

EFFECTS OF PRENATAL PARENTING EDUCATION CLASSES

by

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Participants were pregnant women receiving prenatal care through East Carolina University's Brody Medical Center, along with their partners. The present study investigated the effects of prenatal education regarding self-care, child care, child cognitive, emotional and physical development on parental self-efficacy, knowledge of child development through age one, social support, realistic expectations, and stress levels. Data were collected through the use of pre-post class surveys and measurements that were analyzed using SPSS version 22 statistical software. Results suggested that participants increased their parenting self-efficacy through gains in knowledge of infant care and development. Perceived stress levels decreased significantly from pre-test to post-test at both time one and at time two measures. Participants who attended a greater number of classes reported a greater degree of change from pre-test to their final post-test measures of parenting self-efficacy and perceived stress. Implications are that a focused intervention with limited dosage may be effective at reducing prenatal stress through helping expectant parents feel better prepared for parenthood. Implementation in existing group prenatal settings would maximize reach.

Keywords: prenatal education, parenting program, parenthood, parenting self-efficacy, prenatal stress, bioecological, family stress, infant care and development

EFFECTS OF PRENATAL PARENTING EDUCATION CLASSES

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CHAPTER 1: INTRODUCTION

It is undisputed that a baby's parents and environment have a lifelong influence on that child's development. Researchers are identifying the myriad of ways in which a baby's first environment, the mother's womb, affects fetal development at a molecular level (Claes, Hompes, Verhaeghe, Freson, & Demyttenaere, 2013). Maternal stress and anxiety during pregnancy are correlated with a number of adverse effects, not only on maternal mental and physical health but on fetal development as well. Biosocial theory (Lancaster & U.S. Social Science Research Council, 1987) explained the reciprocal, interconnected relationship between our biological processes and our social world. This theory identifies stress and anxiety in expectant parents as both a cause and an effect of changes in a couple's relationships, their environment, their bodies, and changes to and by their developing fetus.

Changes can be stressful and the transition to parenthood has been identified as being a highly stressful life event for mothers and fathers (Belsky, Spanier & Rovine, 1983; Cowan et al., 1985; Mulder et al., 2002). Some theories explain that one's ability to adjust to change depends on the resources available. Reuben Hill's (1958) ABCX stress model posits the birth of a child as A, the stressful event; B is the couple's perception of the event; C is the resources they have to cope with it; and X is the crisis outcome if the couple has insufficient resources. Echoing the ABCX model, the Transition Framework (Goodman, Schlossberg, & Anderson, 2006) states that successfully moving from one life stage to another depends on circumstances, perceptions, and resources. Considering these models and frameworks, strengthening an expectant couple's resources through education should decrease their stress. Indeed, Bloomfield and Kendall (2012) determined that parental stress can be mitigated through parenting education.

Unfortunately, the National Parenting Education Network's survey (2015) of parenting educators ranked "Prenatal/Preparation for Parenting" as one of the least-offered evidence-based program (EBP) topics nationwide. The purpose of my research was to begin to address this by determining the effects of a series of researcher designed parenting classes that educated expectant parents and their partners at the Women's Clinic of the Brody Medical Outpatient Center and at Vidant Hospital. Mothers and fathers were invited to classes since co-parenting is important (National Academy of Sciences, 2016). Classes provided expectant parents with information and activities to better understand child mental, physical and emotional development through the first year of life. Family stress theory and the transition framework support the premise that helping participants develop these resources should decrease participant stress levels. It was hypothesized that:

1. participants who attended classes would increase their parenting self-efficacy;
2. participants' levels of stress would decrease
3. dosage would affect the benefits obtained: the more classes participants attended, the more their resources would increase and their stress would decrease
4. participants would have realistic expectations of likely changes in their relationships as a result of parenthood;
5. participants would increase their social support of each other and through sharing their contact information with at least one other classmate.

This research took a uniquely universal, biosocial approach to prenatal parenting classes that provided a foundation for further exploration of the benefits of bringing parenting education into the earliest point of parenthood.

CHAPTER 2: LITERATURE REVIEW

For this study, biosocial theory (Lancaster & U.S. Social Science Research Council, 1987) was used as an overarching theory to explain the relationship between stress and biopsychosocial issues, including relationships with others as well as the environment, and how each factor interacts to affect the others. Research has linked prenatal maternal stress to adverse physiological functioning in the mother and in the developing fetus (Claes et al., 2013). The transition to parenthood can be stressful, and this life event is explored through the lenses of Hill's (1959) ABCX model of family stress theory as well as by using Goodman, Schlossberg, and Anderson's (2006) transition framework. Since all of these theories highlight the importance of resources, research regarding those that are modifiable through education were examined to identify a theory of change that explains how helping participants strengthen parenting self-efficacy, knowledge of child care and development, and self-care could increase social support and decrease stress.

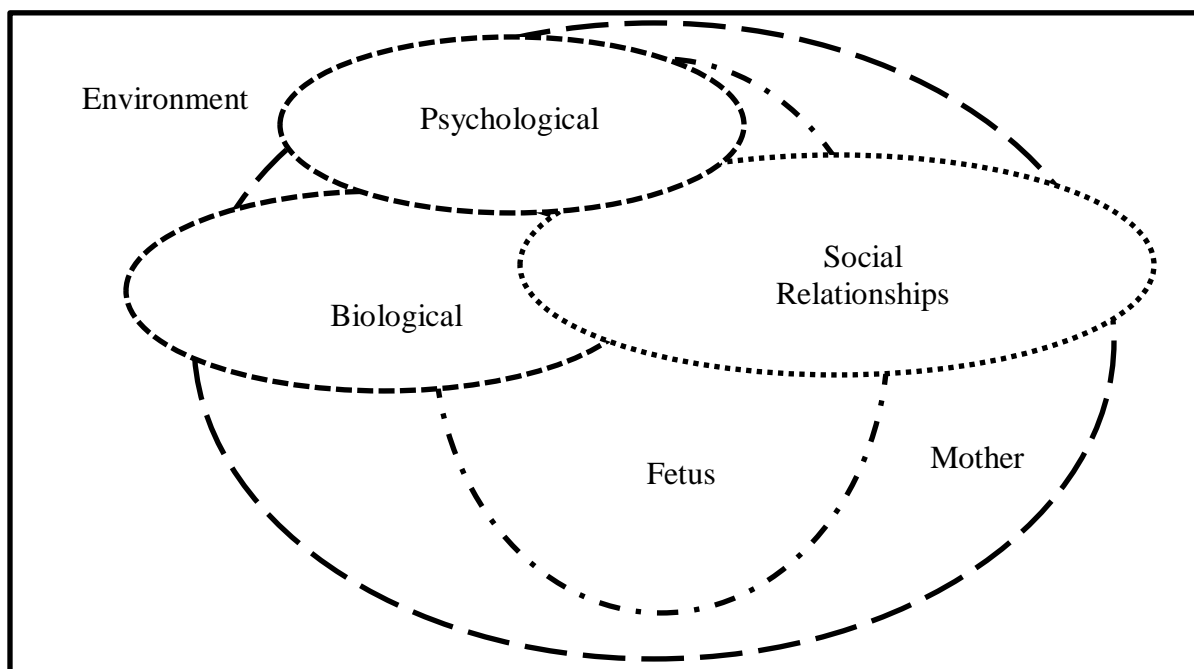
Further reviews examined research literature concerning existing evidence-based programs. The documentation on program best practices and programs designed for expectant parents revealed the paucity of parenting education available to this target population. This process also identified the program components most likely to foster the child care and development knowledge and parenting self-efficacy desired.

What Theories Apply to Stress and Pregnancy?

Biosocial theory (Lancaster & U.S. Social Science Research Council, 1987) explained the reciprocal, interconnected relationship between biological processes and our social and the physical world. This theory holds that personal relationships influence us both mentally and physically, as well as alter our interactions with the environment. Additionally, our physical

nature affects us mentally, which shapes our relationships, and also changes how we impact our environment. Likewise, our environment has an impact on us physically as well as mentally, which also leaves marks on our relationships. This interconnected system of relationships explains that the mental states of stress and anxiety in expectant parents may have negative consequences for the couple's relationships, for themselves physically, and for their developing fetus.

Figure 1. Diagram of Interconnectedness According to Biosocial Theory



Van den Bergh (2011) pointed out that fetal cells are very sensitive to environmental disruptions while their reproductive and division processes are still immature, and these disruptions can change the way genes are expressed. Among other possible “insults” to the fetal environment, maternal endocrine imbalances due to stress have altered fetal neurological genetic expression. These fetal neurological and physical manifestations of maternal stress can have

lifelong consequences for the child, such as ADHD (Van den Bergh, 2011), a predisposition for schizophrenia, and other prefrontal cortex neurological mental illnesses (Claes et al., 2013).

Maternal stress can have many sources, one of which is feeling unprepared for parenthood (Wernand et al., 2013). Preparedness for this major life event can be improved by increasing the degree of social support available to the expectant parent (Lu, 2006). In this biosocial manner, a mother's social condition can affect her psychological state, which affects her physically and that, in turn, affects her developing child. Since parental stress and anxiety can be altered by interactions with others, this opens a window of opportunity to socially strengthen parental resources (Tremblay & Soliday, 2012). It may be possible to accomplish this social resource strengthening through a small group prenatal parenting program. Parenting programs are considered to be evidence-based programs (EBP) after repeated randomized controlled trial research has shown the programs repeatedly accomplished what they claim to do and that results are sustained for at least one year after the program ends (Jacobson, 2016). Small-group parenting education classes in EBPs such as The Incredible Years, Nurturing Parenting, and Triple P, have been shown to provide social strengthening for parents by increasing their knowledge of child development, infant care, and coping skills and by providing an opportunity to develop social support relationships with other parents (Marcynyszyn, Maher, & Corwin, 2011; Maher et al., 2011; Turner & Sanders, 2006). The same principles and theories of change that explain the success of these programs were also applicable for assisting expectant parents. Strengthened parenting resources were predicted to help expectant parent participants feel more supported and better prepared for the upcoming life event, which led to reduced levels of stress.

Family stress theory explains that when major life events occur, such as the birth of a child, changes to the family structure create a degree of stress and our ability to effectively adjust

and cope with the event is directly related to the resources available to us (Gameiro, et al., 2011). Reuben Hill (1958) developed the original ABCX model of family stress (see Figure 1.) in which “A” is the stressful event, “B” represents protective factors including internal and external resources and social support, “C” is the way in which the family perceives the event (as positive or negative), and “X” is the crisis outcome that can occur if the family cannot adapt or cope with the event. Several researchers have documented that the transition to parenthood (A) can be an especially stressful time in a marriage (Belsky, Spanier, & Rovine, 1983; Bouchard, 2009; Cowan, et al., 1985). Yet Hill’s theoretical model clearly indicates that the crisis outcome X is dependent on B, the couple’s resources and ability to cope with A (the event), as well as on C, the couple’s positive or negative perception of the event. A couple that perceives themselves to be unprepared for parenthood is more likely to feel negatively stressed (Patterson, 2002). It logically followed that strengthening their resources (B) may alter their perception (C), thereby averting the crisis (X) by increasing the couple’s capacity to cope with the stressful event.

Figure 2. Hill’s (1958) Original ABCX Model of Family Stress

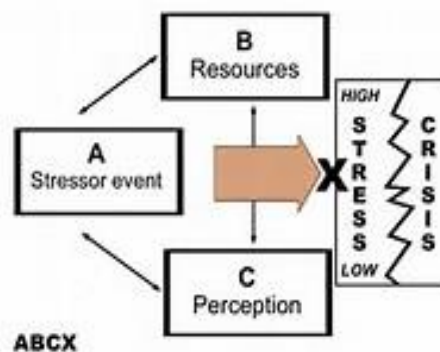


Figure 1. This flowchart representation of Hill’s (1958) ABCX model of family stress indicates the way in which a stressor event (A) is moderated by one’s resources (B) and perceptions (C) and the totality of these factors determine if the event will produce an outcome (X) of low stress (manageable) or high stress. When A, B, and C produce high stress, the outcome (X) is more likely to be a crisis.

Levinson (1986) viewed adulthood as consisting of a series of periods of stability and transition. Transition framework (Goodman, Schlossberg, & Anderson, 2006) dovetailed with this concept while it also reiterated and expanded family stress theory's view of the importance of resources. This framework put transitions into context by explaining that each life transition begins with the end of one period, which requires adjusting to its loss before being able to accept the reality of a new period. These transitions are inclusive of one's biopsychosocial being and are comprised of the period during which the end of one life stage of stability overlaps with the beginning of another. The change from being a couple to being parents is an important transition during adulthood. Schlossberg (1981) laid out a "4 S Strategy" of adjustment during transitions that involves identifying the Situation, Self, Support, and Strategies. The same event (A in ABCX) will be viewed differently depending on the Situation: did the couple plan to have a child, are they financially prepared, is there enough space in their living quarters? As well, individuals (the Self) may perceive the same event differently; their perception of the event corresponds to the C in the ABCX model. The third "S", Support, is a key ingredient in both the Transition Model and Family Stress Theory (B in ABCX), and it is seen as being partly responsible for one's ability to adjust to the new adult developmental period (X in ABCX). Finally, Strategies in the transition framework (the fourth "S") are coping mechanisms that are also resources employed in the transition process. Group prenatal parenting classes were expected to modify a couple's Support and Strategies to facilitate the transition to parenthood and also reduce stress.

Transition to Parenthood: The Event (A, and the Situation)

A period of transition, as defined by Levinson (1986), is the overlap between differing adult stages of stability. Transitions, such as the change from being childless to being a parent,

involve substantial adjustment and consequently are potentially very stressful (Delmore-Ko, Pancer, Hunsberger, & Pratt, 2000). The transition to parenthood may be the most stressful transition couples make (Gameiro, Moura-Ramos, Canavarro, Santos, & Dattilio, 2011). As explained by Goodman, Schlossberg, and Anderson (2006), even within couples some individuals can transition to parenthood well while the other experiences difficulty.

Research has identified prenatal expectations, which can differ for women and men (Cowan, et al., 1985), as being one key to successfully negotiating this life event (Bouchard, 2009; Curran, Hazen, & Mann, 2009; Delmore-Ko et al., 2000; Lu, 2006; Pancer et al., 2000; Salmelo-Aro, 2012). Interestingly, couples who did not know the sex of the fetus agreed more on expected parenting methods than did couples who knew they were expecting a boy (Abramson, Mankuta, Yagel, Gagne, & Knafo-Noam, 2014). Fathers in that study expected to employ more rejection and controlling parenting methods than did expectant mothers when they knew the baby was a male. Cowan, et al., (1985) reported that pregnant women anticipated a reduction in the amount of outside-the-home work they would do after giving birth, as well as the accompanying reduced income. Women also expected there to be some degree of shift in their self-concept from being a worker to being a parent. Men did not perceive such a shift; in fact, they anticipated an increase in their self-concept as worker. Cowan et al. (1985) indicated their research corroborated the work of other researchers who found that gender roles become more differentiated and traditional in the transition to parenthood. Six months after childbirth, only women reported declines in their satisfaction with their roles and relationships; both men and women reported relationship dissatisfaction at the 18 month follow-up. Because of the greater physical and psychological impact of parenthood on women, they realized the effect of the transition to parenthood much sooner than their male partners did, which also added to

relationship conflicts (Cowan, et al., 1985). Idealistic, unreasonably positive assessments of the upcoming event and its likely effect on home life were associated with both lower marital satisfaction and parenting self-efficacy in the Delmore-Ko et al. (2000) research as well.

Notably, Delmore-Ko et al. (2000) reported that “too often, prenatal classes focus only on the birth of the child and then leave the parents to make the actual adjustment to parenthood on their own” (p. 638). Salmela-Aro (2012) concurred that the transition to parenthood is an ideal time for an intervention that promotes positive parenting. Delmore-Ko et al. (2000) recommended providing expectant parents with resources related to infant care to help them adjust and develop mastery - a core component of self-efficacy. Sommer et al., (1993) also identified cognitive readiness for parenting as a predictor of prenatal maternal stress. They further recommended that partners discuss parenting goals and approaches, the ways each partner can assist with care before and after childbirth, and expectations regarding division of household duties and child care to avoid prenatal and postnatal conflict and crisis over these basic parenting issues.

Resources: Parenting Self-Efficacy (B, and Strategies)

Self-efficacy requires knowledge of the steps involved in a task in order to be able to practice and master them (Bandura, 1979). Having self-efficacy in a task enables people to frame difficulties related to it in solvable ways and is a significant personal resource (Bandura, 1979). Research has found that parenting self-efficacy, which includes knowledge of child care and development, is closely correlated with parenting behaviors and with child development outcomes (Bloomfield & Kendall, 2012; Coleman & Karraker, 2000). Their research concluded that the effects of the EBP “1-2-3 Magic” replicated other studies that showed a positive relationship between parenting education and parenting self-efficacy. Conversely, Kunseler,

Willemen, Oosterman, and Schuengel (2014) determined that parental stress and anxiety aligned negatively with parenting self-efficacy. Further, Wernand et al. (2013) confirmed that higher levels of maternal prenatal anxiety were associated with lower levels of parenting self-efficacy throughout all three pregnancy trimesters. Wernand et al. (2013) clarified that prenatal anxiety involves uncertainty and insecurity about their ability to perform their future parenting responsibilities, as opposed to the negative and hopeless feelings of depression. As mentioned by Wernand et al. (2013), a large number of studies have linked maternal depression to negative child outcomes.

Anxiety about the upcoming transition to parenthood is also linked with low parenting self-efficacy (Kunseler, et al., 2014). Once a child is born, parenting self-efficacy may further decrease as parents face the daily reality of infant care, especially if the parents had unrealistic, simplistic expectations of parenthood (Pancer, Pratt, Hunsberger, & Gallant, 2000). However, parenting self-efficacy can be modified through education and social support (Bloomfield & Kendall, 2012; Gao, Sun, & Chan, 2013). Stronger parenting self-efficacy including knowledge of child care and development, fortified socially through prenatal classes, was expected to lead to realistic ideations of parenthood and to reduce stress and anxiety.

Resources: Social Support (C, and Support)

Centering Care is a method of group prenatal care designed to reduce stress during pregnancy through social and emotional support in addition to education (Straub, et al., 2014). Centering Care participants reported the fewest preterm and low birth weight pregnancy outcomes as compared to all other prenatal stress reduction methods evaluated in the meta-analysis conducted by Straub, et al. (2014). Social support was identified by participants and the researchers as being a statistically significant factor in the success of the Centering Care

program. By reducing parental stress, social support has also been shown to mediate the adverse relationship between low income, depression, and harsh parenting methods (Lee, Anderson, Horowitz, & August, 2009). This is especially true when the social support includes partner congruence (Lu, 2006). Regardless of socio-economic status, a couple's willingness and ability to communicate with each other was identified as being a key to relationship satisfaction and one's perceived level of social support (Lu, 2006).

Social support, especially from one's partner and family, affects one's attitude toward parenthood and this can affect a couple's relationship (Bloomfield & Kendall, 2012; Gao, Sun, & Chan, 2013). Women who did not receive the support they desired from partners and family reported lower parenting self-efficacy and higher stress (Suzuki, Holloway, Yamamoto, & Mindnich, 2009). Lu (2006) therefore recommended parenting skills training, stress-coping workshops, education about the likely effects of parenting on relationships, conflict resolution skills, and instruction on building social support resources to assist couples in expressing their needs and expectations clearly to avoid conflicts over these issues during the pregnancy and after the child is born.

Stress: The X Factor

The perception (B, and Self) that one does not have sufficient resources available (C, and Support, Strategies) to cope with the impending demands of parenthood (A, and Situation) can lead to a crisis of stress (X). Maternal stress is implicated in a variety of physiological problems for both the mother and her developing child. Stress raises maternal hormone levels, specifically glucocorticoids including cortisol as measured in saliva (Weinstock, 2011), that affect the fetal hypothalamic-pituitary-adrenal (HPA) axis (Claes et al., 2013). Research conducted by Qulu, Daniels, and Mabandla (2015) on pregnant rats and their pups indicated that stress induced

during the third trimester increased the pups' basal corticosterone concentration, caused anxiety-related pup behaviors, reduced the pups' navigational ability, and shrunk the pups' hippocampal mass when measured at two weeks of age. By altering the methylation of cell DNA at the NR3C1 gene in prefrontal cortex cells, these changes in the HPA axis are ultimately linked to a host of adverse mental health outcomes in human offspring as well, such as schizophrenia and bi-polar disease (Claes et al., 2013). Further, Van den Bergh, Mulder, Mennes, and Glover (2005) explained that many functions of the HPA axis, as well as neurological functions, determine and are affected by the sleep-wake cycle. Van den Bergh, et al.'s (2005) research correlated maternal stress with increased fetal activity, as measured by ultrasound, and with increased fetal heart rate. These, in turn, affected the infant's sleep-wake cycle. Evidence of abnormal fetal activity and heart rate are indicators of systemic fetal development concerns which may have effects on the infant after birth. Indeed, Beijers, Jansen, Riksen-Walraven, and Weerth (2010) analyzed maternal self-reports of stress along with test results measuring cortisol in maternal circadian saliva collections and calculated that maternal stress explained a significant percentage of the variance in general infant physical illnesses and antibiotic use through the first year of life.

There is growing concern within the fields of medicine and psychology about the effects of stress during pregnancy, as evidenced in the American Academy of Pediatrics' report entitled *Poverty and Child Health in the United States* (2016). In it, the Academy discussed the many adverse physiological effects of chronic, toxic stress – specifically, when caused by poverty - but the report also pointed out the protective effects of warm, responsive relationships even for children living in harsh conditions. Their report highlighted just one example of biosocial theory in action by pointing out the physiological effects of an impoverished environment and the

counter effects of positive social interactions for child physical development. Salmela-Aro (2012) conducted a psycho-educative group intervention using social support aimed at decreasing the risk of depression by promoting increased preparedness and good motherhood. She discovered that education increased preparedness and reduced depressive symptoms, and that preparedness also mediated early positive parenting.

Sommer et al., (1993) identified cognitive readiness for parenting as one predictor of prenatal maternal stress. Further, a meta-analysis conducted by Straub, Qadir, Miller, and Borders (2014) regarding the effectiveness of prenatal stress reduction techniques concluded that prenatal care that included social support and education not only reduced maternal stress, it also reduced incidences of preterm and low birth weight pregnancy outcomes. As biosocial theory further explains, exposure to prenatal education that teaches conflict resolution, coping skills, and stress management, along with child care and development information and effective parenting methods, may help expectant parents lower their stress levels as they strengthen relationship skills and increase in knowledge of the tasks of parenthood (Gao, Sun, & Chan, 2013; Kunseler, et al., 2014; Leahy-Warren & McCarthy, 2010). Family stress theory and the transition framework indicate that these strengthened resources should enable couples to cope with this life event, thereby avoiding crisis.

Identifying the Gap

The National Academies of Sciences, Engineering, and Medicine (2015) correlated certain basic elements of parenting to successful child development: responsiveness, warmth, book reading, kind but firm guidance and providing for child safety and health. Effective evidence-based parenting programs (EBPs) are generally designed to address these core competencies by instructing parents about healthy ways to increase warm, nurturing interactions

with their children and ways to use positive corrective methods. Parenting intervention programs are considered to be evidence-based after repeated experimental or quasi-experimental designed research has shown the programs repeatedly accomplished what they claim to do (Jacobson, 2016). The National Academies of Sciences, Engineering, and Medicine (2015) further reported that parents with knowledge of child development tend to interact with their children in healthier ways and are more likely to utilize parenting practices that promote healthy child development. EBPs are designed as either primary, which is preventive, secondary, to address a problem behavior in its early stages, or tertiary, which aims to mitigate the effects of an issue that cannot be entirely resolved. Primary programs comprise the smallest number of EBPs (California Evidence-Based Clearinghouse for Child Welfare, 2016) yet the research and theories on maternal stress, parenting self-efficacy, social support, and the transition to parenthood indicate a need for a primary approach to parenting education (Delmore-Ko, et al., 2000; Gao, et al., 2013; Goodman, Schlossberg, & Anderson, 2006; Hill, 1958, Lu, 2006; Straub, et al., 2014).

Evidence based programs have been shown to improve parent-child relationships (Bloomfield & Kendall, 2012) but most are secondary programs designed for parents already experiencing problem child behaviors (California Evidence-Based Clearinghouse for Child Welfare, 2016). Examples of EBPs include the Chicago Parent Program, The Incredible Years, Parent Management Training – Oregon Model, Parenting with Love and Limits, the Triple P Parenting Program, and Tuning in to Kids. Very few EBPs have been designed for expectant parents. The few that do exist mainly target high-risk populations of women, such as low-income, addicted and abused women, and also teen mothers. The Mt. Sinai NYU Health program (Rothenberg & Weissman, 2002) focuses on teen mothers while the Nurse-Family Partnership targets all types of at-risk women using home nurse visitations as its primary component. These

programs are of a comprehensive nature that addresses the mother's education, employment, and social service needs in addition to providing parenting education. Consequently, they are difficult and expensive to upscale, and they are not applicable to families not deemed to be "at risk".

On the California Evidence-Based Clearinghouse for Child Welfare website, a search for "parenting" programs for children age 0 that are supported or well supported by research evidence yielded only five results: AVANCE, which also incorporates home visits by nurses; Child-Parent Psychotherapy, for trauma victims; Childhaven Childhood Trauma Treatment, by referral from Child Protective Services; Triple P Positive Parenting Program Level 4, for families with moderate to severe behavioral problems; and the Triple P Positive Parenting Program in its totality – which is the only program listed that has components applicable to all families.

Triple P is currently developing a program for parents of infants but the program is not yet available. On their website, founder Matt Sanders (2016) stated their research indicated 85% of parents of infants were unsure that they were caring for their baby properly. This newest Triple P program is designed to meet what Sanders called "a clear need in the community" for instruction that helps parents handle infant care issues that lead to parental stress. However, research plainly shows that parental stress begins even before the birth of a child, indicating there is a gap between the need for effective prenatal primary family education programs and their availability.

The purpose of this research was to begin to address this gap by determining the effects of a program designed and conducted to help expectant parents develop parenting competencies and social support, and to demonstrate that increasing these modifiable resources would reduce participants' prenatal stress and anxiety. Participants attending these classes were to gain knowledge of proper child care skills and of child physical, emotional, and cognitive

development through age one. It was anticipated that these resources (C, and Strategies) would facilitate participants' development of strong parenting self-efficacy. Knowledge and practice of conflict resolution, effective coping mechanisms, and stress management techniques were expected to increase social support given to and received by their partners (C, and Support). The combination of increased parenting self-efficacy and social support (B, and Self) was hypothesized to enable participants to feel more confident about the transition to parenthood (A, and Situation). Expectant couples were expected to be more likely to have realistic expectations of the transition to parenthood as a result of knowledge acquisition and class discussions. Conducting the classes in a group setting was meant to allow participants to further increase their social support, in anticipation that members would exchange their personal contact information. In accordance with biosocial theory, it was predicted that this program would help reduce prenatal stress (X). In theory, the social support provided through these classes may later assist participants in their transition to parenthood.

CHAPTER 3: METHODS

Program Development

Ballard and Taylor (2012) identified five components of effective family life education programs: strengths and needs of the population, culture (of the participants, the host organization, the community, and the larger political environment), program content, the educator, and program design. Each component must complement the others for a program to be successful. These five components comprise the Framework for Best Practices in Family Life Education and were used to facilitate the development of this parenting program.

Strengths & Needs of the Population, Culture

To determine the content of a parenting program, a needs assessment should be conducted asking likely participants to identify areas of interest or importance to them, or what outcomes they desire. This involves learners in identifying their own learning needs and encourages them to be invested in the program (Galbraith, 2004). As part of a needs assessment, a thorough review of relevant research should be conducted to identify research and theories that could explain how to address the gap between the current conditions and those desired.

Accordingly, the first step of this study was to develop and implement needs assessment surveys with the assistance of Dr. Sharon Ballard of the Human Development and Family Science Department and Dr. Sarah Smith of the East Carolina Brody Medical School's Women's Clinic. Surveys were designed to identify whether people expecting their first, second, or subsequent children have interest in learning about the topics suggested by research, and to understand the logistic needs of potential participants. Since this involved human subjects, permission to conduct the surveys was requested from East Carolina University's Institutional Review Board (IRB). After adding the IRB contact information to the survey cover letters, permission was received in April 2016. During the week of June 6 to June 10, 2016 at the Brody

Medical Outpatient Center in Greenville, NC, all prenatal women and their partners were asked to voluntarily complete surveys assessing their level of interest in seven parenthood topics. There was robust participation in the survey ($N = 92$) which provided some interesting results.

After combining the “Extremely interested” and “Very interested” response categories, topics of interest were (in order): when to call the doctor (86.5%); how a baby grows (78.2%); how and what a baby learns (75%); baby’s emotional needs (71.7%); creating a healthy environment (68.5%); physical care of a baby (66.4%); and care of self (66.3%). This suggested that most expectant parents would appreciate and benefit from some parenting topics. There was no significant difference in the levels of interest expressed by women ($n = 71$) and their male partners ($n = 21$). Partners of pregnant women were included in the assessment because fathers have and scored lower on parenting self-efficacy than mothers (Salonen et al., 2009) and there is a push to include fathers in more parenting research and programs (National Academies of Sciences, Engineering, Medicine, 2016).

An ANOVA was conducted to determine if there was a difference in the level of interest expressed by first-time parents ($n = 29$) as compared to participants who already had children at home ($n = 63$). There was a statistically significant between-groups difference at the $p = .02$ level in the level of interest reported for each topic (see Table 1). First-time parents expressed statistically significant greater levels of interest in each topic listed on the needs assessment survey, as compared to interest reported by multiparous expectant parents. A combined 88.7% of first-time expectant parents indicated they were either very or extremely interested in the topics. Of note is that 72.4% of them (21 of 29) had at least some post-secondary education.

Table 1.

Between-subjects ANOVA of Expressed Interest by Topic: First-Time Expectant Parents Compared to Multiparous Expectant Parents

Topic	<i>df</i>	<i>F</i>	η^2	<i>P</i>
Physical Care	1	8.7	.1	.00*
Emotional Needs	1	5.7	.07	.02*
Healthy Environment	1	8.3	.1	.005*
Learning	1	5.7	.07	.02*
Growing	1	6.9	.09	.01*
Call the Doctor	1	5.4	.06	.02*
Self-Care	1	5.3	.06	.02*

*Significance at the .05 level

Medical providers (N = 29) were also surveyed to assess how important they feel it is for their patients to know information about these topics. This engaged the staff of the host organization, East Carolina University's Brody Medical Outpatient Center, to help foster effective collaboration and contribute to the program's sustainability (Mancini & Marek, 2004). Provider surveys offered a contrasting picture of which topics medical personnel saw as important for parents to be taught. Most personnel indicated all of the topics were extremely important for patients to know. A one-way between-groups analysis of variance indicated a statistically significant difference ($F(5, 21) = 3.5, p = .02$) in provider ratings for the importance of teaching about baby's cognitive development. The Tukey HSD post-hoc analysis indicated that the mean score for physicians ($M = 4.4, n = 5$) was significantly lower than that of ancillary providers ($M = 5.8, n = 5$), medical assistants ($M = 6.0, n = 3$), nurse/midwives ($M = 5.3, n = 3$), registered nurses ($M = 5.8, n = 4$), and obstetrician/gynecologists ($M = 5.3, n = 7$). Several physicians rated parental knowledge of infant emotions and learning as being only "somewhat"

important for expectant parents to know, and some wrote that these topics can wait to be taught. However, current psychology and brain research point to the long-lasting effects of early stimulation and/or deprivation in these areas (Bardi, et al., 2016; Minagawa-Kawai, et al., 2011; Mistry, Benner, Biesanz, Clark, & Howes, 2010). Also, once children are born, it becomes more challenging for parents to find time and to coordinate the logistics needed to attend classes.

The supportive culture of the Brody Medical School is highlighted here since its personnel welcomed this research, gave permission for the needs assessment surveys, and facilitated classes by providing and arranging for space for them. Conducting the needs assessment step of the development process elucidated the culture of comradery of the staff at the Women's Clinic, and it also provided me with insight into the cultures of its patients and their partners.

Content

The next step in developing this program's content was to examine best practices of existing parent education programs. Kaminsky, Valle, Filene and Boyle (2008) conducted a meta-analysis of 128 articles evaluating parenting programs to identify common components of successful EBPs that amount to best practices. Kaminsky, et al. (2008) identified parental knowledge of child development and parenting care skills as having the highest program effect size (.88). For parents in the programs they evaluated, education and training about consistent responding, emotional communication, positive child interactions, and practicing with their own child yielded the best program results. Child behaviors were most positively affected when parents were instructed in responsiveness, sensitivity, nurturing, modeling behaviors, the proper use of time-out, and also when parents could practice skills with their own child. The common elements, effective for both parents and children, were positive child interactions and practicing with one's own child.

To discover additional best practices for the current program, a search was conducted for prenatal EBPs on the websites of the California Evidence-Based Clearinghouse for Child Welfare (2016), Coalition for Evidence-Based Policy (2016), and What Works Wisconsin (2009) but none were listed without a nurse home visit component, or that were for populations that are not at-risk. On the SAMHSA website, a search for “prenatal” did reveal information about the Family Foundations program. This program targets first-time parents and addresses issues similar to those in the current program: co-parenting, conflict resolution, realistic expectations, child emotional security, responsiveness to baby’s cues, and infant sleep requirements. However, Family Foundations contains four prenatal and four postnatal sessions and all assessments were administered after the babies were six months old, rendering comparison impossible. Following Duncan and Goddard’s (2011) recommendations, content for the current program has been culled from research including Kaminsky, et al.’s (2008) meta-analysis of effective programs and from the results of the needs assessments.

Expectant parents expressed the most interest (86.5%) in the topic “When to Call the Doctor” so the researchers met with Dr. Coral Steffey, of ECU Physicians’ Pediatric unit, to help develop this portion of the program content. Dr. Steffey generously gave of her time and expertise to identify the most important information for parents of newborns to know: SIDS prevention, sleep and nutrition requirements, bowel regularity, the importance of attending well-baby checkups, and that doctors prefer parents to call whenever they have concerns about their infant’s physical condition.

Based on identified best program practices and armed with results of a needs assessment, completing a logic model can clarify program content. A logic model requires the identification of the needs of the target audience, activities that will engage participants in learning relevant and effective knowledge and skills, resources needed to conduct the program, and how the

activities should lead to the outcomes desired, creating a coherent, unified theory of change (Yuen, Terao, & Schmidt, 2009). The logic model created for this program (see Appendix A) identified the modifiable factors of stress as well as the scope of the information about child development that can reasonably be covered. This determined what outcomes can be reasonably expected and measured, and these guided the choice of activities. The activities, in turn, identified the resources needed to run the program.

The Educator

The third component of Ballard and Taylor (2012)'s concept of effective family life education is the educator. This research involves the design and implementation of an intervention for pregnant women and their partners, making it important for the researcher to understand and incorporate best practices for teaching adults. Dean (2002) referred to the need for an educator to use a simultaneous three-phase process of assessment, developing instruction, and reflection in order to be effective.

Assessment is comprised of the educator's development of content knowledge, self-awareness, and understanding of adult learners in the context of the program's delivery. The author's undergraduate degree in Psychology prepared her for master's level classes in family theories, child and human development, research methods, program planning, statistics, and parent education. These courses provided the content knowledge necessary to be an effective resource for expectant parents. Being a parent also provided wide range of practical, first-hand parenting experiences. Memberships in the North Carolina Parent Education Network and the North Carolina Infant Mental Health Association provided professional education opportunities via webinars and conferences, and membership in the National Council on Family Relations website granted access to additional professional development tools. Implementation of the self-awareness component of assessment led the researcher to participate in a formal master's level

education course. This facilitated the author's development of an understanding of adult learners, knowledge of effective methods for teaching adults, and, most importantly, of best practices for teaching expectant parents the class content identified for this research.

The educator instruction component is the totality of developing core goals and objectives, activities, and assessments of learning achieved. The researcher began this through an intuitive process but refined it through reviews of literature regarding parenting education programs, literature evaluating program best practices, literature evaluating program delivery, and literature identifying modifiable components of sources of stress during pregnancy and the transition to parenthood. Research articles reviewed were also scoured for reliable assessments and statistical analysis methods that would be appropriate to use in this current research.

Dean's (2002) final educator process component specifies that the educator, in this case the researcher, must continually reflect upon the entire process to evaluate the program with the goal of improving it. This reflective process aligns well with Yuen, Terao, and Schmidt's (2009) explanation of the role of formative evaluation, which this research accomplished through a questionnaire as part of the post-class assessments (see Appendix D) administered throughout the program. By asking for participant feedback, respecting their perspectives on the classes, and making adjustments to subsequent classes when appropriate, the current research acknowledged participant strengths and aided in meeting their needs.

Program Design

Adult education should engage the learner in a process that challenges them to construct their own meaning from new information that they assimilate into their lived experiences in order to develop mastery of the content. People who develop mastery feel in control and have a strong sense of self-efficacy. This program taught expectant parents evidence-informed information about stress management, conflict resolution techniques, and about child mental,

emotional, and physical development and care. This was designed to strength their parenting and relationship skills as they built self-efficacy while reducing their anxiety and stress levels. In the needs assessment conducted by Svensson, Barclay and Cook (2006), expectant and new parents indicated their ideal delivery format for a parenting program would include experiential learning, problem-solving activities, small groups, and instruction that relates theory to practice, all of which concur with Galbraith's (2004) recommendations for educating adult learners.

This program utilized a combination of delivery methods appropriate for adult learners including didactic, audiovisual, written, group discussions, and hands-on practice sessions. These were chosen depending on the content being taught, the constraints of the resources available, and to accommodate a variety of learning styles (Galbraith, 2004). Group sessions were in harmony with the principles of Centering Pregnancy Prenatal Care (Heberlein et al., 2016). Since the program sought to build on participants' knowledge and skills, the researcher helped expectant parents identify their existing strengths. This program was conducted with the support of the East Carolina Brody Medical School. The original intent was to schedule classes at venues that were familiar and supportive to participants: the Brody Outpatient Center and Vidant Hospital. As emphasized by Wlodkowski (in Galbraith, 2004), the educator should create a culture and atmosphere of comfort and confidentiality for the participants. This secure environment would encourage engagement and participation and enable participants to experience social support from the program, their medical community, and each other.

In accordance with Hill's (1958) ABCX family stress model and the transition framework proposed by Goodman, Schlossberg, and Anderson (2006), the information provided and skills practiced in these classes were designed to strengthen participants' confidence in their ability to be good parents. Group classes were expected to provide attendees with additional social support from other participants, in addition to strengthening social support for and from their own

partners. Anticipated increases in parenting self-efficacy and social support were expected to help first-time parents have realistic expectations of what life with a baby will be like. As explained by biosocial theory, these socially strengthened resources should have combined to reduce physiological symptoms of prenatal stress.

Based on the interests participants expressed in the needs assessments and on researched best practices, classes in this program focused on teaching infant emotional, physical, and cognitive development through the first year of life. Expectant parents were introduced to methods of having positive interactions with their babies in a developmentally appropriate manner. Since positive child interactions often depend on the state of parental stress levels and co-parenting agreement, classes also incorporated instruction and practice of coping, stress, and conflict management techniques. (For a more detailed outline of each class, see Appendix D.) Activities reinforced this knowledge and these skills through the use of videos, discussions, and simulations. Adjustments to best practices were necessary to accommodate the target population of expectant parents. For example, Kaminsky, et al. (2008) identified practicing techniques with their own child as one of the most effective instructional approaches, but couples expecting their first child obviously cannot. Active Parenting's "1,2,3,4 Parents!" program includes an activity in "Preventing Problems" (Chapter 2) that asks participants to think of three commands they usually give toddlers that can be reworded as simple choices, then to write down how the child reacted to being given a choice (Popkin, Gard & Montgomery, 1998). Their responses and child reactions are shared at the next session. My modified activity asked participants to imagine and share aloud some commands they might give a one year old, then to share possible ways to turn those into a choice between two acceptable options. This preserved the lesson's intent while adjusting for the participants' inexperience and inability to practice the technique.

Program Delivery

An effective program should be delivered in accordance with the logistics identified in the needs assessment. The needs of the participants should determine which days and times are best for the attendees and, if participants do not have their own transportation, the location should be near mass transit (Yuen, Terao, & Schmidt, 2009). If the community is of a particular ethnicity, it may be best to have a program presenter of the same ethnicity (Renzaho & Vignjevic, 2011). Language and disability needs must also be accommodated. There must be sufficient space for the anticipated number of attendees, and sufficient equipment and supplies for conducting all planned activities. In the needs assessment for this program, survey participants indicated all likely participants speak English, have transportation, and do not need disability accommodations. The East Carolina Women's Clinic was deemed to be an acceptable, accessible location for the classes. The Brody Medical School accordingly arranged for appropriate facilities in their Clinic for daytime classes and at nearby Vidant Hospital for the evening class. The mean number of classes survey participants indicated they were willing to attend was three. Days and times of the class adhere to those requested in the needs assessment: Mondays and Wednesdays at noon at the Brody Women's Clinic conference room, and Friday evenings at 6:30 p.m. at Vidant Hospital's Conch Room. Classes were scheduled to take 90 minutes, including assessments. Participants were to be encouraged to access restrooms as needed, so a specific break time was not scheduled. The researcher used personal funds to provide appropriate healthy snacks and water. No other incentives were offered.

This parenting program utilized a quasi-experimental design. Typically in experimental research, participants are recruited from a range of socioeconomic backgrounds and geographic locations and should be randomly assigned to either a treatment group or a control group which, for social sciences, can be a wait-list group (Greenstein & Davis, 2013). However, unless some

qualified people decline the treatment but agree to complete the assessments, it can sometimes be unethical to have a control group. For research with pregnant women, there is a time constraint that may not give enough time to have a participant wait for treatment. In such an instance, the most frequently used research method is a single-group pre- post-treatment design. This quasi-experimental design is considered acceptable when it is unethical to have even a wait-listed control group (Yuen, Terao, & Schmidt, 2009).

Participant Recruitment

IRB approval for this research from East Carolina University was delayed pending IRB approval from Vidant Hospital. Once final approval was received on January 10, 2017, advertisement posters were placed in a waiting area and in an ultrasound room at the ECU Brody Outpatient Medical Center's Women's Clinic, and in a corridor to exam rooms at ECU Women's Physicians. Color 8.5" x 11" take-home program advertisements (see Appendix H) were placed at the check-in desks in the lobbies at both facilities as well. Color advertisements were also distributed in person to attendees of two Vidant Hospital evening maternity facility tours. Grayscale versions of the advertisement were distributed one week later to other Greenville obstetrics providers. Of fifteen facilities listed online, only three other locations were valid: Carolina Women's Physicians, Greenville Women's Clinic, and Women's Health Center. These advertisements were displayed and available until the last class was held (February 17, 2017). These announced the "who/what/where/when and why" of the classes, which began on January 30, 2017, and clearly stated that male partners should also attend. The researcher's contact information was listed on these documents for any questions about the classes, and also for registration purposes. Although registration was encouraged, it was clearly noted that registration was simply to insure there was enough room and snacks for attendees. Personal information was not collected, and attendance without registering was acceptable.

All expectant female and male parents were welcome to attend, although some class content was geared toward first-time parents because they reported significantly higher levels of interest in all topics on the needs assessment conducted. Participation was confidential and voluntary in accordance with IRB standards. Before beginning their first class, each participant was provided with a standard IRB consent forms, a verbal explanation of the form, and time to read the document in its entirety; each person indicated their consent to participate in the research on the form by means of a check mark. Confidentiality on the assessments was ensured by asking participants to identify their documents using only their vehicle model and color, or their pet's name and color. There were no duplicates, so no further means of distinguishing the assessments was necessary.

Measures

Program assessments should measure only, but all of, the constructs relevant to the program's outputs and goals (Yuen, Terao, & Schmidt, 2009). Accordingly, each participant completed one pre-class set of assessments at the beginning of just the first class they attend, which included demographics (see Appendix E). In addition to standard demographic information, participants were asked to indicate their current trimester since Teixeira, Figueiredo, Conde, Pacheco and Costa (2009) found a curvilinear relationship between time of pregnancy and degree of anxiety. Post-class assessments were completed at the end of each class (see Appendix F). This design captured useful information even from participants who only attended one class.

Self-efficacy is one's confidence in their ability to perform a certain task (Bandura, 1979). It requires knowledge of the steps involved in the task in order to practice and master the task. Parenting self-efficacy requires knowledge of child development and parenting skills in order to practice them and develop mastery, conveying confidence in one's ability to be a good

parent. For the purpose of this research, parenting self-efficacy was defined as knowledge of child physical, emotional, and cognitive development through the first year of life in addition to their confidence in their ability to perform the practical skills of daily infant caretaking (Leahy-Warren & McCarthy, 2010). Parenting self-efficacy was measured with two scales, the first of which was the Skill/Knowledge (eight items) section of The Parenting Sense of Competence Scale (Gibaud-Wallston & Wandersman, 1978). Questions assessed parents' perceptions of the degree to which they have the skills and understanding to be a good parent, rated on a Likert scale from 1 (Strongly Agree) to 6 (Strongly Disagree) with lower scores indicating more parenting confidence. Cronbach's alpha reliability rating for this portion of the assessment was .80 on the original version, but certain questions were adjusted for this research due to its application with parents whose child is not yet born. In this research, Cronbach's alpha reliability was .85. Nine additional researcher developed questions assessed participants' confidence in their understanding of infant cognitive, emotional, and physical development based on specific class content using a Likert scale from 1 (Not Confident) to 5 (Totally Confident), so that higher scores equated to more confidence. This included questions such as, "I will be able to help my baby calm down." These nine questions were combined into a scale entitled Parenting Self-Efficacy, which had a Cronbach's alpha reliability rating of .91.

The MacArthur Foundation's Research Network on SES & Health (2008) defines the psychological view of stress as being one's perception of their ability to cope with the demands of either specific events or daily experiences, and how their evaluation of their ability makes them feel. In this research, The Perceived Stress Scale PSS-10 (Cohen & Williamson, 1988) was used for the pre-test assessment (see Appendix D) with a Cronbach's alpha of .78. The PSS-10 used a Likert scale from 1 (Never) to 5 (Very Often) to measure frequency of stressful feelings, with lower scores representing less stress. The published normal mean score for 18 to 29 year old

respondents is 14.2 (*SD* 6.2). For the post-class assessments, the wording on this scale was altered from, “In the past MONTH” to “Since the first class” to account for the fact that the program will only take three weeks (see Appendix E). The PSS-10 was not administered after class one since nothing would have changed from the beginning to the end of that class.

Actual knowledge of typical first-year child cognitive, emotional, and physical development was assessed via eleven researcher developed True or False questions (True = 1, False = 2) covering cognitive, emotional, and physical infant care and development. Questions were designed to understand how much of the specific class content participants truly comprehended. After reverse-coding false questions, the combined Knowledge of Child Development Scale had a Cronbach’s alpha of .79 with lower total scores indicating more accurate knowledge.

Sommer et al. (1993) indicated that cognitive readiness for parenting was a predictor of prenatal maternal stress. To gauge this construct, participants answered a single multiple choice question distilled by Bouchard (2009) from a 22-question survey conducted by Pancer, et al. (2000). Bouchard (2009) held that this single question was a strong indicator of the expectant parents’ level of complexity of thought and realistic expectations regarding the upcoming childbirth. Answers to the question: "How do you think your relationship as a couple will change after the baby has arrived?" were to demonstrate (a) the person understands that life will be different but that they have not mentally integrated parenthood into the multiple layers of life, or (b) that differentiation and integration has occurred to a minimal degree, or (c) that they have a realistic and fully integrated understanding of the likely effects of parenthood. As in Bouchard’s research, participants who answer (c) were considered realistic. Post-class changes from (a) to (b) or (c), and from (b) to (c), indicated an improvement in realistic expectations.

Social support is a modifiable resource that is widely recognized as a protective factor against the effects of stress (Uebelacker, et al., 2013). According to the MacArthur Foundation's Research Network on SES & Health (2008), social support can be categorized as being emotional, informational, or instrumental. Emotional support consists of encouragement and things people do and say that make a person feel better or loved. Informational support provides data, direction and resources people can use. Instrumental support involves tangible things that assist with the problem at hand and can include housekeeping or childcare help in addition to physical things. In this program, informational social support was provided through the dissemination of knowledge regarding child care and development, and through instruction regarding ways to communicate to increase their emotional and instrumental support of each other. To assess changes in social support, participants were asked to complete a short researcher developed posttest/retrospective pretest questionnaire regarding coping, stress, and conflict management skills. The seven questions were combined into a Stress Management Skills scale that had a Cronbach's alpha of .89. By asking, "Compared to what I knew before this program, what I know now is..." on a scale of 1 to 5, with 1 being No More Than Before and 5 being All I Wanted to Learn, higher scores indicated greater skill acquisition. This captured changes that may have been realized by participants whose initial self-assessments might have been relatively high (Ponzetti, 2012). On post-class assessments, participants also indicate whether or not they have exchanged contact information with any other participants. Participants who responded that they had done so were counted as having increased in emotional social support as a result of classes. Increased knowledge of stress management skills was viewed as an indicator of increased informational social support. Changes from pre-test to post-test on the posttest/retrospective stress management skills questionnaire, combined with indications that contact information was shared, were viewed as an indicator of change in overall social support.

At the end of each class, participants completed a participant satisfaction survey including five questions indicating the degree to which the class met their information needs and addressed their concerns. This served as feedback to the educator/researcher regarding what was received well and which components may need to be adjusted to meet the needs of the participants. Participants used a scale of 1 (Poor) to 5 (Outstanding) to rate these categories: overall quality of the class, teaching effectiveness of the instructor, usefulness of the materials and activities, class provided me with new knowledge, and class provided me with new skills. Questions were added together to comprise a Total Formative Evaluation scale for an overall class rating that was divided by the number of participants who rated each class. Classes with ratings closer to 5 were considered to be more helpful. To obtain an average rating for each category in each class, an Excel chart listed the number of class participants, multiplied that by each rating given to that category in that class, then added those sums, and divided that result by the total number of participants in that class for a mean score. Participants also had an opportunity to add additional comments via an open-ended question asking about how they planned to use the information learned in the classes and a section for additional comments.

CHAPTER 4: RESULTS

The total recruiting time frame was less than three weeks, for a total of 13 business days. Two participants indicated that they receive their care at Brody, but did not mention whether they were high risk pregnancies, or whether they saw the posters or picked up a flyer. Three participants received their prenatal care at ECU Women's Physicians, where a poster was displayed on a wall in the corridor leading to the exam rooms. Two participants picked up grayscale flyers from the waiting room the Greenville Women's Clinic, and one participant did not specify where they receive their prenatal care.

For the participants the program did receive ($N = 8$), demographics varied widely. Gender was evenly divided and most participants were unmarried. Race and ethnicity varied, as did levels of income and education; all participants reported having some post-secondary education. Only two participants listed their age (23 and 24) but all were between 18 and 30 years old. One pregnancy was first trimester, five were third trimester, one couple had a two month old infant, and all were primiparous. Full participant demographics are listed in Table 2.

Attendance throughout the program fluctuated. Each of the three classes was offered three times within a one week period: Monday and Wednesday at noon and Friday evening at 6:30. Class one was attended by a total of three pregnant women and one married couple whose baby was two months old at that time ($n = 5$). Two pregnant nurses who worked together attended the Monday noon class, one pregnant woman came by herself on Wednesday at noon, and the married couple attended on Friday evening.

Class two had the largest combined attendance ($n = 8$). The Monday noon class was attended by the same two pregnant coworkers and one of their partners. The woman who attended the Wednesday noon class also brought her partner to the second Wednesday class. An

expectant father came late for that class, but was encouraged to and did join the married couple for the Friday evening class instead.

Before class three, the pregnant nurse who brought her partner to the second Monday class had her labor induced; she and her fiancé could not attend any of the third class days. Attendance for class three was the same total as for class one ($n = 5$) but with a different mix. The other pregnant nurse attended on Monday, as usual, but was alone. The Wednesday attendee had planned to join her but was ill that day; she and the expectant father joined the parents of the newborn on Friday evening instead. In total, two pregnant women and the married parents completed all three classes ($n = 4$).

Table 2
Participant Demographics (N = 8)

	<i>n</i>	%
Gender	8	
Female	4	50
Male	4	50
Race/Ethnicity	8	
Black or African American	1	12.5
White	3	37.5
Asian	2	25
Hispanic	1	12.5
Not Specified	1	12.5
Education Level	8	
Some College	4	50
Associate's Degree	1	12.5
Bachelor's Degree	3	37.5
Employment Status	8	
Work Full Time	5	62.5
Unemployed	2	25
Part-time Work, Part-time Student	1	12.5
Household Income	8	
\$15,001 - \$25,000	1	12.5
\$25,001 - \$35,000	2	25
\$35,001 - \$45,000	2	25
\$45,001 - \$55,000	1	12.5
\$55,001 - \$65,000	2	25
Trimester	8	
First	1	12.5
Third	5	62.5
Postnatal	2	25
Relationship Status	8	
Single	1	12.5
Committed	4	50
Cohabiting	1	12.5
Married	2	25

Paired *t*-tests of the Parenting Sense of Competence scale showed changes in the direction of improvement (see Table 3) and, though results were not significant, class 1 had a medium effect size of .51. Paired samples *t*-test results for the Parenting Self-Efficacy scale were significant for classes two and three, as shown in Table 3. These two measures combined indicate partial support for the hypothesis that participants would experience a gain in parenting self-efficacy. Perceived Stress Scale-10 measures were compared from pre-test to after the second and third classes. Paired *t*-tests showed significantly reduced stress from pre-class to post-class (see Table 3). Results seemed to confirm the second hypothesis that participants' levels of stress would decrease.

Table 3
Paired Samples t-Tests of Each Measure for Each Class

Measure	Pre-test		Post-test		n	95% CI for Mean Difference	r	T	df	Sig 2-tailed
	M	SD	M	SD						
Parenting Sense of Competence										
Class 1	28.80	5.93	24.80	3.90	5	-1.48, 9.48	0.51	2.03	4	0.11
Class 2	24.75	7.40	23.00	6.89	8	-8.01, 11.51	0.03	0.42	7	0.68
Class 3	27.40	8.08	26.00	8.75	5	-17.65, 20.45	0.01	0.20	4	0.85
Parenting Self-Efficacy										
Class 1	23.20	1.30	27.60	2.07	5	-6.97, -1.83	0.85	(4.75)	4	0.61
Class 2	27.29	6.55	32.00	5.57	7	-8.40, -1.03	0.62	(3.13)	6	0.03*
Class 3	26.60	7.60	35.60	5.90	5	-12.62, -5.38	0.92	(6.90)	4	0.02*
Perceived Stress Scale										
Class 2	29.00	4.24	22.00	2.92	5	1.52, 12.48	0.76	3.55	4	0.02*
Class 3	27.40	6.84	19.80	4.15	5	3.16, 12.04	0.85	4.75	4	0.01**

For Parenting Sense of Competence, low scores indicate more confidence. High Parenting Self-Efficacy scores reflect more confidence. Low Perceived Stress Scale scores suggest less stress.

*Significance at $p < .05$ (two-tailed).

**Significance at $p < .01$ (two-tailed).

Actual knowledge of child development was measured by eleven researcher designed True or False questions specific to class content, where True = 1 and False = 2. False questions were reverse-coded so that scores closer to eleven were considered more accurate knowledge. Answers were summed into a scale measure then analyzed with paired samples *t*-tests. Results indicated that participants were generally already knowledgeable in this domain on pre-class assessments so that, while there was change in the direction of improvement, the changes from pre-test ($M = 12.4$, $SD = 1.52$) to post-tests ($M = 11.6$, $SD = .89$), $t(4) = .93$, $p > .40$ (two-tailed) were not significant.

Paired *t*-tests analysis of Stress Management Skills scores, which used a post-test/retrospective pre-test design, showed that post-class 1 measures ($M = 22.67$, $SD = 6.66$) improved by class 3 ($M = 25.00$, $SD = 2.00$), $t(4) = .93$, $p > .40$ (two-tailed), though not significantly. The third hypothesis was that dosage would matter. It was expected that participants who attended more classes would realize greater gains in resources in the form of actual knowledge and in parenting self-efficacy and that, the more these resources increased, the lower participants' perceived stress would be. This premise was partially supported by the results of the PSS-10 and the Parenting Self-Efficacy scale, but not by the results of any other assessment.

Results from Bouchard's (2009) distilled question regarding realistic expectations of life with a baby were not significant: six of the eight participants answered (b) on each assessment, never changing their response from "It's going to be really exciting relating to a new person, but it's also going to affect our life as a couple." One answered (a) on the pre- and post-class assessment (Becoming a parent is going to be the best thing that could happen to us as a couple.) for the second (and only) class attended, and one participant changed from (a) to (b) after attending two classes. No one checked off (c) "We're going to have to try to balance the time we

devote to the baby with the time we devote to each other as a couple.” The hypothesis that participants would have realistic expectations of likely changes in their relationships as a result of parenthood was not supported on the basis of answers to this question.

The final hypothesis was that participants would increase their social support of each other and through sharing their contact information with at least one other classmate. Five of the eight participants (62.5%) did exchange contact information with the intent of staying in touch with other attendees, indicating an increase in social support. However, several of the participants already knew each other prior to the classes, skewing this statistic. Considering the small sample size, this hypothesis was only partially supported.

Participant satisfaction questions, completed after each class, revealed that class 1 was given an overall mean rating of 4.44 ($SD = .69$), class 2 garnered a mean rating of 4.63 ($SD = .64$), and class 3 was rated as 4.65 ($SD = .70$). Participant ratings for individual components of the classes are listed in Table 4.

Table 4.

Participant Satisfaction Mean Scores on a scale of 1 (Poor) to 5 (Outstanding), by Class, for Individual Components

Component	Class 1		Class 2		Class 3		All Classes	
	M	SD	M	SD	M	SD	M	SD
Overall class quality	4.40	.55	4.50	.54	4.75	.50	4.55	.53
Teaching effectiveness of instructor	4.40	.55	4.75	.46	4.75	.50	4.63	.50
Usefulness of materials	4.60	.55	4.88	.35	4.75	.50	4.74	.47
Class provided new knowledge	4.40	.89	4.50	.93	4.50	1.0	4.47	.94
Class provided new skills	4.40	.89	4.50	.93	4.50	1.0	4.47	.94

The participant satisfaction survey section also gave participants the opportunity to write in that, as a result of this program, they “plan to...”. Answers included plans to learn more,

share the information with their partner, use the skills learned, worry less, and tell others about this class. An open-ended “Comments:” section yielded feedback such as “recommend classes, very informative”, “Love this class!” and “You did great! Thank you for everything”.

CHAPTER 5: DISCUSSION

The theories that framed this research, bioecological and family stress, suggested that providing social support through group parenting classes during pregnancy would help increase participants' confidence in their parenting abilities while strengthening their relationships with their partners and classmates. These increased resources were expected to provide participants with knowledge and skills that would decrease their perceived stress.

Participant recruitment was hampered by the delay in the IRB process, by the consequently truncated advertising time, and because it also complicated the logistics for the evening class venue. By the time IRB approval was received, alternatives for the location of the evening class were severely limited. Optimistically, the 13 business days available for recruitment was still more than twice the time allotted for the needs assessment and, for that, at least 25 first time expectant parent participants had indicated their interest in the class topics. However, 13 business days was insufficient for utilizing a wide variety of media methods for advertising, so posters and flyers were the only means utilized. The placement of the advertising posters was left to their discretion of the medical organizations involved in an effort to gain their support for the program. One participant specified that she saw the poster in the corridor at ECU Women's Physicians. She commented that she almost missed it because it was an area she normally does not pay attention to. It is unclear whether the other ECU Women's Physicians participants also saw that poster or if they obtained a flyer. The same is true for participants receiving care at the Brody Medical Center. The use of color flyers versus grayscale flyers did not affect the recruitment effort, but it is unclear whether the posters had more or less recruiting value than the flyers.

Of note is that 100% of the class participants had at least some post-secondary education. This was a higher percentage than that of the first time expectant parents who completed the needs assessment survey (72.4%), and it is an indication that having a greater amount of education may be a factor in potential participants' motivation to avail themselves of further educational opportunities in general. Similarly, the demographics reported by Marcynyszyn, Maher, and Corwin (2011) indicated that while only 29.3% of participants in The Incredible Years program they evaluated (N = 41) had less than a high school education, that group represented 41.7% of the attrition rate. This suggests that, while general advertising efforts may be sufficient to attract participants who are more self-motivated, a more targeted approach is likely needed to increase the participation of expectant parents who may be less appreciative of education overall.

Results fully supported the hypothesis that the increased resources, as provided by group parenting classes, would reduce participant stress levels as measured by the PSS-10. The Parenting Self-Efficacy scale, which measured topics covered in class, indicated significant improvement in this construct; the more general Parenting Sense of Competence scale only yielded negligible gains; the combined scales results only partially supported the expectation that classes would improve parenting self-efficacy. Although none of the other measures indicated significant improvements from pre-test to post-test, all of the class resources may still have been necessary in order to collectively influence participants' perceived stress. Indeed, the high degree of participant satisfaction with the program would suggest support for this premise.

Perceived Stress

Teixeira, et al. (2009) discovered higher levels of stress in pregnant women during their first and third trimesters, with decreased stress experienced in the second trimester, forming a

curvilinear relationship over time. In this research, one participant was in the first trimester while five were in the third; the married couple's child was two months old at the time of the first class. Results supported the hypothesis that participants' levels of perceived stress would decrease. Paired *t*-tests indicated significant decreases in participant perceived stress on the PSS-10 from pre-tests ($M = 29.00$, $SD = 4.24$) to measures after class 2 ($M = 22.00$, $SD = 2.92$, $p < .02$), and scores decreased even more significantly from pre-test ($M = 27.40$, $SD = 6.84$) to post-class 3 ($M = 19.80$, $SD = 4.15$, $p < .01$). The perceived stress scale norm published by Cohen and Williamson (1988) for the likely age group of participants (18 to 29) was 14.2 ($SD = 6.2$), which means that participant stress levels were brought within one standard deviation of the norm by the end of the third class. These results were particularly relevant and encouraging in light of that curvilinear relationship over pregnancy trimesters. Reductions in perceived stress were also a main goal for this research, considering the correlations between cortisol caused by prenatal stress and its adverse effects on both the mother and the developing fetus (Hompe, et al., 2013; Van den Bergh, Mulder, Mennes, & Glover, 2005; Weinstock, 2004).

Additionally, since perceived stress levels reported after class 3 were lower than those reported after class 2, the hypothesis that dosage would affect the benefits obtained was also supported: the more classes that participants attended, the further their perceived stress scores decreased. These results suggest that three classes may be sufficient for participants to achieve significant improvement. This concurs with Bakermans-Kranenburg, van IJzendoorn, and Juffer's (2003) research showing that a moderate number ($n < 5$) of targeted sessions can be effective for improving sensitive parenting behaviors that foster secure attachment. Their study, coupled with the perceived stress results in the current study, suggest that providing participants

with “just in time” information via a limited dosage intervention may be effective for constructs other than for parenting sensitivity.

Parenting Self-Efficacy

Participant confidence in their parenting sensitivity and skills were reflected in two scales measuring participant confidence levels. Results comparing The Parenting Sense of Competence Scale pre- and post- class did not yield significant increases in self-confidence, though changes were in the direction of improvement and there was a medium effect size of .51 for class 1. The original scale was developed for use with people whose children were already born and, although scale reliability in this research was high, changing some wording and administering the scale with expectant parents instead may have affected the outcomes obtained. Also, Rodgers, Markland, Selzler, Murray, and Wilson (2014) posited that competence and self-efficacy are actually two different constructs. Their research teased out separate factors of each and determined that competence is a component of self-determination theory, which involves one’s innate psychological drive to satisfy a need. Competence was defined by Rodgers, et al. (2014) as being one’s level of motivation to master a personally challenging task. This necessitates the inclusion of a personal judgment about the value and importance of the task. Self-efficacy is a component of social-cognitive theory and was defined by Bandura (1989) as one’s belief in their ability to organize and execute actions to attain a desired result. Unlike competence, self-efficacy does not involve a value judgment of the task to be mastered. The two are very similar and related but, because of these distinctions, the Parenting Sense of Competence Scale may not have been an accurate means of measuring participant parenting self-efficacy.

In contrast, the Parenting Self-Efficacy scale, which was developed specifically regarding the information taught in classes, showed significant improvement in participants’ confidence in

their parenting abilities, but only after class 2 ($M = 32.00$, $SD = 5.57$, $p < .03$) and after class 3 ($M = 35.60$, $SD = 5.90$, $p < .02$). Some researchers (Kunseler, et al., 2014; Wernand, et al., 2014) used a scale entitled Self-Efficacy in the Nurturing Role developed by Pederson, Bryan, Huffman and Del Carmen (1989) but that assessment was not able to be located in a publication and so could not be obtained for this research. Both Kunseler, et al. (2014) and Wernand, et al. (2014) reported that higher levels of prenatal parenting self-efficacy correlated with lower levels of perceived stress, which concurs with this current study's results on the researcher designed PSE assessment and the PSS-10.

Comments from participants during class one, which did not produce a significant gain in PSE, indicated that expectant parents were unsure about what emotions the facial expressions of babies indicated. Participants had difficulty distinguishing between baby face photos showing sadness, fear, anger, and pain; a few participants wrote that they plan to study facial expressions further in order to understand what their baby is communicating. Providing example images of infant facial expressions did not engender confidence in participants' abilities to recognize those emotions. Since that was the only infant development topic covered in class one, this explains the lack of significant increase in their parenting confidence for that class. However, the hands-on nature of class two, in which participants practiced holding, swaddling, and changing a baby using realistic dolls, more than made up for that. In class three, participants were assured that their baby only needs calm, consistent interactions with them, and positive play including reading books, to foster cognitive and emotional development. However, even discounting the lack of significance on the PSOC, the significant increases on the PSE after only two of three classes meant that the hypothesis that participants who attended classes would increase their parenting self-efficacy was only partially supported.

Realistic Expectations

Realistic expectations of life with a baby were measured using Bouchard's (2009) single question. Seven of the eight participants did not change their answer, regardless of the number of classes they attended. Most checked off the second choice, which reflected a minimal degree of understanding regarding the changes likely to be experienced. Since stress levels decreased significantly and parenting self-efficacy increased significantly, it could be that participants were more optimistic that their relationship would be able to withstand the demands of parenthood. Participant responses could also be because classes did not specifically cover the detrimental ways in which a baby typically affects a relationship. Additionally, using only one item may have not been sufficient to adequately measure this construct of expectations. Regardless, the second hypothesis that participants would have realistic expectations of likely changes in their relationships as a result of parenthood was not supported.

Social Support

The final hypothesis was that participants would increase their social support of each other and through sharing their contact information with at least one other classmate. Using a post-test/retrospective pre-test design on the Stress Management Skills scale indicated little change from after the first to after the last class. This was likely because all of the conflict resolution, stress management, and coping techniques were presented and discussed in the first class. Although participants were asked to practice the techniques for homework, no new information was presented in classes two or three. In hindsight, it may have been more appropriate to measure that construct in the same pre-test/post-test method as the other assessments as well.

The small number of participants ($n = 8$) made it difficult to support this program goal. Class one's Monday session was attended by two pregnant women who already knew each other through their common work facility and would have remained in contact regardless of the classes. One of those women brought her fiancé to the second Monday class, and clearly she would also maintain contact with him. That couple was unable to attend the third class because her labor was induced the weekend before the class. Class one's Wednesday session was attended by a sole pregnant woman who brought her partner to the second Wednesday class. Again, this was someone with whom she would maintain contact anyway. The first Friday evening class one session at Vidant Hospital was attended only by the married couple, and the same thing applied to them.

Logistics were then complicated by Vidant Hospital when, due to the small class size, they requested that another venue be found for the second and third Friday evening class. Friday evening's second class was moved to Joyner Library study room 1802, and the change of venue was communicated by text to the married couple and to another young man, who had just found out he was an expectant father and contacted the researcher earlier in the week. The last Friday evening class three, held in Joyner Library study room 1800, was attended by the married couple, the expectant father, and the pregnant woman who had previously come to the Wednesday classes. All of those attendees exchanged contact information before they left that last class. Hence, when participants who did not previously have a relationship were presented with the opportunity to increase their social network, they did. This gave partial support to the hypothesis that participants' social support would be exhibited through the exchange of contact information with at least one other participant.

Considering the low dosage of this intervention, it may have been detrimental to offer each class three different days and times. Although the intent was to maximize attendance by providing multiple opportunities to accommodate various personal schedules, doing so more thinly distributed the limited number of actual participants. Further, the participants who did not previously know one another attended only a single class together. This was a severely limited time in which to develop a connection sufficiently trusting for personal information to be exchanged. Even the full three classes may not have been enough time to establish a relationship that would truly qualify as being supportive.

Since social support is comprised of not only emotional support from family, friends, and one's partners, it is reasonable to note that the participants did benefit from the informational support provided by the classes themselves. This was evidenced by the increases in the PSE scale as well as in the results of the participant satisfaction surveys.

Participant Satisfaction

Answers on the participant satisfaction survey section provided valuable feedback regarding the researcher as the educator, about this program in general, and concerning the class content as it related to the participants. The first class received the lowest overall mean score of 4.44, which was still between "good" and "outstanding", but which revealed the inexperience of the instructor and some technical equipment difficulties. During the first Monday noon class, one participant helped troubleshoot the projector to get audio from it and, in the first Friday evening class, the internet link to the second video and to the third audio activity would not load. Class two, which covered safe environments and hands-on practice swaddling and changing a realistic baby doll's clothes, received the highest ratings for the usefulness of the materials and activities. This corroborated Galbraith's (2004) contention that adults learn best when the information is

useful, relevant, and experiential. The third class' ratings for overall class quality and of instructor effectiveness increased to their highest levels, which coincided with the instructor's increased confidence and experience. Of note is that the ratings of the usefulness of the materials and activities, along with the amount of new knowledge and skills, included the opinions of the two parents of an infant. Since they had two months' worth of experience and practice before classes began, this suggests that these participants still benefited from what was presented. However, it also suggests that it might be best to hold classes for expectant parents separately, or that supplemental information may need to be at the ready in future mixed classes to accommodate the existing knowledge and skills of parents of newborns.

In support of Ballard and Taylor's contention that the educator is an integral part of a program's success and, as the participant satisfaction survey's mean scores reflect (see Table 4), ratings improved as the program progressed and the instructor gained experience and comfort in the delivery of the material. Practice and experience made a difference in the confidence with which the researcher delivered the program content and conducted discussions and led activities. Most of the researcher's master's level courses provided presentation opportunities that cultivated these skills and helped prepare the researcher for leading parenting classes. Even so, there is no substitute for actual experience.

Limitations

There are several limitations to the generalizability of the results obtained in this research. The sample size was small ($n = 8$), though there was a surprising amount of diversity among the participants. The advertising window of 20 days was fairly short, and some locations that may have boosted enrollment, such as the Carolina Pregnancy Center, were not considered until after classes had concluded. Low participation is a common problem cited in parenting

education literature (Duncan & Goddard, 2017), which was also confirmed through a telephone conversation with Amy Hattem, Health Education Director for Pitt County Public Health. Ms. Hattem indicated that the county had conducted a similar stand-alone parenting program for pregnant women but discontinued it due to low participation rates.

Another limitation of this research is that some of the assessments were researcher designed, rather than being standardized and well-proven measures. However, this was necessary because the author was unable to obtain the Self-Efficacy in the Nurturing Role, developed by Pederson, Bryan, Huffman and Del Carmen (1989). Even that may not have been appropriate since the current research was unique in its approach to prenatal parenting classes by being open to all pregnant women and their partners. Further, very few programs of this nature have been conducted with the general community, as opposed to with at-risk populations in which different constructs are measured. Results suggested that this program may produce significant stress reduction benefits along with significant gains in parenting self-efficacy not only for expectant parents, but also for new parents. Improvements to class one may be necessary since participants were still unsure about how to identify what is upsetting a baby based on photos of facial expressions. It may just be necessary to emphasize that parents need to consider the totality of the situation, such as how long it has been since baby was fed or has been awake. Also, more in-depth information regarding co-parenting guidelines and infant sleeping and eating patterns may be needed, if only as supplemental material, to accommodate the needs of parents with babies.

The participants in this research, though diverse from a socioeconomic view, were still only drawn from a limited geographic area. Further research in varied locations would be necessary before generalizing results could be considered. Also, since these classes were

presented to expectant and new parents, it may be advisable to hold classes separately for each group in future studies.

Implications and Recommendations

This research provided a foundation for further exploration of the benefits of bringing parenting education into prenatal care, which is the earliest point of parenthood. The theories that framed this research, bioecological and family stress, suggested that providing social support through group parenting classes during pregnancy could help increase participants' confidence in their parenting abilities while strengthening their relationships with their partners and classmates. These increased resources were expected to provide participants with knowledge and skills that would decrease their perceived stress. Since prenatal stress has been implicated in a host of maternal and infant mental and physical health conditions (Beijers, Jansen, Riksen-Walraven, & Weerth, 2010; Hompes, et al., 2013) the results of this research indicating significant reductions in perceived stress were particularly encouraging. Studies suggest that prenatal stress may affect pre-term or low birth weight deliveries (Mulder, et al., 2002) so further research is recommended to follow the participants of this study to determine if their pregnancy and birth outcomes differ from those of a control group of non-participants.

Some recommended improvements to the program include the securing of one location for all of the classes, with adequate parking facilities nearby, to test and retest the technology in advance of classes, and to advertise the classes farther in advance, in more locations, and using multiple media methods. Personal funds were used to obtain additional baby clothing, and actual diapers and a legitimate swaddling blanket should have been purchased for practice sessions as well. If this program is implemented in the future, additional realistic baby dolls would be

needed. Handouts were printed on plain paper but either brochures or heavier paper, and pocket folders for them, would have lent more professionalism to the classes.

Participant comments during and after classes indicated that the videos selected were very helpful. Although no one mentioned this, class length was too short to really encourage and engage participants in discussion. This may also have an effect on the ability of participants to form supportive relationships. If larger class sizes are achieved, more time would increase opportunities for participants to engage in discussions and would also be helpful for conducting additional activities such as role-playing. Two hours per class, rather than an hour and a half, are recommended if two topics are covered in each class considering the time needed for the pre-test and post-test assessments. The topic groupings worked for this research but, if classes are implemented again, it would be worth considering regrouping them into two classes of four hours each, held on weekends. In that case, infant emotions should be combined with self-care and with cognitive development. The second class should cover safe environments, physical care, and when to call the doctor. Perhaps weekend classes would attract higher interest and participation from working adults.

Findings of significant improvement in both perceived stress and in parenting self-efficacy lends credence to the possibility of using prenatal parenting education as a means of improving infant-parent relationships. The results of this research suggest that it may be worth following participants to assess their infant-parent relationships, as compared to those of a control group of non-participants. Depending on those results, this small dosage program may be worth testing in other settings to gauge its generalizability for increasing sensitive parenting from birth.

The final recommendation is to incorporate this small dosage program into existing group prenatal care settings. Heberlein, et al. (2016) discovered that better birth outcomes were realized by women who received prenatal care in group settings, such as Centering Care, through the social support they provided. Considering the documented difficulty recruiting participants for parenting education (Duncan & Goddard, 2017) and the low participation in this research, participation may be improved by holding classes at venues where pregnant women and their partners are already gathered. Some organizations conduct prenatal care in group settings, which Pitt County Public Health is currently planning to do, and group childbirth classes are another possible venue for incorporating this type of intervention.

Incorporating prenatal parenting education into group care settings may lead to having parenting education become a standard component of prenatal care, as a preventive measure that promotes mental and physical family health. This could normalize prenatal parenting education, and possibly have a ripple effect on later parenting education, while getting young families off to a good start.

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APPENDIX A: IRB APPROVAL



EAST CAROLINA UNIVERSITY
University & Medical Center Institutional Review Board Office
4N-70 Brody Medical Sciences Building- Mail Stop 682
600 Moye Boulevard · Greenville, NC 27834
Office 252-744-2914 · Fax 252-744-2284 · www.ecu.edu/irb

Notification of Exempt Certification

From: Social/Behavioral IRB
To: [Margaret Stridick](#)
CC: [Sharon Ballard](#)
[Sharon Ballard](#)
Date: 1/10/2017
Re: [UMCIRB 16-002160](#)
Prenatal Parenting Classes

I am pleased to inform you that your research submission has been certified as exempt on 1/7/2017. This study is eligible for Exempt Certification under category #1, 2.

It is your responsibility to ensure that this research is conducted in the manner reported in your application and/or protocol, as well as being consistent with the ethical principles of the Belmont Report and your profession.

This research study does not require any additional interaction with the UMCIRB unless there are proposed changes to this study. Any change, prior to implementing that change, must be submitted to the UMCIRB for review and approval. The UMCIRB will determine if the change impacts the eligibility of the research for exempt status. If more substantive review is required, you will be notified within five business days.

The UMCIRB office will hold your exemption application for a period of five years from the date of this letter. If you wish to continue this protocol beyond this period, you will need to submit an Exemption Certification request at least 30 days before the end of the five year period.

The Chairperson (or designee) does not have a potential for conflict of interest on this study.



EAST CAROLINA UNIVERSITY

University & Medical Center Institutional Review Board Office

4N-70 Brody Medical Sciences Building· Mail Stop 682

[600 Moyer Boulevard · Greenville, NC 27834](http://www.ecu.edu/irb)

Office 252-744-2914 · Fax 252-744-2284 · www.ecu.edu/irb

Amendment Approved

ID: [Ame1_UMCIRB_16-002160](#)

Title: Amendment 1 for IRB Study #UMCIRB 16-002160
Prenatal Parenting Classes

Description: Your amendment has been approved. To navigate to the project workspace, click on the above ID.

IRB00000705 East Carolina U IRB #1 (Biomedical) IORG0000418
IRB00003781 East Carolina U IRB #2 (Behavioral/SS) IORG0000418

APPENDIX B: LOGIC MODEL

A Need	B Resources Inputs	C Activities	D Outputs	E Outcomes (Desired Change/Impact)		
				Initial	Intermediate	Ending
<p>Prenatal stress and anxiety harm fetal development</p> <p>Parenting stress and prenatal expectations are risk factors for maladaptive adjustment to parenting</p> <p>Stress and anxiety are negatively correlated with parenting skills and child development knowledge</p>	<p>Support of ECU Physicians program</p> <p>Room, chairs at ECU Brody Outpatient Center for noon classes</p> <p>Room, chairs at Vidant Hospital for 6:30 class</p> <p>Computer, video equipment</p> <p>Healthy snacks, beverages</p> <p>Surveys (pre-post measures)</p> <p>The educator: content knowledge, informational and emotional support</p> <p>Lifelike dolls with clothes</p> <p>Infant size diapers</p> <p>Support of thesis committee</p>	<p>Develop Evidence-informed parenting education program</p> <p>Create Informational handouts: parenting practices, ages and stages of child development, 0-1yr, county child care resource agency</p> <p>Recruit 30 expectant mothers and partners</p> <p>Expectant parents are provided with information on additional sources of accurate parenting information and social support</p>	<p>Conduct 3 one-hour parenting classes at BOC and Vidant</p> <p>80% of expectant parents who attend classes participate in class activities</p> <p>80% of expectant parents enrolled attend 2 classes</p>	<p>Expectant parents who attend 2 prenatal parenting education classes increase parenting self-efficacy as compared to pre-class measures</p> <p>Expectant parents who attend classes are more knowledgeable of ages and stages of child development, nurturing parenting, child health and home safety measures, as compared to pre-class measures</p> <p>Expectant parents who attend Class 1 have awareness of effective coping and stress management techniques</p>	<p>Expectant parents bond and become a source of support for each other after childbirth</p> <p>Expectant parents show reduced anxiety as compared to pre-class levels</p> <p>Expectant parents have realistic expectations of parenthood life</p> <p>Expectant parents utilize effective coping and stress management techniques</p>	<p>Expectant parents have healthy birth outcomes due to reduced stress and anxiety</p> <p>Parents effectively bond with their babies and achieve secure attachment</p> <p>Parents use information learned in classes to raise babies in mentally and physically healthy ways</p> <p>Parents use the resources provided if they need assistance after giving birth</p>

APPENDIX C: PARTICIPANT NEEDS ASSESSMENT COVER LETTER AND SURVEY

**East Carolina University
Human Development and Family Science**

To All Prenatal Care Patients 18 and over, and their Partners:

Attached is a survey we are asking you to complete to help us understand what you would like to know about being a parent. The information you provide will be used to help us develop parenting classes here at the Women's Center. If your partner is here with you, we invite them to complete a survey, too.

Your participation in this research study is completely voluntary. By completing the form, you certify that you are over 18 years old and are giving your consent to participate in this survey. You will not be identified on the survey and only the researchers will have access to completed forms. You may call Margaret Stridick at 856.316.2365 with questions at any point in this study, or if you decide not to participate after you have handed in your completed form.

If you choose not to complete the survey, please be assured it will not affect the excellent care you are given here at the Women's Center. Your participation in the research is **voluntary**. You may choose not to answer any or all questions, and you may stop at any time. There is **no penalty for not taking part** in this research study. Please call the Office of Research Integrity & Compliance (ORIC) at 252-744-2914 for questions about your rights as a research participant. Thank you for your help in this important project.

Please help us understand what you would like to know about being a parent by answering the questions below. Your responses are anonymous and completely confidential. Thank you for your help!

Gender: Female___ Male___

Primary Language: English___ Spanish___ Other (List)_____

Relationship Status: Single___ Committed Relationship___ Cohabiting___ Married___

Highest Education completed (circle): Middle School High School/GED Some College Associates Degree Bachelor's Degree Graduate Degree

Number of Children at Home: _____ **Ages:** _____

Which topics are of interest to you? Check your **level of interest** next to each topic:

	Extremely	Very	Somewhat	Don't Know	Not Very	Not At All
Physical care of a newborn (Diapering, dressing, bathing, sleep and diet needs)	_____	_____	_____	_____	_____	_____
Baby's emotional needs (How much & when to give attention; how babies get "spoiled")	_____	_____	_____	_____	_____	_____
Healthy environment for baby (Common hazards, keeping baby safe)	_____	_____	_____	_____	_____	_____
What baby learns in first years (First steps toward being ready for school – yes, already!)	_____	_____	_____	_____	_____	_____
How baby grows in first years (What to expect: turning over, teething, sitting, crawling, standing, walking)	_____	_____	_____	_____	_____	_____
When to call the doctor (Fever, rashes, infections, regular checkups & vaccines)	_____	_____	_____	_____	_____	_____
Taking care of You (Coping with stress, caregiver conflicts, depression, social support)	_____	_____	_____	_____	_____	_____

Other things you want to know about being a parent? Please list:

Are you willing to come to this Clinic for classes? (circle) Yes No

What day of the week is best for you to attend? (circle) Mon Tues Wed Thur Fri

What time of day is better for you to attend? (circle) 7:00am Noon Other (write in)_____

How many classes are you willing to attend? (circle) One Two Three Four Five Six

Do you have reliable transportation? (circle) Yes No

Would you need child care in order to attend? (circle) Yes No

There would be no cost for these classes. What other costs would you incur in order to attend? Please list the type and amount:

If there was no cost of any kind, how likely is it that you would attend? (circle one)

Extremely Likely	Somewhat Likely	Neither Likely nor Unlikely	Somewhat Unlikely	Extremely Unlikely
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Would you want to be reminded of the day and time of classes? (circle) Yes No

If Yes, how would you like to be reminded? (circle) **MyChart** **Text** **Voice message** **Mail**

**APPENDIX D: MEDICAL PROVIDER NEEDS ASSESSMENT COVER LETTER AND
SURVEY**

**East Carolina University
Human Development and Family Science**

To All Prenatal Care Providers:

Attached is a needs assessment we are asking you to complete to help us understand what you feel pregnant women and their partners need to know about being a parent. The information you provide will be used to help us develop and implement parenting education classes here at the Women's Center.

Your participation in this initial phase of a research study is completely voluntary. By completing the form, you certify that you are over 18 years of age and that you consent to participate in this survey. All forms will remain anonymous and only the researchers will have access to completed forms. You may contact Margaret Stridick at 856.316.2365 or stridickm15@students.ecu.edu with questions at any point in this study, if you want to add anything, or wish to withdraw from the study after you complete the form.

Your participation in the research is voluntary. You may choose not to answer any or all questions, and you may stop at any time. There is no penalty for not taking part in this research study. Please call the Office of Research Integrity & Compliance (ORIC) at 252-744-2914 for questions about your rights as a research participant.

Thank you for your help in this important project.

ECU Parenting Pre-Program Assessment – Medical Personnel Assessment of Participants Needs

Gender: Female___ Male___ Primary Responsibility/Job title: _____

How important do you feel it is to cover the following topics in a parenting program?

Extremely Very Somewhat Neutral Not Very Not At All

Physical care of a newborn _____
(Diapering, vaccinations, dressing, bathing, rashes, roseola, sleep and diet needs)

Baby's **emotional** needs _____
(Attention: how much & when; holding baby; responsiveness; how babies get "spoiled")

Healthy **environment** for baby _____
(Caregiver vaccines, smoking in house, electrical outlets, sharp edges, knick-knacks, pets)

What baby **learns** in first years _____
(Language development, naming & numbering objects, colors, sounds & sights, mouthing & touching)

How baby **grows** in first years _____
(Typical weight, height, milestones: grasping, turning over, teething, sitting, crawling, standing, walking)

When to call the **doctor** _____
(Fever, rashes, humidifiers, viral vs bacterial infections, regular checkups)

Parental mental health, stress control _____
(Positive focus, don't dwell, address small things, social support, meditation, postpartum depression)

Other or Specific things you think are important for parents to know - Please list:

Is the Clinic the best place to hold parenting classes for patients? (circle) Yes No- alternate location?

Do you foresee any difficulty holding classes on a particular weekday? No___ Yes -

Which?_____ Why?_____

What time of day is best to hold classes? (circle) 7:00am Noon Other (write in)_____

Do you foresee certain obstacles that might limit patients' ability to attend and participate in parenting classes? Please list the type:

Do you think that an incentive would increase participation? (circle) Yes No

If so, what type of incentive would be effective in increasing attendance?_____

APPENDIX E: CLASS OUTLINES

Class 1: What Are You Saying?

Pre-program assessments

Introduction of myself and what this class would cover

Activity: Participants will introduce themselves, tell of up to three places they have lived, when their baby is due, and what they most hope to learn from the classes to foster a sense of inclusion (Wlodkowski, 2004).

Emotional Development:

- Consistent, calm responsiveness to baby's expressions and needs
- What emotions babies experience, and when
- Positive interactions, attentiveness
- Gentle corrections, redirecting baby to acceptable behaviors
- Providing clear expectations, calm and consistent communication, and firm corrective guidance
- Working and bonding
- Establishing routines to foster secure attachment

Activities: Photos of baby facial expressions were shown and participants guessed which emotions they expressed. A youtube video of how to calm a crying baby was played, as was a video of the Still Face experiment.

Personal Relations, Care of Self:

- Stress management techniques
- Expressing needs
- Conflict resolution techniques
- Effective coping techniques
- Social support/supporting each other
- Recognizing depression, asking for help.

Activity: guided meditation exercise. Handouts: PowerPoint, Martin-Pitt Partnership Family Resource Guide.

Post-class assessments

Homework: (1) Reflect on positive aspects of their own upbringing, (2) Discuss their anticipated postpartum division of responsibilities, including childcare, finances, household duties, and birth control, keeping conflict management techniques in mind, and (3) Practice stress relief strategies at least three times between classes.

Class 2: Handle With Care

Pre-class assessments were completed by any attendees who missed Class 1; these participants introduced themselves in the same way as in Class 1. While new attendees completed pre-class assessments, returning students discussed their homework assignments.

Safe Environments

- Common safety threats: smoking in the house, sharp edges, knick-knacks, chemicals, electrical outlets, noise levels, pets.
- Preventive products available: electrical outlet plugs, cabinet locks, baby gates, playpens
- Car seats and cribs
- Baby product recalls
- Videos and television
- Caregiver vaccinations, daycares

Activity: Discussed how hazards to child safety change as children become more mobile.

Physical Care

- Sleep and nap requirements
- Preventing SIDS
- Proper holding techniques
- Changing diapers
- Feeding (bottle, breast, and solids – when and what)
- Burping techniques
- Bathing
- Dressing

Activity: Lifelike dolls were available for expectant parents to practice caregiving skills. Each participant had a turn; participants were allowed to help each other. Videos: toddlers toppling a dresser, baby bathing methods, swaddling technique.

Handouts: PowerPoints, ages and stages chart

Post-class assessments for all attendees

Homework: (1) view their home from their baby's perspective and make it safe for baby's arrival; (2) discuss and choose day care options (if applicable) and (3) decide on a pediatrician if not already done. Increase practicing stress relief methods, at least four times during the week.

Class 3: Well, What Do You Know?

Pre-class assessments completed by any new attendees; these participants would introduce themselves in the same way as in Class 1. While new attendees completed pre-class assessments, returning students were asked to discuss their homework assignments.

Cognitive development

- Language development
- Why babies mouth and touch everything
- Baby's (in)ability to follow instructions
- How children develop self-control
- Stages of comprehension: how far they can see, object permanence, peek-a-boo
- Child-directed play, together
- Allowing baby to concentrate without interruption
- Allowing baby to figure things out vs "helping" too quickly
- Choices: when to start giving them, what's appropriate

Activities: Section of a TED talk on language development; Harvard brain architecture video.

Common Infant Issues, When to Call the Doctor

- APGAR scores
- The circumcision decision
- Normal baby weight loss and gain
- Regular checkups and immunizations
- Common infant health issues and how to handle them: fevers, rashes, bowel issues, viral vs bacterial infections
- When to call the doctor

Handout: PowerPoint, Technology & Baby guide.

Participants were encouraged to share their contact information with each other to provide continuing support for one another. Post-class assessments concluded the program.

APPENDIX F: CLASS OBJECTIVES AND MEASUREMENTS

Class 1: What Are You Saying?		
	Objectives	Corresponding Assessments
1.	Increase emotional development knowledge: responsiveness, bonding	Pre#4/Post#3: Assessment of Child Emotional, Physical and Cognitive Development Self-Efficacy (SE)
2.	Increase emotional development knowledge: Gentle, corrective guidance; clear expectations, security through daily routines, positive interactions	Pre#4/Post#3: SE Assessment; and Pre#5/Post#4: Specific Child Emotional, Physical and Cognitive Development Knowledge
3.	Increase knowledge of care of self, self-support skills: stress management, coping, expressing needs	Post-Class#5: Assessment of Knowledge of Care of Self
4.	Increase knowledge of care of self, partner support skills: conflict resolution, emotional support, recognize depression	Post-Class#5: Care of Self Knowledge
5.	Increase parenting self-efficacy: Confidence in knowledge of child cognitive, emotional, and physical development	Pre#3/Post#2: Parenting Sense of Competence Scale; and Pre#4/Post#3: SE Assessment
6.	Reductions in perceived stress	Pre#6/Post#7: PSS-10
7.	Increase in social support: informational	Pre#5/Post#4: Specific Knowledge; and Post-Class#5: Care of Self Knowledge
8.	Increase in social support: emotional	Post-Class #5: Care of Self Knowledge; and Post#6: After-Class Questionnaire
9.	Realism of expectations	Pre#2/Post#1: Realistic Expectations Question
Class 2: Handle With Care		
	Objectives	Corresponding Assessments
1.	Increase knowledge of infant physical care: safe environments, SIDS prevention	Pre#5/Post#4: Specific Knowledge
2.	Increase knowledge of infant physical care: holding, bathing, diapering, dressing, feeding, sleep	Pre#5/Post#4: Specific Knowledge

3.	Increase parenting self-efficacy: Confidence in knowledge of child cognitive, emotional, and physical development	Pre#3/Post#2: Parenting Sense of Competence Scale; and Pre#4/Post#3: SE Assessment
4.	Reductions in perceived stress	Pre#6/Post#7: PSS-10
5.	Increase in social support: informational	Pre#5/Post#4: Specific Knowledge; and Post-Class#5: Care of Self Knowledge
6.	Increase in social support: emotional	Post-Class #5: Care of Self Knowledge; and Post#6: After-Class Questionnaire
7.	Realism of expectations	Pre#2/Post#1: Realistic Expect?
Class 3: Well, What Do You Know?		
Objectives		Corresponding Assessments
1.	Increase knowledge of infant cognitive development: how babies learn language, sense of self, exploring through play, scaffolding	Pre#5/Post#4: Specific Knowledge
2.	Increase knowledge of normative infant health and development: approximate ages and stages, when to call the doctor (for cognitive, emotional, and physical concerns)	Pre#5/Post#4: Specific Knowledge
3.	Increase parenting self-efficacy: Confidence in knowledge of child cognitive, emotional, and physical development	Pre#3/Post#2: Parenting Sense of Competence Scale; and Pre#4/Post#3: SE Assessment
4.	Reductions in perceived stress	Pre#6/Post#7: PSS-10
5.	Increase in social support: informational	Pre#5/Post#4: Specific Knowledge; and Post-Class#5: Care of Self Knowledge
6.	Increase in social support: emotional	Post-Class #5: Care of Self Knowledge; and Post#6: After-Class Questionnaire
7.	Realism of expectations	Pre#2/Post#1: Realistic Expect?

APPENDIX G: PRE-TREATMENT ASSESSMENTS

1. Identifier _____
(Car & color, Mom's birth year OR Pet name & color, Mom's birth year)

Where do you/Where does your partner receive prenatal care: _____

Gender: Female ____ Male ____ Age ____ Trimester _____

Relationship status: Single ____ Committed Relationship ____ Cohabiting ____ Married ____

Race/Ethnicity: African American/Black ____ Asian ____ Caucasian ____ Hispanic ____

Other (please indicate) _____

Highest education completed (circle): Middle School High School/GED Some College

Technical Program Associates Degree Bachelor's Degree Graduate Degree

Employment/Student status (all that apply): Work full-time ____ Work part-time ____

Unemployed ____ Full-time student ____ Part-time student ____

Number of children at home ____ Child age(s) _____

2. Instructions: Please mark the answer below that comes closest to how you would answer this question:

"How do you think your relationship as a couple will change after the baby has arrived?"

____(a) Becoming a parent is going to be the best thing that could happen to us as a couple.

____(b) It's going to be really exciting relating to a new person, but it's also going to affect our life as a couple.

____(c) We're going to have to try to balance the time we devote to the baby with the time we devote to each other as a couple.

3. Instructions: Please answer all of the questions using the following scale:

Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
1	2	3	4	5	6

- ____ 1. The problems of taking care of a baby are easy to solve once you know how your actions affect your baby, an understanding I have acquired.
 - ____ 2. I will meet my own personal expectations for expertise in caring for my baby.
 - ____ 3. I will make a fine model for a new parent to follow in order to learn what they would need to know to be a good parent.
 - ____ 4. Being a parent is manageable, and any problems are easily solved.
 - ____ 5. If anyone can find the answer to what is troubling my baby, I will be the one.
 - ____ 6. A difficult problem in being a parent is not knowing whether you're doing a good job or a bad one.
 - ____ 7. Considering how long I've been a parent, I feel thoroughly familiar with this role.
 - ____ 8. I honestly believe I have all the skills necessary to be a good parent to my baby.
-

4. Instructions: Please answer all of the questions using the following scale:

Not Confident	Less than Confident	Confident	More than Confident	Totally Confident
1	2	3	4	5

- ____ 1. I will be able to understand my baby's expressions and needs
 - ____ 2. I know how to give clear directions to my baby
 - ____ 3. I will be able to help my baby calm down
 - ____ 4. I understand when and how my baby will need to sleep
 - ____ 5. I will be able to properly hold, bathe, diaper and dress my baby
 - ____ 6. I will be able to properly feed and burp my infant
 - ____ 7. I know how babies think
 - ____ 8. I will be able to let my baby lead our play time
 - ____ 9. I will know when to help my baby do things
-

5. Please circle T if the statement is True, circle F if the statement is False:
1. T / F It is good enough if I only give my baby calm and positive attention once in a while.
 2. T / F Removing baby from unsafe activities and giving baby something else to play with is better than yelling or spanking.
 3. T / F I can work and still have a good relationship with my baby.
 4. T / F It is not important for baby to have a daily routine.
 5. T / F It is my baby's responsibility to learn what is safe to touch and play with .
 6. T / F Loud or constant background noise and electronics can harm my baby.
 7. T / F I should not give solid foods to my child until (s)he is 6 months old.
 8. T / F The doctor does not want me to call every time I am worried about my baby's health.
 9. T / F It is better to let my baby play alone and figure things out than to step in and help right away.
 10. T / F Once baby can communicate, I should always let them decide what to eat, wear, and do.
 11. T / F My baby does not need TV shows or special programs to learn language; talking and reading aloud are enough.
-

INSTRUCTIONS:

The questions in this scale ask you about your feelings and thoughts during **THE LAST MONTH**. In each case, please indicate your response by placing an “X” over the circle representing **HOW OFTEN** you felt or thought a certain way.

	Never Often	Almost Never	Sometimes	Fairly Often	Very
	0	1	2	3	4
1. In the last month, how often have you been upset because of something that happened unexpectedly?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. In the last month, how often have you felt that you were unable to control the important things in your life?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. In the last month, how often have you felt nervous and “stressed”?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. In the last month, how often have you felt confident about your ability to handle your personal problems?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. In the last month, how often have you felt that things were going your way?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. In the last month, how often have you found that you could not cope with all the things that you had to do?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. In the last month, how often have you been able to control irritations in your life?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. In the last month, how often have you felt that you were on top of things?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. In the last month, how often have you been angered because of things that were outside your control?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

APPENDIX H: POST-TREATMENT ASSESSMENTS

1. Realistic Expectations Question
2. Parenting Sense of Competence Scale
3. Assessment of Child Emotional, Physical and Cognitive Development Self-Efficacy
4. Specific Child Emotional, Physical and Cognitive Development Knowledge
5. Compared with what I knew before class, I now know:

Less than Before 1	No More than Before 2	A Little More than Before 3	Much More than Before 4	All I Wanted to Learn 5
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- _____ 1. How to tell when I am feeling stress
- _____ 2. Ways to manage stress
- _____ 3. Ways to express my needs clearly
- _____ 4. How to talk about, and to resolve, issues with people
- _____ 5. Ways to deal with everyday problems
- _____ 6. That my partner will help me be a good parent
- _____ 7. The signs of depression and how to ask for help

-
6. Using this scale, please write in your impressions about today's class

5= Outstanding, 4 = Good, 3 = Average, 2 = Fair, 1 = Poor

1. _____ Overall quality of the class
2. _____ Teaching effectiveness of the instructor
3. _____ Usefulness of the materials and activities
4. _____ Class provided me with new knowledge
5. _____ Class provided me with new skills

7. As a result of this program, I plan to:

8. Comments: _____

9. Do you plan to stay in contact with anyone you met in class?

Yes / No / Maybe

10. Perceived Stress Scale (10 questions), modified to “SINCE THE FIRST CLASS”

Off to a Good Start!

FREE CLASSES - Parenting in the First Year

What **Moms** and **Dads** need to know:

Class 1: What Are You Saying?

Emotional Needs, Communication, Positive Guidance

What about Us?

Baby Needs You to Be Calm; Skills for You to Practice

Attend One: Mon, Jan 30 @ Noon – 1:30pm, **ECU Brody Outpatient Mod.C**
Wed, Feb. 01 @ Noon – 1:30pm, **ECU Brody Outpatient Mod.C**
Fri, Feb. 03 @ 6:30pm – 8:00pm, Vidant Women's Center

Class 2: Handle with Care: Physical Needs

Safe Homes, Handling Instructions, Nutrition & Sleep

Attend One: Mon, Feb. 06 @ Noon – 1:30pm, **ECU Brody Outpatient Mod.C**
Wed, Feb. 08 @ Noon – 1:30pm, **ECU Brody Outpatient Mod.C**
Fri, Feb. 10 @ 6:30pm – 8:00pm, Vidant Women's Center

Class 3: Well, What Do You Know?

How Baby Learns, Brain Development, How to Help

When Should We Call the Doctor?

Common Concerns, What to Expect

Attend One: Mon, Feb. 13 @ Noon – 1:30pm, **ECU Brody Outpatient Mod.C**
Wed, Feb. 15 @ Noon – 1:30pm, **ECU Brody Outpatient Mod.C**
Fri, Feb. 17 @ 6:30pm – 8:00pm, Vidant Women's Center

ATTEND AS A COUPLE, ATTEND ALONE, ATTEND WITH A SUPPORT PERSON – ALL ARE WELCOME! This is a **research program** being conducted by Margaret Stridick, ECU-HDFS. **Participation is Voluntary; Registration is Appreciated.** E-mail stridickm15@students.ecu.edu or text/call 856.316.2365 with class dates attending (to insure enough **seats & snacks**) and for directions

