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The Parental Experience of Pregnancy after Perinatal Loss

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Abstract

Objective—To review the research literature on the parental experience of pregnancy, primarily maternal, subsequent to perinatal loss.

Data Sources—Computerized searches on CINAHL and PubMed databases.

Study Selection—Articles from indexed journals relevant to the objective were reviewed from January 1997 to December 2007. Only research-based studies in English were included.

Data Extraction—The review was performed using the methodology of Whittemore and Knafl (2005). Data were extracted and organized under headings: author/year/setting; purpose; sample; design/instruments; results; and nursing implications for parents during a pregnancy following a perinatal loss.

Data Synthesis—Depression and anxiety are frequently seen in pregnant women subsequent to a perinatal loss. The parental experience is filled with intense and conflicting emotions as parents balance being hopeful while worrying about another potential loss.

Conclusions—It is important for health care providers to evaluate the woman's obstetric history, acknowledge and validate previous perinatal loss, and discuss with her what would be helpful during the prenatal period with respect to the previous perinatal loss.

Keywords

perinatal death; fetal death; infant death; newborn death with subsequent pregnancy

Despite great strides in improving perinatal care, perinatal loss (fetal loss and newborn death) continues to occur in the United States. According to the World Health Organization (WHO), the perinatal period extends from the 20th gestational week through one month post birth. However, researchers who study perinatal loss use a broader definition that includes early (during the first 12 weeks following conception) as well as late fetal loss (greater than 20 weeks' gestation). Of all known pregnancies, an estimated 12 - 20% ends in an early fetal loss (Scotchie & Fritz, 2006). In the United States, late fetal loss occurs at a rate of about 6.4 out of every 1,000 live births (National Center for Health Statistics, 2005). The most recent available data reveal that the rates translate to about 1.03 million annual fetal losses (Ventura, Abma, Mosher, & Henshaw, 2004) and, for 2004, 18,602 newborn deaths (Mathews & MacDorman, 2007).

Of the many parents who suffer a perinatal loss, at least 80% become pregnant again, an event that occurs within 18 months (Cuisinier, Janssen, de Graauw, Bakker, & Hoogduin, Côté-Arsenault, 1996). Therefore, it is important for nurses and health care professionals to understand the impact that a perinatal loss has on a subsequent pregnancy. The purpose of this article is to synthesize the research on parental, primarily maternal, responses to pregnancy subsequent to perinatal loss, and to describe nursing implications for parents during the subsequent pregnancy.

CALLOUT 1

Background

Parents go through a period of grief and mourning after a perinatal loss. Parental mourning is an enduring process that is complex and individual; grief can be severe, complicated, and enduring and show many variations in emotional state over an extended period (Cordell & Thomas, 1997). Mourning can lead to feelings of depression and low self-esteem (Janssen, Cuisinier, Hoogduin, & deGraauw, 1996; Swanson, 1999) and the loss of support from family and friends (deMontigny, Beaudet, & Dumas, 1999; Nansel, Doyle, Frederick, & Zhang, 2005). The parental responses to the loss can extend and impact on a subsequent pregnancy. Parents may begin to question their ability to maintain a pregnancy and successfully carry a child during the timeframe following a loss (Nansel, Doyle, Frederick, & Zhang, 2005). Several investigators have recognized the importance of understanding the impact of a prior loss on a subsequent pregnancy and have focused their programs of research in this area (Armstrong, 2002, 2004; Côté-Arsenault, Bidlack, & Humm, 2001; Côté-Arsenault, Donato, & Earl, 2006; Côté-Arsenault & Morrison-Beedy, 2001).

The care and understanding shown during the time of the loss can influence the parents' grieving process (DiMarco, Renker, Medas, Bertosa, & Goranitis, 2002; Gold, 2007; Säflund, Sjögren, & Wredling, 2004; Trulsson & Rådestad, 2004; Uren & Wastell, 2002). Health care professionals need an understanding of the impact of perinatal loss on subsequent pregnancy so that adequate healthcare may be provided.

Methods for Article Selection

The methodology developed by Whittemore and Knafl (2005) guided this review. Between the years 1997-2007, the CINAHL and PubMed databases were searched using the following key words: perinatal loss; subsequent pregnancy; pregnancy loss; previous pregnancy loss; perinatal death; fetal death; infant death; and newborn death with subsequent pregnancy. All possible combinations of these terms were also used in the search. In addition, the ancestry method was followed to locate additional research articles. Exclusion criteria included: non-research-based articles, language other than English, books, articles that did not address the parental experience of the subsequent pregnancy, and unpublished studies. Initial searching revealed 252 articles; the citations and abstracts were reviewed. Assistance of a medical librarian was used to confirm the adequate use of search terms and phrases to allow for the best retrieval of information.

Following review of citations and abstracts, the initial sample of 252 was decreased to 40 articles. Review of this sample of 40 yielded 17 articles for study inclusion. The 235 articles were excluded for the following reasons: were not primary research studies, did not focus on the parental experience subsequent to a perinatal loss, and published outside the designated time frame.

Callout 1: Of the many parents who suffer a perinatal loss, at least 80% will experience a subsequent pregnancy.

To ensure accurate extraction of data from the articles, the first and second authors completed a separate data collection tool for 30% of the sample. The data collection tool contained the following items: authors and year, title of article, study purpose, study design and setting, conceptual framework, sample characteristics, definition of perinatal loss, independent/dependent variables and measurement level, instruments and their reliability and validity, study limitation, parental responses to pregnancy after perinatal loss, and nursing implications. There was a 96% accuracy rate for the data extracted from the articles, demonstrating acceptable inter-rater reliability.

The 17 articles published between 1997 and 2007 were retained for review. Study designs were either quantitative ($n = 6$) or qualitative ($n = 11$). All of the studies employed convenience samples ranging from 13 to 206 participants, and the participants ranged from 18 to 47 years of age (Table 1).

Results

Specific parental responses, primarily from women, to a perinatal loss and nursing implications are illustrated in Table 1. Overwhelmingly, the studies included mainly Caucasian, married, middle-class women. The following sections present the various parental responses from quantitative studies and themes from qualitative research extracted from the research-based literature.

Parental Responses

Pregnancy anxiety—Six of the studies specifically included pregnancy anxiety as a variable. Increased pregnancy anxiety was the parental response observed in a majority (64.7%, $n = 11$) of the studies. The degree of pregnancy anxiety was higher in women with a history of loss, when compared to women without a history of perinatal loss (Armstrong, 2002). Mothers with a history of perinatal loss had increased levels of pregnancy anxiety, while still having similar levels of optimism about the pregnancy compared with those without a history of loss (Côté-Arsenault, 2003). Pregnancy anxiety was more increased in the pregnancy after the loss when the mother assigned more fetal personhood to the loss (Côté-Arsenault & Dombeck, 2001). Also, pregnancy anxiety was increased if the mother felt that she was in control and responsible for the health of the fetus (Franche & Mikail, 1999). Findings in two studies also demonstrated that pregnancy anxiety was higher in the pregnancy after a loss for mothers compared with fathers (Armstrong, 2002; 2004).

For women with histories of early pregnancy loss, subsequent pregnancy anxiety was more increased in early pregnancy versus late pregnancy (Tsartsara & Johnson, 2006). In a recent study, it was demonstrated that anxiety decreased as the pregnancy advanced (Côté-Arsenault, 2007). Findings from this recent study also demonstrated that mothers viewed the pregnancy loss as a threat, that threat appraisal strongly predicted pregnancy anxiety and that threat appraisal was correlated with assigned fetal personhood and gestational age of past loss (Côté-Arsenault, 2007).

Other statements regarding anxiety during a subsequent pregnancy were reported. For example, in one study primiparae were compared with pregnant women who previously experienced a perinatal loss. Primiparae or women pregnant for the first time showed a decreased level of pregnancy anxiety compared to pregnant women who had experienced a previous perinatal loss (Armstrong & Hutti, 1998). Hughes and others (1999) reported that women had an increase in state anxiety during the third trimester, whether there was a history of loss or not. State anxiety refers to the measurement of anxiety at time of testing as opposed to a general tendency to anxiety (trait).

Prenatal attachment—Another parental response to pregnancy that was described was prenatal attachment to the fetus, but the findings are conflicting. Prenatal attachment was decreased in pregnant women who had experienced a prior loss compared to primiparae (Armstrong & Hutti, 1998). In addition, primiparae had higher levels of prenatal attachment than pregnant women who previously experienced a perinatal loss (Armstrong & Hutti, 1998). However, in a later study, Armstrong (2002) found that the level of prenatal attachment was the same in women with and without a history of perinatal loss. Similarly, Tsartsara and Johnson (2006) reported that prenatal attachment occurred in the third trimester regardless of a history of loss or no loss. Increased pregnancy anxiety has also been reported to possibly lead to decreased prenatal attachment (Armstrong, 2004).

Depressive symptoms and despair—Depressive symptoms were found to be present in pregnancy following perinatal loss (Franche & Mikail, 1999), and depressive symptoms were higher during pregnancy in women who had a history of perinatal loss as compared to women who had not experienced a perinatal loss (Armstrong, 2002). In addition, depressive symptoms were higher in women than men in the pregnancy following a perinatal loss (Armstrong, 2002; 2004). Moreover, depressive symptoms were reported to be higher in the third trimester and the symptoms may be greater in women who conceive less than 12 months after a loss (Hughes et al., 1999). However, in contrast, it is interesting that Franche (2001) found in one sample of Caucasian women that a longer time between loss and conception were associated with difficulty coping and despair.

Qualitative themes—Several *methodologies and* themes were found across the qualitative studies. All of the qualitative studies were conducted by Côté-Arsenault and colleagues. Methodologies used included a focused or mini ethnography in which data were gathered primarily through selected episodes of participant observation, combined with unstructured and partially structured interviews (Côté-Arsenault & Freije, 2004); focus groups and individual interviews (Côté-Arsenault & Marshall, 2000; Côté-Arsenault & Morrison-Beedy, 2001); descriptive, open-ended responses to a self-completed questionnaire (Côté-Arsenault et al., 2001; Côté-Arsenault & Mahlangu, 1999); and a descriptive design with multiple triangulations using face-to-face and telephone interviews (Côté-Arsenault, Donato, & Earl, 2006).

The themes from these studies reflect the experience of parents as they balance being hopeful while worrying about another potential loss, and illustrate the complex emotions that are experienced by parents. For example, Côté-Arsenault and Marshall (2000) identified the subsequent pregnancy experience for women as “having one foot in the pregnancy and one foot out.” Côté-Arsenault and Morrison-Beedy (2001) found that uncertain outcomes and holding back emotions were themes that emerged from their study. Perinatal loss was portrayed as a life-altering event with feelings of vulnerability, worry, fear, and uncertainty about the outcome of subsequent pregnancies. Emerged themes included dealing with uncertainty; daily worries about health of baby; waiting to lose the baby; holding back emotions; acknowledging that the loss happened and can happen again; and changing self, in that losing a baby was an experience that changed their behaviors and sense of self.

Similar themes were found in another study, such as losing another baby, concerns about the overall health of the baby, emotional stability of self, the impact of another loss on her future, lack of support from others, fear of bad news, and worries never end (Côté-Arsenault et al., 2001). Common discomforts and events over time included: fluctuating worry; growing confident; interpreting signs; managing pregnancy; and having dreams (Côté-Arsenault et al., 2006). Other responses included: seeking reassurance; being hyper vigilant; and relying on internal beliefs (Côté-Arsenault et al., 2006).

Some commonalities emerged upon examining the themes. The theme of worry was seen in four studies (Côté-Arsenault et al., 2001; Côté-Arsenault et al., 2006; Côté-Arsenault & Freije, 2004; Côté-Arsenault & Morrison-Beedy, 2001). The theme of having a healthy baby was reported in two studies (Côté-Arsenault et al., 2001; Côté-Arsenault & Morrison-Beedy, 2001). Finally, recognition of a changed reality was the last theme that was identified more than once (Côté-Arsenault & Mahlangu, 1998; Côté-Arsenault & Marshall, 2000; Côté-Arsenault & Morrison-Beedy, 2001). A changed reality meant that the perinatal loss had changed the woman's perspective on pregnancy, and she was in a precarious position.

Post traumatic stress disorders—In a quantitative study, Turton and colleagues (2001) showed that there was an increased risk for the mother to experience post traumatic stress disorder in the pregnancy following a stillbirth. In addition, there was an increase in the presence of post-traumatic stress disorder when there was a short timeframe between the loss and the current pregnancy. The dearth of studies in this area indicate that additional studies are needed before conclusions can be drawn.

Nursing Implications

Evaluation—Investigators recommended a thorough evaluation of the obstetric history which will allow nurses as well as other health care providers to provide the necessary care (Armstrong, 2002; Armstrong & Hutti, 1998; Côté-Arsenault et al., 2001; Côté-Arsenault & Dombeck, 2001). Evaluation of the obstetric history is critical because it alerts nurses to expect and recognize anxiety when the pregnancy is subsequent to a loss (Côté-Arsenault, 2007; Côté-Arsenault & Dombeck, 2001; Côté-Arsenault & Freije, 2004). Referral to appropriate services is also critical and can only be done if this history is first obtained (Armstrong, 2002; Côté-Arsenault et al., 2001; Turton et al., 2001). Evaluation of the parental support system is another essential aspect (Armstrong & Hutti, 1998). An appropriate evaluation will allow health care providers to work with the parents to promote choice in procedures that may be performed in the subsequent pregnancy (Armstrong, 2004; Côté-Arsenault et al., 2001; Côté-Arsenault & Marshall, 2000). One way to promote parental choice would be to ask the parents what would be beneficial to them throughout the pregnancy (Côté-Arsenault et al., 2001; Côté-Arsenault & Marshall, 2000).

Acknowledgement—Another nursing implication recommended by the investigators is that of acknowledgement and understanding by the health care workers. Validating and acknowledging the loss is significant to these women (Armstrong, 2002; Côté-Arsenault & Dombeck, 2001; Côté-Arsenault & Freije, 2004; Côté-Arsenault & Marshall, 2000; Côté-Arsenault & Morrison-Beedy, 2001). Women who have experienced a perinatal loss desire the health care team to understand the emotions that they are experiencing (Armstrong, 2004; Côté-Arsenault & Dombeck, 2001) and to not make light of their concerns during the subsequent pregnancy (Côté-Arsenault & Morrison-Beedy, 2001). Appropriate counseling for the woman concerning her increased concerns is needed (Armstrong & Hutti, 1998), and referral to a mental health professional, preferably one familiar with perinatal mood disorders, is warranted. If the woman appears to be highly self-critical (Franché, 2001).

Encouragement—Encouraging the women to talk and voice their concerns is another vital practice implication described in the research. This approach can be achieved by asking and allowing the women to have discussions about their emotions and feelings during the pregnancy (Armstrong, 2002; Armstrong, 2004; Côté-Arsenault et al., 2001; Côté-Arsenault & Dombeck, 2001). Talking about the loss is essential for these women and should be encouraged (Côté-Arsenault & Marshall, 2000).

More frequent contact with the health care team via increased numbers of visits or phone calls can be advantageous (Côté-Arsenault, 2003; Côté-Arsenault et al., 2006; Côté-Arsenault & Morrison-Beedy, 2001). Support groups or networks can be useful to women after perinatal loss. Referral to these resources should be made (Armstrong & Hutti, 1998; Côté-Arsenault, 2003; Côté-Arsenault et al., 2001; Côté-Arsenault & Freije, 2004).). If support groups are not available or attendance not feasible, the health-care provider can refer to one of the following websites, which offer resources for both those experiencing a loss and for health professionals:

(<http://www.obgyn.net/women/women.asp?page=/women/loss/loss;>
[http://www.marchofdimes.com/pnhec/572_4150.asp;](http://www.marchofdimes.com/pnhec/572_4150.asp) [http://www.plida.org/;](http://www.plida.org/)
[http://www.nationalshareoffice.com/;](http://www.nationalshareoffice.com/) [http://www.bereavementprograms.com/;](http://www.bereavementprograms.com/)
<http://www.missfoundation.org;> www.compassionatefriends.org).

Education—Other nursing implications include helping the woman to decrease the amount of control that she may feel responsible for during the pregnancy (Franché & Mikail, 1999). Providing education regarding pregnancy signs and symptoms is also a vital aspect that must not be forgotten (Côté-Arsenault et al., 2006; Côté-Arsenault & Mahlangu, 1999).

In summary, using the nursing implications previously discussed to decrease anxiety during pregnancy subsequent to loss is critical (Armstrong & Hutti, 1998; Côté-Arsenault, 2007; Franché & Mikail, 1999; Tsartsara & Johnson, 2006).

Discussion

The research demonstrates that a pregnancy after a perinatal loss is a time full of intense emotions for expectant mothers, and according to the limited research, fathers. Clearly, the responses to pregnancy after perinatal loss are constant among Caucasian, married, middle-class women and can be generalized to this particular population. Anxiety and depression for expectant mothers and, to a lesser degree, fathers, are common parental responses cited consistently. This finding is not surprising considering these responses usually occur at the time of the loss and may continue into future pregnancies (Janssen, Cuisinier, Hoogduin, & deGraauw, 1996; Swanson, 1999; Van & Meleis, 2003). Furthermore, these responses can be viewed as a natural response to worrying that this pregnancy will also end in a loss. This is especially prevalent when the reason for the prior loss cannot be fully explained or avoided. The research conducted by Côté-Arsenault and co-workers, as referenced in this article, has offered a better understanding of the complexity of emotions experienced during the pregnancy, which extend beyond anxiety; her recent research offers a beginning understanding of the patterns of emotions and coping strategies.

CALLOUT 2

The research contains some conflicting evidence regarding parental-fetal attachment in the subsequent pregnancy, leaving it yet unclear whether or not attachment is decreased. However, there is evidence to suggest that some mothers seem to show decreased attachment in subsequent pregnancies. These behaviors could serve as a protective and even practical approach women use to deal with the uncertainty of the outcome of their pregnancy. What is unknown and perhaps more significant is to determine the effect of these behaviors on paternal attachment in the newborn period and beyond, especially because earlier and limited research in this area has shown problems with attachment (Heller & Zeanah, 1999) and disrupted parenting (Forrest, Standish, & Baum, 1982; Hunfeld et al., 1997; Phipps, 1985-86) for infants born after a subsequent pregnancy. Investigators in this review have

Callout 2: Anxiety and depression are common maternal responses during pregnancy following a perinatal loss.

noted the importance of future research in this area. It is interesting that in a recent review of maternal-fetal attachment research, Cannella (2005) concluded that there was insufficient evidence to demonstrate a link between maternal-fetal attachment and pregnancy risk variables (medical problems during pregnancy). Furthermore, the research supports that maternal-fetal attachment increases over time. This finding has implications for controlling the timing of the data collection when attachment is measured. Moreover, the response to pregnancy loss, like maternal-fetal attachment, is a complex phenomenon that may not lend itself to traditional methods of measurement.

Implications for Practice

Research should assist practitioners in improving patient care outcomes. Our intent is for this review to serve as a useful way for nurses to incorporate research into their clinical work. The review demonstrated four main practice implications which include: evaluation of obstetric history, acknowledging the loss, encouraging mothers to discuss their concerns, and educating mothers about pregnancy loss. Perhaps the most critical aspect of caring for parents who have had a prior pregnancy loss is to remember that each mother and each partner is different. This means that the nurse should evaluate the needs of each parent individually.

CALLOUT 3

Even though care should be individualized, there are some general practice implications. Evaluation is a critical, but often overlooked aspect of the clinical encounter. Thoroughly exploring a mothers' obstetric history in terms of prior losses, and learning about their personal choices regarding prenatal care can both help facilitate the medical encounter by alerting health-care professionals to potential complications and gives practitioners an entrée into how the mother is coping with her current pregnancy and past loss. This approach requires health care professionals to communicate with the mother by acknowledging and validating her previous losses. Women particularly appreciate when health-care providers acknowledge the loss through an open and honest discussion; therefore, it is important to ask mothers about their previous losses. It is imperative that mothers be given the opportunity to contact the health-care team as often as she needs to. For some it may be additionally supportive to discuss their concerns in a support group setting. Unfortunately, there remains a paucity of research being conducted with fathers who also experience a pregnancy loss. There is even less literature reviewing their needs in terms of subsequent loss. However, there is some evidence to suggest that fathers may also benefit from these interventions.

Limitations

The most limiting factors of this integrated literature review is the small number of studies that met inclusion criteria and the homogenous sample of predominantly women. The sample homogeneity limits the generalizability of the responses and implications beyond married, middle-class Caucasians. The way that investigators defined 'perinatal loss' and outlined inclusion criteria was also inconsistent and therefore a limitation. Specifically, a majority of investigators defined perinatal loss to be any loss during the course of an entire pregnancy, as well as neonatal losses occurring in the first 28 days of life. However, their inclusion criteria for subject recruitment often varied from this definition. Other limitations include that some investigators did not include first trimester loss, while others excluded

Callout 3: Nurses should evaluate the obstetric history, acknowledge and validate previous perinatal loss, encourage women to talk, and personalize care.

neonatal losses. Researchers have not yet studied whether parental responses during a pregnancy subsequent to a pregnancy loss prior to 12 weeks gestation are different from a loss after 24 weeks gestation, or a stillbirth.

Recommendations for Research

Based upon the literature included in this paper, nursing has little to no knowledge about women's responses to pregnancy following a perinatal loss in nearly anyone other than Caucasian, married, middle-class women. Future research should consider including subjects who have been underrepresented in research, such as women of color, who also have a disproportionate incidence of perinatal loss; women without supportive partners; adolescents; women who have gone through unsuccessful infertility treatments; working class/impoverished women; and women with unintended or unwanted pregnancies; as well as men in their study. Recruitment at clinics that serve underrepresented 'clientele, as compared to recruitment via support groups, may be successful in recruiting a diverse background. Furthermore, future research should include all types of perinatal loss. Some studies may be limited to a specific trimester, the neonatal period, or to elective losses. Overall, further research is needed to validate the responses and implications currently reported in the research on pregnancy subsequent to perinatal loss.

Conclusion

Perinatal loss can have devastating effects on the mental health and anxiety of the woman, and possibly the partner. This knowledge is essential to consider not only at the time that the loss occurs, but also throughout any future pregnancies. A narrow segment of the population has been studied regarding women's responses to pregnancy after perinatal loss. Clearly, this lack of knowledge and how best nursing can meet the needs of women necessitates further inquiry. The parental responses and implications identified are important for the health care team to consider, as they strive to provide the most supportive care.

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References

- Armstrong DS. Emotional distress and prenatal attachment in pregnancy after perinatal loss. *Journal of Nursing Scholarship*. 2002; 34(4):393–345.
- Armstrong DS. Impact of prior perinatal loss on subsequent pregnancies. *Journal of Obstetric, Gynecologic, and Neonatal Nursing*. 2004; 33(6):765–773.
- Armstrong D, Hutti M. Pregnancy after perinatal loss: The relationship between anxiety and prenatal attachment. *Journal of Obstetric, Gynecologic, and Neonatal Nursing*. 1998; 27(2):183–189.
- Cannella BL. Maternal-fetal attachment: An integrative review. *Journal of Advanced Nursing*. 2005; 50:60–68. [PubMed: 15788066]
- Cordell AS, Thomas N. Perinatal loss: intensity and duration of emotional recovery. *Omega: journal of death and dying*. 1997; 35(3):297–308.
- Côté-Arsenault D. The influence of perinatal loss on anxiety in multigravidas. *Journal of Obstetric, Gynecologic, and Neonatal Nursing*. 2003; 32(5):623–629.
- Côté-Arsenault D. Threat appraisal, coping, and emotions across pregnancy subsequent to perinatal loss. *Nursing Research*. 2007; 56(2):108–116. [PubMed: 17356441]
- Cote-Arsenault D, Bidlack D, Humm A. Women's emotions and concerns during pregnancy following perinatal loss. *Maternal Child Nursing*. 2001; 26(3):128–134.

- Côté-Arsenault D, Dombeck MB. Maternal assignment of fetal personhood to a previous pregnancy loss: Relationship to anxiety in the current pregnancy. *Health Care for Women International*. 2001; 22(7):649–665. [PubMed: 12141842]
- Côté-Arsenault D, Donato KL, Earl SS. Watching and worrying: Early pregnancy after loss experiences. *MCN: American Journal of Maternal Child Nursing*. 2006; 31(6):356–363.
- Côté-Arsenault D, Freije MM. Support groups helping women through pregnancies after loss. *Western Journal of Nursing Research*. 2004; 26(6):650–670. [PubMed: 15359076]
- Côté-Arsenault D, Mahlangu N. Impact of perinatal loss on the subsequent pregnancy and self: Women's experiences. *Journal of Obstetric, Gynecologic, & Neonatal Nursing*. 1999; 28(3):274–282.
- Côté-Arsenault D, Marshall R. One foot in- One foot out: Weathering the storm of pregnancy after perinatal loss. *Research in Nursing and Health*. 2000; 23(6):473–485. [PubMed: 11130606]
- Côté-Arsenault D, Morrison-Beedy D. Women's voices reflecting changed expectations for pregnancy after perinatal loss. *Journal of Nursing Scholarship*. 2001; 33(3):293–244.
- Cuisinier M, Janssen H, de Graauw C, Bakker S, Hoogduin C. Pregnancy following miscarriage: Course of grief and some determining factors. *Journal of Psychosomatic Obstetrics and Gynecology*. 1996; 17:168–174. [PubMed: 8892163]
- deMontigny F, Beaudet L, Dumas L. A baby has died: The impact of perinatal loss on family social networks. *Journal of Obstetric, Gynecologic, & Neonatal Nursing*. 1999; 28(2):151–156.
- DiMarco M, Renker P, Medas J, Bertosa H, Goranitis JL. Effects of an educational bereavement program on health care professionals' perceptions of perinatal loss. *The Journal of Continuing Education in Nursing*. 2002; 33(4):180–186.
- Forrest C, Standish E, Baum JD. Support after perinatal death: A study of support and counseling after perinatal bereavement. *British Medical Journal*. 1982; 285:1475–1479. [PubMed: 6814610]
- Franché RL. Psychologic and obstetric predictors of couples' grief during pregnancy after a miscarriage or perinatal death. *Obstetrics & Gynecology*. 2001; 97:597–602. [PubMed: 11275034]
- Franché RL, Mikail SF. The impact of perinatal loss on adjustment to subsequent pregnancy. *Social Science and Medicine*. 1999; 48(11):1613–1623. [PubMed: 10400261]
- Gold KJ. Navigating care after a baby dies: A systematic review of parent experiences with health providers. *Journal of Perinatology*. 2007; 27:230–237. [PubMed: 17377604]
- Heller SS, Zeanah CH. Attachment disturbances in infants born subsequent to perinatal loss.: A pilot study. *Infant Mental Health Journal*. 1999; 20:188–199.
- Hughes PM, Turton P, Evans CDH. Stillbirth as a risk factor for depression and anxiety in the subsequent pregnancy: Cohort study. *British Medical Journal*. 1999; 318(7200):1721–1724. [PubMed: 10381705]
- Hunfield JAM, Taselaar-Kloos AKG, Agterberg G, Wladimiroff JW, Passchier J. Trait anxiety, negative emotions, and the mother's adaptation to an infant born subsequent to late pregnancy loss: A case controlled study. *Prenatal Diagnosis*. 1997; 17:843–851. [PubMed: 9316129]
- Janssen HJ, Cuisinier MC, Hoogduin KA, deGraauw KP. Controlled prospective study of the mental health of women following pregnancy loss. *Obstetrical & Gynecological Survey*. 1996; 51(9):512–514.
- Mathews TJ, MacDorman MF. Infant mortality statistics from the 2004 period linked birth/infant death data set. *National Vital Statistics Reports*. 2007 May 2; 55(14):1–32. [PubMed: 17569269]
- Nansel TR, Doyle F, Frederick MM, Zhang J. Quality of life in women undergoing medical treatment for early pregnancy failure. *Journal of Obstetric, Gynecologic, & Neonatal Nursing*. 2005; 34(4):473–481.
- National Center for Health Statistics. *Health, United States, 2005: With chartbook on trends in the health of Americans* (DHHS Publication No 2005-1232). Washington, DC: U.S. Government Printing Office; 2005.
- Phipps S. The subsequent pregnancy after stillbirth: Anticipatory parenthood in the face of uncertainty. *International Journal of Psychiatry in Medicine*. 1985-86; 15:243–267. [PubMed: 4066164]
- Säflund K, Sjögren B, Wredling R. The role of caregivers after a stillbirth: Views and experiences of parents. *Birth*. 2004; 31(2):132–137. [PubMed: 15153133]

- Scotchie JG, Fritz MA. Early pregnancy loss. *Postgraduate Obstetrics and Gynecology*. 2006; 26(9):1–7.
- Swanson KM. Effects of caring, measurement, and time on miscarriage impact and women's well-being. *Nursing Research*. 1999; 48(6):288–298. [PubMed: 10571496]
- Trulsson O, Rådestad I. The silent child: Mothers' experiences before, during, and after stillbirth. *Birth*. 2004; 31(3):189–195. [PubMed: 15330881]
- Tsartsara E, Johnson MP. The impact of miscarriage on women's pregnancy-specific anxiety and feelings of prenatal maternal-fetal attachment during the course of a subsequent pregnancy: An exploratory follow-up study. *Journal of Psychosomatic Obstetrics and Gynecology*. 2006; 27(3): 173–182. [PubMed: 17214452]
- Turton P, Hughes P, Evans CDH, Fainman D. Incidence, correlates and predictors of post-traumatic stress disorder in the pregnancy after stillbirth. *The British Journal of Psychiatry*. 2001; 178:556–560. [PubMed: 11388974]
- Uren TH, Wastell CA. Attachment and meaning-making in perinatal bereavement. *Death Studies*. 2002; 26:279–308. [PubMed: 11980450]
- Van P, Meleis AI. Coping with grief after involuntary pregnancy loss: Perspectives of African American women. *Journal of Obstetric, Gynecologic, and Neonatal Nursing*. 2003; 32(1):28–39.
- Ventura SJ, Abma JC, Mosher WD, Henshaw S. Estimated pregnancy rates for the United States, 1990-2000: An update. *National Vital Statistics Reports*. 2004 June 15; 52(23):1–10. [PubMed: 15224964]
- Whittemore R, Knafl K. The integrative review: updated methodology. *Journal of Advanced Nursing*. 2005; 52(5):546–553. [PubMed: 16268861]

Table 1

Studies of Parental Responses to a Subsequent Pregnancy after a Perinatal Loss

Authors/Year/Location	Purpose	Sample	Design/Instruments	Results	Nursing Implications
Armstrong, 2002, United States	To evaluate the association of previous pregnancy loss with parents' levels of depressive symptoms, pregnancy-specific anxiety, and prenatal attachment in a subsequent pregnancy, and to determine whether higher levels of depressive symptoms and pregnancy-specific anxiety were associated with prenatal attachment	N = 206 (103 couples); Caucasian (90%); married (93%); upper-middle income; most college educated, between ages 18 to 45. Average time at loss was 22.6 (SD = 12.3) wks. The loss group experienced an average of 2 prior perinatal losses. The three groups did not differ by race, marital status, or educational level	Quantitative, three-group comparative design: (1) previous perinatal loss and pregnant; (2) pregnant for first time; (3) prior of successful pregnancy. Cross-sectional survey via in-person and telephone interviews. Prenatal Attachment Inventory, Pregnancy Specific Outcome Questionnaire, The Center of Epidemiologic Studies – Depression Scale. Data collected between 16 and 32 weeks of pregnancy.	Parents with a loss history had more depressive symptoms than parents in their first pregnancy; mothers had more depressive symptoms than fathers. Pregnancy specific anxiety was higher in mothers, as well as in the loss group. Prenatal attachment did not differ among the groups, but mothers demonstrated higher attachment in all groups.	Good evaluation of prior pregnancy history; support and referral as appropriate; allow parents to discuss the feelings that they are experiencing with this pregnancy; validate the previous loss; understand that mothers and fathers grieve differently.
Armstrong, 2004, United States	To evaluate the influence of perinatal loss on depression, pregnancy related anxiety, and prenatal attachment, for parents in a subsequent pregnancy.	N = 80 (40 couples); Caucasian (95%); married (95%); upper-middle income; mean education and age, 16.1 (SD = 2.1) and 32.6 (SD = 4.6), respectively. Gestation at loss- average 22.6 wks; mean loss = 2, range = 1-7; 60% had no living children.	Quantitative, cross-sectional survey via telephone interview. The Impact of Event Scale; The Center for Epidemiologic Studies-Depression Scale; The Pregnancy Outcome Questionnaire; The Prenatal Attachment Inventory. Data collected between 15 and 32 weeks of pregnancy.	Mothers reported higher levels of depressive symptoms and increased anxiety during current pregnancy compared to fathers. Mothers (45%) and fathers (23%) had a high risk for depression. Mothers (88%) and fathers (90%) scored in the high-stress range for continuing stress related to prior perinatal loss.	Evaluate prior obstetric history; support and referral as needed. Be aware of differences in mothers' and fathers' grieving experience; understand the emotions that parents may experience; promote parental choice in procedures that may be introduced in the subsequent pregnancy. Allow parents to freely discuss the feelings that may be associated with the previous loss.
Armstrong & Hutti, 1998, United States	To examine the relationship between anxiety related concerns about the pregnancy and the development of prenatal attachment between mothers who had experienced a perinatal loss and those pregnant for the first time.	N = 31 expectant mothers; mean age 29 years; mean education 15 years; 68% employed; 66% income > \$45,000. All but one was married; 68% of pregnancies were planned. When the groups were separated, the loss group was older, more educated, less likely to work, had a higher income and were more likely to have planned the pregnancy than the non-loss group.	Quantitative, comparative descriptive design (1) 15 primiparae; (2) 16 experienced previous perinatal loss. Mailed questionnaires received after description of study in-person or via telephone. The Center for Epidemiologic Studies-Depression Scale; The Pregnancy Specific Outcome Questionnaire; The Prenatal Attachment Inventory. Data collected between 16 and 32 weeks of pregnancy.	Women with previous loss had higher levels of anxiety related to concerns about pregnancy and decreased prenatal attachment in current pregnancy. First time mothers showed decreased anxiety compared with the loss group, as well as a higher level of prenatal attachment.	Counsel on increased concerns regarding the pregnancy. Evaluate previous pregnancy experiences and concerns; assess support systems. Encourage participation in support groups. More frequent prenatal visits.
Côté-Arsenault, 2003, United States	To compare multigravid women with and without	N = 170 women; Caucasian (91%); married (93%); mid-high income; mean age 32.8 years;	Quantitative, comparative descriptive, cross-sectional; two groups based on history of	Women who had previous losses demonstrated more pregnancy anxiety compared with those	Increased anxiety leads to a desire for more contact with the health care providers (both visits and by

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	history of perinatal loss on state anxiety, pregnancy anxiety, and optimism.	mean education 15.1 years; 74 women with a loss, 96 without a loss; loss occurred at mean gestational age of 10.4 wks but ranged from 2 wks gestation to neonatal death at 2 days of age.	pregnancy loss, Spielberger's State Anxiety Scale; the Life Orientation Test. Data were collected between 17 and 28 weeks gestation.	without a loss; no group differences on demographic variables, state anxiety, or optimism; pregnancy anxiety was correlated with desire to see care provider more often and number of phone calls between visits, and was not correlated with number of living children.	phone); encourage more contact if helpful to patient; refer to support groups.
Côté-Asenault, 2007, United States	To test the theoretical model of coping, stress, and emotions stated by Lazarus. To examine the patterns of threat appraisal, coping, and emotional states of women across pregnancy after perinatal loss.	N = 82 women; Caucasian (88%); age range 20-42, mostly married or partnered; average 2 years college, median income \$60,000-79,000 annually. Mean number of pregnancies, 4.3; average gestation at loss, 11.1 wks; mean living children, 1; mean yrs since loss, 2.3.	Quantitative, longitudinal, predictive, correlational study. Data were collected at three time points (10 wks gestation, 20-25 wks, and 30-35 wks) via in-person or telephone and mail, depending on location. Moneyham Threat Index; Ways of Coping Checklist/ revised; Pregnancy Anxiety Scale; Multiple Affect Adjective Checklist/ revised; Stress in Life Scale.	Threat appraisal was correlated with assigned fetal personhood and gestation age of past loss. Pregnancy loss was perceived as a threat, and threat appraisal strongly predicted pregnancy anxiety. Pregnancy anxiety decreased over time; threat appraisal, coping, and other emotions were stable across pregnancy. Coping did not mediate these effects but relative coping was correlated with emotional status with problem focused coping used more than emotion focused coping.	Anxiety should be expected and addressed throughout pregnancies subsequent to perinatal loss. Past losses should not be ignored.
Cote-Asenault, Bidlack, & Humm, 2001, United States	To determine the primary emotions and concerns of women who are pregnant after a perinatal loss.	N = 73 women; Caucasian (89%); age range 25 to 47, college educated (51%); mean income, \$60,000-\$79,000. Only 17 were pregnant at survey completion; range of 1-9 losses/ person.	Qualitative, mailed questionnaire using an open response format with a self-addressed return envelope.	Most frequent emotions reported were: "anxious," "nervous," "scared." Concerns identified: "losing another baby," "health of the baby," "fear of bad news," "emotional stability of self," "impact of another loss on my future," "worries never end," women also include a positive emotions, indicating the mixed emotions of the pregnancy experience.	Complete history-taking with sensitivity is essential; discuss procedures to determine her response to having a sonogram, amniocentesis, etc.; ask what would be helpful and supportive for her and her family during this pregnancy; avoid assumptions. Provide lists of support groups; refer to mental health providers as appropriate.
Côté-Asenault & Dombek, 2001, United States	To examine the relationship between state and pregnancy anxiety and maternal assignment of personhood to a fetus lost in a previous pregnancy.	N = 74 women; Caucasian (95%); married (95%); age range 19 to 44; mean of 15 yrs of education; 2/3 with income ≥ \$40,000, participants had 1-2 losses; 59.5% had a loss within last 3 yrs. All women were between 17 and 29 weeks gestation.	Quantitative, descriptive survey, Spielberger's State-Trait Anxiety Inventory; Pregnancy Anxiety Scale; Fetal Personhood Scale.	Women do apply some level of personhood to their pregnancy loss, and level of personhood increased with gestational age at the time of loss. Higher personhood correlated with higher anxiety in the subsequent pregnancy.	Ask about previous losses and how they are feeling in the current pregnancy. Acknowledge their losses as appropriate. Recognize their current level of anxiety.
Côté-Asenault, Donato, & Earl, 2006, United States	To describe the pregnancy experience to 25 wks gestation in women who had previously experienced a	N = 82 women; Caucasian (98%); married (72%); age ranged 20-42 yrs; education ranged 10-21 yrs; mode income, \$60,000-\$79,000. History of 1-7 losses per woman ranging fro	Qualitative, longitudinal (starting at between 10 and 17 weeks until 25 weeks gestation), descriptive with multiple triangulations. Contact occurred via	Themes identified were: Fluctuating worry, growing confident, interpreting signs, managing pregnancy, and having dreams. Other responses included: seeking reassurance, being hyper	Recognize that many documented symptoms and events are normal for a pregnant woman after a perinatal loss. Frequent calls and visits are the most common means of comfort to manage the anxieties

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	pregnancy loss, and to explore changes in common discomforts and events over time.	3.5 to 40.5 wks gestation; 69% had at least 1 living child.	telephone or personal meetings at an agreed upon location.	vigilant, and relying on internal beliefs.	of pregnancy; thus, frequent visits should be offered if desired. Education regarding pregnancy signs is important to these women, so that they can interpret what is going on with their pregnancy.
Côté-Arsenault & Freijé, 2004, United States	To explore the impact of pregnancy after loss support groups (why they are needed, how structured and functioned, and why these groups are helpful).	Group size varied from meeting to meeting, mostly women (range of 2 to 13); Caucasian (90%); married (94.5%); mean age 35, range 21-47 yrs; mode of education, 16.5 yrs; mean income, \$60,000-\$79,000. 38.4% had no living children and not all were pregnant.	Qualitative, ethnography. Two established pregnancy after loss support groups : one in Midwest, one in Northwest.	Being a member of a PAL (pregnancy after loss) group enabled members to learn new coping skills, advocate for themselves, and deal with daily uncertainties.	Refer families to available support groups or consider starting a support group. Nurses and other providers must acknowledge the loss and understand the anxiety in subsequent pregnancies.
Côté-Arsenault & Mahlangu, 1999, United States	To gain insight into the experience of pregnancy after perinatal loss.	N = 72 women; primarily white, middle class, well-educated; age range 19-44; experienced 1-2 losses.	Qualitative, descriptive, open-ended responses to a self-completed questionnaire. Data were collected between 17 and 28 wks gestation	Pregnancy anxiety was a common theme; their sense of self was affected by the loss; mothers described a fear of dates and milestones in the pregnancy subsequent to loss and expressed concerns about how to get through the current pregnancy; kin and friendship network provided emotional support.	Supportive care should be provided following a perinatal loss, as the loss stays with the women and can impact them in the future. Pregnancy progress should be clearly discussed.
Côté-Arsenault & Marshall, 2000, United States	To gain insights into women's pregnancy after perinatal loss experiences, including major feature and helpful provider responses.	N = 13 women; Caucasian (85%); married (100%); high school education (100%); age range, 24-42; range of income, \$10,000-\$100,000; 1-3 losses per person. Some were pregnant at various gestational ages and some completed their pregnancies between 9 months and 3 years prior.	Qualitative, three separate focus groups and two individual interviews.	The overall theme for the maternal response to the pregnancies was one foot in-one foot out. Women lived within contexts of; reliving the past, balancing the present, living with wavering expectations, and recognizing my changed reality. Seven themes characterized their navigation of the pregnancy; setting the stage, weathering the storm, gauging where I am, honoring each baby, expecting the worst, supporting me where I am, and realizing how I've changed. Trying to stay balanced is the major challenge.	Acknowledge pregnancy losses; allow women to tell story. Listen. Encourage participation in the care. Do not presume what support is needed; ask what is needed or would be helpful.
Côté-Arsenault & Morrison-Beedy, 2001, United States	To describe women's experience of pregnancy after perinatal loss and	N = 21 women; Caucasian (95%); married (86%); education, 12-19 yrs; age 27-60 yrs; income \$20,000-120,000; 1-7 losses per person. 1-34 yrs since the loss, and currently	Qualitative, cross-sectional, interpretive,	Perinatal loss portrayed as a life-altering event with feelings of vulnerability, worry, fear, and uncertainty about the outcome of subsequent pregnancies. Emerged themes: dealing with uncertainty, daily worries about health of baby, waiting to lose the baby, holding back emotions, acknowledging	Acknowledge and talk about the loss with the patient. Encourage to call and/or visit office for reassurance as needed. Do not make light of pregnancy concerns;

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Frache, 2001, Canada	To determine if the long-term effects of loss.	pregnant to more than 20 years since last pregnancy.	phenomenological approach using focus groups.	that the loss happened and can happen again and changing self.	do not tell them that everything will be okay.
	To determine if the psychologic constructs of self-criticism and marital adjustment, considered jointly with obstetric and demographic factors, are significant predictors of grief during a pregnancy after a miscarriage or perinatal death.	N = 60 pregnant women between week 10-19 gestation with a prior loss; 50 of their partners. Caucasian (100%); married 81%; age 19-40 for women, 24-46 yrs for men. Education, 51% had university training; income $\geq$ \$40,000 (72%); 1-12 losses/woman;	Quantitative, cross-sectional survey. Perinatal Grief Scale; Depressive Experiences Questionnaire-Self-criticism subscale; Abbreviated Dyadic Adjustment Scale.	For women, active grief was associated with high self-criticism and later losses. Later losses and longer time between loss and conception were associated with difficulty coping and despair. In men, active grief was associated with high self-criticism and later losses, difficulty coping and despair with high self-criticism. Poor marital adjustment was associated with higher levels of difficulty coping and despair in men.	Assess woman's typical level of self-criticism by asking if she blames herself for things that happen; refer to a mental health professional if woman appears to be highly self-critical.
Frache & Mikail, 1999, Canada	To compare the emotional adjustment of pregnant couples with and without a history of previous loss.	N = 62, 31 mothers/28 fathers with a loss, 31 mothers/23 fathers with no loss; Caucasian (91%); married (86%); age range 19-40 yrs for mothers; education range 9-18 yrs; income > Can \$40,000 for 80%. 61% of loss group had at least 2 losses. Women were between 10 and 24 weeks gestation.	Quantitative, cross-sectional survey. Pregnancy Outcome Questionnaire; Fetal Health Locus of Control Scale; Beck Depression Inventory; Depressive Experiences Questionnaire; Abbreviated Dyadic Adjustment Scale; Spielberger's State-Trait Anxiety Inventory.	For the group with previous loss, depressive symptomatology was significantly associated with self-criticism, interpersonal dependency, and number of losses. Anxiety was higher in men and women after a previous loss compared to no loss group. Women who felt in control of their fetal health had higher levels of anxiety in pregnancy.	Attend to signs of anxiety in early stages of pregnancy. Help to reduce feelings of maternal control over fetal health, as appropriate.
Hughes, Turton, & Evans, 1999, United Kingdom	To assess women's symptoms of depression and anxiety during pregnancy and the postpartum year in pregnancy after stillbirth; to assess relevance of time since loss.	N = 106 women, 53 matched pairs: pregnant women with loss and without loss; Caucasian (39 pairs); mean age, loss group, 30 (20-46) yrs, control group, 29 (20-43) yrs. All participants had no living children. Time since loss to conception varied from 1-180 mo.	Quantitative, cohort with four data collection times: 3 rd trimester, 6 wks, 6 mo, 12 mo after birth. Edinburgh postnatal depression scale, Beck depression inventory, Spielberger state-trait anxiety scale.	Women with loss had significantly higher levels of depression and state anxiety in 3 rd trimester than controls. Women who conceived within 12 mo after loss had significantly higher risk of high state anxiety during next pregnancy and of depression and both state and trait anxiety 12 mo postpartum than women with longer time since loss.	Following a loss, some women may need a year to mourn the lost child before beginning another pregnancy; there may be some benefit to waiting $\geq$ 12 mo until next conception.
Tsatsara & Johnson, 2006, United Kingdom	To study the specific implications of miscarriage on subsequent pregnancy. To determine if adverse effects of a previous miscarriage are present at both early and late gestations of a subsequent pregnancy. To determine if these adverse effects	N = 35 expectant mothers, 10 with a history of miscarriage; married (69%); age range 19-44 yrs, mean = 30.4 yrs; 57% childless.	Quantitative, longitudinal, descriptive survey with data collection at: 1 st trimester, 3 rd trimester. Pregnancy Outcome Questionnaire; Maternal Antenatal Attachment Scale; Demographic/Reproductive History Questionnaire.	Anxiety in pregnancy after loss is higher in early than late pregnancy. Women without any children also have higher pregnancy concerns, even with no history of loss. Women reported maternal fetal attachment in the 3 rd trimester, regardless of loss history.	Explore the impact of miscarriage in women pregnant after perinatal loss.

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Turton, Hughes, Evans, & Fainman, 2001, United Kingdom	<p>override the effects of other reproductive history variables.</p> <p>To assess incidence, correlates and predictors of PTSD during and after the pregnancy following stillbirth.</p>	<p>N = 66 women; Caucasian (62%); age range, 20-46, mean, 29.7 yrs; 62% had a stillborn infant. Six reported previous mental illness. Women were in their 3rd trimester of pregnancy.</p>	<p>Quantitative, cohort study; interviewer-rated demographic questionnaire, Edinburgh Postnatal Depression Scale, Beck Depression Inventory, Spielberger State-Trait Inventory, PTSD-I interview.</p>	<p>Levels of PTSD are higher in women pregnant after stillbirth. A short timeframe between the loss and the current pregnancy increased the risk of PTSD. Perceived insufficient support or uncertain support from partner and from family were related to PTSD.</p>	<p>Encourage and support women who may be in need of psychological help during their pregnancy and after birth. There may be an advantage to waiting at least 12 month after a loss prior to a subsequent pregnancy.</p>