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Assessing the Psychometric Properties
of the Childbirth Stages of Readiness Questionnaire (CSORQ)

Suzan Walsh Clemens

Thesis submitted to the
Eberly College of Arts and Sciences
at the West Virginia University
in partial fulfillment of the requirements
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Master of Science
in
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ABSTRACT

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Suzan Walsh Clemens

Women choose pharmacological approaches in addition to or in lieu of self-management to relieve childbirth pain for several reasons including availability, personal preference, medical necessity, and anticipation of high levels of pain during labor. When pain expectations result in (or are influenced by) pathologically high fear and anxiety during the antenatal period, a woman can suffer a myriad of negative effects that can include psychopathological status during pregnancy, a distressing birth experience, and postpartum distress. This study assessed the validity and reliability of the Childbirth Stages of Readiness Questionnaire (CSORQ) for use in prenatal obstetrical care to identify women's stage of readiness (i.e., Precontemplation, Contemplation, Preparation, or Action/Maintenance) to utilize self-management methods to cope with discomfort and pain during labor and delivery. The original version of the CSORQ was revised to lower the reading level to make it more accessible to a variety of populations. Subsequent reliability (i.e., internal consistency and test-retest) and validity (i.e., convergent and discriminant) indices indicated that the CSORQ subscales has good psychometric properties. At the same time, the Contemplation subscale requires further revision in two of its items. Overall, in relation to childbirth, the CSORQ subscales correlated with pain expectations, anxiety, and self-efficacy. Implications are that the CSORQ can be used by obstetrical health professionals to assess and address concerns in pregnant women to enhance the birth experience and to facilitate the provision of treatment and referral.

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Assessing the Psychometric Properties of the Childbirth Stages of Readiness Questionnaire

The accumulation of knowledge about the natural life process of giving birth began with women, eventually known in many cultures as midwives, who supported other women through their pregnancies and births according to the traditions of their communities (Kay, 1982). In the industrialized West and in developing countries, the care of the pregnant woman now is the responsibility of the medical community (McClain, 1982). The modern medical model of obstetrical care views childbirth as a potentially “abnormal” situation, with associated potential problems that should be anticipated and controlled (McBride, 1982; Searle, 1996). While medical advances have resulted in lowering the risk of pregnancy and childbirth, many women struggle with the various aspects of the birth process and the mother’s role in it (McClain, 1982).

Defining Childbirth

Defining typical childbirth from a physical perspective focuses on the biological aspect of birth. The illustrated English edition of an early obstetrical work that utilized this focus was a *Text Book of Midwifery* (Spiegelberg, 1858). The section on the *Clinical Progress of Parturition* states that labor can be divided into two stages (Spiegelberg, 1858). The text goes on to explain the changes that take place in the uterus, and that still today define the stages of labor.

A biological ballet, the process of childbirth is “controlled by physical, biochemical, and hormonal signals from not only the mother, but the fetus, membranes, and placenta” (Young, 2007, p. 74). During labor contractions, the muscles of the uterus tighten and shorten, causing the cervix to dilate (open) from 0 to 10 cm (Leveno, Cunningham, Gant, Alexander, Bloom, Casey et al., 2003). As labor progresses, the muscles also concentrate at the top of the uterus, bunching above the fetus to facilitate its descent. This process called effacement results in the thinning of the cervix at the bottom

of the uterus that is measured from 0 (none) to 100 (complete) percent. When birth is imminent, dilation typically measures approximately 10 cm and effacement approximately 100 percent (Leveno et al., 2003).

Leveno and colleagues (2003) describe the labor process in detail. The first stage of labor consists of three phases, early (latent) labor, active labor, and transition. The early labor phase, lasting anywhere from hours to days, begins when the cervix starts to dilate and to efface and continues until dilation reaches approximately 3 cm. Mild to moderate contractions also will begin. Throughout the 3 to 8 hours of the next phase, active labor, cervical dilation progresses from 3 to 7 cm, labor contractions become regular and more intense (eventually reaching approximately 45 to 60 seconds in duration) and occur closer together. The transition phase, between 7 and 10 cm of cervical dilation, is usually the shortest in duration, lasting anywhere between 15 minutes and 3 hours. Contractions are extremely intense, can occur only seconds apart, and may last as long as 90 seconds. When dilation reaches 10 cm, the second stage of labor, the baby's birth begins. This stage can last anywhere from minutes to a few hours, often accompanied by an intense involuntary bearing down of the upper abdominal muscles (sometimes called the urge to push), and is frequently perceived as less painful than the previous stage or as not painful at all (Simpkins, 2001).

Most women begin to use labor coping techniques (e.g., breathing patterns, labor positioning, massage) and/or medications during the active labor phase of the first stage to help them deal with their childbirth pain (Simpkins, 2001). The use of coping techniques will continue through the transition phase, and possibly into the second stage, the birth. The third stage of labor (5-10 minutes in duration on average) is the afterbirth, and it is the delivery of the placenta and fetal membranes (Leveno et al., 2003).

Variations of Labor and Delivery

Giving birth is a biological process that takes place in social, political, religious, and medical frameworks (Kay, 1982). Even though the progression through the stages of labor as described above is well known, each labor is a unique experience. Leveno et al. (2003) detail the physical (genetic and physiological) and psychological factors that influence each individual labor. Genetic factors include many factors such as the structure of the pelvis and uterus, and possible unique variations (e.g., abnormalities), which can slow (or hasten) labor (dystocia) or even prevent vaginal birth. An example of a physiological factor is gestational diabetes, and it can present a variety of problems including maternal hypertension, eclampsia, or excessive fetal growth, any of which could result in interventions including cesarean section (Leveno et al., 2003). The baby's position in the uterus also can be an issue because non-crown presentations (i.e., breech presentations such as transverse and buttocks) make labor more painful, of longer duration, and may necessitate a cesarean delivery (Leveno et al., 2003). Much research has been done supporting the role of psychological factors that influence the childbirth process. For instance, Li, Liu, and Odouli (2008) found that depression during pregnancy correlated with a higher risk of preterm birth. Fear and anxiety also have been found to affect childbirth in many ways including pain coping choices, labor interventions, and cesarean sections (Alehagen, Wijma & Wijma, 2001; Heinze & Sleight, 2003; Waldenström, Hildingsson & Ryding, 2006).

Anthropologists ethnographically discuss labor and birth in the context of specific cultural influences which define labor variations. Kay (1982) writes of the many components that compose the concept of various childbirth belief systems including who is allowed to attend, what the mother is allowed to do, what is allowed to be done with her, where the birth takes place, and types of monitoring and interventions used. Environmental factors such as these can either facilitate or interfere with the progress of the labor (Banta & Thacker, 1979; Redmond, 2004; Watson, Murtagh, Lally, Thomson & McPhail, 2007). Even the experience of childbirth pain itself varies, and it includes a

psychosocial aspect (Callister, Khalaf, Semenik, Kartchner & Vebvilainen-Julkunen, 2003). “Pain in labor and childbirth is expected by women in all societies, but may be interpreted, perceived, and responded to differently,” and these expectations can include silence, stoicism, and levels of perceived pain (Kay, 1982, p. 146).

Childbirth Pain, Fear, Anxiety, Escape, and Avoidance

Pain has been defined by the International Association for the Study of Pain (2009) as “an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage” (p. 1). The IASP makes clear the fact that pain is subjective, and its interpretation is determined by each individual’s personal history. The presence of pain can elicit both fear and anxiety. As defined by Craske, Antony, and Barlow (2006), fear is “the emotion the individual experiences when directly confronted with threat or danger and is associated with strong, protective behavioral action tendencies (flight or fight),” and anxiety is “a future-oriented state characterized by worry, tension, and hypervigilance about future threat” (p. 5). Barlow (2002) characterizes the core of anxiety as “a sense of uncontrollability and unpredictability” (p. 65). In relation to Barlow’s portrayal, childbirth often is predictable (abortion notwithstanding), in that a woman who is pregnant will have a birth, probably close to a nine-month time frame; however, the variations of childbirth discussed above are less predictable. Also, a woman also loses control of many aspects of her life when she becomes pregnant, including her body.

Fear and anxiety have come to be understood as separate, but often co-occurring protective states. Craske (2003) has summarized the current research. While both fear and anxiety are both triggered by threat, fear is a result of near proximity, and anxiety is a result of distant proximity, low threat potential, and anticipation. Fear is correlated with activity in the amygdala and the brain stem, is characterized with low cognitive processing, high autonomic arousal, and visual imagery (Davis,

1992). Anxiety is correlated with activity in the amygdala and the hippocampus, is distinguished by high cognitive processing, low autonomic arousal, and verbal activation (Davis, 1992).

As shown in the overview above, there are many factors that act together in the process of childbirth, so the range of possible labor outcomes dependent upon a combination of the factors is large. It is this unpredictability that creates the uniqueness of each individual labor, even for multiparas who have given birth two or more times (Wright, McCrea, Stringer & Murphy-Black, 2000). This unpredictability forms one connection between fear and childbirth. Marks (1987) writes, “Many frightening stimuli are novel, and this novelty may be more frightening than the stimuli themselves” (p. 28). This novelty phenomenon may account for the decreased levels of fear seen by Alehagen, Wijma, and Wijma (2001) in Swedish multiparas who have had personal experience with birth and who have a general sense of what to expect when compared to primiparous women experiencing their first birth.

Melender (2002) found several factors for Finnish women, the outcomes of which in relation to each upcoming birth are by nature unknown prior to the experience, to be associated with increased fear including aspects of the birth itself (e.g., pain, duration), the well-being of both mother and child (e.g., episiotomy, stillbirth), and the demeanor of obstetrical caregivers (e.g., degree of perceived friendliness, woman’s participation in decision-making). For multiparas, previous negative birth experiences evoked fear in relation to the impending birth. Searle (1996) also found concerns about the mother’s coping ability after the delivery and birth of her child to be related to childbirth fear.

The World Health Organization (WHO) reports that “Every minute, at least one woman dies from complications related to pregnancy or childbirth” and that ten million per year “suffer injury, infection or disease” (World Health Organization, 2008, p. 1). It is not only fear due to the threat of pain, death, or disability that causes maternal distress. Zar, Wijma and Wijma (2001, 2002) found a

strong relation between existing anxiety disorders and fear of childbirth and found that fear of childbirth correlated with trait anxiety, which is an established individual attribute that results in a propensity for anxiety (Gaudry, Vagg, & Spielberger, 1975). Women who scored higher before birth on measures of both fear of childbirth and on anxiety in general also scored higher on childbirth fear during the experience and during the postpartum period. Their research has led them to theorize that this intense fear of childbirth has the features of a phobia as characterized by elevated fear levels when the feared condition is imminent and sustained high levels when the condition has just passed, in addition to a significant decrease when exposure is ended (Zar, Wijma, & Wijma, 2002). In another study of prenatal anxiety and difficulties after birth in women in Switzerland, Sieber, Germann, Barbir, and Ehlert (2006) found that an indicator of poor postpartum psychological state was birth anxiety.

Bakshi, Mehta, Mehta, and Sharma (2008) found similar results and reported that 13% of non pregnant women reported fear of childbirth strong enough to avoid becoming pregnant. This fear, tokophobia, is an unreasonable dread of childbirth, and has been related to anxiety, depression, and bonding disorders (Hofberg & Brockington, 2000). Saisto and Halmesmaki (2003) found that tokophobia complicates the lives of 6% to 10% of childbearing women. Beebe, Lee, Carrieri-Kohlman and Humphreys (2007) found that antepartum anxiety in women in the San Francisco Bay area in California was positively correlated with self-efficacy in relation to capability to manage labor pain and to subsequent pain perception during labor. As shown in these and in previously described studies, anxiety in relation to childbirth is pervasive, enduring, and not necessarily representative of the actual pain that is experienced during childbirth. “‘Fear of pain’ in a Western society may be a culturally accepted way of expressing something more complex” (Hofberg & Ward, 2003, p. 507).

Avoidance and escape are common behaviors that are exhibited by organisms in reaction to fear-provoking situations (Craske, 2003; Skinner, 1953). Martin and Pear (2007) describe avoidance as

a behavior that prevents an aversive stimulus from occurring while escape facilitates the removal of an aversive stimulus. In childbirth, avoidance or escape can be present by on-demand cesarean sections and high anesthetic usage to prevent or end pain associated with labor and delivery (Alehagen, Wijma & Wijma, 2001; Lang, Sorrell, Rodgers & Lebeck, 2006; Nerun, Halvorsen, Sørli & Øian, 2006; Saisto & Hamesmäki, 2003). Waldenström, Hildingsson, and Ryding (2006) found that Swedish women with significant childbirth fear had a three to six times higher number of elective cesarean births. Heinze and Sleigh (2003) found that women recruited from the internet in the USA who had a “high fear of childbirth” in addition to “an external locus of control for childbirth and a desire for passive compliance in the childbirth process” had a higher incidence of epidural anesthesia use during labor (p. 323). They found no relation between labor situation factors (e.g., labor support partner, pain rating during labor, pregnancy complications) and choice of pain relief method. Ninety percent of the women in the study used the method of pain control for which they had expressed an antenatal preference (Heinze & Sleigh, 2003). Their result replicated a study in Boston, Massachusetts, by Goldberg, Cohen, and Lieberman (1999) that showed a robust correlation between a woman’s desire to use an epidural and her probability of getting one. The latter study also found that the women who planned before their births to use epidural pain relief during labor were administered the anesthetic earlier in labor than those who had not preplanned anesthesia usage (Goldberg, Cohen & Lieberman). A literature review by Saisto and Halmesmaki (2003) also found that an important factor in the choice of epidural over non-pharmaceutical pain control techniques was fear of pain.

Hirsh, George, Bialosky and Robinson (2008) found that pain-related fear was a significant aspect of the pain experience. Alehagen, Wijma, and Wijma (2006) found that antenatal fear positively correlated with fear during labor, and fear during labor correlated positively with postpartum psychopathological outcomes, but actual pain in early labor did not correlate with fear. Waldenström,

Hildingsson and Ryding (2006), working with 2,662 pregnant Swedish women, defined 11% of them as having a prenatal fear of childbirth with 9% at such high levels that counseling was obtained.

Together these studies indicate that the choice to use epidural anesthesia during labor can be predicated on choices made prior to the inception of labor, can be correlated with high levels of antenatal anxiety and fear of pain, and may not be in response to the actual level of pain experienced.

Another aspect of fear and anxiety in relation to childbirth is a connection with post-traumatic stress disorder (PTSD). Reynolds (1997) looked at research concerning women who have PTSD diagnoses prior to childbirth and other histories of traumas (e.g., sexual assault, molestation). Antenatal anxiety disorders and traumas can result in symptoms such as nightmares and subsequent avoidance behaviors during pregnancy (e.g., elective cesarean section) and negative birth experience perceptions postpartum. Two main features were identified that makes childbirth prospectively traumatic for this group, fear of pain and a loss of control. Maggioni, Margola, and Filippi (2006) note that the meaning of loss of control can vary for Italian women, such as other persons controlling the mother's options, or in the mother's expectation of being unable to control her own behavior during childbirth. They also found a correlation with PTSD and both preexisting depression and experiencing physical problems during childbirth indicating childbirth as a risk condition for PTSD. White, Matthey, Boyd, and Barnett (2006) found a stable profile across 12 months in women in Sydney, Australia, who were diagnosed with PTSD postpartum, leading them to suggest that emotional distress postpartum should be viewed in a wider lens than simply as postnatal depression.

For some women, the fear of childbirth is at the level of an anxiety disorder (e.g., phobia, PTSD). It can be theorized that the provision of on-demand regional anesthesia or cesarean sections allows women suffering from these high levels of anxiety to avoid/escape not only the pain associated with childbirth, but the disturbing physiological feelings of expectancy, anxiety sensitivity, and

ruminative cognitions of anxiety antenatally (due to personal experience and/or modeling), thus providing operative negative reinforcement of childbirth as a situation to be feared (Lang, Sorrell, Rodgers & Lebeck, 2006; Skinner, 1953; Zar, Wijma & Wijma, 2001). According to Antony and Barlow (2002), exposure to feared situations is essential for treatment. So, for these women, it would be beneficial to experience childbirth, especially since oxytocin (a hormone that stimulates the contraction of uterine muscles during childbirth) is correlated with parasympathetic functioning including augmentation of relaxation and decreased fearfulness, making labor a prime opportunity for a woman to experience an exposure situation while being biologically supported for success (Craske, 2003; Leveno et al., 2003).

For those women who have negative experiences in labor, the stimuli can be tied to various sources including fear and anxiety. The research previously discussed found that maternal request for anesthesia during routine labor can be a result of an interplay of these issues. Key behaviors in maintaining anxiety are avoidance and escape (Skinner, 1953). According to Craske (2003), females are socially conditioned to avoid “because expression of anxiety is more consistent with the female gender role” (p. 184). The correlation of anxiety with epidural anesthesia usage is a means of escaping from or avoiding labor pain (Alehagen, Wijma & Wijma, 2001; Lang, Sorrell, Rodgers & Lebeck, 2006; Nerun, Halvorsen, Sørli & Øian, 2006; Saisto & Hamesmäki, 2003). So, by providing epidural anesthesia on demand in response to fear for these women, their anxiety is reinforced.

Comprehending Childbirth Pain

Historically and currently, childbirth has been paired with danger, mutilation, and death. Sharing a view of childbirth in the early 1900s, Sandelowski (1984) writes that “men, except in war and in some dangerous trades, did not have to face the constant threat to life and health that women were forced to confront in maternity” (p. 4). The list of dangerous maternal physical health

complications associated with pregnancy includes gestational hypertension, eclampsia, placental abruption, placenta previa, uterine rupture, and post-delivery hemorrhage, the results of which can range from convulsions and cesarean section to death (Leveno et. al., 2003). Episiotomies, the surgical enlargement of the vaginal opening to facilitate birth, is a standard procedure in the USA and can be traumatic to some women to the point of being considered a Western form of genital mutilation (Kitzinger, 1996). At 13.1 deaths per 100,000 live births in the USA in 2004, maternal death, though rare, still is a reality (Miniño, Heron, Murphy, & Kochanek, 2007).

Sandelowski (1984) observes that pain is difficult to communicate because one word is used to describe “a personal and unshared experience of hurting, suffering, or anguish . . . a patterned and shared cultural response protecting a group of individuals from harm . . . as well as any warning stimulus signaling current or impending injury” (p. 13). It is “both subjective and objective, both particular and universal, and both helpful and harmful” (Sandelowski, p. 13). Pain has come to be understood as a complex and subjective experience comprised of two components, the nociceptive neurophysiologic process and the psychosocial process (Callister, Khalaf, Semenic, Kartchner & Vebvilainen-Julkunen, 2003; Hadjistavropoulos & Craig, 2004).

In the neurophysiologic process, according to Leveno et al. (2003), pain during vaginal delivery is associated with nerves in the “lower genital tract and is transmitted primarily through the pudendal nerve” (p. 144). According to VanHoover (2000), however, the exact cause of pain during labor has not been explained. Hypotheses include “(a) hypoxia of the contracted myometrium, (b) compression of nerve ganglia in the cervix and lower uterus, (c) stretching of the cervix during dilatation, and (d) stretching of the overlying peritoneum” (Van Hoover, 2000, p. 1552). Both the neurologic basis and the perception of pain vary throughout the course of labor.

During the first stage of labor, the primary nerves mediating pain are small fibers that

belong to the sympathetic division of the autonomic nervous system. Women typically perceive this pain as diffuse abdominal cramps, in phase with each uterine contraction. In contrast, pain of the second stage of labor is more continuous than rhythmic, sharper in character, and sensed in the perineum rather than in the abdomen or back. It is mediated by larger, somatic sensory fibers from sacral portions of the spinal cord. Other types of pain may be superimposed on the basic patterns described above. (Caton, Frölich & Euliano, 2002, p. 27)

According to Caton, Frölich, and Euliano (2002), the ultimate anesthetic for relief of childbirth pain would block the nerves involved in the pain sequence, yet not affect other functions such as uterine contractions; the best method currently available to achieve these goals is “a properly managed epidural anesthesia” (p. 27).

Connections have been made between the processes of pregnancy and birth with the processes of fear and anxiety by measuring levels of the stress hormones catecholamines and cortisol during pregnancy and labor (Alehagen, Wijma, Lundberg, & Wijma, 2003; Alehagen, Wijma, & Wijma, 2001). Psychosocial factors, relative to physiological ones, were identified as being paramount during labor. In psychosocial processes, the “gate control theory of pain has confirmed the presence of descending neurophysiological pathways through which psychological states can either exacerbate or inhibit afferent nociceptive input and the experience of pain” (Bruehl & Chung, 2004, p. 246). Gate control theory was innovative in an area that had previously been thought to be only sensory, and it opened a line of research that explored cognitive and emotional input into pain perception through a dynamic system where the brain “filters, selects, and modulates inputs” (Melzack & Katz, 2004, p. 13). Subsequently, psychological interventions have been developed to treat acute pain that include dissemination of information (e.g., sensory, procedural), relaxation (e.g., breathing, imagery,

progressive muscle relaxation), and cognitive structuring (e.g., positive affirmations, distraction), the application of which during labor have been found to reduce associated pain (Bruehl & Chung, 2004).

Part of the psychosocial input into pain perception in labor is that women feel at risk and vulnerable during pregnancy. In exploring this issue, Searle (1996) found that exposure to stories of negative outcomes related by family, friends, and media accounted for 28% of reported fear origin in her study of women in Melbourne, Australia. In a literature review, Hodnett (2002) found four factors to be important enough in women's evaluation of their childbirth experiences that they supersede other influences such as childbirth preparation and even the actual experience of pain. These factors are "personal expectations, the amount of support from caregivers, the quality of the caregiver-patient relationship, and [the woman's] involvement in decision-making" (p. 160).

In addition to personal expectations are cultural expectations that include where labor should take place, how long it should last, what (if anything) should be eaten or drunk, and whether one should sleep or be awake, be active or lay quiet, or make noise or be silent (Kay, 1982). Kay relates that in some societies women may not be expected to feel pain. This is not the case in Christian countries where sociocultural influences on labor originate in the Bible which traditionally has ascribed labor pain to a curse on all women due to Eve's disobedience of God in the Garden of Eden: "I will greatly increase your pains in childbearing; with pain will you give birth to children" (Genesis 3:16, New Revised Standard Version). In traditional Christian theology, pain and suffering eventually came to both cleanse and redeem an individual (Martin, 1986). In the USA, the perspective of cleansing and redemption was present in relation to childbirth in the view that women should experience labor pain for the betterment of humankind (Sandelowski, 1984). This is illustrated in Tracy and Boyd (as cited in Sandelowski) by a 1915 editorial in *Harper's Weekly* actively discouraging the use of analgesics to alleviate labor pain, "It is a great thing...this promised doing away

with [childbirth] pain; but as a tonic what shall take its place? How much the necessary heroism of all women must have done to keep nobility in the race!”

According to Zar, Wijma, and Wijma (2001), “The event of childbirth as well as its outcome is momentous, in the first place for the woman giving birth, but also for the child being born, and for the woman’s possible partner. Her achievements during the delivery thus have lifelong physical, social, and existential consequences for herself and her intimates” (p. 77). Historically, childbirth was viewed as a natural but painful, sometimes fatal process, to be endured by women for the propagation of the human race (Sandelowski, 1984). The appearance of anesthesia brought about a shift in this paradigm.

Advent of Obstetrical Anesthesia

People experiencing pain (e.g., childbirth, wounds, tumors, broken bones) are not the only persons affected this nociception. Those who provided care for them found their pain to be psychologically disturbing, too (Caton, 1999). Marks (1987) made a connection between fear and pain from an evolutionary standpoint. He reported studies that repeatedly showed that many species (humans, primates) react with the physiological arousal of the sympathetic nervous symptom that, in combination with other responses, is conceptualized as fear when exposed to sights, sounds, or smells indicating that another member of the species has been injured, mutilated, or disabled. This arousal in response to another’s injury is attributed to their interpreting the information as threatening to themselves. So, a social function of pain is to serve as a warning of threat to others (Hadjistavropoulos & Craig, 2004). It might seem a natural sequence for those perceiving another in pain to want to alleviate or remove their pain and, by so doing, remove the associated unpleasant physiological arousal within themselves.

Prior to the 1840s, however, pain was the norm because there was no effective mechanism with which to relieve the pain (Sandelowski, 1984). Caton (1999) explains that it probably was for this

reason that social value came to be ascribed to pain and suffering in the following ways. Pain (e.g., torture, punishment) was used to maintain order in adults and children alike. Christian theology encouraged the loyal to persevere under persecution and that they would be rewarded in heaven, with the understanding that the wicked would be punished.

The inability to alleviate pain changed in 1846 when Boston dentist William Thomas Green Morton successfully used an anesthetic (ether) in surgery for the first time (Caton, 1999). Scarcely three months later, in 1847, James Young Simpson affected the first recorded use of anesthetic in childbirth when he used it in his practice in Edinburgh, Scotland, to ease the pain of labor for a woman with a deformed pelvis (Caton, 1999; VanHoover, 2000). In *A Treatise on Etherization in Childbirth*, Channing (1848) summed up what seems to be the thoughts still present today behind using anesthesia during childbirth: “etherization [is used] to prevent *pain*; and in this way to make labor safe and happy to both mother and child” (p. 21).

Women quickly became aware of the physician’s newfound ability to remove pain from childbirth. They lobbied for pain relief and used their economic clout to obtain it by patronizing those physicians who fulfilled their demands (Caton, 1999; Sandelowski, 1984). Upper and middle class women promoted anesthetized childbirth for those “refined and exquisitely sensitive women” for whom childbirth pain constituted a dangerous situation that interfered with their “efforts to take [their] rightful place in the world alongside men” (Sandelowski, p. 5). These women separated themselves from other women who were “nonwhite, lacking in education and intelligence, or [who were] poor” because those women were viewed as more suited to the physical trials of childbirth (Sandelowski, p. 8). With the advent of anesthesia, childbirth pain and its relief moved beyond being a physical issue; it also became a social, economic, and political subject of concern.

The view of pain in childbirth had moved from centuries of being seen as God's righteous curse on women, to necessary for the cleansing and redemption for humankind, to a "destructive, disintegrating, inharmonious, undermining, unnatural, unnecessary" state that was dangerous to women and infants (Sandelowski, 1984, p. 3). In the paradigm shift from cursing to cleansing to liberating, birth without anesthesia had become artificial. Anesthetized birth was recast as natural childbirth because it separated the mind from the body, allowing the body to labor and birth *naturally*, unimpeded by thoughts (Sandelowski, 1984).

By the end of the 1940s, virtually every physician who wrote on the subject of pain relief in childbirth believed that it was the moral and professional obligation of all physicians to relieve pain...physicians tied pain relief in labor to the emancipation of women and to the advancement of both civilization and the profession of obstetrics. (Sandelowski, p. 28)

This humanitarian effort to provide relief from pain was not without costs, some of the most overt of which were neonatal central nervous system depression and an increase in frequently invasive and restricting labor interventions (e.g., internal exams, fetal monitoring, intravenous administration of medications) for the mother (Sandelowski, 1984). In the views of some, other more enduring losses resulting from the emphasis on the physical aspects of labor and delivery were the ignoring of the powerful socioemotional aspects involved in becoming a parent in addition to the loss of a chance for a woman to develop self-efficacy and to exercise control over her own body (McBride, 1982).

Present Day Childbirth Pain Management

Today, there continues to be a range of options available for mediating pain during childbirth that includes both medicated and non-medicated means. In the USA, the two types of medically based pain relief options that operate on the nociceptive neurophysiologic process are analgesics and

anesthetics (American College of Obstetricians and Gynecologists, 2004). Analgesics (e.g., meperidine, nalbuphine, fentanyl) are used to relieve pain without affecting total loss of sensation. They lessen, but do not stop the pain. According to Mander (1992), many of the analgesics that are administered early in labor to assist the woman in relaxing and resting actually result in sleepiness, dysphoria, and a sense of loss of self-control. Opioids can result in nausea, vomiting, and sedation (Williams, Povey & White, 2008). Analgesics cross the placenta to the fetus, and so are not administered close to anticipated time of delivery due to their effects of slowing neonatal breathing and reflexes, with as many as 11% of the babies in one study requiring resuscitation (American College of Obstetricians and Gynecologists, 2004; Leveno et al., 2003; Mander, 1992).

Regional anesthetics remove the sensations of pain in specific regions of the body, and epidural anesthesia often is used for this purpose in the lower abdominal area during labor. Epidural anesthesia usually is administered repeatedly throughout labor by means of a catheter placed near the spinal cord (American College of Obstetricians and Gynecologists, 2004). Epidural anesthetic currently is being used by as much as 90% of women in some areas of the USA (Leveno et al., 2003). The American College of Obstetricians and Gynecologists (ACOG) has recommended that maternal request is an adequate guide for use of epidural anesthesia during a routine labor (Miller, 2005). Other reasons to use epidurals include health problems that preclude the use of cesarean sections, as well as disorders (e.g., coronary heart disease) that medically contraindicate extended, painful labors. Epidural anesthesia is connected to longer labors (first and second stages), oxytocin augmentation, maternal hypotension, and an increase in instrument-assisted birth (Cyna & Dodd, 2007). According to Barclay (2007), some women base their decision to use epidural anesthesia on cultural expectations, previous traumatic experiences, or fear.

There also is a possible ethical issue in relation to informed consent. According to Barclay (2007) in reference to epidural usage on demand, “It remains a mother’s right to make an informed decision and opt for the treatment that best suits her needs” (p. 289). Heinze and Sleight (2003) found that when questioned within 6 months prior to their due dates, women who indicated that they would use epidural anesthesia scored higher in comparison to women who indicated that they would not on measures of fear of childbirth and of external locus of control in association with childbirth. They also scored lower on a “scale designed to assess knowledge of risks associated with epidural use” indicating less understanding of side effects (p. 323). In a comparable acute pain situation, Eli, Schwartz-Arad, and Bartal (2008) echoed this finding in the dental lab. They observed that “State of anxiety, dental anxiety, and expectation to experience pain had a profound effect on...ability to recognize provided information correctly” and “patients’ ability to process information may be severely impaired” (p. 65). Zar, Wijma and Wijma (2001) found that women with strong trait fear “even keep completely away from information about childbirth” (p. 77). These findings affirm that the choices a woman makes concerning methods of pain relief during childbirth, whether the choices are made prior to the commencement of labor or during it, can be predicated in part by their levels of fear in relation to the childbirth experience instead of being based on an understanding of the options and consequences involved.

As for the effects of epidural usage on pain perception, Waldenström and Irestedt (2006) found that “a higher proportion of the women who seemed to have difficulty in forgetting pain in labor had used epidural analgesia during labor” (p. 150). These high pain reports endured, with 64% of the women continuing to report either the same or higher levels at both two months and one year postpartum. Allehagen, Wijma, and Wijma (2006) found that the use of analgesia during labor did not increase new mothers’ satisfaction with their labor experiences. As a result of their research, they

concluded that administering an epidural anesthetic during labor is “an insufficient response to women’s fear” that probably results “in higher postpartum fear when the women reflect on their experiences” (p. 61). Epidural anesthesia is one of a group of medical interventions that includes routine intravenous infusions, electronic fetal monitoring, labor augmentation, episiotomies, laboring in the dorsal position, and delivering in the lithotomy position the effectiveness of which have been called into question in normal childbirth (Johanson, Newburn & Macfarlane, 2002).

For the birth, a local infiltration analgesia provides loss for pain sensation in the perineal region for episiotomy, a common surgical procedure that cuts the perineum just prior to birth to prevent uncontrolled tearing (Leveno et al., 2003). A pudendal block, where anesthesia is injected into the pudendal nerve, provides analgesia for the rectum and perineum in addition to the dorsal nerve to the clitoris, and it is most often used for deliveries requiring manipulation at the vaginal outlet either manually or with forceps when regional anesthesia is not in use.

The range of pharmacological pain management choices previously discussed for labor and delivery is limited and availability varies for reasons that include maternal/fetal medical conditions, pharmacological provider availability, financial reimbursements to providers, race and ethnicity, geographic region, and hospital size (Atherton, DeCarolus & El-Adham, 2004; Leveno et al., 2003; Marmor and Krol, 2002). These factors bring to attention the fact that some women will not be able to utilize pharmacological pain management techniques even if they choose to, so may need to use self-management techniques.

Historically (and currently), not all women could afford or had access to anesthetized childbirth, and others wanted to labor without drugs (Sandelowski, 1984). During the 1900s, while some obstetricians were refining anesthetics, others were exploring non-pharmacological pain management options. One of these was British obstetrician Grantly Dick-Read. In *Childbirth Without*

Fear (1944), Dick-Read recounted the origins of his natural childbirth theory. He had attended a birth in a poor neighborhood in which the young, first-time mother did not experience pain and, upon being questioned by him, replied that she did not know that she was supposed to have pain.

From this experience, Dick-Read (1944) concluded that childbirth pain is the result of a woman's psychological expectations affected by the norms of her society, and he crafted his fear-tension-pain theory. He believed that women have pain in childbirth because they are conditioned from childhood to fear childbirth. This fear results in muscular tension during labor and subsequent pain, and creates a feedback loop that perpetuates and intensifies the pain and fear. Dick-Read's theory taught that by combining the mind and the body using psychotherapeutic methods and physiological training during pregnancy (e.g., relaxation), one could break the cycle and allow women to labor naturally, painlessly, and safely without the use of anesthetics (Dick-Read, 1944).

Due to the risks, expenses, and logistics involved with the use of anesthetics, many women and some physicians/obstetricians espoused this new natural, non-medicated method of childbirth. Dick-Read's techniques intrigued Margaret Gamper, a nurse in Chicago, who developed the Gamper method in the 1930s. She augmented Dick-Read's theory using two breathing techniques. One "lifted the abdominal wall off the uterus during contractions" and the other used a "relaxation technique based on yawning" (Lieberman, 1992, p. 46).

Again, as it had in promoting obstetric anesthesia, consumer demand affected the way childbirth was managed, and a number of variations on these unmedicated childbirth methods emerged. Dr. Robert Bradley began training husbands to support their wives through their childbirth experiences in the mid 1950s. His book, *Husband Coached Childbirth*, was published in 1965 and promoted his ideas which were catalysts for many changes in obstetrical care in the USA. (Wallace,

2000). The Bradley method “disavows the safety” of medical interventions such as sonograms, anesthetics, episiotomies, and medical personnel in general (Bovo, 1996, p. 1).

Another of the more prominent methods came from the Soviet Union in 1951 through French physician Fernande Lamaze. As explained by Michaels (2007), this technique was called the psychoprophylactic method (PPM), was based on Pavlov’s conditioned response theory, and was being practiced in all Soviet birth facilities by order of the Soviet Minister of Public Health. Utilizing hypnosis and avoiding the use of language as a pain trigger (i.e., calling uterine contractions “labor pains” triggers pain thoughts), this technique crossed the ocean and was quickly adopted by American women. Today, this technique focuses on providing information to reduce anxiety due to “lack of knowledge about the birth experience,” on using a variety of coping techniques (e.g., breathing), and encouraging the use of a support person during labor (Charles, Norr, Block, Meyering & Meyers, 1978, p. 44). Psychoprophylactic preparation for childbirth was found to be significantly related to “lower levels of pain and higher levels of enjoyment during childbirth” (Charles et al., 1978, p. 44).

Social anthropologist and international promoter of natural childbirth, Sheila Kitzinger, became prominent in the 1980s. Kitzinger has written, taught, and lectured prolifically on using a method based on the techniques of both Dick-Read and Lamaze with the addition of touch, massage, and visualization (Kitzinger, 1996; Lieberman, 1992). She advocates following cues from one’s body as to which labor positions to adopt and when to push. Other methods include Frederick LeBoyer’s birth without violence that eases transition from the womb by welcoming a baby with dim lights, soft voices, and a warm water bath and Michael Odent’s undisturbed births that allowed women to labor as they wanted to without education or structure including in a warm-water pool (Bovo, 1996; Rooks, 1997).

Caton, Frölich and Euliano (2002) discuss expectations in relation to the management of childbirth pain which at present are complex. On one side, there is an acknowledgement of the efficacy of natural birth (i.e., birth without anesthesia). On the other side, there is a sense that a birth free from pain is not only a right, but a necessity. One consideration that many men and women agree upon is that childbirth pain is one of the worst physical and imaginal experiences of pain that they can envision (Bergh, Jakobsson & Sjöström, 2007).

Self-management techniques to address these states (e.g., fear, anxiety, locus of control), and so manage labor pain, continue to be available today. These methods fall into three categories: (a) provision of information to alleviate anticipatory anxiety, (b) relaxation inducing behaviors to interfere with the sympathetic nervous system's arousal cycle, and (c) cognitive restructuring to enhance self-efficacy (Bruehl & Chung, 2004). These methods include massage, breathing techniques, hydrotherapy (shower, bath), walking, position changes, hot/cold compresses, progressive muscle relaxation, relaxation, hypnosis, visualization, distraction, acceptance, focus (focal point, prayer, music), and labor support. (Transcutaneous electrical nerve stimulation, or TENS, also has been used as a medical intervention for labor pain.) Any of the techniques can be used alone, with other non-medication methods, or in conjunction with the pharmacologic pain relief agents described above (Lieberman, 1992).

Learning such techniques generally involves attending classes (e.g., educated childbirth, Lamaze) taught by educators, midwives, or doulas (birth and postpartum support persons), and the classes usually also include educational components that provide information on labor/birth, variations on normal labor and delivery (e.g., cesarean section), and medications and their side effects (Lieberman, 1992). Unlike pharmaceuticals, self-management methods carry few negative side effects (Mander, 1992). Positive side effects include a lower usage of epidural anesthesia, increased

confidence, greater satisfaction with the labor experience, and lower anxiety (Lally, Murtagh, Macphail & Thomson, 2008; Van Zandt, Edwards & Jordan, 2005).

There is much more involved in dealing with childbirth, however, than simply pain relief. Simpkins (2000) states that neither the process of eradicating labor pain (e.g., analgesia) nor the attitude of just getting through the experience addresses the complexity of labor pain, its underlying issues, or its potential long-term effects on women.

Antenatal Anxiety Intervention

It might be said that fear and anxiety associated with childbirth do not present a real problem as they occur only infrequently in most women's lives and do not interfere with a woman's daily functioning. The preceding research, however, showed connections between fear of childbirth and postpartum depression, PTSD, and other disorders. Existing anxiety and mood disorders have been shown to correlate with increased postpartum problems including post traumatic stress disorder (Söderquist, Wijma, Thorbert, & Wijma, 2006). According to Hofberg and Ward (2003), suicide is "the leading cause of maternal death overall" in the Confidential Enquiry into Maternal Deaths in the United Kingdom (p. 505). An American Psychological Association (APA) Summit on Women and Depression declared that "The psychiatric status of childbearing women is a major public health issue. Depression during pregnancy is associated with biological dysregulation that can be detrimental to fetal development" (Mazure, Keita & Blehar, 2002, p. 26). The DSM-IV-TR (2000) states that in women suffering from a postpartum onset mood disorder, "The presence of severe ruminations or delusional thoughts about the infant is associated with a significantly increased risk of harm to the infant" (p. 422). It also advises that women who have postpartum major depressive episodes also frequently have comorbid anxiety disorders.

Research examined in previous sections found that women who suffer antenatal anxiety disorders frequently carry them into their postpartum periods. These women can become anxious mothers. Looking at mothers and children both diagnosed with an anxiety disorder, Kortlander, Kendall, and Panichelli-Mindel (1997) found that anxious mothers “expected their children to become more upset and less able to comfort themselves” in addition to having lower expectations of their children’s abilities to cope in general than did a control group of mothers of non-anxious children (p. 309). This pattern of low parental expectations and childhood anxiety disorders also is reflected in research by Eisen, Spasaro, Brien, Kearney and Albano (2004) in their development of the Parental Expectancies Scale.

Craske (2003) states, “Parental influences may be particularly prominent in the vicarious modeling and informational transmission of fears to children, and represents an aspect of parental influence that is specific to anxiety relative to other forms of distress in their children” (p. 64). Since parental anxiety can affect interactions with their child and the child’s subsequent development, it can be theorized that intervening with anxiety treatments during pregnancy may improve eventual life-outcomes for the child. Since most pregnant women seek health care during their pregnancy, this life event presents a unique opportunity to identify these women and address any significant anxiety (Miniño, Heron, Murphy & Kochanek, 2007). This intervention could improve their global functioning, lessen their chances of suffering adverse effects postpartum, positively affect subsequently pregnancies, and help them function more effectively as parents.

Transtheoretical Model of the Stages of Change and Childbirth

According to the studies discussed above, some women’s choices to use epidural anesthesia in routine labors can be connected with existing fear and anxiety in relation to the childbirth experience. For these women, the choice can constitute avoidance (Reynolds, 1997; Skinner, 1953; Waldenström,

Hildingsson & Ryding, 2006). The transtheoretical model of stages of change has been shown to be effective in predicting readiness in relation to behavior change such as avoidance in many different venues including chronic pain (Kerns & Rosenberg, 2000; Rosen, 2000).

Prochaska and DiClemente (1982) developed the stages of change theory. It contends that persons go through predictable activities related to changes of behavior. Many people move through this change pattern linearly. Others may go back and forth from stage to stage or continue negative behaviors without change. The *precontemplation stage* is when the person does not recognize or acknowledge the problem, even though others (e.g., spouse, employer, minister) may be aware of it and may be pressuring the person to change their behavior. The *contemplation stage* is when the person may be considering the need of the behavior change, but is not ready to act upon it. The *preparation stage* unites intention and action. Many persons who are categorized in this stage report prior attempts to change their behavior, and they are ready to commit to the behavior change. The *action stage* is the stage when the person actively modifies their “behavior, experiences, and environment in order to overcome their problems” (Prochaska & Norcross, 2001, p. 444). The final stage is *maintenance* when the person works to prevent relapse and solidify their behavior changes.

The theory maintains that the therapist or other health professional should use different techniques in interacting with the person during each stage. The precontemplative and contemplative stages respond to humanistic or psychoanalytic interactions while the preparation and active stages respond to more behavioral exchanges (Prochaska & Norcross, 2001). Research has found this theory applicable in many behavior change processes, even though the choice of their corresponding therapy traditions may be different depending upon the problem (Rosen, 2000; Tolin & Maltby, 2008). This interaction allows the health care provider to act in the most facilitative manner to guide the person to behavior change. McCracken and Corrigan (2008) discuss this concept. Many health care providers

prescribe medication with the expectation that the patient will follow their advice and use it. This may or may not be the case determined by the existing thoughts, experiences, and outside influences that the patient already has regarding the use of the medication. Adopting the stages of change model can help for there to be a more realistic expectation on the part of the provider, rather than assuming that a patient will follow through with instructions (in the active phase) when many are in the precontemplative and contemplative stages and may well not comply (Prochaska & DiClemente, 1982).

During pregnancy, there often are several opportunities across many visits in a space of a few months to assess and work with the patient. Obstetrical caregivers are frequently acting as “gatekeepers” in that women in their childbearing years frequently visit them for medical needs, so women experiencing psychological distress can be identified and referred. Using the transtheoretical stages of change model can assist with effective, proactive referrals to psychotherapy (Prochaska & Norcross, 2001).

There has been some research on the stages of change model and anxiety has shown varied results. Dozois, Westra, Collins, Fung and Garry (2004) looked at the University of Rhode Island Change Assessment (URICA) that was created to measure readiness of change in relation to anxiety treatment. Results were that this instrument was of value in predicting treatment retention and its outcome. The fit of the subscales, however, was deficient. It was suggested that the use of therapy techniques such as motivational interviewing might increase the probability of treatment compliance.

Widoe (2006) created a measure, Childbirth Stages of Change Questionnaire (CSOCQ), to assess a woman’s readiness to adopt self-managed pain relief methods (e.g., relaxation, breathing, massage) for coping with acute childbirth pain. Based on the SOC and backed by research on chronic pain management, the CSOCQ was to aid communication between the caregiver and the woman

concerning her needs during labor. Because of the acute nature of childbirth in comparison to chronic conditions or behaviors, the stages of change concept of readiness was modified. Widoe created the CSOCQ to assess “readiness to engage in” the one-time behavior of self-management of childbirth pain, instead of the readiness to change a behavior such as smoking or consuming alcohol (p. 19). Due to this conceptualization, the stage of readiness has been used instead of stage of change to describe the stages in the CSOCQ. In the present paper, the CSOCQ has been renamed to be the Childbirth Stages of Readiness Questionnaire (CSORQ), to be more consistent with this conceptualization.

Based on previous information, understanding the motivations (e.g., fear, PTSD) behind a woman’s choice of pain management can facilitate dialogue between the woman and her caregiver that can assist informed consent and assessment of patient needs. Since a woman’s attitude about medication may be illustrative of her possible existing anxiety state, it is possible that the CSOCQ could be used to assess this component.

Statement of the Problem

The existence of pain management choices presents the question of the purpose of pain relief in a routine labor. If the purpose is the immediate cessation of discomfort as it was in 1848, to “prevent pain,” and to “make labor safe and happy for mother and child” then anesthetics may be indicated (Channing, 1848, p. 8). If they are to provide an experience that will lessen a woman’s fear and anxiety toward not only her current experience but toward future births, improve a woman’s overall health (mental and physical), and improve outcomes for her child, then the routine use of anesthesia may be effective, but not ideal. This question of the purpose of anesthetic in labor highlights the obstetrical duality that balances whether the focus should be the process of providing pain relief, or the result of a satisfactory experience for the mother, or both the process and the result (Marmor & Krol, 2002).

To summarize, the problem as it exists today is that the main focus of immediate pain relief and the resulting high use of epidural anesthesia during routine labor may be based for many women more on psychosocial and economic contingencies than on physiological realities. The pain prevention mindset may perpetuate a model of avoidance and escape from pain in women suffering from fear, anxiety, and depression, does not address psychological factors such as pain perception and postpartum outcomes, obviates the diagnosis of existing mental disorders, does not take advantage of an opportunity for treatment that could positively impact the lives of both the woman and her child, fails to provide a learning opportunity for women that may help them deal with physically painful situations without using medication later in life, and may result in ethical issues for care providers.

If caregivers could identify women prenatally who have unresolved trauma issues and provide appropriate individualized care and support to them during childbirth, they could decrease the numbers of women who are overwhelmed and devastated by the pain of labor.

Furthermore, the ability to identify those new mothers for whom childbirth pain was traumatic and to help them process and resolve the traumatic aspects of the pain would improve their mental health and the well-being of their entire family. (Simpkins, 2000, pp. 254-255)

This thesis tests the internal consistency, test-retest reliability, and validity (i.e., convergent and discriminant) of the CSORQ in the antenatal period. This use of the CSORQ is to assess a woman's overall view of labor pain and her ability to cope with discomfort, which may be associated with possible psychopathology in relation to childbirth. The CSORQ then would supply the care provider with information related to the woman's stage of change in relation to either treatment of these symptoms or utilization of coping methods in line with her needs.

Hypotheses

Hypothesis 1. Internal consistency and test-retest reliability for each of the CSORQ subscales will be significant and positive, demonstrating adequate reliability.

Hypothesis 2. In relation to choice of childbirth pain control methods, the Precontemplation and Contemplation stages will positively correlate with each other and the Preparation and Action/Maintenance stages will positively correlate with each other (Prochaska & Norcross, 2001).

Hypothesis 3. As measures of convergent validity, scores on measures of fear, anxiety, and depression will positively correlate with the Precontemplation and Contemplation stages of the CSORQ, reflecting childbirth pain control methods.

Hypothesis 4. As measures of discriminant validity, scores on measures of fear and anxiety will negatively correlate with the Preparation and Action/Maintenance stages of the CSORQ, reflecting choice of childbirth pain control methods.

Hypothesis 5. Maternal attendance at childbirth classes (defined by attending at least one class or planning to attend class) and self-efficacy will negatively correlate with the Precontemplation and Contemplation stages of the CSORQ in relation to choice of childbirth pain control methods.

Hypothesis 6. Maternal attendance at childbirth classes (defined by attending at least one class or planning to attend class) and self-efficacy will positively correlate with the Preparation and Action/Maintenance stages of the CSORQ in relation to choice of childbirth pain control methods.

Hypothesis 7. As a measure of discriminant validity, the Agoraphobia subscale of the FQ is not expected to significantly correlate with any of the CSORQ stages.

Method

Research Design Overview

The experimental protocol involved completion of the Childbirth Stages of Readiness Questionnaire (CSORQ) and of several measures of fear, anxiety, and depression in a testing session

involving both interview and questionnaire completion; several testing locations were involved. Each participant was given a second copy of the CSORQ to complete in 48 hours to return by mail to the investigators. Participants who had complete data from the initial session were included in the analysis. The protocol was approved by West Virginia University Institutional Review Board; written informed consent was obtained from all participants.

Participants

Without sufficient past research to determine effect sizes, a medium effect size ($r = .30$) was anticipated for the correlations among the SOC, acute pain, and anxiety in the present study. Using the G*Power program (Erdfelder, Faul & Buchner, 1996), a sample size of 80 participants was deemed necessary to detect the predicted effect size with $\alpha = .05$ and a power of $1 - \beta = .80$. Participants were recruited from the following sites: West Virginia University Healthcare - Obstetric and Gynecology Clinic, Morgantown, WV; FamilyCare HealthCenter (Patrick Avenue and WomenCare Birth Center), Charleston, WV; Morgantown Mall Baby Fair, Morgantown, WV; MountainCap, Upshur County, WV; Women, Infants, and Children's Program, Summersville, WV, and personal contacts with pregnant women in the community. Due to failure to complete all of the measures in the initial assessment, the total of 101 women who agreed to participate yielded a final sample of 92 women. Of these 92 women, 66 (71.7%) returned the post-test, and on average those tests were received in the mail 7.28 days ($SD = 2.95$, range 3-16) after the first administration. Table 1 presents participants' demographic information.

Measures

Demographic information form. A questionnaire was administered to gather basic information about the participants including age, ethnicity, birth due date, information about prior births (e.g., how many, vaginal/cesarean, medical problems), information about childbirth classes, the

site of prenatal care, and the anticipated location of delivery. Additionally, there were questions about how much pain and anxiety was anticipated (on a 0-100 Likert-type scale). The Flesch-Kincade Grade Level score on Microsoft Works® Office is 6.4. See Appendix A.

Childbirth Stages of Readiness Questionnaire. The CSORQ is a 20-item, self-report questionnaire modified from the Childbirth Stages of Change Questionnaire (Widoe, 2006) that uses the stages of change model (Prochaska & DiClemente, 1982) to assess a woman's readiness to self-manage childbirth pain without the use of medication. Each stage (Precontemplation, Contemplation, Preparation, Action/Maintenance) is represented by a separate subscale. Therefore, the CSORQ is divided into four subscales, each with five questions, Precontemplation (questions 2, 7, 10, 14, 18), Contemplation (questions 5, 9, 12, 16, 19), Preparation (questions 1, 3, 8, 13, 17), and Action/Maintenance (questions 4, 6, 11, 15, 20). Responses are recorded by indicating the participant's agreement (1 = completely disagree to 5 = completely agree) with a statement in relation to their own pregnancy, with 25 being the maximum score in each stage. The highest score among the stages indicates the stage of readiness of the participant. If two stage-scores are equal, the more advanced stage is used (e.g., when Contemplation = 15 and Preparation = 15, then Preparation is considered the woman's stage). While a total score for the entire measure can be calculated, this study utilized individual stage scores. Internal consistency using Cronbach's alpha for each stage of change ranged from .83 to .95, and correlations between the stages were significant in the expected directions (Widoe, 2006).

Prior to the present project, the CSOCQ was discussed with community partners at two of the data collection sites that were ultimately used, and they indicated that the reading level was too high. Subsequently, adjustments were made to the original measure to lower the reading level to increase comprehension using the Flesch-Kincade Grade Level score on Microsoft Works® Office (Beckman

& Lueger, 1997; Paasche-Orlow, Taylor, & Brancati, 2003). This program ranks the reading level using the USA school grade level (i.e., 8.0 is understandable by an average eighth grade student). Various items and the instructions were revised, and the reading level of the original measure, the CSOCQ (level = 8.4), was lowered for the revised version, the CSORQ (level = 7.3), used in this study. See Appendix B.

Childbirth Self-Efficacy Inventory. The CBSEI (Lowe, 1993) consists of 62 items ranked from one (not at all helpful) to ten (very helpful) and categorized in the following subscales: outcome expectancies for active labor, self-efficacy for active labor, outcome expectancies for second stage, and self-efficacy for second stage. The questions are predominantly the same for each stage. The scales have excellent internal consistency (.86 to .96). Since this study was assessing prenatal beliefs of childbirth self-efficacy in general, we used one grouping of the questions designed for the second stage of labor to assess a woman's beliefs about how she will feel during labor and delivery. The single scale yields a score from 16 to 160, and a higher score indicates a higher level of self-efficacy. The Flesch-Kincaid Grade Level score on Microsoft Works® Office is 11.9. See Appendix C.

Fear of Pain Questionnaire-Short Form. The FPQ-SF (Kennedy & McNeil, 2001), based on the FPQ-III (McNeil & Rainwater, 1998), is a Likert-style (1 = not at all, 5 = extreme), self-report instrument that is connected with the full-length, original version of the scale (FPQ-III). The FPQ-SF consists of 9 items designed to measure anxiety or fear in relation to pain in three subscales: Minor Pain, Severe Pain, and Dental/Medical Pain. The FPQ-III has good internal consistency ($\alpha = .92 - .95$), with evidence of convergent validity ($r = .17, p < .05$) when compared to the State-Trait Anxiety Inventory (Roelofs, Peters, Deutz, Spijker, & Vlaeyen, 2005). The Flesch-Kincaid Grade Level score on Microsoft Works® Office is 6.3. See Appendix D.

Anxiety Sensitivity Index- 3. The ASI-3 (Taylor, Zvolensky, Cox, Deacon, Heimberg, Ledley,

et al., 2007) is an 18-item, Likert-style (1 = very little, 5 = very much), self-report instrument that measures anxiety based on physical, cognitive and social factors. The ASI-3 has good reliability and validity, and its Flesch-Kincade Grade Level score on Microsoft Works® Office is 5.6 (Taylor et al.). See Appendix E.

Wijma Delivery Expectancy/Experience Questionnaire A. The W-DEQ A (Wijma, Wijma, & Zar, 1998) is a 33-item, Likert-style (0 = never, 5 = very often), self-assessment to measure prenatal fear of childbirth and related anxiety. High scores (≥ 85) indicate intense fear and anxiety in connection with childbirth. Internal consistency reliability and split-half reliability of the W-DEQ A was at least $r = 0.87$ (Wijma, Wijma, & Zar). High scores on the W-DEQ A have positively correlated with the Anxiety Symptoms Questionnaire Part One (ASQI) and the Anxiety Disorder Interview Schedule-Revised (ADIS-R), both of which screen for anxiety disorders (Zar, Wijma, & Wijma, 2002). The Flesch-Kincade Grade Level score on Microsoft Works® Office is 7.9.

Center for Epidemiological Studies Depression Scale. The CES-D (Radloff, 1977) is a self-report instrument using a Likert-style construction with a 4-point scale (0 - rarely or none, 3 - most or all of the time) to measure depressive symptoms in the general population. A cut-off of 16 or higher has been recommended for indicating depression, though research has indicated that the cut-off point should be higher. Using Spearman-Brown and split-half statistics, internal consistency is .85. The Flesch-Kincade Grade Level score on Microsoft Works® Office is 4.2. See Appendix F.

Fear Questionnaire. The FQ (Marks & Mathews, 1979) is a 17 question, self-report measure using a Likert-style (0 = would not avoid it, 8 = always avoid it) to assess severity for several phobias (e.g., agoraphobia, social phobia). This study used this measure to determine discriminant validity with the CSORQ, assessing the agoraphobia scale (Ag) whose scores range from 0 to 40. Internal consistency using Cronbach's alpha in a sample of participants with anxiety disorders was 0.71 to 0.83

for the subscale. The Flesch-Kincaid Grade Level score on Microsoft Works® Office is 5.1. See Appendix G.

Procedure

Pregnant women age 18 years and older were recruited at random from various sources (e.g., obstetrical clinics, community baby fairs) by either the primary investigator or one of five trained research assistants. The women were advised of the nature of the study, and those who declined ($n = 42$) to participate were asked the reason. Out of the total refusals, 24 (57%) cited no interest in participation, 17 (40%) cited no time to fill out the forms, and 1 (3%) did not speak the English language well enough to comprehend the questionnaires. Those who chose to participate were given forms explaining the handling of their private health information and their rights as participants which the investigator or research assistant also verbally explained to them. Literacy was assessed during this process by ascertaining the participant understood the written information. Written informed consent was obtained, and the participant's mailing address, phone number(s), and email address was obtained to facilitate payment when the follow-up CSORQ was returned after 48-hours. The option of allowing access to labor and delivery records was discussed with each participant, and 54 (58.7%) of the women consented to allow their records to be accessed. A list of community resources was provided should the participants experience emotional distress as a result of the research process. See Appendix H and Appendix I.

Anonymity was provided for the women by assigning a code number for each one in lieu of using their names. The participants were advised that they could stop their involvement at any time, and that they need not answer any questions to which they were uncomfortable responding.

To control for effects in responding due to order of packet placement and for fatigue and confusion due to the quantity of included measures, each questionnaire was printed on different color

paper and the questionnaires were in random order within the packet with the exception of the CSORQ (on white paper) which was always first, and the demographics form (on white paper) which was always last. The women completed the following: Demographic information form, CSORQ, CBSEI, FPQ-III, ASI-3, W-DEQ A, CES-D, and FQ. When finished, each participant was debriefed and received \$10.00 in cash. Each participant was given a self-addressed, stamped envelope with a second CSORQ to be completed 48-hours after the initial session for re-test purposes. After the follow-up CSORQ questionnaire was received, a second payment of \$10 in a money order was mailed to the participant along with a “thank you” letter.

Results

Statistical Analysis

Data analysis was completed using the Statistical Package for the Social Sciences (SPSS 16.0.1). The data were entered by the primary investigator, and consistency of the data entry was verified by a research assistant who reentered 20% of the data for randomly chosen participants. The error rate was less than .01%, which was deemed acceptable. Since adjustments were made to the original CSORQ which lowered the reading level to facilitate comprehension, item analyses and internal consistency reliability first were assessed. Following adjustments to one of the subscales, the internal consistency of individual scales (Precontemplation, Contemplation, Preparation, Action/Maintenance) was evaluated using Cronbach's alpha. Two-day (48-hour) test/re-test data were evaluated using Pearson's product-moment correlation coefficients. Concerning validity, the CSORQ stages were examined for discriminant and convergent validity using Pearson's correlations.

Internal Consistency and Item Analyses

Internal consistency first was measured within each of the four CSORQ subscales, using Cronbach's alpha (α). Using accepted cutoffs, if a subscale alpha is high (≥ 0.70), it was assumed

that the five questions composing that stage of the CSORQ were measuring a unidimensional construct. The Cronbach's alphas for each subscale were: Precontemplation, $\alpha = .87$; Contemplation, $\alpha = -.02$; Preparation, $\alpha = .93$; Action/Maintenance, $\alpha = .91$. All subscales were above the minimum acceptable cutoff except the Contemplation subscale. Further, inspection of item-subscale totals revealed acceptable correlations, except for the Contemplation subscale. In the five questions comprising the Contemplation subscale, questions 5, 12, and 19 positively intercorrelated, and questions 9 and 16 intercorrelated with one another. Consequently, items 9 and 16 were dropped from the Contemplation scale, and subsequent equations were calculated using the revised scale. Internal consistency was recalculated using Cronbach's alpha ($\alpha = .72$) for questions 5, 12, and 19. Since the alpha value for the revised three question subscale was above the cutoff, the revised Contemplation subscale was used for all subsequent calculations. Descriptive statistics for each item are shown in Table 2. The item intercorrelations are shown in Table 3. The item-total correlations are shown in Table 4.

Hypothesis Testing

Hypothesis 1. Internal consistency results already have been presented as part of the initial examination of the revised CSORQ. Test-retest calculations for the four CSORQ subscales were performed for the 66 of 92 (71.7%) participants who completed the retest. Table 5 portrays the test-retest results, all of which were at an acceptable level.

Hypothesis 2. Table 5 presents the results of Pearson's correlations conducted among CSORQ subscales. As predicted, the Precontemplation and Contemplation subscales correlated positively with one another, and the Preparation and Action/Maintenance subscales similarly correlated with one another.

Hypothesis 3. As shown in Table 6, hypothesis 3 was partially supported, with a significant positive correlation between the Contemplation subscale score and the W-DEQ A, a specific measure of fear of childbirth and related anxiety. No other correlations with measures of fear, anxiety, and depression related to this hypothesis, however, were significant.

Hypothesis 4. Again as predicted, and as shown in Table 6, hypothesis 4 was partially supported, with a significant negative correlation between both the Preparation and Action/Maintenance subscale scores and the W-DEQ A, a specific measure of fear of childbirth and related anxiety. No other correlations with measures of fear, anxiety, and depression related to this hypothesis, however, were significant.

Hypothesis 5. Maternal attendance at childbirth classes was defined by attendance at least one class ($M = 1.7$, $SD = .57$) prior to this birth and assessed by asking “How likely is it that you will take childbirth classes?” ($M = .58$, $SD = .50$). Self-efficacy was assessed by the CBSEI ($M = 114.0$, $SD = 33.9$) and by asking “Right now, how do you feel about your ability to handle labor pain?” ($M = .21$, $SD = .41$). Both of the questions were computed as dichotomous variables. In relation to the Precontemplation and Contemplation subscores and self-efficacy, and as shown in Table 7, the self-reported ability to handle childbirth pain was negatively correlated with both subscales. The CBSEI was negatively correlated only with the Contemplation subscale. None of the relationships involving taking childbirth classes were significant.

Hypothesis 6. Maternal attendance at childbirth classes and self-efficacy was defined and assessed as in hypothesis 5. As shown in Table 7, hypothesis 6 was partially supported in that self-reported ability to handle childbirth pain was positively correlated with the Action/Maintenance subscale. No other correlations, however, were significant.

Hypothesis 7. As expected, and as shown in Table 6, the Agoraphobia subscale of the FQ did not significantly correlate with any of the CSORQ subscales.

Discussion

Reliability and Validity

In the revalidation of the CSORQ, results indicate that the internal consistency was maintained within the Precontemplation, Preparation, and Action/Maintenance subscales after the rewording of the scale to lower its reading level. In the Contemplation subscale, however, the internal consistency was not maintained. In that subscale, item analysis found that two of the questions (i.e., 9, 16) were similar to one another in content, while three other questions (i.e., 5, 12, 19) were more similar to one another. In examining the content of the questions, there seems to be two singular underlying constructs involved. In questions 9 (I'm thinking about learning some ways to help me during labor, other than drugs and an epidural) and 16 (I am thinking about using ways to deal with labor pain, like breathing to try to make labor easier), the wording involves learning alternate pain coping methods. In questions 5 (If I only use other ways instead of drugs or an epidural, I am afraid they won't be enough to reduce my labor pain), 12 (I'm not sure that my own ways to cope, without an epidural or drugs, are the best way to handle labor pain), and 19 (I am worried that dealing with labor pain without drugs or an epidural will not help enough), the wording entails concerns about ability (self-efficacy) to cope with pain. The latter observation is supported by the subscale's subsequent significant correlation with self-efficacy when the questions 9 and 16 were removed. Future work with the CSORQ should include a further revision of items 9 and 16 to be more consistent with the other three items of the Contemplation subscale.

The removal of those two items allowed the CSORQ to perform well in terms of reliability, both internal consistency and test-retest. The validity of the CSORQ in terms of its relation to other

measures of anxiety, fear, and depression was supported, but specifically in terms of fear and anxiety related to childbirth (i.e., W-DEQ A), and not related to general measures (i.e., FPQ-SF, ASI-3 and CESD). The lack of a relation between CSORQ subscales and the FQ-Agoraphobia subscale is suggestive of discriminant validity; given that there are a number of other nonsignificant correlations with the CSORQ, however, other psychometric considerations may be affecting this result.

In general, the Precontemplation subscale did not correlate as expected. It is possible that the reason for the lack of significance with the Precontemplation subscale is that this study did not control for women who were having scheduled Cesarean sections. Several of the women who participated were patients at a high risk clinic, and due to their status, they were scheduled for operations. These women would be in the Precontemplation subscale because they would be using epidural anesthesia. It is possible that these women also experience low anxiety because they expect not to experience labor pain.

Additionally, there were no significant correlations with fear of pain in general in relation to minor, severe, or dental/medical pain. Nor were there significant correlations with depression, or anxiety as measured in physical, cognitive and social dimensions. These findings may indicate that fear of pain and anxiety in connection with childbirth is a unique, highly specific construct (Alehagen, Wijma, & Wijma, 2001; Bakshi, Mehta, Metha, & Sharma, 2008; Hofberg & Brockington, 2000; Saisto & Halmesmaki, 2003).

In connection to childbirth classes and self-efficacy, only self-efficacy revealed reliable relationships. The general style of the wording of the questions or availability of classes (e.g., location, cost) may be factors that influenced these results. It could also be that using childbirth classes as a measure of one's choice of non-medication based pain control in childbirth is not the best way to make this assessment. The findings support prior studies that show a correlation between low childbirth self-

efficacy and epidural usage (Barclay, 2007; Beebe, Lee, Carrieri-Kohlman & Humphreys 2007; Saisto & Halmesmaki, 2003). The lack of significant correlations in the Precontemplation subscale with the CBSEI might echo the status of the women scheduled for Cesarean sections. They might have fewer low feelings of self-efficacy because they are less concerned about going through labor. As to the lack of significance with the CBSEI and the Preparation and Action/Maintenance subscales, the CBSEI asks specific questions about abilities in relation to breathing, relaxation, etc. It might be that while women feel that they can handle childbirth pain in totality, they are not sure about their ability to handle each detail. Another reason for the lack of significant correlations might be that the CBSEI has been validated to be used during labor, and in this study it was used for prenatal assessment. A third reason might be its higher reading level.

The present findings also reflect other studies that make the connection of childbirth fear of pain and anxiety with epidural usage and low self-efficacy (Barclay, 2007; Beebe, Lee, Carrieri-Kohlman & Humphreys 2007; Saisto & Halmesmaki, 2003). So, scores that place women in the subscales/stages of Precontemplation and Contemplation indicate the possible presence of high levels of childbirth anxiety and fear of pain in addition to concerns with ability to handle childbirth (Barclay, 2007; Hodnett, 2002). Such scores can cue obstetrical care providers to initiate discussions regarding patient history and present concerns and, if necessary, to give patients referrals to mental health care providers. Since childbirth is a biopsychosocial experience, areas to be explored might include the presence of generalized anxiety and anxiety disorders, the need for accurate information about birth, the availability of training in alternate pain control methods in lieu of medication, the comfort of the patient with the patient/provider relationship, and maternal social supports (Barclay, 2007; Gaudry, Vagg, & Spielberger, 1975; Hodnett, 2002; Zar, Wijma, & Wijma, 2002, 2001). Discussions of this

type could encourage a positive relationship between the woman and her caregiver, which is one of the factors in a positive birth experience (Melender, 2002).

Limitations

There were several limitations in the study. One issue is that the participants were relatively homogenous in terms of ethnicity and race. At the same time, this sample provides important information about a unique population group of women residing in Appalachia, and specifically in West Virginia. Some of the demographic questions were worded too generally, which resulted in a lack of information that could have been helpful in understanding meaning. One of these items was the household income item in which whose income (e.g., spouse's, participant's, parents', household) was not specified. Another issue was a lack of controlling for planned cesarean sections which might have resulted in a lowering of a woman's anxiety level and increasing her self-efficacy due to her anticipating not experiencing labor pain. This issue could have been addressed by asking whether or not a cesarean section was planned. Concerning the 48 hour time frame for the post-test completion, since the participants took the second copy of the CSORQ home then mailed it back, it was not possible to ascertain when it actually was completed.

Future Directions

In the future, the two questions in the Contemplation subscale of the CSORQ should be further revised to be consistent with the other three items of that subscale. Another line of research could test the measure's face validity since it was created to be used to assess a woman's stage of change in connection to her choice of pain control methods and not to assess a woman's anxiety and pain expectation levels. Assessing for scheduled Cesarean sections in the Precontemplation stage could be another avenue for exploration.

Summary

Childbirth fear and anxiety are complex, multi-dimensional constructs that are comprised of biological, psychological, and social elements. Overall, the CSORQ can be easily and economically used in prenatal healthcare environments to stimulate discussions between obstetrical care givers and their patients/clients in all areas relating to the patient's impending birth, possibly resulting in more positive experiences for both. The measure also can be used to assess the need for higher support, intervention, and treatment needs.

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Appendix A

Demographic information form

Date _____

Participant ID# _____

Site Collection ID# _____

Pregnant Mother Form

- 1) Age: _____
- 2) Ethnicity:
- A) _____ American Indian or Alaska Native
 - B) _____ Asian
 - C) _____ Black or African American
 - D) _____ Hispanic or Latino
 - E) _____ Native Hawaiian or Other Pacific Islander
 - F) _____ White
 - G) _____ Other (Describe: _____)
- 3) What is your usual occupation or type of work? _____
- 4) Are you currently employed? Yes No
- A. If yes, Full Time Part Time
- 5) What is your current annual income? (Please check only one)
- A) _____ \$0 - 10,000
 - B) _____ \$10,001 - 20,000
 - C) _____ \$20,001 - 35,000.
 - D) _____ \$35,001 - 50,000.
 - E) _____ \$50,001 - 75,000.
 - F) _____ \$75,001 - 100,000.
 - G) _____ \$100,001+
- 6) What is your highest level of education/school? (Please check only one)
- A) _____ Grades 1 through grade 12 (did not graduate)
 - B) _____ Graduated high school
 - C) _____ GED
 - D) _____ Some college (enter how many years _____)
 - E) _____ Graduated college
 - F) _____ Post graduate years (enter how many years _____)
 - G) _____ Master's Degree
 - H) _____ Doctoral Degree
- 7) Is your religion:
- A) No religion
 - B) Buddhist
 - C) Christian

- D) Jewish
 E) Muslim
 F) Other (please list _____)

8) Have you ever given birth to a child before? If so:

- A) How many? _____
 B) Number vaginally? _____
 C) Number c-section? _____

9) If you have been pregnant before, were there any problems with these pregnancies?

Yes No (Please circle only one)

A) If yes, please describe any problems with the pregnancy:

10) If you have experienced childbirth before, were there any problems with any of the births?

Yes No (Please circle only one)

A) If yes, please describe any problems with these labors or deliveries:

11) When is your due date? _____

A) Trimester: First Second Third (Circle one)

12) Who will be delivering your baby? (Please include names)

A) _____

B) Is this person a:

- (a) _____ Midwife
 (b) _____ Obstetrician
 (c) _____ Other (Please describe _____)

13) Was your pregnancy planned? Yes No (Please circle a number on the scale below)

Completely
Unexpected

Completely
Planned

1 2 3 4 5

14) Did you use fertility drugs? Yes No

15) Did you use artificial insemination? Yes No

16) How do you feel about your pregnancy? (Please circle a number on the scale below)

Very Sad	Very Happy
<hr/>	
1	5
2	4
3	

17) Are you currently in a relationship with the baby's father? Yes No

A) If Yes:

- 1) _____ Married
- 2) _____ Living together
- 3) _____ Other (please describe _____)

B) If No:

Please describe _____

18) Are you currently in a relationship with the baby's father or with another person who will:

A) help you during the birth? Yes No

B) help you care for your baby after you bring your baby home? Yes No

19) Do you have friends and/or family who are planning to help you:

A) during the birth? Yes No

B) care for your baby after you bring your baby home? Yes No

20) Do you plan to keep the baby? Yes No

21) How many other women have you talked with to learn about their childbirth experiences?

0 1 3 4 5 6 7 8 9 10+

22) How do you feel about the information that you got from talking with other women about their childbirth experiences? (Please circle a number on the scale below)

Childbirth is physically easy	Childbirth is physically hard
<hr/>	
1	5
2	4
3	

23) Have you ever attended a birth? Yes No

A) If yes, how many? 1 3 4 5 6 7 8 9 10+

24) How did you feel about the birth(s) that you attended? (Please circle a number on the scale below)

Extremely
frightened

Not at all
frightened

1

2

3

4

5

25) Please list any significant physical condition(s) such as cancer, diabetes:

A) you have had in the past:

B) you have now:

26) Please list any significant mental condition(s) such as depression, panic attacks:

A) you have had in the past:

B) you have now:

27) Do you take prescription medication right now? Yes No

If Yes:

Please list the reason (use the condition's name if you know it) and the medication's name (if you do not know it, please describe it)

	<u>Name of Condition/Diagnosis</u>	<u>Name of Medication</u>
1)	<hr/>	<hr/>
2)	<hr/>	<hr/>
3)	<hr/>	<hr/>
4)	<hr/>	<hr/>
5)	<hr/>	<hr/>
6)	<hr/>	<hr/>

28) Do you plan to use epidural medication during your labor? (Please circle a number on the scale below)

Definitely plan
NOT to use
epidural

Definitely plan
TO use
epidural

1 2 3 4 5

29) I expect epidural medication to prevent all pain and/or take away all labor pain.
(Please circle a number on the scale below.)

I expect
no pain

I expect
a lot of pain

1 2 3 4 5

30) Have you taken childbirth classes with a previous pregnancy? Yes No

31) Have you already taken childbirth classes during this pregnancy? Yes No

32) How likely is it that you will take childbirth classes? (Please circle a number on the scale below.)

Very unlikely

Very likely

1 2 3 4 5

A) If you are unlikely not to do childbirth classes, please check all the reasons why:

1) _____ Classes are too far away for me to attend

2) _____ Classes cost too much

3) _____ I am not interested in taking classes

4) _____ Other (_____)

33) Right now, how do you feel about your ability to handle labor pain? (Please circle a number on the scale below.)

I feel that
I can handle
labor pain

I feel that
I can not handle
labor pain

1 2 3 4 5

34) Right now, do you think that you will use medication to handle labor pain? (Please circle a number on the scale below.)

I think I
will need
medication

I think I
will not need
medication

1

2

3

4

5

35) On a scale of 0 to 100 (0 being no pain, 100 being the most pain you could possibly imagine), how do you rate the most intense pain you think that you will experience during your labor?

A) _____

36) On a scale of 0 to 100 (0 being no fear or anxiety, 100 being the most fear or anxiety you could possibly imagine), how do you rate the most intense fear or anxiety you think that you will experience during your labor?

A) _____

37) What concerns (if any) do you have about your labor and birth? _____

Thank you!

Appendix B

Childbirth Stages of Readiness Questionnaire: The CSORQ-20

Planning for Childbirth Questionnaire
(CSORQ-20)

INSTRUCTIONS: Below are sentences that tell a number of thoughts about childbirth pain. Please look at each sentence and think about how each one might or might not be the way you feel about your own pregnancy. Then circle one number to the right of each sentence that is closest to the way you feel.

1 = completely disagree (not like me at all) and 5 = completely agree (just like me).

	Completely disagree	Disagree	Neutral	Agree	Completely agree
1. It's worth looking into ways to deal with labor pain that do not involve an epidural or drugs.	1	2	3	4	5
2. I believe that drugs or an epidural are the best ways to deal with labor pain.	1	2	3	4	5
3. I think I might be ready to learn some ways to deal with labor pain that do not use drugs.	1	2	3	4	5
4. I have begun to practice a way that could help me deal with childbirth pain.	1	2	3	4	5
5. If I only use other ways instead of drugs or an epidural, I am afraid they won't be enough to reduce my labor pain.	1	2	3	4	5
6. I feel good about using my own ways, other than drugs or an epidural, to deal with labor pain.	1	2	3	4	5
7. I do not see why someone would want to go through the pain of natural childbirth.	1	2	3	4	5
8. I am ready to learn ways to deal with labor pain on my own, other than drugs or an epidural.	1	2	3	4	5

	Completely disagree	Disagree	Neutral	Agree	Completely agree
9. I'm thinking about learning some ways to help me during labor, other than drugs or an epidural.	1	2	3	4	5
10. It would be foolish not to use drugs during labor to help with pain.	1	2	3	4	5
11. I am practicing new ways to deal with labor pain, without drugs or an epidural.	1	2	3	4	5
12. I'm not sure that my own ways to cope, without an epidural or drugs, are the best way to handle labor pain.	1	2	3	4	5
13. I am going to look for ways to deal with labor pain other than drugs or an epidural.	1	2	3	4	5
14. I don't think I can handle labor pain without drugs or an epidural	1	2	3	4	5
15. I'm really getting good at using ways to deal with labor pain that do not use drugs or an epidural.	1	2	3	4	5
16. I am thinking about using ways to deal with labor pain, like breathing, to try to make labor easier.	1	2	3	4	5
17. I've made a decision to learn some ways that do not use drugs or an epidural to cope with childbirth pain.	1	2	3	4	5
18. Knowing my own ability to cope with pain, I think I'll need an epidural or drugs during labor.	1	2	3	4	5
19. I am worried that dealing with labor pain without drugs or an epidural will not help enough.	1	2	3	4	5
20. I am learning ways to deal with my labor pain without drugs or an epidural.	1	2	3	4	5

CSORQ-20 Scoring

Subscale Score = Total these items

Precontemplation Score = 2 + 7 + 10 + 14 + 18

Contemplation Score = 5 + 9 + 12 + 16 + 19

Preparation Score = 1 + 3 + 8 + 13 + 17

Action/Maintenance Score = 4 + 6 + 11 + 15 + 20

Stage of Change = Highest subscale score

(Note: If two subscale scores are equally high, take the more advanced stage of change as the Stage of Change. For example, if Preparation = 22 and Action/Maintenance = 22, the Stage of Change would be Action/Maintenance.)

Appendix C

*Childbirth Self-Efficacy Inventory (CBSEI)*Part I - Labor

Think about how you imagine labor will be and feel when you are having contractions 5 minutes apart or less. For each of the following behaviors, indicate how helpful you feel the behavior could be in helping you cope with this part of labor by circling a number between 1 – not at all helpful and 10 – very helpful.

1. Relax my body	1	2	3	4	5	6	7	8	9	10
2. Get ready for each contraction	1	2	3	4	5	6	7	8	9	10
3. Use breathing during labor contractions	1	2	3	4	5	6	7	8	9	10
4. Keep myself in control	1	2	3	4	5	6	7	8	9	10
5. Think about relaxing	1	2	3	4	5	6	7	8	9	10
6. Concentrate on an objects in the room to distract myself	1	2	3	4	5	6	7	8	9	10
7. Keep myself calm	1	2	3	4	5	6	7	8	9	10
8. Concentrate on thinking about the baby	1	2	3	4	5	6	7	8	9	10
9. Stay on top of each contraction	1	2	3	4	5	6	7	8	9	10
10. Think positively	1	2	3	4	5	6	7	8	9	10
11. Not think about the pain	1	2	3	4	5	6	7	8	9	10
12. Tell myself that I can do it	1	2	3	4	5	6	7	8	9	10
13. Think about others in my family	1	2	3	4	5	6	7	8	9	10
14. Concentrate on getting through one contraction at a time	1	2	3	4	5	6	7	8	9	10
15. Listen to encouragement from the person helping me	1	2	3	4	5	6	7	8	9	10

Part I - Labor (Continued)

Continue to think about how you imagine labor will be and feel when you are having contractions 5 minutes apart or less. For each behavior, indicate how certain you are of your ability to use the behavior to help you cope with this part of labor by circling a number between 1 - not at all sure and 10 -completely sure.

16. Relax my body	1	2	3	4	5	6	7	8	9	10
17. Get ready for each contraction	1	2	3	4	5	6	7	8	9	10
18. Use breathing during labor contractions	1	2	3	4	5	6	7	8	9	10
19. Keep myself in control	1	2	3	4	5	6	7	8	9	10
20. Think about relaxing	1	2	3	4	5	6	7	8	9	10

21. Concentrate on an object in the room to distract myself	1	2	3	4	5	6	7	8	9	10
22. Keep myself calm	1	2	3	4	5	6	7	8	9	10
23. Concentrate on thinking about the baby	1	2	3	4	5	6	7	8	9	10
24. Stay on top of each contraction	1	2	3	4	5	6	7	8	9	10
25. Think positively	1	2	3	4	5	6	7	8	9	10
26. Not think about the pain	1	2	3	4	5	6	7	8	9	10
27. Tell myself that I can do it	1	2	3	4	5	6	7	8	9	10
28. Think about others in my family	1	2	3	4	5	6	7	8	9	10
29. Concentrate on getting through one contraction at a time	1	2	3	4	5	6	7	8	9	10
30. Listen to encouragement from the person helping me	1	2	3	4	5	6	7	8	9	10

Part II - Birth

Think about how you imagine labor will be and feel when you are pushing your baby out to give birth. For each of the following behaviors, indicate how helpful you feel the behavior could be in helping you cope with this part of labor by circling a number between 1 - not at all helpful and 10 - very helpful.

31. Relax my body	1	2	3	4	5	6	7	8	9	10
32. Get ready for each contraction	1	2	3	4	5	6	7	8	9	10
33. Use breathing during labor contraction	1	2	3	4	5	6	7	8	9	10
34. Keep myself in control	1	2	3	4	5	6	7	8	9	10
35. Think about relaxing	1	2	3	4	5	6	7	8	9	10
36. Concentrate on an objects in the room to distract myself	1	2	3	4	5	6	7	8	9	10
37. Keep myself calm	1	2	3	4	5	6	7	8	9	10
38. Concentrate on thinking about the baby	1	2	3	4	5	6	7	8	9	10
39. Stay on top of each contraction	1	2	3	4	5	6	7	8	9	10
40. Think positively	1	2	3	4	5	6	7	8	9	10
41. Not think about the pain	1	2	3	4	5	6	7	8	9	10
42. Tell myself that I can do it	1	2	3	4	5	6	7	8	9	10
43. Think about others in my family	1	2	3	4	5	6	7	8	9	10
44. Concentrate on getting through one contraction at a time	1	2	3	4	5	6	7	8	9	10
45. Focus on the person helping me in labor	1	2	3	4	5	6	7	8	9	10
46. Listen to encouragement from the person helping me	1	2	3	4	5	6	7	8	9	10

Part II - Birth (Continued)

Continue to think about how you imagine labor will be and feel when you are pushing your baby out to give birth. For each behavior, indicate how certain you are of your ability to use the behavior to help you cope with this part of labor by circling a number between 1, not all sure and 10, completely sure.

47. Relax my body	1	2	3	4	5	6	7	8	9	10
48. Get ready for each contraction	1	2	3	4	5	6	7	8	9	10
49. Use breathing during labor contractions	1	2	3	4	5	6	7	8	9	10
50. Keep myself in control	1	2	3	4	5	6	7	8	9	10
51. Think about relaxing	1	2	3	4	5	6	7	8	9	10
52. Concentrate on an object in the room to distract myself	1	2	3	4	5	6	7	8	9	10
53. Keep myself calm	1	2	3	4	5	6	7	8	9	10
54. Concentrate on thinking about the baby	1	2	3	4	5	6	7	8	9	10
55. Stay on top of each contraction	1	2	3	4	5	6	7	8	9	10
56. Think positively	1	2	3	4	5	6	7	8	9	10
57. Not think about the pain	1	2	3	4	5	6	7	8	9	10
58. Tell myself that I can do it	1	2	3	4	5	6	7	8	9	10
59. Think about others in my family	1	2	3	4	5	6	7	8	9	10
60. Concentrate on getting through one contraction at a time	1	2	3	4	5	6	7	8	9	10
61. Focus on the person helping me in labor	1	2	3	4	5	6	7	8	9	10
62. Listen to encouragement from the person helping me	1	2	3	4	5	6	7	8	9	10

Thank you!

Appendix D

Short Form of the Fear of Pain Questionnaire (FPQ-SF)

INSTRUCTIONS: The items listed below describe painful experiences. Please look at each item and think about how **FEARFUL** you are of experiencing the **PAIN** associated with each item. If you have never experienced the **PAIN** of a particular item, please answer on the basis of how **FEARFUL** you expect you would be if you had such an experience. Circle one number for each item below to rate your **FEAR OF PAIN** in relation to each event.

Not At All	A Little	A Fair Amount	Very Much	Extreme
---------------	----------	------------------	--------------	---------

I FEAR the PAIN associated with:

1. Breaking your arm.	1	2	3	4	5
2. Having a foot doctor remove a wart from your foot with a sharp instrument.	1	2	3	4	5
3. Getting a paper-cut on your finger.	1	2	3	4	5
4. Receiving an injection in your mouth.	1	2	3	4	5
5. Getting strong soap in both your eyes while bathing or showering.	1	2	3	4	5
6. Having someone slam a heavy car door on your hand.	1	2	3	4	5
7. Gulping a hot drink before it has cooled.	1	2	3	4	5
8. Receiving an injection in your hip/buttocks.	1	2	3	4	5
9. Falling down a flight of concrete stairs.	1	2	3	4	5

Appendix E

Anxiety Sensitivity Index- 3 (ASI-3)

INSTRUCTIONS: Circle the one number that best represents the extent to which you agree with the item. If any of the items concern something that is not part of your experience answer on the basis of how you might feel *if you had* such an experience. Otherwise, answer all the items on the basis of your own experience.

		Very Little	A Little	Some	Much	Very Much
1.	It is important for me not to appear nervous.	1	2	3	4	5
2.	When I cannot keep my mind on a task, I worry that I might be going crazy.	1	2	3	4	5
3.	It scares me when my heart beats rapidly.	1	2	3	4	5
4.	When my stomach is upset, I worry that I might be seriously ill.	1	2	3	4	5
5.	It scares me when I am unable to keep my mind on a task.	1	2	3	4	5
6.	When I tremble in the presence of others, I fear what people might think of me.	1	2	3	4	5
7.	When my chest feels tight, I get scared that I won't be able to breathe properly.	1	2	3	4	5
8.	When I feel pain in my chest, I worry that I'm going to have a heart attack.	1	2	3	4	5
9.	I worry that other people will notice my anxiety.	1	2	3	4	5
10.	When I feel "spacey" or spaced out I worry that I may be mentally ill.	1	2	3	4	5
11.	It scares me when I blush in front of people.	1	2	3	4	5
12.	When I notice my heart skipping a beat, I worry that there is something seriously wrong with me.	1	2	3	4	5
13.	When I begin to sweat in a social situation, I fear people will think negatively of me.	1	2	3	4	5
14.	When my thoughts seem to speed up, I worry that I might be going crazy.	1	2	3	4	5
15.	When my throat feels tight, I worry that I could choke to death.	1	2	3	4	5
16.	When I have trouble thinking clearly, I worry that there is something wrong with me.	1	2	3	4	5
17.	I think it would be horrible for me to faint in public.	1	2	3	4	5
18.	When my mind goes blank, I worry there is something terribly wrong with me.	1	2	3	4	5

Appendix F

Center for Epidemiological Studies Depression Scale (CES-D)

Below is a list of some of the ways you may have felt or behaved. Please indicate how often you have felt this way during the past week by checking the appropriate space.

1. I was bothered by things that usually don't bother me.	1	2	3	4
2. I did not feel like eating; my appetite was poor.	1	2	3	4
3. I felt that I could not shake off the blues even with help from my family or friends.	1	2	3	4
4. I felt that I was just as good as other people.	1	2	3	4
5. I had trouble keeping my mind on what I was doing.	1	2	3	4
6. I felt depressed.	1	2	3	4
7. I felt that everything I did was an effort.	1	2	3	4
8. I felt hopeful about the future.	1	2	3	4
9. I thought my life had been a failure.	1	2	3	4
10. I felt fearful.	1	2	3	4
11. My sleep was restless.	1	2	3	4
12. I was happy.	1	2	3	4
13. I talked less than usual.	1	2	3	4
14. I felt lonely.	1	2	3	4
15. People were unfriendly.	1	2	3	4
16. I enjoyed life.	1	2	3	4
17. I had crying spells.	1	2	3	4
18. I felt sad.	1	2	3	4
19. I felt that people disliked me.	1	2	3	4
20. I could not get "going."	1	2	3	4

USE THE FOLLOWING RESPONSE ITEMS:

- 1. Rarely or none of the time (Less than 1 day)**
- 2. Some of a Little of the Time (1-2 days)**
- 3. Occasionally or a Moderate Amount of the Time (3-4 days)**
- 4. Most or All of the Time (5-7 days)**

Appendix G

Fear Questionnaire, Marks & Mathews - Agoraphobia Subscale (FQ-Ag)

ID# _____

Date _____

Choose a number from the scale below to show how much you would avoid each of the situations listed below because of fear or other unpleasant feelings. Then write the number you chose in the space to the left of each situation.

0	1	2	3	4	5	6	7	8
Would not avoid it		Slightly avoid it		Definitely avoid it		Markedly avoid it		Always avoid it

1. Travelling alone by bus or coach.
2. Walking alone in busy streets.
3. Going into crowded shops.
4. Going alone far from home.
5. Large open spaces.

Appendix H

**Psychological Resource Numbers
Huntington Area**

NAME	ADDRESS	PHONE NUMBER	SERVICES
University Psychiatric Assoc.	Hal Greer Blvd Huntington, WV 25701	304-691-1500	Psychiatric Services
Marshall University Psychology Clinic, Huntington Clinic		304-696-2772	Various mental health services
Marshall University Psychology Clinic, Dunbar Clinic		304-766-2674	Various mental health services
Prestera Center for Mental Health Services	University Heights 3375 US Rt. 60 E Huntington, WV 25705	304-525-7851	Variety of Mental Health Services
River Park Hospital	1230 6 th Avenue Huntington, WV 25701	304-535-9105 304-621-COPE	Variety, specialty of addiction
Family Services, Inc.	1304 5 th Avenue Huntington, WV 25701	304-523-9454	Adult Survivors of Sexual Abuse Support
Branches		304-529-2382	Emergency Shelter, Counseling, and Legal Advice
Contact		304-523-3448 304-423-0060 (TDD)	Rape Crisis counseling and referral
Cabell County Prosecutor's Office		304-526-8653	Legal actions
Child Protection Team		304-523-9587	
Pathways	2162 Greenup Avenue Ashland, KY 41101	1-606-324-1141	Various, with addiction
Hanshaw Geriatric Center	St. Mary's School of Nursing 2900 1 st Avenue Huntington, WV 25702	304-526-1500	
WV DHHR		1-800-352-6513	To report child abuse
Time Out Hotline		304-525-4322	Shelter and counseling teen/child

Contact-a-friend		304-523-3448	Children home alone
Hunting Child Center		304-525-5833	Emergency shelter and referrals

Appendix I

Psychological Contact Phone Numbers Monongalia County Area

If you feel that you need immediate help with anxious or otherwise distressing thoughts, we recommend that you use one of the following emergency options: (1) call the appropriate emergency number from the list below, (2) call or visit your family physician or your obstetrician, or (3) visit the nearest emergency room and ask for the mental health professional on call.

Below are some emergency numbers, which may be helpful to you in the case of an emergency:

Valley Comprehensive Community Mental Health Center Emergency Hotline: 1-800-232-0020

Valley Comprehensive Community Mental Health Center in Morgantown: 304-296-1731

Valley Comprehensive Community Mental Health Center in Fairmont: 304-366-7174

Valley Comprehensive Community Mental Health Center in Kingwood: 304-329-1059

Chestnut Ridge Hospital Helpline: 1-800-458-4898

If this is not an emergency, you can call the Quin Curtis Center at the Department of Psychology at West Virginia University for an appointment at 304-293-1002, ext. 4.

Table 1

Participant Demographics

<i>n (%)</i>	
Number of participants	92
Mean age/SD	27.1/5.7 (Range - 18 to 41)
Race/Ethnicity:	
American Indian	0 (0)
Asian	1 (1.1)
African American	2 (2.2)
Hispanic/Latino	0 (0)
White	89 (96.7)
Employed:	
Yes	45 (48.9)
No	44 (47.8)
Declined to answer	3 (3.3)
Income level:	
\$0 - 10,000	31 (33.7)
\$10,001 - 20,000	18 (19.6)
\$20,001 - 35,000.	15 (16.3)
\$35,001 - 50,000.	9 (9.8)
\$50,001 - 75,000.	6 (6.5)
\$75,001 - 100,000.	4 (4.3)
\$100,001+	2 (2.2)

Declined to answer	7 (7.6)
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Education:

Grades 1 - 12	12 (13.0)
Graduated high school	22 (23.9)
GED	12 (12.0)
Some college	17 (18.5)
Graduated college	17 (18.5)
Post graduate year	2 (2.2)
Master's degree	6 (6.5)
Doctoral degree	4 (4.3)

Religion:

No religion	25 (27.2)
Buddhist	1 (1.1)
Christian	62 (67.4)
Jewish	0 (0)
Muslim	1 (1.1)
Declined to answer	3 (3.3)

Current trimester of pregnancy

1 st	11 (12.0)
2 nd	25 (27.2)
3 rd	50 (54.3)
Declined to answer	6 (6.5)

Number (percentage) of participants who had previous births:

Yes	48 (52.2)
No	36 (38.1)
Declined to answer	8 (8.7)

Number (percentage) of births for the 48 participants who had previous births:

1 birth	26 (54.2)
2 births	11 (22.9)
3 births	4 (8.3)
4 births	4 (8.3)
5 births	1 (2.1)
Declined to answer	2 (4.2)

Of the 48 previous births there were:

Vaginal births	32 (66.7)
Cesarean sections	14 (29.2)
Declined to answer	2 (4.2)

Table 2

Descriptive Statistics for CSORQ Items

	Item #	Range	Minimum Value	Maximum Value	Mean	Standard Deviation
Precontemplation	2	5	1	5	3.05	.12
	7	5	1	5	2.48	.12
	10	5	1	5	2.41	.10
	14	5	1	5	2.88	.14
	18	5	1	5	3.25	.14
Contemplation	5	5	1	5	3.22	.12
	9	5	1	5	3.45	.12
	12	5	1	5	3.03	.10
	16	5	1	5	3.65	.11
	19	5	1	5	3.26	.13
Preparation	1	5	1	5	3.97	.11
	3	5	1	5	3.61	.11
	8	5	1	5	3.38	.12
	13	5	1	5	3.23	.13
	17	5	1	5	3.26	.13
Action/Maintenance	4	5	1	5	2.83	.13
	6	5	1	5	3.02	.12
	11	5	1	5	2.78	.13
	15	5	1	5	2.68	.12

20	5	1	5	3.05	.13
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Note. $n = 92$

Table 3

Item Intercorrelations

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1															
2	-.46														
3	.68	-.53													
4	.43	-.38	.42												
5	-.36	.33	-.42	-.25											
6	.52	-.50	.67	.61	-.37										
7	-.37	.55	-.46	-.35	.32	-.44									
8	.59	-.51	.77	.56	-.38	.74	-.53								
9	.60	-.54	.80	.49	-.36	.69	-.50	.84							
10	-.40	.44	-.52	-.24	.39	-.40	.74	-.47	-.46						
11	.48	-.46	.54	.73	-.40	.62	-.41	.61	.60	-.35					
12	-.30	.38	-.32	-.15	.53	-.41	.36	-.39	-.34	.36	-.27				
13	.68	-.59	.77	.45	-.32	.59	-.56	.81	.79	-.53	.60	-.29			
14	-.49	.58	-.62	-.38	.61	-.62	.61	-.59	-.61	.57	-.52	.61	-.51		
15	.43	-.54	.51	.54	-.34	.68	-.41	.55	.49	-.32	.73	-.30	.51	-.58	
16	.59	-.44	.64	.46	-.20	.55	-.41	.68	.66	-.37	.56	-.20	.69	-.48	.62
17	.52	-.51	.71	.48	-.41	.68	-.58	.83	.82	-.46	.63	-.35	.80	-.63	-.51
18	-.50	.55	-.62	-.47	.37	.68	.55	-.66	-.61	.52	-.55	.38	-.62	.68	-.40
19	-.52	.57	.57	-.52	.50	-.67	.51	-.56	-.52	.43	-.60	.38	-.52	.60	.66
20	.55	-.54	-.54	.59	-.36	.79	-.51	.78	.74	-.48	.68	-.35	.77	-.60	.69

	16	17	18	19	20
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17	.62				
18	-.51	-.64			
19	-.40	-.58	.77		
20	.70	.81	-.76	-.66	

Table 4

Item-Subscale Correlations

	CSORQ Subscales			
	Precontemplation	Contemplation	Preparation	Action/Maintenance
Items by Subscale				
Precontemplation				
2	.77**	.13	-.59**	-.56**
7	.84**	.12	-.57**	-.50**
10	.78**	.15	-.54**	-.42**
14	.86**	.32**	-.65**	-.63**
18	.83**	.18	-.69**	-.72**
Contemplation ^a				
5	.50**	.66**/.85**	-.43**	-.40**
9	-.67**	.20/-.52**	.88**	.70**
12	.52**	.56**/.75**	-.38**	-.34**
16	-.55**	.38**/-.34**	.73**	.64**
19	-.55**	.44**/.50**	-.62**	-.62**
Preparation				
1	-.55**	.004	.78**	.56**
3	-.68**	.07	.89**	.67**
8	-.69**	.09	.91**	.76**
13	-.69**	.16	.93**	.68**

17	-.70**	.05	.89**	.74**
Action/Maintenance				
4	-.46**	.00	.53**	.82**
6	-.66**	-.09	.73**	.86**
11	-.57**	-.06	.65**	.88**
15	-.62**	-.15	.59**	.85**
20	-.72**	.01	.83**	.88**

* $p < 0.05$.

** $p < 0.01$.

^aValues for the Contemplation subscale that are to the right of the forward slash are for the revised subscale consisting of items 5, 12, and 19.

Note. $n = 92$.

Table 5

Test/Re-test for CSORQ Subscale using Pearson's Correlations

CSORQ stages	Test			
	Precontemplation	Contemplation	Preparation	Action/ Maintenance
Re-Test	.83**	.79**	-.93**	-.89**

** $p < 0.01$.

Note. Test $n = 92$, Re-Test $n = 66$

Table 6

Pearson's Correlation for CSORQ Subscales with Fear, Anxiety, and Depression Measures

	Measures				
	FPQ-SF	W-DEQ A	ASI-3	CESD	FQ-Agoraphobia
Precontemplation	.10	.20	.14	.13	.05
Contemplation	.18	.22*	.14	.10	-.10
Preparation	-.09	-.26*	-.12	-.12	-.15
Action/Maintenance	-.04	-.21*	-.06	.01	-.02

* $p < 0.05$.

Table 7

Pearson's Correlation for CSORQ Subscales with Childbirth Classes and Self-efficacy

	Childbirth classes		Self-efficacy	
	Took classes with prior pregnancy	Plan to take classes now	CBSEI	Can handle childbirth pain
Precontemplation	-.01	-.18	-.13	-.22*
Contemplation	-.14	.15	-.29**	-.27*
Preparation	.09	.13	.16	.17
Action/Maintenance	.02	.01	.16	.26**

* $p < 0.05$.

** $p < 0.01$.