985, 1993) list of characteristics more prevalent in nonlabor cesarean born individuals could be explored with a more nuanced and extensive textual analysis of interviews of these individuals. A semistructured interview could perhaps provide more discernable information that this study was not able to with its brief questionnaire. These are just two ideas for future qualitative research and there are likely more, including those utilizing qualitative methods other than grounded theory.

Conclusion

Are there correlations between being born via labor cesarean section and adult psychological functioning and spirituality? This study suggests that there may be some reduction in adult anxiety, obsessive-compulsiveness, and somatization. With the
cesarean section rate at a record high this may a welcome discovery (Hamilton et al., 2009). If these results are not, in fact significant, this may also be welcome news. It may suggest that birth trauma does not psychologically or spiritually harm an individual. Or, if birth trauma does have a negative impact, it is reassuring that this study supports Forssman and Thuwe’s (1981) and Kubicka’s et al. (1995) work that shows the this harm dissipates over time. This would be an indication that human resiliency can overcome psychological wounds.

It is important to remember that birth is a very complicated phenomenon. Given all the variables involved in birth it is unlikely that researchers will find any one factor of birth that directly results in adult symptomology. It may also be that regardless of what trauma the neonate experiences, it is the quality and quantity of care from the parents and medical community that she or he receives that determines what impact that trauma will have in the individual’s life.

This study raised far more questions than it answered and that is its value to psychology and medicine. As research continues in perinatal psychology and its relationship to child and adult psychologies is explored, a clearer and more thorough understanding of birth and its meaning and consequences will develop. It is this researcher’s hope that the research will continue to grow and become more sophisticated. As more empirical studies are conducted, the chances of the findings being read by and integrated into the medical community and medical practice increases. This study has been a small part of that endeavor. May it continue to unfold.
References


Feher, L. (1990). Perinatal issues: The psychological effects of pregnancy and birth on the mother, father, and child as well as the long lasting effect of childbirth conditions such as natural, cesarean, forceps, anesthetic, and breech on development of the adult personality using 16PF factors that included anxiety, creativity, leadership, and extroversion. *Dissertation Abstracts International, 51*(04), 2102B. (UMI No. 9023080)


PARTICIPANTS NEEDED

Adults over the age of 18 are needed to participate in a scientific psychological study concerning adult development.

Participation involves filling out two brief questionnaires and two psychological assessments given in two stages. The total time involved will be 30-60 minutes. The procedure will be done by mail.

To participate or ask questions please contact Steve Curley at curleystudy@xxxxxxx or at (xxx) xxx-xxxx. Thank you for your generous participation.

Sincerely,

Steven J. Curley, MA

If you have further questions, you may contact my Chairperson, Patricia G. Campbell, Psy.D. at (xxx) xxx-xxxx ext. xxx or Fred Luskin, Ph.D., Chairperson of the Ethics Committee for Research, Institute of Transpersonal Psychology, 1069 E. Meadow Circle, Palo Alto, California 94303 at (xxx) xxx-xxxx ext. xxx.

The Institute of Transpersonal Psychology assumes no responsibility for psychological or physical injury resulting from this research. Participants are free to withdraw from the study without penalty or prejudice.
Appendix B: First Assessment Packet Cover Letter

Dear Participant,

Thank you for agreeing to participate in this study. Enclosed are an informed consent form, one questionnaire, and two assessments. Included are the Demographic Questionnaire, Symptoms Checklist-90-Revised test booklet and answer sheet, and the Spirituality Assessment Scale. It is important that you answer all of the questions so that your information may be included in this study. Please take your time and complete these at a time when you do not feel rushed. Please return the completed forms, including the Symptoms Checklist-90-Revised test booklet, in the enclosed stamped, addressed envelope within 1 week of receiving the Assessment Packet. Thank you for your generous participation.

Sincerely,

Steven J. Curley, MA
curleystudy@xxxxxxx
xxx-xxx-xxxx
Appendix C: Consent Form

To the Participant of This Research:

You are invited to participate in a study concerning adult development.

The procedure will involve completing two short questionnaires and two short psychological assessments. This will take approximately 30 minutes to an hour and will be done by mail in two stages.

The two psychological assessments are designed to assess one’s current psychological and spiritual states. The Symptoms Checklist-90-R is designed to examine mental health characteristics. The Spirituality Assessment Scale is designed to measure one’s level of spirituality and meaningfulness in life.

For the protection of your privacy, all information received from you will be kept confidential as to source, and your identity will be protected. All information you provide will be kept secure in a locked file. Your identity will be protected by use of code numbers rather than names. In the reporting of information in published material, any information that might identify you will be altered to ensure your anonymity.

The potential benefits of participating in this study may include:
  personal growth and self-awareness,
  greater knowledge of your adult psychological and spiritual development,
  a contribution to the further advancement of scientific knowledge in the field of psychology.

This study is designed to minimize the potential risks to you. It is possible that focusing on your experience may stimulate a degree of anxiety or discomfort. If at any time you have any concerns or questions, I will make every effort to discuss them with you and inform you of options for resolving your concerns such as a referral to a psychotherapist.

If you have any questions or concerns, please email me at curleystudy@xxxxxxx or phone me at (xxx) xxx-xxxx.

If you have further questions, you may call my Chairperson, Patricia G. Campbell, Psy.D. at (xxx) xxx-xxxx ext. xxx, or Fred Luskin, Ph.D., the head of the Ethics Committee for Research of the Institute of Transpersonal Psychology, 1069 E. Meadow Circle, Palo Alto, California 94303 at (xxx) xxx-xxxx ext. xxx.

The Institute of Transpersonal Psychology assumes no responsibility for psychological or physical injury resulting from this research.

If you decide to participate in this research, you may decide to withdraw your consent and discontinue your participation at any time during this study for any or no reason
without penalty or prejudice.

You may request a summary of your individual results and/or a summary of the research findings by providing your mailing address with your signature.

I attest that I have read and understood this form. The researcher has explained the study to me and has answered any questions about this research to my satisfaction. My participation in this research is entirely voluntary and no pressure has been applied to encourage my participation. My signature indicates my willingness to be a participant in this research.

Participant’s Signature ___________________________ Date __________

Print Name ____________________________________________

Mailing Address (if you want a summary of the research findings and/or your individual results)

________________________________________________________________________

________________________________________________________________________

Researcher’s Signature ___________________________ Date __________

curleystudy@xxxxxxx
(xxx) xxx-xxxx
Appendix D: Demographic Questionnaire

DIRECTIONS:

Please answer all of the questions. Check or fill in each answer. Please write legibly.

I am:  [ ] Man  [ ] Woman

My present age is:

[ ] 18-29  [ ] 30-39  [ ] 40-49  [ ] 50-59  [ ] 60 or over

birth date ________________

Education (check highest level):

[ ] High school  [ ] Some college  [ ] College graduate

[ ] Postgraduate study

Degree(s) earned ________________

Current relationship status:

[ ] Single (never married)  [ ] Married  [ ] Partnered  [ ] Divorced

[ ] Separated  [ ] Widowed

Ethnic origin:

[ ] Native American  [ ] Caucasian/White  [ ] Asian

[ ] African American/Black  [ ] Other ________________

Do you have children?  [ ] Yes  [ ] No

Religious/spiritual affiliation:

[ ] Christian  [ ] Jewish  [ ] Hindu  [ ] Muslim

[ ] Atheist/Agnostic  [ ] Other ________________
What is your yearly income?

[ ] $0-$30,000  [ ] $30,000-$60,000  [ ] $60,000-$90,000

[ ] $90,000 or above

Were you born in the United States of America?

[ ] Yes  [ ] No

This completes the Demographic Questionnaire. Please continue with the Symptoms Checklist-90-R.
Appendix E: Symptoms Checklist-90-Revised

Leonard R. Derogatis, Ph.D.

Copyright 1975 Leonard R. Derogatis, Ph.D.

“SCL-90-R” is a registered trademark of Leonard R. Derogatis, Ph.D.

Published and distributed exclusively by NCS PEARSON, INC.

Contact: Pearson Assessments, PO Box 1416, Minneapolis, MN 55440

www.pearsonassessments.com

800-627-7271
Appendix F: Spirituality Assessment Scale

Copyright 1993 by Judy W. Howden

Louise Herrington School of Nursing
Baylor University
Waco, TX 76798
214-820-4190
Appendix G: Second Assessment Package Cover Letter

Dear Participant,

Thank you for completing and returning the first assessment package and for your continued participation in this study. Enclosed is the Birth Questionnaire. Please take your time and complete this at a time when you do not feel rushed. Please return the completed form in the enclosed stamped, addressed envelope within 1 week of receiving the Assessment Packet. Thank you for your generous participation.

Sincerely,

Steven J. Curley, MA
curleystudy@xxxxxxx
(XXX) XXX-XXXX
Appendix H: Birth Questionnaire

Please take some time to fill out the following questionnaire. Please choose a time when you are not feeling rushed and answer the questions to the best of your ability. There are no “right” or “wrong” answers. Please write legibly and answer all of the questions. The questionnaire will take less than 30 minutes to complete.

Were you born vaginally (normal birth)?  [ ] Yes  [ ] No  [ ] Don’t know

Were you born by caesarean section?  [ ] Yes  [ ] No  [ ] Don’t know

If you were born by caesarean section, what kind of caesarean section was it?

[ ] Labor caesarean section  [ ] Nonlabor caesarean section  [ ] Don’t know

You had medical complications during or immediately after birth.

[ ] Yes  [ ] No  [ ] Don’t know

Your mother had medical complications during pregnancy, birth, immediately after birth.  [ ] Yes  [ ] No  [ ] Don’t know

Please check all that apply to your mother’s pregnancy with you.

[ ] Planned pregnancy  [ ] Unplanned pregnancy  [ ] Don’t know

Mother smoked during pregnancy.  [ ] Yes  [ ] No  [ ] Don’t know

Mother used alcohol during pregnancy.  [ ] Yes  [ ] No  [ ] Don’t know

Mother used any street drugs during pregnancy.  [ ] Yes  [ ] No  [ ] Don’t know

Mother used prescription medication during pregnancy.  [ ] Yes  [ ] No  [ ] Don’t know

[ ] Don’t know

Please check all that apply to your mother during her pregnancy with you:

[ ] Depression  [ ] Anxiety  [ ] Schizophrenia

[ ] Bipolar Disorder  [ ] Obsessive-compulsive disorder
[ ] A personality disorder       [ ] Addiction
[ ] Victim of violence or abuse
[ ] Received counseling or psychotherapy for a mental health concern
[ ] Don’t know

Please check all that apply to you now or in the past:

[ ] Depression       [ ] Anxiety       [ ] Schizophrenia
[ ] Obsessive-compulsive disorder       [ ] A personality disorder
[ ] Addiction       [ ] Bipolar disorder
[ ] Received counseling or psychotherapy for a mental health concern
[ ] Used prescription medication to treat a mental health concern
[ ] Don’t know

Please answer the following questions only in the lined-space provided. Thank you.

Please describe what role, if any, that “interruption” plays in your life.

__________________________________________________________________
__________________________________________________________________
__________________________________________________________________
__________________________________________________________________
__________________________________________________________________
__________________________________________________________________

What do you do if and when you feel “stuck?”

__________________________________________________________________
__________________________________________________________________
__________________________________________________________________
__________________________________________________________________
__________________________________________________________________
How do you claim or stake out your “space?”

__________________________________________________________________
__________________________________________________________________
__________________________________________________________________
__________________________________________________________________
__________________________________________________________________

When you think of what you have in life (possessions, relationships, jobs, etc.) how do you feel?

__________________________________________________________________
__________________________________________________________________
__________________________________________________________________
__________________________________________________________________
__________________________________________________________________

When you think of the times in life when you needed the protection provided by parents, family, friends, or the law how do you feel? Do you think you got the protection you needed?

__________________________________________________________________
__________________________________________________________________
__________________________________________________________________
__________________________________________________________________
__________________________________________________________________
How truthfully have you answered the above questions? Please check one.

[ ] Not at all truthfully

[ ] Somewhat truthfully

[ ] Neutral

[ ] Mostly truthfully

[ ] Extremely truthfully

Thank you. This completes the Birth Questionnaire. Please place the Birth Questionnaire in the self-addressed-stamped envelope provided and place in the mail today. Thank you for your time and effort. It is much appreciated.

Note. The write-in questions are based upon questions in William Emerson’s The Evaluation of Obstetrical Trauma: A Questionnaire which is based upon Ray and Mandel’s (1987) Birth & Relationships: How Your Birth Affects Your Relationships.
Appendix I: Follow-Up Letter One

Dear Participant,

I am writing to follow-up with you on the Assessment Packet I sent you. I have not yet received it. If you have not yet completed and mailed it to me, I would appreciate you doing so as soon as is conveniently possible. If you have any questions or concerns please contact me. Thank you.

Sincerely,

Steven J. Curley, MA
curleystudy@xxxxxxx
(xxx) xxx-xxxx
Appendix J: Follow-Up Letter Two

Dear Participant,

I am writing to follow-up with you on the Birth Questionnaire I sent you. I have not yet received it. If you have not yet completed and mailed it to me, I would appreciate you doing so as soon as is conveniently possible. If you have any questions or concerns please contact me. Thank you.

Sincerely,

Steven J. Curley, MA
curleystudy@xxxxxxx
(XXX) XXX-XXXX
Appendix K: English’s Nonlabor Caesarean Characteristics

Among the habits, expectations, and patterns, some of them paradoxical and contradictory, that might be learned in nonlabor caesarean births are the following:

- the expectation that nourishment will be followed by poisoning and attack;
- defensiveness in relation to all approach; touch sensitivity and paradoxically a love of physical contact once the defensiveness has passed;
- a habit of opening only when exhausted or invaded;
- residual body-tension patterns that are different from those in vaginally born people, for example, neck tensions related to the head being pulled rather than pushed in birth;
- dependence, a feeling of needing to be rescued, inability to act on one’s own, and paradoxically, an unwillingness to ask for help;
- anger toward would-be helpers who fail to satisfy on a physical level the impossible demand of total rescue;
- distortion of relationship and sexual patterns with people of the same sex as the obstetrician. Expectations of struggle and defeat, and of merging, bonding, and being totally cared for;
- perception of self as separate, and paradoxically, less sense of personal boundaries;
- easy access to transpersonal awareness but lack of appreciation of this capability because of having less sense of personal boundaries;
- continual testing of limits and boundaries;
- relationship patterns that are colorful, abrupt, intense, and arrow-like rather than like the waves of contraction and expansion that would be learned in labor;
- little sense of process; expectation that a relationship either exists and doesn’t need to be nourished, or doesn’t exist and is impossible;
- being not particularly goal-oriented and feeling criticized for this; wanting to have goals but feeling unable to find any that seem real;
- strong negative self-judgment for not meeting others’ unconscious expectations that one knows the relationship patterns and sense of limit usually learned in vaginal birth;
- trust that help will always be there without having to ask for it.

(English, 1993, pp. 218, 222)
Appendix L: Textual Codes Used in First Round of Qualitative Analysis

“Interruption”

ability to tolerate interruption, anger, anxiety, beyond control, deals with interruption as they arise, depression as interruption, disorienting, does not allow interruption to be disruptive, draining, ends activity to avoid interruption, frustration, impatient, interruption as pleasant surprise, interruption as part of life, interruption as rude, interruption as serving a function, interruption plays little role in life, interrupted sleep, learning opportunity, loss of concentration, makes the best of it, okay to interrupt others, overwhelming, pervasive obstacle in life, prefers things going as planned, provides a chance to reflect, requires a step back, skips from task to task without completion, stress as interruption, talked over frequently, upsetting.

“Stuck”

act in the extreme, alcohol, anger, anxiety, art, ask for help, assertiveness, avoidance, baby steps, brainstorm, calm down, change perspective, cry, depression, discuss with others, distraction, do nothing, does not feel stuck, exercise, fatigue, feels incompetent, gather strength, give up, inspiration, learn something new, look to outside for help, prayer, put it aside for a time, receives touch, reflection, relax body, set up reward system, sing, surrender to it in a positive way, switch activities, try different approaches, writing.

“Space”

activities I enjoy, all or nothing, allows others to delineate space for them, anxiety provoking, asks for space, being alone is important, claims internal space, claims space abruptly, claims space quickly, conflict avoidant, creates internal space, delays claiming space, energetic process, feels victimized when space encroached upon, has too much space, has trouble creating suitable space, having physical space important, imagines ideal physical space, makes mess to claim space, mental imagery, merges with others rather than claim space, minimizes space, never had a problem claiming space, not very territorial, personal space is important, personal touch to claim space, physical space is important, physical presence, retreats from people, ritual, shares space, takes space, territorial, uses body language, uses boundaries and space for protection, uses competence, uses organization, uses confidence, uses possessions to claim space, uses scents to claim space, vocalization, wants to see clearer boundaries

(continued)
“Have”

abundance, ambivalence over job, ambivalence over possessions, ambivalence over relationships, at peace, difficult financial situation, difficult relationships, doubt about external sources of happiness, good relationships, gratitude, gratitude for things, hoping for more, hoping for more relationships, hoping for more things, job dissatisfaction, job satisfaction, joy, lack of possessions, lack of relationships, lucky, luck but undeserving, no to consumerism, pride, sadness, satisfied, unsatisfying relationships

“Protection”

abandonment, afraid protection not enough, distrust, distrust of law enforcement, does not like being protected, emotionally unprotected as a child, felt overprotected, felt protected, felt protected by law enforcement, felt safe, felt unprotected, God as protection, never needed protection, protected as an adult, protected as a child, protected by adults, protected by family, protected by father, protected by mother, protected by spouse, protected when possible, protection by law enforcement not possible, protection by law enforcement inadequate, protects self, unfairness, unprotected by government, unprotected as a child, unprotected by family, unprotected by father, unprotected by friends, unprotected by spouse
Appendix M: Textual Codes Derived From English (1993) Used in Qualitative Analysis

- abrupt relationships
- anger at not being rescued
- defensive to approach
- easy access to the transpersonal
- either/or relationships
- expect defeat
- expect to be totally cared for
- helplessness
- less personal boundaries
- little goal orientation
- need for rescue
- nourishment leads to attack
- open only as last resort
- self as separate
- trust that help is available
Appendix N: Textual Codes Derived From Emerson (1998) Used in Qualitative Analysis

- direct recapitulation of birth trauma
- avoidant recapitulation, elimination type
- avoidant recapitulation, identification type
- confrontive recapitulation