

PRENATAL CARE EDUCATION

Prenatal Care Education for Women Experiencing Unplanned Pregnancy

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Abstract

This project suggested that the Prenatal Care Education Module (PCEM), a series of three brief videos lasting a total of ten minutes, may be an effective way to educate women experiencing an unplanned pregnancy about the importance of prenatal care for themselves and their babies. To assess the effect of the PCEM, the Brief Pregnancy Perception Questionnaire (B-PPQ), a tool adapted from the Brief Illness Perception Questionnaire (B-IPQ) (Broadbent, Petrie, Main & Weinman, 2006) was employed. The B-PPQ assessed participants' health care needs, their understanding of pregnancy, their emotional response to pregnancy, and current contact with a prenatal health care provider. Participants were asked to complete the B-PPQ before and after viewing the PCEM. The items for BPPQ had a Cronbach's alpha coefficient (α) of 0.77, indicating acceptable reliability. Results of B-PPQ scores before and after viewing the PCEM intervention were analyzed for differences. Out of eight participants, three women met the eligibility criteria. Changes in response to the B-PPQ after viewing the PCEM were noted. Due to the small sample size, however, these changes could not be generalized to all women with an unplanned pregnancy. The B-PPQ may be useful to assess a woman's emotional response to pregnancy and as a screening tool for indication of maternal prenatal depression. *Keywords:* prenatal care, prenatal care education, accessibility, Prenatal Care Education Module (PCEM), Brief Pregnancy Perception Questionnaire (B-PPQ).

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Prenatal Care Education for Women Experiencing Unplanned Pregnancy

Although prenatal care early in pregnancy is very important to the health of mother and baby, if a pregnancy is unplanned, many women delay seeking care out of fear or denial (Exavery, et al., 2013; Quelopana, Champion, & Salazar, 2009). Alternatively, they may turn to other sources of support, such as family and friends, and cling to these support systems if they do not see value in seeking care through a provider (Gray, 2014). They may also face barriers, such as lack of transportation or childcare for younger children to attend prenatal care visits (Fobelets, et al., 2015; Hajizadeh, et al., 2016; Sunil, Spears, Hook, Castillo, & Torres, 2010).

This project focused on the population who may access services at a pregnancy center in a metropolitan suburb of Michigan. This pregnancy center is a faith-based organization that assists individuals facing an unplanned or crisis pregnancy. It offers free pregnancy testing, ultrasounds, testing for sexually transmitted diseases and many other support services related to mothers and babies. The project was intended to reach those who came to the pregnancy center, had their pregnancy confirmed, had questions regarding their pregnancy, and were seeking assistance with finding a prenatal care provider. From personal observation and conversations with the pregnancy director and his staff, those who seek pregnancy center services to confirm pregnancies come from a wide variety of ethnicities and socioeconomic levels. Currently, it is estimated that they serve approximately 150 clients per month, many of whom are low income.

Novick (2009) provided insights into six areas of women's experience of prenatal care in an integrative review. Six topics of prenatal care emerged: (1) incentives/barriers, (2) prenatal care setting, (3) time, (4) components of care, (5) relationships with staff and clinicians, and (6) receipt of information. Women identified several features as being present and/or occurring during care.

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They also voiced their perceptions, reactions, and preferences regarding these features. The findings of this review collectively suggested that women's experiences of prenatal care were varied. Some articles indicated that psychosocial services, group support, and coordination of care were identified as valuable when provided. Although women valued continuity of care and standardized information, these were not consistently provided. Some studies indicated women experienced hurried visits and long waits. Many findings indicated women valued relationships with staff and clinicians and felt these features to be critically important in their care. The pregnancy center staff excelled at promoting a welcoming environment, characterized by relaxed visits with scheduled appointment times.

This project anticipated that the Prenatal Care Education Module (PCEM), the Brief Pregnancy Perception Questionnaire (B-PPQ) and contact with the author would provide an effective way to engage women experiencing unplanned pregnancy who want to know more about their pregnancy and may need assistance in finding a provider to begin prenatal care. Furthermore, it was expected that women who viewed the PCEM would indicate they made an appointment with a healthcare provider for prenatal care. This was assessed through the B-PPQ, a tool adapted with the Dr. Broadbent's permission, from the Brief Illness Perception Questionnaire (B-IPQ, Broadbent, et al., 2006). The B-PPQ concluded by asking participants to list in order the three most important things they wanted to know about their pregnancy and to indicate whether they had a prenatal care provider. The participants were encouraged to provide their contact information for follow-up. Despite the project lead's best efforts to analyze web traffic to the pregnancy center website prior to launching the survey, to maintain consistent contact with the volunteer coordinator, and to advertise the program by placing postcards

promoting the PCEM in client packets at the front desk and in the ultrasound room, only three participants responded.

Participants' responses to the B-PPQ and the proportion of participants who made an appointment with a health care provider for prenatal care were tracked. The results were compared to county/zip code level historical data available to the public for prenatal care during the 1st trimester to evaluate the effectiveness of the program.

Background of the Problem

Infant Mortality Rate (IMR) is an indicator of overall health for a country, state or community. The two leading causes of infant mortality are congenital malformations and short gestation characterized by preterm delivery and low birth weight (Reproductive Health, 2017). The Centers for Disease Control (CDC) provides the most recent statistics on the infant mortality rate (IMR) for the US as well as individual states. According to 2013-2015 data provided by the Michigan Department of Community Health (Appendices B, C, D, E,& F) and cited by Murphy, et al., (2015) Michigan's IMR is 6.8 infant deaths per 1,000 live births. Michigan and Oakland County have a slightly higher infant mortality rate than the Healthy People 2020 (HP 2020) benchmark of six deaths per 1,000 live births (Michigan Department of Health and Human Services, 2020) (Appendices C & D). The DNP project was posted on the website of a pregnancy center located in Oakland County Michigan. The IMR for Oakland County was 6.0 from 2013-2015 (Appendix C), and the IMR for the city where the pregnancy center is located during the same period was 8.5 (Appendix D).

According to the CDC, infant mortality occurs when a baby dies before its first birthday (National Center for Chronic Disease Prevention and Health Promotion, 2017). IMR is significant because it is often an indicator of the health of a community. The many factors that

affect the health of residents also affect the health of infants born within the community. In addition, there are significant differences in infant mortality rates among ethnicities. For example, in 2015, the IMR for Blacks and Non-Hispanics combined was 11.5 per 1,000 live births compared to 4.9 per 1,000 live births for Whites and Non-Hispanics (CDC, 2017; Mathews & Driscoll, 2017). It is possible that differences in IMR may be due to differences in socioeconomic status rather than differences among the ethnicities; however, information from this study was not adequate to draw such conclusions.

There are significant benefits to mother, baby, and society when pregnancy results in the delivery of a full-term, healthy infant. To promote maternal and infant health, HP 2020 outlined National Health Promotion and Disease Prevention Objectives for the Prenatal Period. One of these objectives is to increase the proportion of pregnant women who receive early and adequate care to 77.6% from its current rate of 70.5% (U.S. Department of Health and Human Services, 2010). Other objectives include 1) reducing the rate of fetal deaths at 20 or more weeks of gestation to no more than 5.6 deaths per 1,000 live births by 2020 from the 2005 rate of 6.2 per 1,000 live births, and 2) reducing the rate of fetal and infant deaths during the perinatal period (28 weeks gestation to 7 days after birth) to no more than 5.9 perinatal deaths per 1,000 live births from the rate of 6.6 per 1,000 live births. These statistics indicate the importance and potential impact that prenatal care can have on pregnancy (U.S. Department of Health and Human Services, 2010).

Although these statistics highlight the intention of increasing the number of women who receive early and adequate prenatal care, the struggle is to understand why women do not make prenatal care appointments. Other areas to contemplate include whether women understand the purpose of what is done in a prenatal visit, where women look for information about their

pregnancy, and whether women think prenatal care is important. A literature review was undertaken with these and other topics in mind.

Dooley and Ringler (2012) examined the degree to which prenatal care was important and identified the attributes that make it important. The authors cited The Institute of Medicine's (1985) recommendation that all women be enrolled in prenatal care to reduce the likelihood of delivering a low birth weight infant. This recommendation influenced changes that ultimately broadened Medicaid coverage to low-income pregnant women. Although these changes presented an opportunity for more women to access prenatal care, African American women and those who are less educated continue to be underserved. Some barriers to accessing care are socio-demographic, such as language, education, and mental status while other barriers include discrepant attitudes and beliefs about the importance of prenatal care, stressful life events, and distance to and availability of prenatal care providers.

In a similar way, Meghea, You, and Roman (2015) examined the efficacy of the Maternal Infant Health Program (MIHP) in reducing infant mortality risk. Results indicated that babies who were part of MIHP were less likely to die within the first year of life than babies who were not part of the program. The Prenatal Care Education Module (PCEM) includes three brief videos that support the intention of MIHP and provides information about what happens during a prenatal visit, aspects of self-care during pregnancy, support during childbirth, breastfeeding, and community resources. The B-PPQ tool can indicate participant response to PCEM and data can be shared with MIHP and other programs with similar aims of engaging women in prenatal care and promoting infant survival in the first year of life.

Purpose of Project

Currently, when a woman's pregnancy is diagnosed, the pregnancy center encourages prenatal care. There are no obstetric or family care physicians at the pregnancy center. Although the center provides childbirth classes and breastfeeding support, the director of the center identified a gap in educational support services for those in early pregnancy also known as the prenatal period.

The purpose of this project was to present the intervention of Prenatal Care Education Module (PCEM) on the pregnancy center website and use the Brief Pregnancy Perception Questionnaire (B-PPQ) to track responses before and after viewing the PCEM. The B-PPQ also provided information about participant contact with a health care provider and indicated three areas about which they desired more information regarding pregnancy. The pregnancy center agreed to provide a link to the PCEM on its website. This project proposed that the use of the PCEM, the B-PPQ, and personal contact with the author would increase participants' understanding of the importance of prenatal care, assess how they were reacting to their pregnancy, and facilitate participants' contact with a prenatal care provider

Significance of Project

This DNP quality improvement project involved the development, implementation, and evaluation of the PCEM, tracking the results of the B-PPQ, the number of participants who made an appointment with a prenatal care provider, and the number of participants who contacted the author to discuss the three most important things they wanted to know about pregnancy. The premise was that any significant health event, whether an illness such as diabetes or unexpected pregnancy, brings an initial state of anxiety and vulnerability as the woman tries to grasp the impact of her health event (Alvarenga & Frizzo, 2017; Broadbent 2015). This vulnerable state

provides an opportunity to educate (Bödecs, Horváth, Szilágyi, Németh, & Sándor, 2011). The PCEM was used to provide participants with information about 1) the importance of prenatal care, 2) how to stay healthy during pregnancy, 3) tips for breastfeeding, 4) information about care immediately after birth, 5) well baby care, and 6) community resources. Further, the PCEM and the B-PPQ offered an efficient method to address and assess the health needs of women who are newly pregnant and access the pregnancy center's website. The online format provided an accessible format for those with Internet access and for those who lacked transportation to the pregnancy center. The online format was considered practical for women with younger children who may not have childcare, a situation that would prohibit them from viewing the PCEM at the pregnancy center. Further, it was thought that online prenatal education classes could provide support during the time between the initial confirmation of pregnancy and preparation for labor and delivery.

Problem Statement

The general problem addressed by this DNP project was the need for accessible prenatal care education. Specifically, the pregnancy center identified a need for prenatal care education for its clients. The director and other staff members indicated that clients do not understand the purpose of prenatal care.

Initially, because of this expressed need, a basic prenatal care education class was developed by the author and advertised through flyers placed at the pregnancy center. This class provided basic information about the role and nature of a prenatal visit. For example, there was a brief discussion of blood pressure and why blood pressure was assessed during a prenatal visit as well as why a urine test was done. To garner attendance and to demonstrate the importance of healthy eating, participants were offered homemade soup. In addition, regular phone calls were

made to 10 to 15 women in early pregnancy, encouraging them and reminding them to come and discuss what they wanted to know about prenatal care. These methods were met with minimal success. The class was held once a month for four months. One person came to the first class, two people came to the second class, one person came to third class, and no one attended the fourth and final presentation of the class.

The results of these monthly class offerings were discussed with the director, volunteer coordinator, support staff, and social media team of the pregnancy center. Over the course of several conversations and meetings, the idea of a prenatal care education module was discussed. This module would be available for staff use and could support the mission of the pregnancy center by providing information about prenatal care for women as the pregnancy center did not provide prenatal or postnatal care. The information in the PCEM would cover the following areas:

1. Importance of seeking a prenatal care provider as soon as possible
2. Tips for a healthy pregnancy
3. Brief information on childbirth
4. Basic breastfeeding information
5. Information on safe sleep position for infants
6. Resources for prenatal care providers

The pregnancy center media support staff person suggested that its website could display a link to the prenatal care education module (PCEM). Two volunteer counselors suggested that putting the class on an Internet platform such as a YouTube channel may provide another viable way to reach mothers. Such an online platform could provide information about the basic elements of what a prenatal visit consisted of as well as various other aspects of prenatal health

care including physical activity and diet. To assess its efficacy, the project lead would need to track number of views and use an evaluation instrument to gauge participant response.

In summary, low client turn out for the face-to-face prenatal care education classes and the ability to utilize the Internet to inform women about prenatal care led to developing the online PCEM and posting it on the pregnancy center website. Placing the PCEM online made it accessible to those with a computer or phone. Traffic to the pregnancy center website was reviewed with the media specialist and thought sufficient to yield a reliable sample population. It was anticipated that this option may make it easier for those with small children to learn about prenatal care in their home settings instead of trying to find childcare to attend a face-to-face class. Also, the online method of learning was thought to be more familiar to younger clients and support could be provided earlier in the pregnancy.

Theoretical Framework

Four theoretical frameworks inform this project. The role of education as identified within the theory of Representational Approach (RA) (Donavan & Ward, 2001; Donovan et al., 2007; Glantz, Burke, & Rimer, 2015) is to supplement what an individual already knows about an issue. The Motivation-Facilitation Theory of Prenatal Care Access (Phillippi & Roman, 2013) emphasizes the importance of determining factors that motivate a client to seek prenatal care, knowledge that will allow the care provider to direct interventions to serve that client's pregnancy needs. In the context of pregnancy, Leventhal's self-regulatory model directs the care provider to the woman's emotional response to her pregnancy, a condition that can affect her behavior. Nola Pender's Health Promotion Model (Pender, 1996; Glanz, et al., 2015) further emphasizes that a woman's previous life experiences influence the way she perceives a health issue like pregnancy, a perception that also may affect her behavior. This theory encourages the

care provider to fully explore the client's perception of a health issue and how it may affect the client's behavior. The relationship between these frameworks is represented within Figure 1.

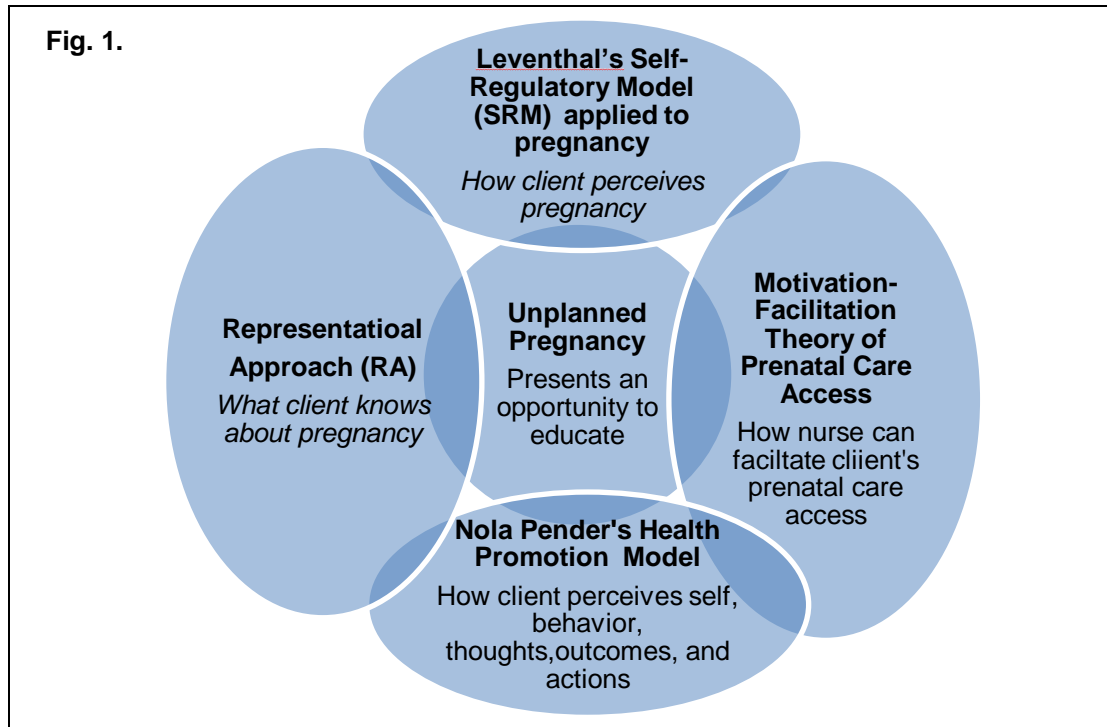


Figure 1. Theoretical Frameworks Influencing Unplanned Pregnancy. This figure represents the theoretical frameworks influencing a woman's response to an unplanned pregnancy. (Leventhal, Meyer, & Nerenz, 1980; Jessop et. al., 2014; Pender, 1996; Phillippi & Roman, 2009).

RA is a person-centered intervention theory that combines existing health psychology and educational theory to specific psycho-educational interventions and uses Leventhal's (Leventhal, et. al., 1980) common-sense model of illness (CSM) to focus on current knowledge regarding a health issue. RA requires the health care provider to understand the patient's baseline knowledge, so new information can be presented in ways that can be understood and acted upon by the individual (Donavan & Ward, 2001; Donavan, et al., 2007; & Glantz, et al., 2015). The elements of RA and the connection with the PCEM were as follows:

- **Representational Assessment:** Information regarding the nature of a prenatal visit, physical activity and diet during pregnancy, elements of childbirth, changes that occur immediately after birth for mother and child, breastfeeding, newborn baby care, and emergency signs were discussed in the PCEM.
- **Exploring knowledge and concerns or any gaps:** The B-PPQ (Appendix H) explored the mother's knowledge and concerns regarding her pregnancy and included space for the mother to state the three most important things she wants to know about her pregnancy.
- **Creating conditions for conceptual change:** The PCEM consisted of three videos that were 2-4 minutes in length. The B-PPQ consisted of 12 to 15 questions with space for participants to list the three most important things they wanted to know about their pregnancy. Both provided fertile ground for revision of subject matter and refinement of the PCEM module and the B-PPQ instrument. Participants were also asked to indicate their ethnicity and zip code for statistical purposes.
- **Introducing new information:** Information provided in the prenatal care education modules may or may not have been new to the participants. Areas assessed in the B-PPQ may reveal opportunities to introduce new information.
- **Setting goals and developing managing strategies:** Information provided within the Prenatal Care Education Module (PCEM) may have inspired participants to set health goals and develop self-care techniques throughout their pregnancy, during childbirth, while breastfeeding and providing safe care for their newborn.

The Motivation-Facilitation Theory of Prenatal Care Access (Phillippi & Roman, 2009) combines factors that comprise a woman's decision to enter prenatal care on two elements: motivation and facilitation. Motivation has been the most cited reason that women fail to start

prenatal care (Phillippi & Roman, 2009). All other areas of access to care are consolidated into facilitation, which can enhance a woman's ability to enter and maintain prenatal care.

This middle-range theory was used as a guide for the incorporation of evidence-based change in the way prenatal care education is provided. While a mother's motivation is primary to the initiation of care, the theory focuses on how clinicians like nurses can facilitate access to care. The interventions of the B-PPQ, the PCEM and the availability of the author to the client for follow-up as suggested in this proposal was anticipated to motivate and facilitate women's decision to seek an appointment with a prenatal care provider.

Leventhal's self-regulatory model (SRM) has been studied for use in pregnancy and supported the choice of the B-PPQ and PCEM for this project. For example, Jessop, Craig, and Ayers (2014) examined whether women's beliefs about and response to pregnancy could influence the mother's mental and physical health outcomes. Similarly, the B-PPQ asks specific questions about how the pregnancy affects the participant such as "How much does this pregnancy affect you emotionally?" "How much does this pregnancy affect you positively?" and "How much does this pregnancy affect you negatively?"

The SRM contends that when individuals are confronted with a health threat or illness, they incorporate the experience both mentally and emotionally. They contemplate their experience and form a mental and emotional response to it. These mental and emotional responses influence how individuals will cope with the health threat or illness. Although pregnancy is not conventionally viewed as a health threat or illness, when the pregnancy is unplanned or unexpected, it may cause mental and emotional responses like an unexpected health threat. When women are informed that their pregnancy test is positive, and they were not trying to become pregnant, the impact of this news can cause mental and emotional responses

that influence coping responses. The coping responses generated by the confirmation of an unexpected pregnancy have pivotal influence on physical, psychological and behavioral outcomes. The way in which a woman initially reacts to the confirmation of an unplanned pregnancy has the potential to be modified so the response can focus on promoting healthy mental and physical behaviors when exposed to self-regulating habits (Jessop et al., 2014).

Nola Pender's Health Promotion Model (Pender, 1996) has its foundation in Bandura's (1977) Social Learning Theory (Glanz, et al., 2015) which purports that what a person thinks affects their behavior. Pender's theory is also influenced by Fishbein's (1967) Theory of Reasoned Action which maintains that a person's attitude and social setting affects behavior. Pender's model (Pender, 1996) includes the following three categories, which support this project:

- Individual characteristics: Each person has his/her own unique personality and experience. Pender's model suggests that previous health behaviors have direct and indirect influence on future health behaviors. The perception of self, benefits, and barriers or emotions all influence an individual's health choices. When the B-PPQ is completed, the client's responses can present a picture of his/her view of a recent and possibly unexpected diagnosis of pregnancy.
- Behavior specific thoughts and affect: People can change their thoughts to change their behaviors. This can happen when a person reflects on the benefits of an action, the barriers to the action and the benefits of the action to self, and the effect the action can yield. It was anticipated that participants would complete the B-PPQ and view the Prenatal Care Education Model (PCEM). Further, the project leader expected participants' replies to the B-PPQ after viewing the PCEM to indicate a change from

their previous responses because of exposure to the information in the PCEM. When the B-PPQ is completed, personal contact with the author could promote discussion of the client's responses to the questionnaire.

- Behavioral outcomes: An individual's commitment to change affects their desire to change and can be affected by many factors. Therefore, the Prenatal Care Education Module (PCEM) presented health behaviors and information that may encourage further health promoting activities related to pregnancy.

The B-PPQ tool assesses the client's perception of their pregnancy, which can reveal areas open to health promoting behaviors. The B-PPQ tool assesses the client's perception of their pregnancy, which can reveal areas open to promoting health promoting behaviors.

Questions from the B-PPQ that assess opportunities for healthy habits include the following:

1. How much control do you feel you have over your pregnancy?
2. How important is prenatal care to your pregnancy?
3. How concerned are you about your pregnancy?
4. How well do you feel you understand your pregnancy?
5. List in order the three most important things you want to know about your pregnancy

The Prenatal Care Education Module (PCEM) presents health behaviors and information that may encourage further health promoting activities related to pregnancy

Definition of Terms

The following definitions were used to guide this project:

- *Antenatal/Prenatal care*: A type of preventive healthcare. This healthcare consists of regular check-ups that allow doctors or midwives to treat and prevent potential health

problems throughout the course of pregnancy while promoting healthy lifestyles that benefit both mother and child (Novick, 2009).

- *Prenatal care education* (PNCE): Providing information about prenatal care, including regularly scheduled visits to a prenatal care provider to assess the health status of the mother and baby (Novick, 2009).
- *Healthy People 2020* (HP 2020): Science-based, 10-year national objectives for improving the health of all Americans.
- *B-PPQ*: Brief Pregnancy Perception Questionnaire adapted with permission from the Brief Illness Perception Questionnaire (B-IPQ) developed by Dr. Elizabeth Broadbent (2006).

The B-PPQ seeks to assess women's perception of and response to their pregnancy. The B-PPQ concludes by asking participants to list in order the three most important things they want to know about their pregnancy. It also queries whether they have a prenatal care provider.

Review of Literature

This literature review provides a summary of the evidence derived from previous theoretical and empirical studies found from 1998 to 2017 which searched for the following key words: prenatal care, prenatal care education, pregnancy centers, unplanned pregnancy, the effects of prenatal care on women's health, nurse navigators in pregnancy, social support in unplanned pregnancy and the use of the Internet as a source of information during pregnancy. The total number of studies found in each keyword search was as follows: prenatal care (31), prenatal care education (10), pregnancy centers (15), unplanned pregnancy (30), effects of unplanned pregnancy on women's health (5), nurse navigators in pregnancy(2), social support in unplanned pregnancy (10), and the use of the Internet as a source of information during

pregnancy (14). Inclusion criteria were studies that addressed prenatal care education in unplanned pregnancy, social support in unplanned pregnancy, use of the Internet during pregnancy, and pregnancy intention, maternal behaviors, and infant outcomes. Exclusion criteria were studies of prenatal care in planned pregnancy. Through the use of these inclusion and exclusion criteria, a total of 25 studies emerged with the following themes related to prenatal care: (1) health literacy, (2) purpose of prenatal care, (3) impact of prenatal care, (4) client's understanding of prenatal care, (5) prenatal care and incidence of preterm birth, (6) clients' attendance at prenatal care, (7) social support in unplanned pregnancy, (8) use of Internet noted among first time mother's as source of pregnancy information, (9) incidence of unplanned pregnancy in U. S. and (10) unintended pregnancy and prenatal care. The strategies to obtain research that addressed these themes employed the use of Jacksonville University Swisher Library and searches of AHRQ, EBSCO, CINAHL and OVID databases. The services of a research librarian were utilized in the initial literature review of tools that evaluated the effectiveness of prenatal care education. This literature review included health communication and the Internet use beginning with seminal works and progressing into current studies (Cassell, Jackson, & Cheuvront, 1998; Brouwer, et al., 2009; Ledford, Canzona, Cafferty, & Hodge, 2016) as well as the factors that influence the decision to use Internet-delivered health interventions for information during pregnancy (Brouwer, et al., 2009, Fleming, Vandermause and Shaw, 2014).

Prenatal Care

The importance of prenatal care has been noted in several studies (Dooley & Ringler, 2012; Serçekuş & Mete, 2010). Some studies examined such issues as accessibility, availability, and acceptability of prenatal care (Kearns, Caglia, ten Hoope-Bender, Langer, 2015; Novick, 2009). Others investigated the efficacy of various screening tools (Benzies, Barker, Churchill,

Smith, & Horn, 2016; Fernández y Fernández-Arroyo, 2014; Hui Choi, et al., 2012; Records & Hanko, 2016; Serçekuş & Mete, 2010).

When Novick (2009) conducted an integrated review that provided insight into women's experiences of prenatal care, she identified six topics of prenatal care: 1) incentives/barriers, 2) prenatal care setting, 3) time, 4) components of care, 5) relationships with staff and clinicians, and 6) receipt of information. The summary themes identified topics women reported as being present and/or occurring during care. In addition, the women's perceptions, reactions, and preferences regarding the features that were present during their care were also noted. The findings of this review collectively suggested that women's experiences of prenatal care were varied. Novick (2009) reviewed additional research articles indicating that psychosocial services, group support, and coordination of care were important. Continuity of care and consistent information, however, was not always provided. Some studies indicated hurried visits and long waits. Many findings indicated the importance of relationships with staff and clinicians to be critically important.

Quelopana, Champion, and Salazar (2009) explored factors that could predict the initiation of prenatal care for Mexican woman. Structured interviews collected demographics, reproductive history, current pregnancy status, perceptions of benefits and barriers to prenatal care, negative attitudes towards pregnancy, and social support. Results indicated those with a higher education level, those living with partner, and those who anticipated that prenatal care was beneficial were more likely to initiate prenatal care early. Perception of barriers such as lack of transportation to a prenatal care provider and lack of childcare for small children during visits affected early initiation of prenatal care.

These studies highlight some of barriers to and factors involved in initiating prenatal care. These issues were considered in the development, presentation of and evaluation of this online prenatal care education program. It was therefore anticipated the online PCEM intervention would decrease the physical barriers such as lack of transportation because many women access electronic devices such as cell phones with connection to the Internet.

Prenatal Care and Unintended, Unplanned Pregnancy

The number of unplanned, unintended pregnancies is one indicator of a community's health. Finer and Zolna (2014) reviewed shifts in the rates of intended and unintended pregnancies in the U.S. from 2001-2008 and found that of the nearly 6.6 million pregnancies occurring in 2008, 51% were unintended. A fact sheet from the Guttmacher Institute (2016) indicated that in 2011, there were 45 unintended pregnancies for every 1,000 women ages 15-44 and the rate of unintended pregnancy was significantly higher in the U.S. than in many other countries. It was also noted that there were demographic disparities. For example, for black women, the rate of unintended pregnancy was 79 per 1,000 live births. This is more than double that of non- Hispanic white women (33 per 1,000). These disparities persist in the outcomes of unintended pregnancies too. For example, 42% of unintended pregnancy, excluding miscarriages, ended in abortion, and 58% ended in birth. In 2008, 40% ended in abortion and 60% ended in birth.

Kost and Lindberg (2015) investigated unintended child bearing and its effects on maternal and child health. They looked at whether maternal behaviors and birth outcomes differ by pregnancy intentions. In their study, they noted that the rate of unintended pregnancy has remained at 54 per 1,000 for women ages 15-44 from 1981 and 2008 (Finer & Zolna, 2014; Henshaw, 1998). They reviewed data from the U.S National Survey of Family Growth to

investigate the idea that unintended pregnancy had a significant negative impact on the mothers and the health of their infants because this premise has an influence on public health policy. Although their study did not reveal a definitive confirmation of this idea, it was noted that unplanned or unwanted pregnancies were less likely than planned births to be recognized early in the pregnancy, to receive prenatal care or the infant to be breast fed. Also, unwanted births were more likely to yield low birth weight infants.

A nurse navigator, a nurse who has a specialized area of expertise, can assist a mother through various aspect of pregnancy from prenatal care to labor and delivery. Austad and colleagues (2017) suggested that a nurse navigator was important to assist women in their pregnancy and promote respectful care while in the hospital setting. The PCEM supports these ideas and features a nurse with a kind voice providing information in a relaxed setting. She discusses the importance women actively maintaining their health and asking questions about various aspects of their care such as the results of their blood pressure check, what their urine specimen revealed, and other tests done during a prenatal care appointment.

The research noted within the preceding paragraphs regarding prenatal care and unplanned pregnancy supports the goal of this project. The B-PPQ touches on many aspects of pregnancy. It is an important tool that can facilitate an assessment of a woman's view of pregnancy and address areas that are of concern such her understanding of and emotional response to pregnancy.

Depression, Social Support, Parenting and Unplanned Pregnancy

Abajobir, Maravilla, Alati, and Najman (2016) reviewed studies on pregnancy and depression. In this meta-analysis, several studies revealed a significant association between unintended pregnancy and depression. This association highlights the importance of screening

for depression early in pregnancy. The B-PPQ addresses participants' emotional reactions to the unplanned pregnancy, which can be an indicator of depression and point to the need for further assessment.

Gray (2016) found that family and friends provided a network pivotal to the support of women in an unplanned pregnancy. Strong social support from significant others was linked to lower levels of maternal depression in the prenatal and postpartum periods. Social support can also promote positive mother-infant interactions. The videos in the PCEM emphasize the importance of the presence of a significant other throughout pregnancy and childbirth.

Claridge, Lettenberger-Klein, and VanDonge (2017) studied pregnancy intention and positive parenting behaviors among first-time teen mothers and examined demographic characteristics as modifiers of the association between intention to become pregnant and behavior as parents. Unintended pregnancy was associated with fewer positive parenting characteristics. Those with less education were less likely to display affirmative parenting skills.

Studies that examined support and unplanned pregnancy validated the importance of social connections. The PCEM emphasizes the importance of support during childbirth and the Brief Pregnancy Perception Questionnaire (B-PPQ) looks at participants' emotional response to pregnancy. Participants can reach out for support if they choose to supply their personal e-mail address or cell phone number. The author can make follow up calls to discuss various questions and concerns the participants may have.

Effects of Prenatal Care on Women's Health

Yan (2017) reviewed the effects of prenatal care utilization on maternal health and health behaviors and found that mothers benefitted from prenatal care in many ways. Early onset of care as well as number of prenatal visits had a significant impact on the health of the mother and

child. This study provides support for the emphasis of prenatal care early in the pregnancy which is promoted in the PCEM module. Nicoloro-Santabarbara and colleagues (2016) suggested that a care provider's frequent contact with women during their pregnancy can influence a woman's emotions and health behavior which in turn supports health in the mother. The health benefits effects of a positive mental outlook can also influence a mother's labor and delivery.

Prenatal Care at Community Health Centers

Kania-Richmond and colleagues (2017) researched the impact of implementing a Centering Pregnancy (CP) program (Centering Healthcare Institute, 2009-2018) at a community health center. The aim of this project was to use of semi-structured interviews to capture the perceptions of staff on workload related to the implementation of the CP program. The results indicated that communication with staff about their responsibilities in relation to the CP program was imperative to its successful implementation. Kapka (2013) reviewed the impact of the Healthy Beginnings program at a Midwest hospital. Healthy Beginnings provided education, support and links to community resources to single, uninsured teenage women to encourage a healthy lifestyle and healthy delivery. For those who participated in the program, the project leader noted a significant increase in the number of babies born after 37 weeks and that these infants weighed more and were longer than those that did not participant in the program.

The results of these studies are important to recognize. The pregnancy center serves the needs of women of childbearing age and is in a low-income area. The author involved the staff at the pregnancy center to discuss the PCEM module and the B-PPQ and how the project supported the pregnancy center's program needs. Clear communication regarding the PCEM and its congruence with the pregnancy center's mission to its client programs was critical to integration of the PCEM and the B-PPQ. The PCEM resembled Healthy Beginnings as it provided education

about healthy lifestyle choices throughout the pregnancy and many community resources. It was anticipated those who participated in the PCEM would realize the importance of prenatal care as part of a healthy pregnancy and the delivery of a healthy baby.

Prenatal Care, Adaptation, and Screening Tools

Serçekuş and Mete (2010) investigated antenatal care on maternal adaptation in the prenatal and postpartum period. Roy's adaptation model was utilized in developing lessons for prenatal and postpartum mothers. Roy's theory suggests that adaptive responses are those that promote the integrity of the human system whereas non-adaptive reactions do not serve this purpose (Roy, 2009). The findings suggest that Roy's theory provides a basis for enhancing adaptation during the prenatal period. This study utilized the Prenatal Self-Evaluation Questionnaire (PSEQ) to indicate the degree of maternal adaptation. It consisted of 79 items on a four-point Likert scale ranging from 1 'not at all' to 4 'very much so.' The total score for the scale ranges from 79 to 316, with lower scores showing positive maternal adaptation. It was revealed that women who were offered individual and group education had lower scores on the PSEQ than those in the control group, showing that education had a positive impact on maternal adaptation.

Benzies, Barker, Churchill, Smith, and Horn (2016) provided an evaluation of UpStart Parent Survey – Prenatal for the following characteristics: reliability and validity, sensitivity to change over time, differences in results between mothers and fathers, and whether results differed when using an electronic tablet versus a paper survey. The evaluation found evidence of reliability, validity, and sensitivity to change over time. There were no differences between the mothers' and fathers' scores in the parenting knowledge and parenting experience scales in post-test responses. No differences in parenting knowledge or experience scores were observed

whether electronic or paper survey formats were utilized. This study concluded that the UpStart Parent Survey-Prenatal may be useful and timely in assessing the impact of brief prenatal education programs. These findings indicate the Upstart Parent Survey-Prenatal was evaluated to assess program outcomes. In a similar way, the B-PPQ was employed to evaluate the effect of the PCEM on participants' understanding of their pregnancy.

Records and Hanko (2016) provided information on the adaptation of the Screening, Brief Intervention, and Referral to Treatment Model (SBIRT). This screening tool was initially developed by the Substance Abuse and Mental Health Services Administration to help identify the appropriate level of services needed based on the patient's risk level. This tool was expanded to include screening, intervention, and brief referral for major health deviations during pregnancy. This tool is important when meeting with clients during prenatal care education classes. This study demonstrates an example of adapting and expanding a tool for pregnancy. Again, in a similar way, the adaptation of the Brief Illness Perception Questionnaire (B-IPQ) for use in pregnancy resulted in the creation of the Brief Pregnancy Perception Questionnaire (B-PPQ).

Fernández y Fernández-Arroyo (2014) assessed the quality of educational sessions provided in the third trimester of pregnancy as part of a parenting program for the Spanish National Health System in Madrid using EDUM2. The EDUM2 was developed by Dr. Matilde Fernández y Fernández-Arroyo, validated in Spanish and was comprised of 56 variables. SPSS was utilized to analyze the descriptive statistics and results indicated that the educational sessions had high functionality, high effectiveness in teaching and methodology as well as high learning effectiveness. Further results indicated a positive impact on maternal bonding with baby. Dr. Fernández y Fernández-Arroyo granted the author permission to adapt and use

elements of the EDMU2. However, as this tool's reliability had not been validated in English, EDUM2 was not utilized for this project.

Hui Choi and colleagues (2012) investigated the relationships between prenatal psychosocial adaptation, social support, uncertainty, adaptation to motherhood, demographics, self-efficacy, and commitment to pregnancy. A self-reported questionnaire consisting of several measurements derived from an integrated framework of the Life Transition Theory and Theory of Uncertainty in Illness was utilized and included an ongoing psychosocial assessment. All areas studied were fluid and subject to change so regular reassessment was imperative. The authors indicated that the sheer volume of screening tools needed to assess various areas of psychosocial adaptation affected by motherhood may be intimidating for the clients to complete. The results indicated that positive psychosocial adaptation to pregnancy was associated with greater social support, higher self-sufficiency, a greater commitment to the pregnancy and less uncertainty.

Tanner-Smith, Steinka-Fry, and Gesell (2013) looked at differences in gestational weight gain for similar women in Centering Pregnancy (CP) classes (Centering Healthcare Institute, 2009-2018) versus traditional prenatal classes. Results indicated that in the CP group, prenatal care may be effective in decreasing the proportion of mothers with excessive gestational weight. Excessive weight gain can be detrimental to the mother and the developing fetus.

While all the above studies have considerable merit, the Brief Illness Perception Questionnaire (B-IPQ) was the instrument chosen for its simplicity in presentation of subject areas to evaluate participant response to content presented in Prenatal Care Education Modules (PCEM). The Brief Pregnancy Perception Questionnaire (B-PPO) was created using similar subject areas and adapted to fit pregnancy concerns. Permission to adapt the B-IPQ was obtained

via e-mail correspondence with the creator of the B-IPQ, Dr. Elizabeth Broadbent (personal communication).

Prenatal Care and Health Literacy

Mottl-Santiago, Fox, Pecci, and Iverson (2013) researched health literacy and the impact of providing prenatal care information to a diverse population in Boston. “Hey Mama” was designed and developed in cooperation with various health care and literacy specialists. Its emphasis was the delivery of prenatal health care information in plain language to meet the needs of clients served in a large metropolitan health care center in Boston. The PCEM was written and designed using plain language to be read and understood by wide variety of people with various literacy levels. It is currently common practice to present material at a 5th grade reading level and this literacy level was considered in the development and delivery of the PCEM.

Prenatal Care Education Delivery Methods

Mauriello, Van Marter, Umanzor, Castle, and de Aguiar (2016) looked at a prenatal care behavior change intervention, Healthy Pregnancy: Step by Step, delivered via I-pad. The study was based on the Transtheoretical Model of Behavior Change and the interventions looked at several behavior risks. Women in the group that used the I-pad reported a significantly lower number of behavior risks. Ledford and colleagues (2016) compared the delivery of prenatal care education with a virtual mobile app to information provided through a paper notebook guide. The results indicated that those patients with the mobile app were more likely to use the device than those who had a physical notebook to record their visits. Patients who were distributed the mobile application developed greater collaboration and interaction with their care providers than patients who were provided notebooks. The investigators found that mobile apps can enhance

patient care, not replace it and these findings were considered in the formation of the online prenatal care education course program.

Brouwer and colleagues (2009) investigated factors that motivate people to visit and use an Internet-delivered behavior-change intervention. The results of their study indicated that a person needs to be motivated to change and this motivation is ignited if their curiosity is heightened by the suggested intervention. They found that visual appeal, number of questions to complete and steps to registration were all important factors that hindered or enhanced visits to a behavior intervention course site. The results of this study were considered in the design of the prenatal care education program.

Cassell and colleagues (1998) examined health communication on the Internet and asked whether the Internet was an effective medium for motivating a change in health behaviors. Their research resulted in a proposed theoretical rationale that supported the use of the Internet for encouraging public health interventions and concluded the Internet was viable method for promoting health behavior change. Prenatal care promotes healthy behaviors and thus this study is supportive of the concept of presenting prenatal care education classes online. In addition to these studies, the literature search included a review of sources of information utilized by women during pregnancy to answer their health care questions. This included the use of the Internet to access web-based prenatal care education programs during pregnancy and the implications of this educational format for delivery of perinatal care. Grimes, Forster, and Newton (2014) reviewed the sources of information used by pregnant women to meet their information needs. Surveys were sent to 752 women who were four months postpartum and 352 returned the surveys; 240 women preferred discussion with the midwife; 154 of the women used the Internet to access information and only eight women preferred group information. The model of care was

important: those who had a midwife during their pregnancy preferred discussing their concerns with their midwife, while those who received care from a doctor or antenatal clinic sought the Internet as their source of information. The Brief Pregnancy Perception Questionnaire (B-PPQ) presented in conjunction with the Prenatal Care Module (PCEM) offered the opportunity for participants to contact the author to discuss pregnancy concerns.

Studies done in the U.S., China, and Sweden also reviewed the use of the internet by women during pregnancy. Fleming, Vandermause and Shaw (2014) reviewed the use of the internet and mobile phone technology by first-time mothers and found that technology such as videos in conjunction with access to provider and hospital websites primary to prenatal care education. Urrutia and colleagues (2015) described pregnant women's use of computer technologies such as computers and mobile phones in a southern United States population. A convenience sample of pregnant women completed an in-person survey as they waited for an ultrasound at a university-based tertiary care center in North Carolina. One hundred women agreed to participate and pregnant women in the study reported broad access to the Internet through computers and mobile phones. The study acknowledged that some non-white women and as well as women with one or more children in the home may have less access to the Internet than white women with no children at home. Access to and use of the Internet was high across all groups. The authors concluded that the integration of web-based educational interventions during pregnancy and the postpartum periods may lead to improved maternal and newborn outcomes. This type of access for women may allow health care providers an opportunity to provide ongoing care between prenatal visits. The B-PPQ presented in conjunction with the PCEM encouraged early contact with a healthcare provider and presented an opportunity for participants to contact the author to discuss pregnancy concerns.

Bjelke, Martinsson, Lendahls, and Oscarsson (2016) studied antenatal care among 193 Swedish women using a questionnaire to discover their Internet use for obtaining information about their pregnancy. In their descriptive cross-sectional study, 95% of the women used the Internet as their source of information for pregnancy information. Many women experienced anxiety over reading some information on the Internet. They coped with this anxiety by talking with their partner, relatives, or friends or by asking a midwife at their next appointment. Considering these findings and because the Brief Pregnancy Perception Questionnaire (B-PPQ) presented in conjunction with the Prenatal Care Module (PCEM) provides an opportunity for participants to contact the author to discuss pregnancy concerns, participant anxiety may be reduced.

Gao, Larsson, and Luo (2013) looked at Internet use by Chinese women seeking pregnancy related information using a descriptive cross-sectional design with a waiting-room questionnaire given to women who attended an antenatal clinic in a general hospital in Guangzhou, mainland China. Participants were 335 women, 91% of whom had access to the Internet and 88% used it to retrieve health information from the beginning of their pregnancy. Fetal development and nutrition were the topics of most interest and more than half of the women regarded the online information as reliable. The content veracity was judged by whether the information was consistent with other resources and by whether references were provided. The authors concluded that the Internet was a common source of information for Chinese women like women in western countries. Healthcare providers should be able to guide pregnant women to evidence and web-based information and then take the opportunity to discuss the findings during care opportunities. The PCEM and the B-PPQ offer education to women and the opportunity to discuss their concerns with the author.

Kellams and colleagues (2016) examined whether a low-cost prenatal education video would improve the hospital rates of breastfeeding initiation and exclusivity in a low-income population. In this study, 522 low-income women were randomized during a prenatal care visit during the third trimester to view an education video on either breastfeeding or prenatal nutrition and exercise. The results of the study suggested that exposure to the intervention did not affect breastfeeding initiation rates or duration during the hospital stay and that an educational breastfeeding video alone is ineffective in improving the hospital breastfeeding practices of low-income women. This study did not mention whether the participants had access to the authors to discuss any question or concerns they may have had regarding breastfeeding. The PCEM and the B-PPQ provide an opportunity for participants to discuss concerns they may have about their pregnancy.

Finally, Kulkarni, Wright, and Kingdom (2014) measured the effect of a web-based educational tool on baseline knowledge of risks and benefits of delivery by Cesarean section in healthy, non-pregnant women. The authors developed a web-based educational tool to provide evidence-based information on the potential benefits and risks of a Cesarean section for first time mothers. Eligible women logged into a website and took a pre-test survey and were given access to the educational tool followed by a link to a second survey. There were 73 participants that completed both surveys. The mean score for knowledge of vaginal delivery and Cesarean section increased significantly between surveys. No change was noted in preference mode of delivery between the two surveys. In both surveys, many participants responded that they were a “little fearful” or “not fearful at all” of vaginal deliveries. In the second survey, significantly more responded that they were “very fearful” or “fearful” of a Cesarean section ($P < 0.05$). Increased knowledge about risks of vaginal delivery did not affect participant’s preferences for a

vaginal delivery. In contrast, knowledge of risks associated with Cesarean section made participants more likely to have “very favorable” or “somewhat favorable” views of vaginal deliveries. These results indicated that the tool was useful in assessing the impact of education about both Cesarean section and vaginal delivery.

This project followed the format used by Kulkarni, Wright, and Kingdom (2014) with the presentation of the Brief-Perception of Pregnancy Questionnaire (B-PPQ), access to the videos in the Prenatal Care Education Module (PCEM), and then retaking of the B-PPQ. It is anticipated that after viewing the PCEM, the second B-PPQ may show a change in response to the following questions:

- How much control do you feel you have over your pregnancy?
- How important is prenatal care to you for this pregnancy?
- How concerned are you about your pregnancy?
- How well do you feel you understand your pregnancy?
- List in order the three most important things you want to know about your pregnancy

All the studies support the idea of presenting information and providing education programs using various avenues of electronic media. Further, the noted studies suggest various factors to consider in the development and presentation of the proposed Prenatal Care Education Module (PCEM). The results of these studies were considered in the design and platform to present the PCEM.

Prenatal Education and Childbirth

Firouzbakht, Nikpour, and Khafri (2014) conducted a semi-clinical trial at health centers in Amol, Iran to review the effect of prenatal classes on the process of childbirth. The results of their study indicate that prenatal education reduced the level of anxiety about the hospital setting,

the intensity of pain and the need for episiotomy and emergency cesarean. In addition, the results showed that parents with a high level of education were more interested in prenatal classes. The impact of prenatal care on childbirth is an additional area of study as indicated by Firouzbakht, et al. The Prenatal Care Education module (PCEM) and Brief Pregnancy Perception (B-PPQ) could be expanded in the future to assess participants' experience of childbirth after completing the PCEM.

Summary of Review of Literature Findings

The review of literature provided a strong foundation that substantiated the importance of prenatal care for mother and baby. The consideration of incentives/barriers, prenatal care setting, time spent in care setting, components of care, relationships with staff and clinicians, receipt of information and women's perception of the importance of prenatal care were highlighted (Kearns, et al., 2015; Novick, 2009). Access to care, time spent in accessing care, and perception of the purpose of prenatal care were indicated as barriers to engaging in care. Early onset of care as well as number of prenatal visits had significant impact on the health of the mother and child. The literature review also indicated that the intention to seek prenatal care was linked to parental level of education such that those with a higher level of education were more likely to engage in prenatal care. In addition, those who had a partner and who considered prenatal care to be beneficial were more likely to engage in prenatal care (Quelopana, et al., 2009).

The intention to seek prenatal care related to whether pregnancy was planned was also reviewed in the literature. Some studies indicated that those whose pregnancies were unwanted were less likely to have their pregnancy recognized early, to seek prenatal care, or to breastfeed (Quelopana, et al., 2009; Kost and Lindberg, 2015). Studies of depression, social support and unintended pregnancy revealed a significant association between unintended pregnancy and

depression pointing to the importance of screening for depression during the prenatal period (Abajobir, et al., 2016).

The reviewed literature found that family and social support were extremely important and played a part in supporting women's unplanned pregnancy (Gray, 2016). Review of studies that looked at parenting skills and pregnancy intention revealed that those experiencing unplanned pregnancy exhibited fewer positive parenting skills (Claridge, et al., 2017). Studies that assessed support and unplanned pregnancy validated the importance of social connections which is emphasized in the PCEM the B-PPQ tracks.

The use of various screening tools employed during the antenatal period to assess adaptation to the prenatal and postpartum periods were reviewed during the literature review for this study (Benzies, et al., 2016; Fernández y Fernández-Arroyo, 2014; Hui Choi, et al., 2012; Records & Hanko, 2016; Serçekuş & Mete, 2010). The insights gained with various screening tools were fundamental to the design and implementation of the PCEM and the Brief-Perception of Pregnancy Questionnaire (B-PPQ). The B-PPQ was developed to assess many aspects of pregnancy. It was intended to facilitate an assessment of a woman's unplanned pregnancy and to address areas of concern, such her understanding of and emotional response to pregnancy.

Serçekuş and Mete (2010) indicated that prenatal care education supports a healthy adjustment to pregnancy and postpartum periods. The B-PPQ encourages participants to contact the author if they desire more information about their pregnancy and stresses the importance of seeking prenatal care. The author monitored the participation in the PCEM and followed up with participants as indicated.

A review of health literacy and the delivery of health care information over the Internet were important to the presentation of the PCEM and the B-PPQ. In general, information

presented at a 5th grade level can be understood by a wide audience (Mottl-Santiago, Fox, Pecci, and Iverson, 2013). This literacy level was considered in the development of the videos for the PCEM and the B-PPQ. Many studies revealed that people in the U.S., Sweden, and China will seek health information over the Internet (Bjelke, et al., 2016; Brouwer, et al., 2009; Cassell, Jackson, and Cheuvront, 1998; Gao, Larsson, and Luo, 2013; Grimes, Forster, and Newton, 2014; Kellams, et al., 2016; Mauriello, et al., 2016; Urrutia, et al., 2015). The format of the PCEM was for participants to take the B-PPQ, watch three short videos (2-3 min each), and then retake the B-PPQ. This format of a brief pre-assessment, intervention and post-assessment was used by Kulkarni, Wright, and Kingdom (2014) to measure the effect of a web-based educational tool to educate first time mothers on the benefits and risks vaginal delivery and elective caesarean delivery.

Project Design and Implementation

Goals of Project

One of the goals of this quality improvement project was to design accessible prenatal care education module (PCEM) consisting of three brief videos lasting 15 minutes in total. The videos aimed to educate women about the importance of prenatal care, various aspects of pregnancy, childbirth and care after delivery for women whose pregnancy was confirmed at a pregnancy center. The next goal was to follow participant response to the (PCEM) using the Brief-Pregnancy Perception Questionnaire (B-PPQ) before and after viewing the PCEM for evaluation. The final goal was to determine participants' plans for accessing a prenatal care provider

Objectives

This study was guided by six objectives. The first and second objectives were to evaluate effectiveness of the PCEM to educate women about prenatal care using the B-PPQ. The participants' completed the B-PPQ before and after viewing the PCEM. The anticipated outcome was to increase the participant's understanding of their pregnancy using the PCEM and this understanding to be noted by a change in the scale indicators in the completion of the subsequent B-PPQ instrument.

Objective 1: Educate women experiencing unplanned pregnancy about various aspects of prenatal care through the PCEM presented within the Brief Pregnancy Perception Questionnaire (B-PPQ) posted on the pregnancy center website.

Objective 2: Track the effectiveness of the PCEM intervention to educate women about prenatal care by comparing participant responses to the B-PPQ before and after viewing the PCEM.

The third objective was to assess participants emotional response to pregnancy and what they wanted to know about their pregnancy. The project lead anticipated that the PCEM may encourage a positive emotional response to pregnancy. Further, it was thought that the PCEM would increase the participant's understanding what happens during a prenatal visit.

Objective 3: Identify specific areas of interest with the following questions:

- How much control do you feel you have over your pregnancy?
- How important is prenatal care to your pregnancy?
- How concerned are you about your pregnancy?
- How well do you feel you understand your pregnancy?

- List in order the three most important things you want to know about your pregnancy.

The fourth objective was to determine whether participants made and attended a prenatal care (PNC) provider appointment by asking, “Do project participants who have not had a prenatal care visit prior to completing the PCEM indicate they intend to make a prenatal appointment?” The anticipated outcome was participants’ intention to make a post-program appointment with a PNC provider. The lead investigator would then contact participants who provided contact information to see if the mother was seen by PNC provider. A fifth objective was to compare the participants’ zip code/county to historical prenatal care data.

Objective 4: Evaluate the intention to make an appointment with a health care provider before and after viewing the PCEM.

Objective 5: Compare results to historical data to evaluate the effectiveness of the PCEM (see Appendices C, D, E, & F).

Finally, the sixth objective was to evaluate satisfaction with PCEM videos using an online satisfaction survey. The outcome was to determine satisfaction with the PCEM as indicated by responses in the completed satisfaction scale. Participants’ responses would guide any future changes to the PCEM. The aligned outcome for this objective would be a review of the qualitative data. Subsequently, the content of the PCEM and the B-PPQ could be revised based on participants’ responses.

Objective 6: Review participant response to PCEM satisfaction survey

Setting

The setting of this project was a pregnancy center website. The pregnancy center is a non-profit Christian organization that meets the needs of women and men experiencing

unplanned pregnancy. The pregnancy center is in mid- Michigan. The pregnancy center website provided a link to Google Survey Document: Prenatal Care Education Module (PCEM).

Population

According to the pregnancy center, it serves women and men of all ethnicities, however; generally, their clients are white, Hispanic or African American. The apartment complex adjacent to the pregnancy center has many Indian families who seek services at the center as well. Many come to confirm their pregnancies or obtain testing for sexually transmitted diseases. The population served is not limited to the location of the pregnancy center or the county in which it is located. Some come to the center to keep the confirmation of their pregnancy or sexually transmitted diseases away from their home community for privacy reasons.

A modified informed consent process was used for this study. The informed consent was posted within the PCEM and participants acknowledged reading the consent form by clicking a box (Waiver of Documentation of Informed Consent). Participants also provided a study code identifier through use of the last three digits of their telephone numbers.

Based on previous records, the number of online website visitors is approximately 1,500. Among this cohort of visitors, the author expected at least 125 visitors to be eligible and to provide their consent to participate in the study. The anticipated sample size for this project was 100. It was assumed that only 80% of enrolled subjects would complete both the pre- and post-survey. The sample size was not based on any empirical power calculation, due to lack of historical data, but on the anticipated visitors to the pregnancy center website and clients who saw the survey postcards in their information packet or placed both at the reception desk and in the ultrasound room. After 60 days, only eight women had consented to participant. Of these

eight, three participants met the eligibility criteria and completed the study. The sample size of three was extremely low compared to the author's expectation.

Several reasons for low participation were considered. The author did not participate in counselor training due to time constraints, and this prevented direct contact with the clients at the pregnancy center. Direct contact with clients may have increased participation. The pregnancy center website may have been hard to find for those surfing the Internet for information. The link for the PCEM was limited to a posting on the pregnancy center website. Putting the link on other pregnancy websites may have increased the number of participants. Additionally, an increase in knowledge about various aspects of prenatal care and pregnancy may not have been motivating enough for clients to engage in the PCEM. An incentive to participate, such as grocery gift card, may have increased participation. Thus, enrolled participants were limited to those individuals who visited the PCEM posted on the pregnancy center website or used the link in the postcards that advertised the project.

Procedure and Timeline

Participants completed a Brief Perception of Pregnancy Questionnaire (B-PPQ, Appendix) prior to viewing the Prenatal Care Education Module (PCEM). They were asked to complete the B-PPQ after viewing the PCEM module as well. The anticipated outcome after viewing the PCEM was a change in participants' response to the following B-PPQ questions:

- How much control do you feel you have over your pregnancy?
- How important is prenatal care to you for this pregnancy?
- How concerned are you about your pregnancy?
- How well do you feel you understand your pregnancy?
- List in order the three most important things you want to know about your pregnancy.

The aim of this project was to develop, implement, and evaluate responses to the PCEM with the B-PPQ, to track the number of participants who had contact with a health care provider, and to track the number of participants who initiated contact with the author to discuss the three most important things about their pregnancy. The project lead anticipated this process would be complete by June 18, 2018. This project included the following phases:

Winter/Spring 2017

Project Intervention Planning Phase

- Collaboration with pregnancy center website director and staff.
- The pregnancy center agreed to provide space for author to present prenatal education classes.
- Prenatal education class curriculum was reviewed and approved by the pregnancy center staff.
- Four prenatal education classes were presented from February to May 2017 with minimal (one to two clients) to zero client participation.
- Review of participant responses to classes was completed and presented to the pregnancy center staff.
- The pregnancy center staff and author discussed strategies to address clients' knowledge deficits regarding prenatal care and online education formats.
- Presentation of prenatal care education classes via the pregnancy center website was decided upon by the pregnancy center staff and author.
- Literature review to inform evidence-based interventions aligned with identified gaps from organizational needs assessment.
- Finalized the pregnancy center media platform for hosting of Prenatal Care

Education Module (PCEM) to include online modified informed consent and Brief Pregnancy Perception Questionnaires. (See Appendices G and I).

April 2018

- Submitted project proposal.
- Received approval from JU IRB.

April 2018 – June 2018

- Initiated project interventions.
- Met with pregnancy center website team to review link to PCEM to be posted on pregnancy center website (Appendix G, H & I).
- Posted link to prenatal care education modules on pregnancy center website.
- Posted recruitment postcard in pregnancy center and placed in patient packets. All informed consent questions or details were directed to the project lead as per the recruitment postcard.
- Project link remained open until project end date or until 100 completed surveys.
- Follow-up call/email – The project lead contacted participants who self-selected to provide their contact information. Project lead answered questions and inquired whether the participant had a scheduled appointment with a health care provider. If the participant did not, the project lead aided and resources to facilitate access to prenatal care.

June 2018 – August 2018

- Statistical analysis and summary results of pre- and post- survey data conducted.
- Concluded data collection and removed project survey link from pregnancy center website. The pregnancy center made the educational videos available to clients.

- Reporting of aggregate, de-identified project outcomes.

The PCEM was open for 60 days, from April 16 to June 18, 2018, with a total of eight participants. Five participants did not meet inclusion criteria of pregnancy. Three participants identified as pregnant and remained in the study.

Selection of the Measurement Method

The Brief Perception of Pregnancy Questionnaire (B-PPQ) was the selected measurement method and was to be completed before and after the client viewed Prenatal Care Education Modules (PCEM). The B-PPQ is an adaptation of the Brief-Illness Perception Questionnaire (B-IPQ), a nine-item scale designed by Broadbent et al. (2006) to rapidly assess the cognitive and emotional representations of illness. Permission was obtained from Broadbent (See e-mail communication) to adapt the B-IPQ to develop the B-PPQ with the goal of assessing mental and emotional responses to various aspects of pregnancy. Like the B-IPQ, the Brief PPQ uses a single item on a scale from 0 to 10 to assess each dimension, where higher scores indicate stronger perceptions along that dimension. The B-PPQ assessed the following areas: affect response to pregnancy, sense of control over pregnancy, importance of prenatal care, concern over pregnancy, and understanding of pregnancy. Whereas the last question of the B-IPQ asked participants to rank order the three most important factors that they believed caused their illness, this question was revised for the B-PPQ to list in order the three most important things the participant wanted to know about their pregnancy. In addition, questions regarding whether the participant had an appointment with a health care provider as well as the participant's age, level of education, and history of pregnancies were asked.

Validity and Reliability

Validity and reliability studies for the B-IPQ have been done in English (Broadbent, et al., 2015).

- The Brief IPQ has been administered to patients from age 8 to over 80, with a wide range of illnesses, in 26 languages from 36 countries. Pooled correlations between illness perceptions and depression, anxiety, blood glucose levels and quality of life were consistent with previous research and theory (range .25–.49 for consequences, identity and emotional representations; $-.12$ to $-.27$ for personal control).
- All items were able to predict some outcomes up to one-year follow-up. Each subscale demonstrated sensitivity to change after intervention in randomized controlled trials with the personal control and causal items showing most frequent change.

The simplicity and design of the B-IPQ was appealing to the author and thus was replicated in the Brief Perception of Pregnancy Questionnaire (B-PPQ). While the B-IPQ was intended to assess for perception of illness, the B-PPQ tool was modified to address participants' response to an unintended pregnancy. Although pregnancy is not considered an illness, the project lead maintains that when a pregnancy is confirmed, and it is unintended or unplanned, the mother can react with anxiety and distress like an unexpected diagnosis of illness (Gray, 2014). Those who seek the services of the pregnancy center may not have intended to be pregnant and want to simply to verify whether they are pregnant. Upon confirmation, they may react anxiously to the pregnancy.

Expert opinion was sought to review and validate the Brief Perception of Pregnancy (B-PPQ). To facilitate this effort, permission was obtained to use the Survey/Interview Validation Rubric for Expert Panel (VREP) (Simon & White, 2013) (Appendix J). The VREP was

established to obtain validation of survey or interview questions by a panel of experts in a field (Simon & Goes, 2014). In this process, ten experts in maternal child care were sought for their opinions and to complete two rounds of review of the B-PPQ using the rubric. Of these ten, five experts responded. The experts were Dr. Julia Phillippi, CNM, PhD at Vanderbilt University; Dr. Cristian Meghea, Assistant Professor, Department of Obstetrics, Gynecology and Reproductive Biology at Michigan State University; Dr. Penny Marzalik, PhD, APRN, CNM, IBCLC, Director, Nurse-Midwifery and Women's Health Specialty Tracks at Ohio State University; Dr. Melva Craft-Blacksheare, DNP, CNM, RN, Assistant Professor of Nursing at the University of Michigan-Flint; and Stephanie Vallie, RN, MSN, Maternal Child Instructor at Oakland University. Their comments were incorporated into the final revisions of the B-PPQ (Appendix K).

Fiscal Consideration

The Prenatal Care Education Module (PCEM) videos were created with the assistance of the manager at a Community Cable Television Station. The manager supervised an experienced videographer that recorded the project lead explaining various aspects of prenatal care, labor and delivery and infant safety. Although the recording and editing of the PCEM videos was provided without cost, an in-kind contribution was estimated to be \$680.00 - \$1,050. As an experienced prenatal care nurse, the project lead's in-kind services are estimated to be \$1,600.00 based on an hourly rate of \$50.00 an hour for approximately eight hours of preparation and presentation per prenatal class for a total of 4 classes. The cost to the project lead of printing the postcards advertising the PCEM was \$70.00. The pregnancy center did not incur the cost of providing printer paper and printer ink as the PCEM and B-PPQ were placed online. The five Maternal – Child professionals who reviewed the initial and revised B-PPQ provided their time and

expertise to read and comment. Their time was given without charge. The in-kind contributions are estimated at \$100.00 per hour which totaled 500.00 for five professional reviews. A statistician at Jacksonville University reviewed pre and post questionnaire design and assisted with the statistical analysis of participant responses to the B-PPQ. The cost of dissemination and publication of the project results at various seminars and in peer-reviewed journals is anticipated to be covered through available professional grants through foundations such as the Ruth Landes memorial fund.

Ethical Consideration

There were no identifiable risks to the participants of this project. An introductory statement spoke to anonymity and confidentiality of the information collected in the pre-post surveys and was protected using study code devised through use of participants' last three digits of their telephone numbers. Participants were informed that the focus of the prenatal care education program was the group's overall response. Their individual information was to remain anonymous (Appendix G). Participants' implied modified consent was given by completing the B-PPQ, the PCEM and the second B-PPQ. Upon request by the author, the data analysis datasets and all documents were stored on a JU secure, encrypted, and password protected server. The electronic documents will be kept for a minimum of three years after the end of the project per federal regulations (U.S. Department of Health and Human Services, 2009) on the JU password protected server.

Data Analysis

The study used Google Forms to present the PCEM. Google Forms tracked the data with an Excel spreadsheet. Three out of the eight participants met the inclusion criteria of being pregnant. Pre- and post- data from the B-PPQ were descriptively summarized. Summary tables

were provided for all key objectives. Differences in level of understanding of pregnancy, the importance of prenatal care, level of concern about the pregnancy, and the effect of pregnancy on participants' emotions before and after the PCEM were noted. Also, the three most important things participants wanted to know about their pregnancy were noted. One of the participants, who already had a prenatal care appointment provided her e-mail address for further follow-up. After the author followed up and answered the participant's questions regarding healthy eating, no further contact was initiated by the participant. Because only three participants completed the study, no statistical analysis was conducted to assess the performance of the PCEM intervention. Only patient listings (i.e. individual results) were generated.

Internal consistency or inter-item reliability of the B-PPQ was assessed using Cronbach's alpha. The Cronbach reliability test assumes the items being tested measure a single construct (i.e., the construct is one-dimensional) and that observations are independent of each other. George and Mallery (2010) suggest the following guidelines for evaluating α values:

- > .9 excellent
- > .8 good
- > .7 acceptable
- > .6 questionable
- > .5 poor
- \leq .5 unacceptable.

The items for B-PPQ had a Cronbach's alpha coefficient (α) of 0.77, indicating acceptable reliability of the B-PPQ.

Discussion of Project Outcomes

The six program objectives that guided this project and the associated outcomes are discussed and presented in table format as indicated below.

Objective One: Educate women experiencing unplanned pregnancy about various aspects of prenatal care through the PCEM presented within the Brief Pregnancy Perception Questionnaire (B-PPQ) posted on the pregnancy center website.

Outcome: The PCEM was developed and presented within the B-PPQ on a pregnancy center website. The PCEM was open for 60 days.

Objective Two: Track the effectiveness of the PCEM intervention to educate women about prenatal care by comparing participant responses to the B-PPQ before and after viewing the PCEM.

Outcome: The participants' responses to the PCEM were assessed using the B-PPQ.

Objective Three: Identify specific areas of interest with the following questions:

- How much control do you feel you have over your pregnancy?
- How important is prenatal care to your pregnancy?
- How concerned are you about your pregnancy?
- How well do you feel you understand your pregnancy?
- List in order the three most important things you want to know about your pregnancy.

Outcome: The responses to the questions above are noted in Table 1 through Table 7.

Objective Four: Evaluate the intention to make an appointment with a health care provider before and after viewing the PCEM.

Outcome: The responses to this area are noted in Table 9.

Objective Five: Compare results to historical data to evaluate the effectiveness of the PCEM

(see Appendices C, D, E, & F).

Outcome: The results are displayed in Table 12. Due to the small sample size of three, no broad conclusions could be made for the larger population.

Objective Six: Review participant response to the PCEM satisfaction survey.

Outcome: The participants' response to the PCEM are displayed in Table 8.

Table 1 indicates clients' responses to question five, both before and after viewing the B-PPQ. Of the three who answered this question, only two viewed the PCEM. Of the two who viewed the PCEM, one indicated no change, whereas the other expressed a decreased understanding of her pregnancy. This outcome may be the result of confusion about the scale.

Table 1

Q5: "How well do you feel you understand your pregnancy?"

Scale 0 Do Not Understand My Pregnancy 10 Understand My Pregnancy Well	Before PCEM	After PCEM	Change
Participant 1	9	6	-3
Participant 2 (Did Not View PCEM)	0	0	0
Participant 3	9	9	0

Whereas Table 1 depicts respondents' knowledge about pregnancy, Table 2 reflects respondents' perceived sense of control over their pregnancies. The two respondents who viewed the PCEM expressed the same sense of control both before and after viewing. A third respondent indicated less control, although she did not view the PCEM.

Table 2

Q 2: “How much control do you feel you have over your pregnancy?”

Scale			
0 No control	Before PCEM	After PCEM	Change
10 Very much control			
Participant 1	8	8	0
Participant 2 (Did Not View PCEM)	5	4	-1
Participant 3	7	7	0

Table 3 depicts the respondents’ perception of the importance of prenatal care for their pregnancy. Two respondents indicated that prenatal care was extremely important with a score of 10 on a scale of 0-10 before and after the PCEM while one client scored prenatal care at eight out of 10. These responses imply that prenatal care was important for their pregnancy.

Table 3

Q3: “How important is prenatal care to you for this pregnancy?”

Scale			
0 Not Very Important	Before PCEM	After PCEM	Change
10 Extremely Important			
Participant 1	8	8	0
Participant 2 (Did Not View PCEM)	10	10	0
Participant 3	10	10	0

Table 4 represents participants' level of concern about their pregnancy before and after viewing the PCEM. Participant 1 indicated moderate concern with a score of six prior to the PCEM and a score of five after the PCEM. This response indicates a slight decrease in concern after viewing the PCEM. This decrease in concern implies a positive reaction to the PCEM. Oddly, although the second participant did not view the PCEM, she rated her concern at 10 before and after PCEM. Participant 3 rated her level of concerns at nine before and after viewing the PCEM.

Table 4

Q 4: *"How concerned are you about your pregnancy?"*

Scale 0 Not Concerned 10 Extremely Concerned	Before PCEM	After PCEM	Change
Participant 1	6	5	-1
Participant 2 (Did Not View PCEM)	10	10	0
Participant 3	9	9	0

Table 5 illustrates how much the pregnancy affected participants' lives. Participant 1 scored seven before the PCEM and six after the PCEM on the scale of 0-10. This response indicates a slight decrease in the effect of pregnancy on this respondent's life after viewing the PCEM. Participant 2 did not view the PCEM and scored this area as zero. Participant 3 indicated no change in how much the pregnancy affected her life with a score of seven before and after the PCEM.

Table 5

Q1: “How much does your pregnancy affect your life?”

Scale	Before PCEM	After PCEM	Change
0 Does not affect my life			
10 Greatly affects my life			
Participant 1	7	6	-1
Participant 2 (Did Not View PCEM)	0	0	0
Participant 3	7	7	0

Table 6 portrays how positively the pregnancy has affected the respondent’s life. Participant 1 indicated a score of 10 before the PCEM and a score of nine after the PCEM, which was a decrease in the positive affect of the pregnancy on their emotions. Again, Participant 2 did not view the PCEM but rated a four in the before PCEM column and zero in the after PCEM column. Participant 3 rated the pregnancy at a seven before and after the PCEM

Table 6

Q7: “How positively does your pregnancy affect your life?”

Scale	Before PCEM	After PCEM	Change
0 Not positively affected			
10 Very positively affected			
Participant 1	10	9	-1
Participant 2 (Did Not View PCEM)	4	0	0
Participant 3	7	7	0

Table 7 represents how much the pregnancy negatively affected the respondent's life. Participant 1 indicated a score of seven before and after PCEM which indicated the pregnancy's negative affect on the respondent's emotions was unchanged by the intervention of the PCEM. Participant 2 did not view the PCEM and did not respond. Participant 3 scored one on the scale of 0 to 10 before and after the PCEM, which indicates the pregnancy did not affect the participant negatively and the intervention of the PCEM did not change her response.

Table 7

Q8: "How much does your pregnancy negatively affect your life?"

Scale 0 Not negatively affected 10 Very negatively affected	Before PCEM	After PCEM	Change
Participant 1	7	7	0
Participant 2 (Did Not View PCEM)	0	0	0
Participant 3	1	1	0

Objective 3 also assessed whether viewing the PCEM changed what they wanted to know about their pregnancies. Participants were asked to write in rank order the three most important things they wanted to know about their pregnancies before and after viewing the PCEM. Table 10 represents data which was to determine if viewing the PCEM addressed what they wanted to know about their pregnancies. Participants' responses may prompt further research into specific learning needs surrounding pregnancy not addressed in the PCEM. These specific learning needs could be addressed in a revision of the PCEM

Table 10

List in order the three most important things you want to know about your pregnancy

Participant	Before PCEM	After PCEM	Change
Participant 1	Gender healthy and size	Health size gender	0
Participant 2 (Did not view PCEM)	Not Sure	Did not answer	0
Participant 3	1. Health of the child	1. Baby's safety and health	0
	2. Things I can do to ensure the development of a child	2. Things I can do to support healthy growth	
	3. Possible risks	3. Risks	

Objective 4 was to determine whether participants intended to make an appointment with a prenatal care provider before and after the PCEM. Table 9 depicts the outcome of this objective. Participant 1 indicated she already had an appointment with a PNC provider before viewing the PCEM. Participant 2 did not view the PCEM and indicated she did not intend to make an appointment with a prenatal care provider. Participant 3 indicated an intention to make an appointment with a health care provider before and after the PCEM but did not provide contact information, so the project lead could not verify the outcome.

Table 9

Q.10: “Are you planning to make an appointment with a prenatal care provider for this pregnancy?”

Response	I already have an appointment with a health care provider	I'm planning to make an appointment with a health care provider	I'm not planning to make an appointment with a health care provider
Participant 1	Before and After PCEM		
Participant 2	(*Did not view PCEM)	(*Did not view PCEM)	(*Did not view PCEM)
Participant 3	Before and After PCEM		

Objective 6 was to measure participants’ satisfaction with the PCEM using an online satisfaction survey. This information was sought to help the project lead decide if the program would benefit from revisions. These revisions may be important if the project is replicated. Table 8 depicts respondents’ satisfaction with PCEM’s three separate video topics: pregnancy and childbirth, postnatal care and breastfeeding, and newborn baby and emergency signs. Both participants who viewed all videos in the module expressed strong satisfaction with coverage of pregnancy and childbirth as well as newborn baby and emergency signs. Coverage of postnatal care and breastfeeding elicited moderate satisfaction (8 of 10) from participant 1 while participant 2 indicated average satisfaction (5 of 10) after viewing.

Table 8

Prenatal Care Education Module Satisfaction Survey

Scale: 0 = Unsatisfied to 10 = Satisfied

Participant	Video 1 Pregnancy & Childbirth	Video 2 Postnatal Care & Breastfeeding	Video 3 Newborn Baby & Emergency Signs
Participant 1	10	5	9
Participant 2	10	10	10
Participant 3	8	8	8

Table 11 depicts demographic information of the three respondents. Two respondents were from Battle Creek and Pontiac, both cities in Michigan and the other respondent was from Elkhart, Indiana. The respondents had three different racial backgrounds which are listed. The age range of two of the respondents was from 25-34 and one respondent was in the 35-44 age range. Each of the respondents had a different level of education. One respondent had some high school, one had an undergraduate degree and one had some college.

Table 11

Demographics

Participant	# of Pregnancy	Zip/Area	Age	Race	Level of Education
1	Third or greater pregnancy	46517/ Elkhart, IN	25-34	Hispanic- Latino	Some High School
2	First Pregnancy	49037/ Battle Creek, MI	35-44	Black or African American	Undergraduate Degree
3	Third or greater pregnancy	48340/ Pontiac, MI	25-34	White Caucasian, Pacific Islander	Some College

Table 12 represents the participants response to the query of whether they had a prenatal care appointment, their zip code, the county in which they lived and a link to historical prenatal care data in that county. While a comparison was to be made between participant response and historical prenatal care in their county of residence, the small sample size made generalization to the larger population impossible. If the project is replicated in the future, a larger sample size may yield itself to a robust comparison.

Table 12

Comparison of the zip code/area/county of participant to historical prenatal care data.

Participant / Prenatal Care Appt. Response	Zip code/Area	County	Historical Prenatal Care Data
Participant 1 I already have an appointment with a health care provider	46517/ Elkhart, IN	Elkhart	Indiana State Department of Health, Division of Maternal and Child Health (2017)
Participant 2 I'm not planning to make an appointment with a health care provider	49037/ Battle Creek, MI	Calhoun	Michigan Department of Health & Human Services (2017)
Participant 3 I'm planning to make an appointment with a health care provider	48340/ Pontiac, MI	Oakland	Michigan Department of Community Health (2017) *Study size of three participants prevented comparison to county statistical data.

Objective six was to review participants' responses to the PCEM satisfaction survey. The results of this survey would assess areas content areas in the PCEM and the B-PPQ that needed revision. Two participants participated in the PCEM by responding to the B-PPQ before and after viewing prenatal care videos. One participant did not view the PCEM but responded to the B-PPQ. This project may be extended to more sites before revising of PCEM or B-PPQ. The

small sample size made generalization to the larger population impossible. A larger sample population may provide an indication as to whether revision of the PCEM or B-PPQ is required.

Discussion of Results

As previously indicated, three goals guided this quality improvement project. The first, to design an accessible prenatal care education module (PCEM), was achieved. The PCEM, which emphasized the importance of prenatal care and various aspects of pregnancy, childbirth, and after delivery care for women whose pregnancy was confirmed at the pregnancy center, was presented on and viewed on a pregnancy center website. Goal two, to track participants' responses to the PCEM, also was achieved using the Brief-Pregnancy Perception Questionnaire (B-PPQ), which participants completed before and after viewing the PCEM. Goal three, to determine if participants planned to seek a prenatal care provider, also was achieved. Because this project had only three participants, two of whom viewed the PCEM, their responses to the B-PPQ cannot be generalized to the population of pregnant women at large.

In addition to the three goals, this study included six objectives. Objective one was to educate women experiencing unplanned pregnancy about the importance of prenatal care by posting the prenatal care education module (PCEM) on a pregnancy center website. Objective one was accomplished because the PCEM was posted on the website for 60 days. Objective two was to track the effectiveness of the PCEM to educate women about prenatal care by comparing participants' response to the Brief Pregnancy Perception Questionnaire (B-PPQ) before and after viewing the PCEM. Although the PCEM was viewed and rated by two participants, this small sample size prevented the lead researcher from drawing conclusions about its effectiveness.

With objective three, the lead investigator sought answers to several questions about their pregnancy and to determine if their answers would be affected by viewing the PCEM. When

asked, “How well do you feel you understand your pregnancy,” one participant felt her understanding of her pregnancy decreased (from 9 to 6) after the module, a result that may reflect a misunderstanding of the scale, whereas there was no change (9) in the other participant’s understanding of her pregnancy. See Table 1. This result was not expected. When asked about their sense of control over their pregnancies after viewing the PCEM, neither participant expressed a change in perceived sense of control (8 and 7, respectively). See Table 2. Likewise, the two respondents who viewed the PCEM expressed no change in their perception of the importance of prenatal care, yet another unexpected finding. See Table 3. When asked about their concerns about the pregnancy, one indicated a slight decrease (from 6 to 5), whereas the other maintained the same level of high concern (9) about her pregnancy after viewing the PCEM. See Table 4. Likewise, one participant expressed a slight decrease (from a 7 to a 6) in her perception of the effect of her pregnancy on her life, whereas the other’s perception remained unchanged (7) after viewing the PCEM. See Table 5. Whereas both perceived their pregnancies as having a positive effect on their lives, one participant expressed a slight decrease (from 10 to 9) in that perception whereas the other’s response remained unchanged (7). See Table 6. When asked about potential negative effects on their lives from the pregnancy, one rated it consistently low (1), whereas the other’s response (7) was inconsistent with the positive rating (10/9) she gave to the previous question. See Table 7. This may reflect confusion with the scale.

Objective 4 was to evaluate participants’ intention to schedule an appointment with a prenatal care provider before and after viewing the PCEM. Participant responses are displayed in Table 9. One participant indicated she already had an appointment with a health care provider before viewing the PCEM, and the other indicated that she had planned to make an appointment before viewing the PCEM. As such, there was no change in their plans. Because the sample size

was too small, the lead researcher was unable to meet objective 5, which was to draw conclusions about participants' plans to seek prenatal care in relationship to historical data on this issue.

Objective 6 was to review participants' responses to the PCEM satisfaction survey, responses that are indicated in Table 8. Participants were asked to rate the PCEM, which consisted of three videos, using a rating scale from 0 (unsatisfied) to 10 (satisfied). In response to Video 1, which addressed Pregnancy and Childbirth, both participants rated it highly (10 and 8, respectively), indicating that they found the information satisfactory. In response to Video 2, which provided information on postnatal care and breastfeeding, one rated it a 5 and the other gave it an 8. In response to Video 3, which presented information on newborn baby care and emergency signs, both rated it as satisfactory (9 and 8, respectively). Although the sample was too small to extrapolate their responses to the general population of women with unplanned pregnancies, their positive ratings suggest that extending this program to a larger group of women might be beneficial.

Limitations

As is evident from this discussion, the study was limited by poor participation. There are several potential explanations for the low participation rate. This project relied heavily on potential visitors to the pregnancy center website as well as on counselors with face-to-face client contact to introduce the project. Based on historical data obtained from the website developer, visits to the pregnancy center website and time spent on the site had steadily increased since it was launched in 2016. The director of the volunteer counselors indicated there were approximately eight to 10 clients to the pregnancy center per month who were seeking pregnancy

testing. Based on website traffic and client visits, the lead researcher anticipated that the goal of 100 participants would be met in two months' time.

In addition to posting a link to the PCEM on the pregnancy center website, postcards about the study were placed in client packets, at the reception desk, and in the ultrasound room to encourage participation. The lead researcher also maintained consistent communication with the volunteer director and staff to ensure they had enough postcards to promote the PCEM. Despite these efforts, only eight people agreed to participate. Unfortunately, of these, only three met the inclusion criteria. Of the three who agreed to participate, only two viewed the PCEM.

As previously stated, the lead researcher did not have direct access to clients at the pregnancy center. Having direct client contact may have increased participation. Moreover, the pregnancy center website may have been hard to find for those surfing the Internet for information. The link for the PCEM was limited to a posting on the pregnancy center's website. Putting the link on other pregnancy-related websites may have increased the number of participants. It may also be that gaining an increase in knowledge about various aspects of prenatal care and pregnancy may not have been enough motivation for clients to engage in the PCEM. An incentive to participate, such as a grocery gift card or a small cash stipend, may have increased participation.

Recommendations for Practice

Despite consistent communication and support from the pregnancy center staff, this project had many challenges. The lead did not participate in counselor training and as a result, could not have direct client contact. Replicating this project after counselor training would allow direct client contact and could increase client participation. Providing information about the Prenatal Care Education Module (PCEM) to multiple pregnancy centers that could place the

PCEM on their websites may also increase client participation. In addition, reducing the length of PCEM to the Pregnancy and Childbirth video would shorten completion time which may increase participation. The Brief-Pregnancy Perception Questionnaire (B-PP/Q) should remain as a tool to assess reactions to the PCEM. The B-PPQ may also be utilized by prenatal care providers as an initial assessment of the emotional impact of pregnancy and could be linked to a depression screening tool. Further, tracking the use of the B-PPQ would provide an opportunity for meta-analysis.

In summary, over the course of two months, a total of three women experiencing an unplanned pregnancy participated in the PCEM when the link was present on the pregnancy center website and a postcard with the link to the PCEM was placed in client intake packets, at the reception desk and in the ultrasound room. Some slight changes in response to the B-PPQ were noted after clients viewed the PCEM. Due to the small sample size, these changes could not be generalized to all women with an unplanned pregnancy.

Unplanned pregnancy can be a stressful event. The low participation response to the PCEM project is consistent with Gray's (2014) findings that women experiencing unplanned pregnancy reach out to family and friends for support. This response to stress is a self-regulating and rational approach to what may be considered a crisis event (Levanthal, et al., 1980; Glanz, et al., 2015). If the project lead had taken the volunteer counselor training, this may have created an opportunity to interact with clients. These interactions may have encouraged more women to participate based on personal contact. This idea is supported by Phillippi and Roman (2013) and Gray (2014). In addition, website traffic could have been further investigated to see the most effective way to draw attention to and encourage participation in the PCEM.

Dissemination of Findings

The project findings will be presented to the pregnancy center director and staff. In addition, the pregnancy center was provided copies of the PCEM. This is pivotal to the intent of this project which was to provide education about prenatal care for those who come to the pregnancy center for pregnancy testing. In addition, the local community television station who taped the PCEM airs portions of the PCEM between various local news events.

The author will provide a copy of this project to Dr. Elizabeth Broadbent, the creator of the Brief Illness Perception Questionnaire which served as the basis for the Brief-Pregnancy Perception Questionnaire (B-PPQ). A copy will also be sent to Dr. Marilyn Simon, the creator of the Validation Rubric for Expert Panel (VREP). The VREP provided a framework for experts to review the B-PPQ. In addition, copies of the project will be sent to the maternal-child experts who reviewed the Brief-Perception of Pregnancy. The project lead also intends to present the project's results to the director and staff at the pregnancy center. Dr. Julia Phillippi, CNM, PhD, contributed to the development of B-PPQ and suggested that the outcomes of this project could be submitted to the Journal of Obstetric, Gynecologic and Neonatal Nursing or the Journal of Midwifery and Women's Health. This manuscript will be submitted to one or both journals. In addition, a copy of this project will reside in the Virginia Henderson Library.

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Appendix A

Permission to adapt the B-IPQ to Pregnancy

Personal Communication with author of Brief Illness Perception Questionnaire (B-IPQ)

On 14/12/2017, at 3:35 AM, :

Hello,

Content Redacted

I'm currently in the project phase of my Doctorate of Nursing Practice at Jacksonville University,

I writing for permission to adapt and use the Illness perception questionnaire.

I am working with a pregnancy center and want to adapt the Illness Perception Questionnaire to pregnancy.

Please see the attached file.

I appreciate your response very much.

Thank you for your time and attention.

Content Redacted

Content Redacted

On Wed, Dec 13, 2017 at 2:38 PM, :

Pregnancy is not really an illness so I am not sure why you want to use the scale for this. Can you please let me know what your aims are?

On 14/12/2017, at 8:53 AM,

Content Redacted

Hello,

Thank you so much for your response.

Yes, it's true that pregnancy is not an illness.

My aim in using the Illness perception questionnaire is to use it as part of a series of surveys for those experiencing unplanned or crisis pregnancy to find out their perception of pregnancy.

Although pregnancy is a healthy event, when the pregnancy is unplanned, it affects a person similar to a crisis or illness situation.

I've attached two files

One is the B-IPQ with suggested revisions

One is the research that used the IPQ

I look forward to your response to this e-mail

Thank you for your time and attention.

Content Redacted

Sharon Heskitt, MSN, RN

The changes look Ok except for the causal item. The way you have it phrased now is assessing something different. That's OK just being sure to call it something other than causal beliefs. You can omit the timeline question if you like

Cheers

Content Redacted

Appendix B

Infant Deaths, Live Births and Infant Death Rates
Michigan Residents, 1989-2015

Three-Year Moving Averages			
Years	Average Number of Infant Deaths	Average Number of Live Births	Average Infant Death Rate
2013-2015	779.0	113,801.0	6.8 \pm 0.3
2012-2014	785.0	113,633.3	6.9 \pm 0.3
2011-2013	777.0	113,533.0	6.8 \pm 0.3
2010-2012	783.0	113,861.3	6.9 \pm 0.3
2009-2011	815.7	115,395.0	7.1 \pm 0.3
2008-2010	864.0	117,752.3	7.3 \pm 0.3
2007-2009	924.0	121,237.3	7.6 \pm 0.3
2006-2008	943.7	124,646.7	7.6 \pm 0.3
2005-2007	983.3	126,742.3	7.8 \pm 0.3
2004-2006	979.0	128,255.0	7.6 \pm 0.3
2003-2005	1,036.3	129,359.3	8.0 \pm 0.3
2002-2004	1,050.0	130,026.0	8.1 \pm 0.3
2001-2003	1,077.3	131,205.0	8.2 \pm 0.3
2000-2002	1,077.3	132,937.7	8.1 \pm 0.3
1999-2001	1,083.0	134,241.3	8.1 \pm 0.3
1998-2000	1,091.3	134,375.3	8.1 \pm 0.3
1997-1999	1,082.3	133,542.3	8.1 \pm 0.3
1996-1998	1,082.7	133,476.3	8.1 \pm 0.3
1995-1997	1,089.0	133,649.7	8.1 \pm 0.3
1994-1996	1,122.0	135,081.3	8.3 \pm 0.3
1993-1995	1,204.3	137,191.0	8.8 \pm 0.3
1992-1994	1,321.0	140,410.3	9.4 \pm 0.3

1991-1993	1,444.3	144,288.3	10.0 \pm 0.3
1990-1992	1,550.7	148,795.0	10.4 \pm 0.3
1989-1991	1,612.3	150,240.7	10.7 \pm 0.3

Notes:

Infant Deaths: Deaths occurring to individuals less than 1 year of age.

Infant Death Rates: The infant death rate is the number of resident infant deaths divided by total resident live births X 1,000. Adding and subtracting the number shown after the \pm symbol from the rate creates a confidence interval indicating that the true rate lies between the lower and upper bounds of this interval with 95 % statistical confidence. The true rate lies between the lower and upper bounds of the interval with 95% statistical confidence. If the confidence interval is large for a single year comparison, it is suggested that you use the three year and five year moving average rates.

*: A rate is not calculated when there are fewer than 6 events, because the width of the confidence interval would negate any usefulness for comparative purposes.

-: A dash indicates that there were either no births or no infant deaths from this category.

Source: 1989-1999 Michigan Death Certificate Registries;1999-2013 Decoded Michigan Death Certificate Registries; 2014-2015 Michigan Death Certificate Registries.,
1989-1999 Michigan Birth Certificate Registries;2000-2015 Geocoded Michigan Birth Certificate Registries.,

Vital Records and Health Statistics Section, Division for Vital Records and Health Statistics,
Michigan Department of Community Health

Date Created: 3/24/2017

Appendix C

Low Birthweight, Neonatal, Post-neonatal and Infant Mortality Rates
Oakland County Residents, 1989-2015
Three-Year Moving Averages

Year	Low Birthweight Mortality Rate	Neonatal Mortality Rate	Postneonatal Mortality Rate	Infant Mortality Rate
2013-2015	4.7 \pm 0.7	4.6 \pm 0.7	1.4 \pm 0.4	6.0 \pm 0.8
2012-2014	4.8 \pm 0.7	4.9 \pm 0.7	1.7 \pm 0.4	6.6 \pm 0.8
2011-2013	4.6 \pm 0.7	4.4 \pm 0.6	1.9 \pm 0.4	6.3 \pm 0.8
2010-2012	4.4 \pm 0.7	4.3 \pm 0.6	2.0 \pm 0.4	6.2 \pm 0.8
2009-2011	4.3 \pm 0.6	4.2 \pm 0.6	1.6 \pm 0.4	5.8 \pm 0.7
2008-2010	4.7 \pm 0.7	4.6 \pm 0.7	1.6 \pm 0.4	6.2 \pm 0.8
2007-2009	4.8 \pm 0.7	4.7 \pm 0.7	1.6 \pm 0.4	6.2 \pm 0.8
2006-2008	4.9 \pm 0.7	4.9 \pm 0.7	1.6 \pm 0.4	6.4 \pm 0.8
2005-2007	5.1 \pm 0.7	5.0 \pm 0.7	1.6 \pm 0.4	6.6 \pm 0.8
2004-2006	5.2 \pm 0.7	5.2 \pm 0.7	1.4 \pm 0.3	6.6 \pm 0.8
2003-2005	5.2 \pm 0.7	5.1 \pm 0.7	1.7 \pm 0.4	6.7 \pm 0.8
2002-2004	4.8 \pm 0.6	4.9 \pm 0.6	1.6 \pm 0.4	6.4 \pm 0.7
2001-2003	4.6 \pm 0.6	4.5 \pm 0.6	1.8 \pm 0.4	6.3 \pm 0.7
2000-2002	4.4 \pm 0.6	4.6 \pm 0.6	1.6 \pm 0.4	6.2 \pm 0.7
1999-2001	4.4 \pm 0.6	4.5 \pm 0.6	1.4 \pm 0.3	5.9 \pm 0.7
1998-2000	4.3 \pm 0.6	4.6 \pm 0.6	1.6 \pm 0.4	6.2 \pm 0.7
1997-1999	4.1 \pm 0.6	4.4 \pm 0.6	1.6 \pm 0.4	6.1 \pm 0.7
1996-1998	4.1 \pm 0.6	4.2 \pm 0.6	1.9 \pm 0.4	6.0 \pm 0.7
1995-1997	3.7 \pm 0.5	3.9 \pm 0.6	1.9 \pm 0.4	5.8 \pm 0.7
1994-1996	3.6 \pm 0.5	3.7 \pm 0.5	1.9 \pm 0.4	5.6 \pm 0.7
1993-1995	4.0 \pm 0.6	4.4 \pm 0.6	1.8 \pm 0.4	6.3 \pm 0.7
1992-1994	4.9 \pm 0.6	5.0 \pm 0.6	1.9 \pm 0.4	6.9 \pm 0.7
1991-1993	5.4 \pm 0.6	5.6 \pm 0.7	2.0 \pm 0.4	7.6 \pm 0.8
1990-1992	5.2 \pm 0.6	5.5 \pm 0.7	2.1 \pm 0.4	7.6 \pm 0.8

1989-1991	5.1 \pm 0.6	5.6 \pm 0.7	2.2 \pm 0.4	7.8 \pm 0.8
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Infant deaths: Deaths occurring to individuals less than 1 year of age.

Infant mortality rate: Number of resident infant deaths divided by total resident live births x 1,000.

Neonatal mortality rate: Number of infant deaths that occurred within the first 27 days of life per 1,000 live births.

Post-neonatal mortality rate: Number of resident deaths occurring to individuals at 28-364 days of age divided by total resident live births x 1,000.

Low Birthweight mortality rate: Number of infant deaths with birthweight less than 2500 grams divided by total resident live births x 1,000.

---Triple dashes indicates that data is unavailable.

\pm Adding and subtracting the number shown after the \pm symbol from the rate creates a confidence interval indicating that the true rate lies between the lower and upper bounds of this interval with 95 % statistical confidence.

*A rate is not calculated when there are fewer than 6 events, because the width of the confidence interval would negate any usefulness for comparative purposes.

- A dash indicates that there were either no births or no infant deaths from this category.

Source: 1989-1999 Michigan Death Certificate Registries; 1999-2013 Geocoded Michigan Death Certificate Registries; 2014-2015 Michigan Death Certificate Registries.

1989-1999 Michigan Birth Certificate Registries; 2000-2015 Geocoded Michigan Birth Certificate Registries.

Vital Records and Health Statistics Section, Division for Vital Records and Health Statistics, Michigan Department of Community Health.

Appendix D

Low Birthweight, Neonatal, Post-neonatal and Infant Mortality Rates Auburn Hills City, Oakland County Residents, 1989-2015 Three-Year Moving Averages

Year	Low Birthweight Mortality Rate	Neonatal Mortality Rate	Postneonatal Mortality Rate	Infant Mortality Rate
2013-2015	7.2 ±5.8	*	*	8.5 ±6.2
2012-2014	*	*	*	*
2011-2013	*	*	*	*
2010-2012	*	*	*	*
2009-2011	*	*	*	*
2008-2010	*	*	-	*
2007-2009	*	*	-	*
2006-2008	*	*	-	*
2005-2007	*	*	-	*
2004-2006	*	*	*	*
2003-2005	*	*	*	*
2002-2004	*	*	*	*
2001-2003	*	*	*	*
2000-2002	*	*	*	9.2 ±6.3
1999-2001	6.7 ±5.3	7.8 ±5.7	*	11.1 ±6.9
1998-2000	8.8 ±6.1	9.9 ±6.4	*	12.1 ±7.1
1997-1999	*	6.5 ±5.2	*	7.6 ±5.6
1996-1998	*	*	*	6.6 ±5.2
1995-1997	*	*	*	*
1994-1996	*	*	*	*
1993-1995	*	-	*	*
1992-1994	*	*	*	*
1991-1993	*	*	*	7.3 ±5.4
1990-1992	*	*	*	8.3 ±5.7

1989-1991	7.2 ±5.3	6.2 ±4.9	*	11.3 ±6.6
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Minor Civil Division (MCD) means city, township or village.

During the late 2000s, the Division for Vital Records and Health Statistics (DVRHS) recoded the decedents' residency reported on the death certificate using geocoding--the process of converting addresses to geographic coordinates. The division recoded data in order to improve the accuracy of small area health statistics. Statistics on this table reflect the geo-coded data and will vary from pre-2011 releases of MCD data based on the reported residency.

Prior to 2000, MCD data contained in vital statistics data files, and reports developed from the files, are based upon the information supplied to the department in the course of registering vital events. Special studies of MCD data quality revealed that there are inaccuracies in these data. The degree of inaccuracy encountered is as high as 25 percent. When rates calculated from these data differ substantially from geocoded data, one should consider whether the events were allocated to the proper MCD.

Infant deaths: Deaths occurring to individuals less than 1 year of age.

Infant mortality rate: Number of resident infant deaths divided by total resident live births x 1,000.

Neonatal mortality rate: Number of infant deaths that occurred within the first 27 days of life per 1,000 live births.

Postneonatal mortality rate: Number of resident deaths occurring to individuals at 28-364 days of age divided by total resident live births x 1,000.

Low Birthweight mortality rate: Number of infant deaths with birthweight less than 2500 grams divided by total resident live births x 1,000.

---Triple dashes indicates that data is unavailable.

±Adding and subtracting the number shown after the ± symbol from the rate creates a confidence interval indicating that the true rate lies between the lower and upper bounds of this interval with 95 % statistical confidence.

*A rate is not calculated when there are fewer than 6 events, because the width of the confidence interval would negate any usefulness for comparative purposes.

- A dash indicates that there were either no births or no infant deaths from this category.

Appendix E

Number of Live Births to Mothers who had Prenatal Care in the First Trimester by Age of
Mother and Race & Ancestry of Mother
Oakland County Health Department, Michigan 2015

Age of Mother	Race						Hispanic Ancestry	Arab Ancestry
	All Races	White	Black	American Indian	Asian & Pacific Islander	All Other Races		
Total	11,361	8,299	1,648	25	1,005	366	583	658
Less than 15	1	-	1	-	-	-	-	-
15 – 19	230	135	86	1	1	7	26	6
20 – 24	1,335	789	445	4	35	60	115	65
25 – 29	3,065	2,200	482	8	275	97	153	181
30 – 34	4,271	3,330	369	8	436	119	176	248
35 – 39	2,041	1,542	208	3	217	68	89	135
40 and over	418	303	57	1	41	15	24	23

Appendix F

Live Births by Race & Ancestry of Mother Oakland County Health Department, Michigan 2015								
Age of Mother	Race						Hispanic Ancestry	Arab Ancestry
	All Races	White	Black	American Indian	Asian & Pacific Islander	All Other Races		
Total	13,547	9,648	2,168	28	1,196	483	794	782
Less than 15	3	-	3	-	-	-	-	-
15 – 19	375	204	150	1	1	19	47	10
20 – 24	1,791	1,027	618	4	47	91	179	84
25 – 29	3,684	2,589	634	9	327	120	198	215
30 – 34	4,874	3,749	441	9	515	149	224	290
35 – 39	2,320	1,729	246	3	256	83	113	157
40 and over	500	350	76	2	50	21	33	26

Notes:

-A dash indicates quantity zero.

Source: 2015 Geocoded Michigan Birth Certificate Registry.

Division for Vital Records & Health Statistics, Michigan Department of Health & Human Services

Appendix G

Modified Informed Consent

Copy was part of the Online Prenatal Care Education Module



JACKSONVILLE UNIVERSITY

Informed Consent Document to Participate in Research

You are being asked to take part in a scholarly project conducted by a Jacksonville University doctoral student, Sharon Heskitt. The investigator will explain to you in detail the purpose of the project, the procedures to be used, the expected duration or frequency of your participation, and the potential benefits and possible risks of participation. You may ask her any questions you have to help you understand the project. A basic explanation of the project is written below. Please read this explanation and discuss any questions you may have with the investigator.

Participation is voluntary. If you decide to participate in the project, please do not complete the online questionnaire and survey forms. Anyone who agrees to participate in this study is free to withdraw from the study at any time with no penalty.

Research Investigators:

Sharon Heskitt

Content Redacted

Dr. Roberta Christopher (Faculty Chair)

Jacksonville University Keigwin School of Nursing

Content Redacted

Title of the Project: Prenatal Care Education for Women Experiencing Unplanned Pregnancy

The Purpose of the Study:

The purpose of this project is to educate women about the importance of prenatal care using the Prenatal Care Education Module (PCEM) and record women's responses to their confirmed pregnancy using the Brief-Pregnancy Perception Questionnaire (B-PPQ). The module's aim is to address an identified gap in the knowledge of prenatal care. Additionally, the Brief Pregnancy Perception Questionnaire asks women to identify the three most important things they want to know about their pregnancy and allows space for women who desire follow up to provide their contact information. A second B-PPQ will be completed after viewing the PCEM to assess any differences in responses. Follow-up visits, phone calls or e-mails will be made if contact information is provided.

Participation in this project will be entirely voluntary, and you may withdraw from the study at any time you wish by not submitting the surveys. All project data will be kept confidential. The results of the project may be used in nursing publications or presentations, but will be reported as aggregate data only (no personal identifying information). There are no known risks associated with this study and no identifying data will be collected.

Procedures:

Your participation will involve completion of an online 11-question Brief Pregnancy Perception Questionnaire (B-PPQ) and listing the three most important things you want to know about your pregnancy, watching short (4-3 min) videos of your choice from the Prenatal Care Education Module (PCEM) and completing an additional 15-question Brief Pregnancy Perception Questionnaire (B-PPQ). The second B-PPQ also asks for some information about the participant and includes a satisfaction survey. PCEM and the B-PPQ are available Pregnancy center website Website. Participants have the option of providing their contact information to Sharon Heskitt if they have questions or need referral to a health care provider.

Time requirements:

The Prenatal Care Education Module (PCEM) and the Brief Pregnancy Perception Questionnaire (B-PPQ) will take approximately 15-20 minutes to complete if the all of PCEM is viewed, both B-PPQs and the brief satisfaction survey are completed.

Risks and Benefits:

There are no expected risks to you outside the minimal risks associated with answering the B-PPQ, a 10-12 item questionnaire, viewing the PCEM, taking the B-PPQ again and completing a 3 question satisfaction survey.

You may directly benefit from participation in the project through increased knowledge of what to expect during prenatal care visits, pregnancy, breastfeeding, newborn care and community resources, as well as understanding the importance of prenatal care.

The investigator is expected to benefit by being able to: report project results to the JU Keigwin School of Nursing faculty, submit project results to nursing journal to be published, and/or submit to a professional nursing organization to present project results to an audience.

Costs/Compensation:

There will be no monetary compensation for participation in this study.

Alternative to Be in the Project:

The alternative to taking part in this project is opting not to participate in the project.

Confidentiality:

Participants are identified only by the last three digits of their phone numbers.

Only the project leads and certain Jacksonville University officials have the legal right to review research records, and they will protect the secrecy (confidentiality) of these records as much as the law allows. Otherwise, your research records will not be released without your permission unless required by law or a court order.

The records of this study will be kept private and confidential to the extent permitted by law. Any identifying information you provide (such as name, address or telephone number) will be destroyed at the completion of the study and are only collected to follow-up on access to prenatal care two weeks after you complete the online survey. You are not required to provide this information to participate or view the Prenatal Care Education Module (PCEM).

Hard copy data printed from the electronic survey website will be kept in a locked file cabinet or scanned into a password-protected, cloud-based database. Downloaded electronic data will be maintained on a secure Jacksonville University server. Data will be kept for a period of three years, or as required by university policy. The information gained from this survey may be used in a journal article and presentation, but will be reported as aggregate data only (e.g. no personal identifying information).

Voluntary nature of this study:

Participation in this study is completely voluntary. There is no penalty for not participating or withdrawing at any time. You are free to stop Content Redacted If you have any questions about the project, please call Content Redacted If you have any questions regarding your rights as a research participant, you may call Content Redacted By electronically signing this form within the survey, you agree that you understand the nature of the study, the possible risks to you as a participant, and how your identity will be kept confidential. When you

sign this form, this means that you are 18 years old or older and that you give your permission to volunteer as a participant in the study that is described here.

You may electronically sign and agree within the survey.

Appendix H

Premises and Recruitment Use Permission



Premises and Recruitment Use Permission

X I hereby authorize, Sharon Heslitt, a Doctor of Nursing Practice (DNP) student with Jacksonville University, to use the premises of Crossroads Care Center Website to conduct a quality improvement project entitled: Prenatal Care Education for Women Experiencing Unplanned Pregnancy

I hereby authorize, Sharon Heslitt, a Doctor of Nursing Practice (DNP) student with Jacksonville University, to recruit subjects for participation in and conduct a quality improvement project entitled: Prenatal Care Education for Women Experiencing Unplanned Pregnancy. Only with express limited permission from Crossroads Care Center.



Electronic Signature

4/2/18

Date

Appendix I

Recruitment flyer



Jacksonville University
Brooks Rehabilitation College of Healthcare
Sciences
Keigwin School of Nursing

Are you Pregnant and aged 18 years or older?

- Would you like to learn more about your pregnancy and baby?
- Please visit the following link for more information:
 - You will be invited to participate in a short pre and post questionnaire as part of a nursing student quality project.
- You may choose among three short videos (2-3 min) to learn simple steps for a healthy pregnancy and a healthy baby
 - Video 1: Three Ways to stay healthy in pregnancy
 - Video 2: Care after baby's birth and breastfeeding
 - Video 3: Infant Safety

Questions?

- Please Contact: JU Keigwin School of Nursing, DNP Student: Content Redacted

Appendix J

Brief Description of Prenatal Care Education Module (PCEM)

Brief Description of the PCEM

Video 1

This video discusses the importance of seeking a health care provider. It mentions three ways to stay healthy in the pregnancy which are to think about what you eat; make healthy food choices, choose to drink water, and keep physically active. Various community resources are listed at the end such as prenatal care providers and support sources for healthy food such as WIC.

Video 2

This video discusses the importance of support during the childbirth process and the importance of breastfeeding right after delivery. Various community resources are listed at the end such as prenatal care providers and support sources for healthy food such as WIC.

Video 3

This video discusses the importance of keeping baby safe and suggests classes for parents such as infant resuscitation. Various community resources are listed at the end such as prenatal care providers and support sources for healthy food such as WIC.

Appendix K

Brief Pregnancy Perception Questionnaire (B-PPQ)

Before Prenatal Care Education Module (PCEM)

Unique Code : Please provide the last three numbers of your phone number. This will be used as your unique identifier in the event you would like to withdraw your participation in the project or your consent.

Last three numbers of your telephone number : _____

Complete this before viewing the Prenatal Care Education Module

For the following questions, please indicate the number that best correspond to your views

1. How much does your pregnancy affect your life?

0 1 2 3 4 5 6 7 8 9 10

Does not affect my life

Greatly affects my life

2. How much control do you feel you have over your pregnancy?

0 1 2 3 4 5 6 7 8 9 10

No control

Very much control

3. How important is prenatal care to you in this pregnancy?

0 1 2 3 4 5 6 7 8 9 10

Not very important

Extremely important

4. How concerned are you about your pregnancy?

0 1 2 3 4 5 6 7 8 9 10

Not concerned

Extremely concerned

5. How well do you feel you understand your pregnancy?

0 1 2 3 4 5 6 7 8 9 10

Do not understand my pregnancy

Understand my pregnancy

6. How much does your pregnancy affect you emotionally?

0 1 2 3 4 5 6 7 8 9 10

Not affected emotionally

Very affected emotionally

7. How much does your pregnancy positively affect you?

0 1 2 3 4 5 6 7 8 9 10

Not positively affected

Very positively affected

8. How much does your pregnancy negatively affect you?

0 1 2 3 4 5 6 7 8 9 10

Not negatively affected

Very negatively affected

9. Please list in order the three most important things you want to know about this pregnancy

Brief Pregnancy Perception Tool (B-PPQ) is adapted with permission from original author of the Brief Illness Perception Questionnaire (Broadbent, E., Petrie, K. J., Main, J., & Weinman, J. 2006).

10. Are you planning to make an appointment with a health care provider?

___ I already have an appointment with a health care provider

___ I'm planning to make an appointment with a health care provider

___ I'm not planning to make an appointment with a health care provider

11. How many pregnancies have you had?

___ This my first pregnancy.

___ This is my second pregnancy.

___ This is my third or greater pregnancy.

___ I am not currently pregnant, but have had at least one prior pregnancy.

___ I am not currently pregnant, and have not had a prior pregnancy

Please provide your contact details below (e.g. phone number for call or text, email address for email

E-mail address: _____

Phone number

for text message response: _____

Appendix L

Brief Pregnancy Perception Questionnaire (B-PPQ)

After Prenatal Care Education Module (PCEM)

Unique Code : Please provide the last three numbers of your phone number. This will be used as your unique identifier in the event you would like to withdraw your participation in the project or your consent.

Last Three numbers of your telephone number : _____

Complete this after viewing any of videos in the Prenatal Care Education Module

For the following questions, please indicate the number that best correspond to your views

1. I have viewed the following videos in the Prenatal Care Education Module (PCEM):

Video 1: Prenatal Care Video 2: Childbirth & Breastfeeding Video 3: Infant Safety
All Videos

2. How much does your pregnancy affect your life?

0 1 2 3 4 5 6 7 8 9 10

Does not affect my life

Greatly affects my life

3. How much control do you feel you have over your pregnancy?

0 1 2 3 4 5 6 7 8 9 10

No control

Very much control

4. How important is prenatal care to you in this pregnancy?

0 1 2 3 4 5 6 7 8 9 10

Not very important

Extremely important

5. How concerned are you about your pregnancy?

0 1 2 3 4 5 6 7 8 9 10

Not concerned

Extremely concerned

6. How well do you feel you understand your pregnancy?

0 1 2 3 4 5 6 7 8 9 10

Do not understand my pregnancy

Understand my pregnancy

7. How much does your pregnancy affect you emotionally?

0 1 2 3 4 5 6 7 8 9 10

Not affected emotionally

Very affected emotionally

8. How much does your pregnancy positively affect you?

0 1 2 3 4 5 6 7 8 9 10

Not positively affected
affected

Very positively

9. How much does your pregnancy negatively affect you?

0 1 2 3 4 5 6 7 8 9 10

Not negatively affected
affected

Negatively

10. Please list in order the three most important things you want to know about this pregnancy

Brief Pregnancy Perception Tool (B-PPQ) is adapted with permission from original author of the Brief Illness Perception Questionnaire (Broadbent, E., Petrie, K. J., Main, J., & Weinman, J. 2006).

11. Are you planning to make an appointment with a health care provider?

- ___ I already have an appointment with a health care provider
- ___ I'm planning to make an appointment with a health care provider
- ___ I'm not planning to make an appointment with a health care provider

Please provide your preferred method of contact so I can provide assistance with the three things you want to know about this pregnancy.

E-mail address _____

Phone number

for text message response _____

12. What is your zip code? _____

13. What is your age?

18 to 24 25 to 34 35 to 44 45 to 54 Over 54 Prefer not to answer

14. What is your race? (Please select all that apply.)

American Indian Alaskan Native Asian or Pacific Islander Black or African American

Hispanic or Latino White / Caucasian Prefer not to answer

15. What is your level of education?

Some High School High School Graduate/GED Some College Undergraduate Degree

Graduate Degree PhD

Appendix M

Prenatal Care Education Module (PCEM) Satisfaction Survey

Please indicate whether you were satisfied with the information presented in the prenatal care education videos:

1. Video 1: This video discusses the importance of seeking a health care provider and presented tips for a healthy pregnancy. It also provided community resources.

0	1	2	3	4	5	6	7	8	9	10	
Not Satisfied											Satisfied

2. Video 2: This video talked about the importance of support during the childbirth process and breastfeeding right after delivery. It also provided community resources.

0	1	2	3	4	5	6	7	8	9	10	
Not Satisfied											Satisfied

3. Video 3: This video talked about the importance of keeping baby safe and suggests classes for parents such as infant resuscitation. It also provided community resources.

0	1	2	3	4	5	6	7	8	9	10	
Not Satisfied											Satisfied

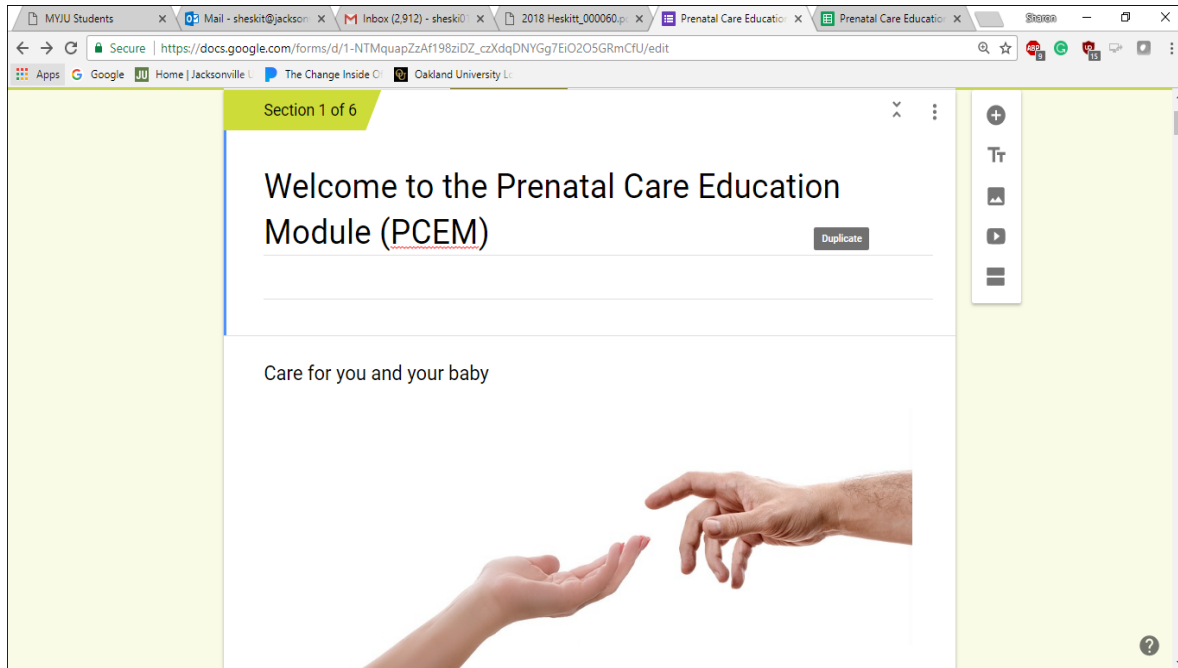
Thank you very much for participating in this project.

If you have any questions, please contact me.

Sharon T. Heskitt, MSN, RN,

Appendix N

Screen Shots of Prenatal Care Education Module



Consent Form and Prenatal Care Education Module (PCEM)

Here is a brief consent form for you to review.

You are being asked to take part in a scholarly project conducted by a Jacksonville University doctoral student, Sharon Heskitt, MSN, RN.

Research Investigators Contact Information: CONTENT REDACTED

Sharon Heskitt, MSN, RN

Dr. Roberta Christopher (Faculty Chair)

Jacksonville University Keigwin School of Nursing

Title of the Project: Prenatal Care Education for Women Experiencing Unplanned Pregnancy

Purpose of the Study: The purpose of this project is to educate women about the importance of prenatal care and record women's responses to their confirmed pregnancy using the Brief-Pregnancy Perception Questionnaire (B-PPQ). The aim of the Prenatal Education Module (PCEM) is to address an identified gap in the knowledge of prenatal care. Additionally, the Brief Pregnancy Perception Questionnaire (B-PPQ) asks women to identify the three most important things they want to know about their pregnancy and allows space for women who desire follow up to provide their contact information. A second B-PPQ will be completed after viewing the PCEM to assess any differences in responses. Follow-up visits, phone calls or e-mails will be made if contact information is provided. Participation in this project will be entirely voluntary, and you may withdraw from the study at any time you wish by not submitting the questionnaires. All project data will be kept confidential. The results of the project may be used in nursing publications or presentations, but will be reported as aggregate data only (no personal identifying information). There are no known risks associated with this study and no identifying data will be collected.

Procedures: Your participation will involve completion of an online 12-question Brief Pregnancy Perception Questionnaire (B-PPQ) and listing the three most important things you want to know about your pregnancy, watching a short (2-3 min) video of your choice from the Prenatal Care Education Module (PCEM) and completing an additional 15-question Brief Pregnancy Perception Questionnaire (B-PPQ). The second B-PPQ also asks for some information about the participant and includes a satisfaction survey. PCEM and the B-PPQ are available at Crossroads Care Center as well as on the Crossroads Care Center Website. Participants have the option of providing their contact information to Sharon Heskitt if they have questions or need referral to a health care provider.

Time requirements: The Prenatal Care Education Module (PCEM) and the Brief Pregnancy Perception Tool (B-PPQ) will take approximately 10-12 minutes to complete if the all of PCEM is viewed, both of the B-PPQ tools and the brief satisfaction survey are completed.

Risks and Benefits:

There are no expected risks to you outside the minimal risks associated with answering the B-PPQ, a 10-12 item questionnaire, viewing the PCEM, taking the B-PPQ a second time and completing a 3 question satisfaction survey. You may directly benefit from participation in the project through increased knowledge of what to expect during prenatal care visits, pregnancy, breastfeeding, newborn care and community resources, as well as understanding the importance of prenatal care.

The investigator is expected to benefit by being able to: report project results to the JU Keigwin School of Nursing faculty, submit project results to nursing journal to be published, and/or submit to a professional nursing organization to present project results to an audience.

Your participation will involve completion of an online 11-question Brief Pregnancy Perception Questionnaire (B-PPQ) and listing the three most important things you want to know about your pregnancy, watching a short (4-3 min) video of your choice from the Prenatal Care Education Module (PCEM) and completing an additional 11-question Brief Pregnancy Perception Questionnaire (B-PPQ) a second time. The second B-PPQ also asks for some information about the participant and includes a satisfaction survey. PCEM and the B-PPQ are available at Crossroads Care Center as well as on the Crossroads Care Center Website. Participants have the option of providing their contact information to Sharon Heskitt if they have questions or need referral to a health care provider.

Time requirements:

The Prenatal Care Education Module (PCEM) and the Brief Pregnancy Perception Tool (B-PPQ) will take approximately 10-12 minutes to complete if the all of PCEM is viewed, both of the B-PPQ tools and the brief satisfaction survey are completed.

Risks and Benefits:

There are no expected risks to you outside the minimal risks associated with answering the B-PPQ, a 10-12 item questionnaire, viewing the PCEM, taking the B-PPQ a second time and completing a 3 question satisfaction survey.

You may directly benefit from participation in the project through increased knowledge of what to expect during prenatal care visits, pregnancy, breastfeeding, newborn care and community resources, as well as understanding the importance of prenatal care.

The investigator is expected to benefit by being able to: report project results to the JU Keigwin School of Nursing faculty, submit project results to nursing journal to be published, and/or submit to a professional nursing organization to present project results to an audience.

Costs/Compensation:

There will be no monetary compensation for participation in this study.

Alternative to Be in the Project:

The alternative to taking part in this project is opting not to participate in the project.

Confidentiality:

Participants are identified only by the last three digits of their phone numbers.

Only the researchers and certain Jacksonville University officials have the legal right to review research records, and they will protect the secrecy (confidentiality) of these records as much as

the law allows. Otherwise, your research records will not be released without your permission unless required by law or a court order.

The records of this study will be kept private and confidential to the extent permitted by law. Any identifying information you provide (such as name, address or telephone number) will be destroyed at the completion of the study and are only collected to follow-up on access to prenatal care two weeks after you complete the online survey. You are not required to provide this information to participate or view the Prenatal Care Education Module (PCEM).

Hard copy data printed from the electronic survey website will be kept in a locked file cabinet or scanned into a password-protected, cloud-based database. Downloaded electronic data will be maintained on a secure Jacksonville University server. Data will be kept for a period of three years, or as required by university policy. The information gained from this survey may be used in a journal article and presentation, but will be reported as aggregate data only (e.g. no personal identifying information).

Voluntary nature of this study:

Participation in this study is completely voluntary. There is no penalty for not participating or withdrawing at any time. You are free to stop taking part in this project at any time. If you have any questions about the project, please call the primary investigator Sharon Heskitt. If you have any questions regarding your rights as a research participant, you may call the Jacksonville University's Institutional Review Board. Additional questions may be directed to Ms. Heskitt's project chair, Dr. Roberta Christopher, EdD, MSN, ARNP. By electronically signing this form within the survey, you agree that you understand the nature of the study, the possible risks to you as a participant, and how your identity will be kept confidential. When you sign this form, this means that you are 18 years old or older and that you give your permission to volunteer as a participant in the study that is described here.

You may electronically sign and agree within the survey.

Thank you so much for taking time to participate in this research project.

Last Three Digits of your phone number *

Short answer text

Are you a pregnant female? (Inclusion Criteria) *

☐ Yes

☐ No



#1 Brief Pregnancy Perception Questionnaire (B-PPQ)

Please complete this questionnaire before viewing one or all of the Prenatal Care Education Videos.

1. How much does your pregnancy affect your life? *

0 1 2 3 4 5 6 7 8 9 10

Does not affect my life

Greatly affects my life

2. How much control do you feel you have over your pregnancy? *

[illegible]

3. How important is prenatal care to you in this pregnancy? *

0 1 2 3 4 5 6 7 8 9 10

Not very important

Extremely important

4. How concerned are you about your pregnancy? *

0 1 2 3 4 5 6 7 8 9 10

Not concerned ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ Extremely concerned

5. How well do you feel you understand your pregnancy? *

	0	1	2	3	4	5	6	7	8	9	10	
Do not understand my pregnancy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Understand my pregnancy

6. How much does your pregnancy affect you emotionally? *

	0	1	2	3	4	5	6	7	8	9	10	
Not affected emotionally	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very affected emotionally

7. How much does your pregnancy positively affect you? *

	0	1	2	3	4	5	6	7	8	9	10	
Not positively affected	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very positively affected

8. How much does your pregnancy negatively affect you? *

	0	1	2	3	4	5	6	7	8	9	10	
Not negatively affected	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very negatively affected

9. Please list in order the three most important things you want to know about this pregnancy *

Short answer text

Please provide your contact information if you would like to be contacted by Sharon Heskitt, MSN, RN to talk about your pregnancy.

Please provide your e-mail, cell phone, or street address below if you would like to be contacted by Sharon Heskitt

Short answer text

10. Are you planning to make an appointment with a health care provider for this pregnancy? *

- ☐ I already have an appointment with a health care provider
- ☐ I'm planning to make an appointment with a health care provider
- ☐ I'm not planning to make an appointment with a health care provider

11. How many pregnancies have you had? *

- ☐ This is my first pregnancy
- ☐ This is my second pregnancy
- ☐ This is my third or greater pregnancy
- ☐ I'm currently not pregnant, but have had at least one prior pregnancy
- ☐ I am not currently pregnant and have not had a prior pregnancy

Prenatal Care Education Videos

Please choose any or all of the videos to watch

Video 1: Pregnancy and Childbirth



Video 2: Postnatal Care and Breastfeeding



Video 3: Newborn Care and Emergency Signs



#2 Brief Pregnancy Perception Questionnaire (B-PPQ)

Please complete this questionnaire after viewing one or all of the Prenatal Care Education Videos.

1. I have viewed the following Prenatal Care Education Videos *

- ☐ Video1: Pregnancy & Childbirth
- ☐ Video 2: Postnatal & Breastfeeding
- ☐ Video 3: :Newborn Baby & Emergency Signs
- ☐ I viewed all 3 Videos

...

2. How much does your pregnancy affect your life? *

	0	1	2	3	4	5	6	7	8	9	10	
Does not affect my life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Greatly affects my life

3. How much control do you feel you have over your pregnancy? *

	0	1	2	3	4	5	6	7	8	9	10	
No control	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very much control

4. How important is prenatal care to you in this pregnancy? *

	0	1	2	3	4	5	6	7	8	9	10	
Not very important	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Extremely important

5. How concerned are you about your pregnancy? *

	0	1	2	3	4	5	6	7	8	9	10	
Not concerned	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Extremely concerned

6. How well do you feel you understand your pregnancy? *

	0	1	2	3	4	5	6	7	8	9	10	
Do not understand my pregnancy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Understand my pregnancy well

7. How much does your pregnancy affect you emotionally? *

	0	1	2	3	4	5	6	7	8	9	10	
Not affected emotionally	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very affected emotionally

8. How much does your pregnancy positively affect you? *

	0	1	2	3	4	5	6	7	8	9	10	
Not positively affected	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very positively affected

9. How much does your pregnancy negatively affect you? *

	0	1	2	3	4	5	6	7	8	9	10	
Not negatively affected	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very negatively affected

Please provide your contact information if you would like to be contacted by Sharon Heskitt, MSN, RN to talk about your pregnancy.

Please provide your e-mail, cell phone, or street address below if you would like to be contacted by Sharon Heskitt

Short answer text

.....

10. Are you planning to make an appointment with a health care provider for this pregnancy?

☒ Multiple choice ▼

- ☐ I already have an appointment with a health care provider ×
- ☐ I'm planning to make an appointment with a health care provider ×
- ☐ I'm not planning to make an appointment with a health care provider ×

11. How many pregnancies have you had? *

- ☐ This is my first pregnancy
- ☐ This is my second pregnancy
- ☐ This is my third or greater pregnancy
- ☐ I'm currently not pregnant, but have had at least one prior pregnancy
- ☐ I am not currently pregnant and have not had a prior pregnancy

12. Please provide your zip code

Short answer

Short answer text

Required ☒

13. What is your age? *

☐ Under 18
 ☐ 18 to 24
 ☐ 25-34
 ☐ 35-44
 ☐ 45-54
 ☐ Over 54
 ☐ Prefer not to answer

14. What is your race? (Please select all that apply) *

- ☐ American Indian
- ☐ Alaskan Native
- ☐ Asian or Pacific Islander
- ☐ Black or African American
- ☐ Hispanic or Latino
- ☐ White/Caucasian
- ☐ Other

15. What is your level of education? *

- ☐ Some High School
- ☐ High School Graduate/GED
- ☐ Some College
- ☐ Undergraduate Degree
- ☐ Graduate Degree
- ☐ PhD
- ☐ Other
- ☐ Prefer not to answer

Please indicate whether you were satisfied with the information presented in the prenatal care education module videos

0 1 2 3 4 5 6 7 8 9 10

Not Satisfied Satisfied

0 1 2 3 4 5 6 7 8 9 10

Not Satisfied Satisfied

0 1 2 3 4 5 6 7 8 9 10

Not Satisfied Satisfied

Appendix O

Permission to use Survey/Interview Validation Rubric for Expert Panel

(VREP)

Permission to Use an existing Validation Rubric for Expert Panel (VREP)

December, 21, 2017

To: Content Redacted

Thank you for your request for permission to use VREP in your research study. I am willing to allow you to reproduce the instrument as outlined in your letter at no charge with the following understanding:

You will use this survey only for your research study and will not sell or use it with any compensated management/curriculum development activities.

You will include the copyright statement on all copies of the instrument.

You will send your research study and one copy of reports, articles, and the like that make use of this survey data promptly to our attention.

If these are acceptable terms and conditions, please indicate so by signing one copy of this letter and returning it to me.

Best wishes with your study.

Sincerely,

Content Redacted

Signature

I understand these conditions and agree to abide by these terms and conditions.

Signed _____ Date 12/21/2017

Content Redacted

Expected date of completion: May 2018_____

Criteria	Operational Definitions	Score			Questions NOT meeting standard (List question number) and need to be revised. Please use the comments and suggestions section to recommend revisions.	
		1=Not Acceptable (major modifications needed) 2=Below Expectations (some modifications needed) 3=Meets Expectations (no modifications needed but could be improved with minor changes) 4=Exceeds Expectations (no modifications needed)				
		1	2	3	4	
Clarity	The questions are direct and specific. Only one question is asked at a time. The participants can understand what is being asked.					

	There are no <i>double-barreled</i> questions (two questions in one).					
Wordiness	Questions are concise. There are no unnecessary words					
Negative Wording	Questions are asked using the affirmative (e.g., Instead of asking, “Which methods are not used?”, the project lead asks, “Which methods <i>are</i> used?”)					
Overlapping Responses	No response covers more than one choice. All possibilities are considered. There are no ambiguous questions.					
Balance	The questions are unbiased and do not lead the participants to a response. The questions					

	are asked using a neutral tone.					
Use of Jargon	<p>The terms used are understandable by the target population.</p> <p>There are no clichés or hyperbole in the wording of the questions.</p>					
Appropriateness of Responses Listed	<p>The choices listed allow participants to respond appropriately.</p> <p>The responses apply to all situations or offer a way for those to respond with unique situations.</p>					
Use of Technical Language	<p>The use of technical language is minimal and appropriate.</p> <p>All acronyms are defined.</p>					
Application to Praxis	The questions asked relate to the daily					

	practices or expertise of the potential participants.					
Measure of Construct: Perception of Pregnancy	The survey adequately measures this construct “Perception of Pregnancy”					

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Excel Spreadsheet Data Collection Tool

The screenshot shows a Microsoft Excel window titled "Heskitt - Project Data Collection Sheet (2) - Microsoft Excel". The ribbon includes Home, Insert, Page Layout, Formulas, Data, Review, and View. The active sheet is named "BN1".

	A	B	C	D	E	F	G	H	I
Formula Bar:	Title of the Project: Prenatal Care Education for Women Experiencing Unplanned Pregnancy Purpose of the Study:The purpose of this project is to educate women about the								
Row 1 Content	Last Three Digits of your phone number	1. How much does your pregnancy affect your life?	2. How much control do you feel you have over your pregnancy?	3. How important is prenatal care to you in this pregnancy?	4. How concerned are you about your pregnancy?	5. How well do you feel you understand your pregnancy?	How knowledgeable do you feel about the following additional aspects? [Childbirth]	How knowledgeable do you feel about the following additional aspects? [The period right after the baby is born (Postnatal period)]	How knowledgeable do you feel about the following additional aspects? [Breastf
Sheet Name	Form Responses 1								