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Hard on Your Heart: A Qualitative Description of Adolescent Prenatal Stress

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HARD ON YOUR HEART: A QUALITATIVE DESCRIPTION OF ADOLESCENT PRENATAL STRESS

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ABSTRACT

Introduction: Pregnancy during adolescence is potentially stressful due to the concurrent tasks of navigating the typically tumultuous adolescent stage of development and the life altering experience of pregnancy (Kaye, 2008). There is a growing body of research linking prenatal stress to poor birth and developmental outcomes such as premature birth and low birth weight infants (K. Keenan, Sheffield, & Boeldt, 2007; Mulder et al., 2002), which makes describing the relatively unexplored perceptions and experience of stress during adolescent pregnancy important. The life course framework, with its emphasis on social, environmental, and family risk factors, has implications for reducing disparities among pregnant adolescents and is used to frame this study.

Purpose: The purpose of this study is to describe the adolescent's perception and experience of stress during pregnancy, and to illuminate which social, family, environmental, or any other experiences are deemed stressful to determine where interventions may be most needed and desired by the adolescent in hopes of impacting the negative sequelae associated with prenatal stress.

Methods: Qualitative interviews were used to elicit a description of stress in pregnant adolescents aged 15-19 years from different socioeconomic and geographic groups. Qualitative content analysis was used to analyze the collected data.

Results: Pregnant teens reported stress related to responses to the pregnancy by family and others, changes in their relationships and future plans, and other fears and

concerns regarding dependence and safety. Perceived disruptions and changes in family and social relationships was the most frequently discussed topic and impacted the remaining themes.

Conclusions: The study findings indicated that much of the stress experienced by the teens was relational in nature. Support of the family and social intervention are possible avenues of intervention that may improve the experience of stress in pregnant adolescents.

DEDICATION

I dedicate this project to my mother and father who persevered as adolescent parents and to my husband and children who sacrificed so that I could fulfill my dream.

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CHAPTER 1

INTRODUCTION

A growing body of research links prenatal psychosocial stress to gestational hypertension, preterm labor, prematurity, and low birth weight (LBW) (Latendresse, 2009; Mulder, et al., 2002; Ruiz & Avant, 2005). Additionally, developmental outcomes for the offspring, like attention deficit disorder (ADD), cognitive delays, difficult infant temperament, depression during adolescence, and adult cardiovascular disease have also been related to prenatal stress (Barker, 2007; K. Keenan, Sheffield, R., & Boeldt, D., 2007; Mulder et al., 2002). Due to the potential difficulties navigating the adolescent stage of development, pregnant adolescents are at risk to experience great psychosocial stress (Kaye, 2008). Therefore, it is of great concern to illuminate what is most stressful to a pregnant adolescent, and learn what may help these adolescents effectively cope with and diminish their stressors.

Problem

Despite the encouraging fact that there were fewer births to adolescent mothers in 2010 than there have been since the 1940's (Hamilton & Ventura, 2012), the United States continues to have one of the highest rates of adolescent childbirth among industrialized nations (Centers for Disease Control and Prevention, 2010; Singh & Darroch, 2000). In Alabama, the adolescent birth rate remains significantly higher than the national rate of births to teens ages 15-19 years (Matthews, Sutton, Hamilton, & Ventura, 2010).

Economically, there are tremendous costs related to adolescent pregnancy and childbirth, which are attributed to adverse birth outcomes, such as prematurity and LBW, as well as reliance on Medicaid and other public programs like WIC. Prematurity alone is extraordinarily costly, especially when the infant is admitted to the neonatal intensive care unit (NICU). Melnyk and Feinstein (2009) estimated that each day an infant remains in a NICU costs $1,250-$2,000. When those numbers are combined with the number of premature infants born to adolescents, the cost is staggering. Recently, the Centers for Disease Control and Prevention (CDC) (2009) estimated that adolescent childbearing costs the U.S. $9 billion per year.

Of course, the costs are not only related to healthcare needs. Adolescent mothers are less likely to attain their educational goals, which reduces their earning potential, and they are more likely to remain single (CDC, 2009). Children born to adolescent mothers are more likely to have lower cognitive ability scores, have behavior problems, like ADD, chronic medical problems, to rely on public health care, be incarcerated, drop out of high school themselves, become pregnant in adolescence, and to be unemployed (CDC, 2009). Adolescent fathers are also more likely to have limited education and employment (Erkut, Szalacha, & Coll, 2005).

Many of the negative outcomes related to adolescent birth are also associated with the experience of psychosocial stress, anxiety, and depression during pregnancy. Most prenatal stress research, though, has been primarily focused on adults. Mitsuhiro and colleagues (2009) related the dual tasks of navigating adolescent development and factors commonly associated adolescent pregnancy and parenting such as poverty, limited education, unemployment, and lack of family and social support with an increased

risk of psychological distress. The response to the pregnancy by the father of the baby and by the parents of both adolescents, in addition to concerns about the future, may be other possible sources of stress for the pregnant adolescent. The research literature concerning the family response to adolescent pregnancy is extremely limited, but may be characterized by emotional turmoil, anger, and feelings of betrayal (Bartell, 2005; Dallas, 2004). This author's personal clinical experience has also demonstrated that family relationships during adolescent pregnancy can be tremendously stressful and anxiety provoking.

Several federal and international health promotion organizations have focused on the reduction of the sequelae associated with adolescent pregnancy and birth, as well as prenatal psychosocial stress. The National Institute of Nursing Research, in its Strategic Plan (2006) listed the application of findings from biobehavioral, descriptive, and intervention studies to influence health disparities among youth and adolescents as a priority research focus. Additionally, the March of Dimes has a long history of supporting research related to prematurity, and promoting better birth outcomes for all babies. Further, the Office of Disease Prevention and Health Promotion, U.S. Department of Health and Human Services in its *Healthy People 2010* and *Healthy People 2020*, lists among its objectives: reduce maternal illness due to pregnancy complications, reduce preterm births, and reduce LBW and VLBW. This research focus relating prenatal stress among adolescents to birth and developmental outcomes potentially impacts the research priorities mentioned earlier.

CHAPTER 2

REVIEW OF LITERATURE

A search of the PubMed, CINAHL, PsychInfo, Academic OneFile, and Social Sciences Full Text databases was performed using combinations of the terms *pregnancy in adolescence, stress, depression, anxiety, distress, prenatal stress, adolescent stress, family, family stress, and adolescent father*. Related article features were utilized and reference lists of helpful works were explored for further assistance. Initially only articles from the past 10 years were sought; however, the literature was so sparse that studies published up to 15 years ago were included.

Stress

The term "stress" has many different connotations in our culture, and definitions range from mechanical to emotional and physiological. When defined physiologically, stress is an event, situation, or emotion that disturbs homeostasis or negatively impacts an individual (Coussons-Read, Okun, Schmitt, & Giese, 2005; Davis & Sandman, 2006). McEwen (2000) defines stress as any real or implied threat to psychological or physiological integrity. Psychosocial stress ranges from the high levels of acute stress brought about by life events, such as death in the family, divorce, loss of a job, pregnancy, or moving, to more chronic daily stress from school or work demands, relationships, social pressures, or poverty (Lazarus & Folkman, 1984).

Stress and Daily Hassles

Chronic daily hassles during pregnancy in adult women, such as household strain and job stress (Hobel, Goldstein, & Barrett, 2008), have been measured and linked to pregnancy complications such as miscarriage, gestational hypertension, and poor birth outcomes, specifically LBW and prematurity (Coussons-Read et al., 2005; Latendresse, 2009; Mulder et al., 2002; Ruiz & Avant, 2005). Latendresse (2009) also found that chronic unresolved levels of prenatal maternal stress, as opposed to acute short lived stress, were more highly correlated with prematurity. One study found that women who reported moderate levels of prenatal stress were not more likely to have poor birth outcomes, and the infants of these women actually had more optimal child development than those who reported less stress; the authors commented that this finding may be specific to their sample and not readily generalizable, as all of the women were well nourished and financially stable (DiPietro, et al., 2006). In a longitudinal study of 13 year, 14 year, and 15 year old non-pregnant adolescent's behavioral symptoms, Seiffge-Krenke (2000) posited that minor daily stressors have been shown to have a stronger effect than major life events on behavior, creating a self perpetuating cycle of stress and negative stress related behavior.

The findings are not entirely consistent with regard to chronic moderate levels of stress during pregnancy, but do seem to point to a relationship with prematurity and LBW infants. Inconsistencies among findings may be related to differences in measurement. A few studies measured stress biologically, typically with salivary cortisol, but most relied heavily on more subjective self report from participants. Often stress was not conceptually defined and was measured in combination with anxiety and depression leading to

blending of the three concepts. Small sample sizes were problematic for some of these studies, and since most of the samples were drawn from pregnant adults, adolescent data is missing.

Stress and Major Life Events

Several studies that measured stress during pregnancy due to major life events, however, have also reported significant relationships with prematurity and LBW infants. Following the events of September 11th at the World Trade Centers in New York and following hurricane Katrina in Louisiana and Alabama, highly exposed pregnant women were found to have a significantly increased incidence of LBW infants and premature deliveries (Eskenazi et al., 2007; Landrigan et al., 2008; X. Xiong, Harville, Mattison, Elkind-Hirsch, & Pridjian, 2008). Conversely, Berkowitz and colleagues (2003) found no increase in prematurity or LBW following the events of September 11th, but did find an increase in intrauterine growth retardation (IUGR). Women who were exposed to these major stress events earlier in pregnancy were more likely to have shorter gestation than those exposed late in pregnancy (Eskenazi et al., 2007).

Similar to the results for chronic daily hassle stress, the findings related to major life event stress are somewhat inconsistent and require further investigation. None of the studies located focused on pregnant adolescents, so little is known about how these kinds of major life events impact the adolescent population.

Stress During Adolescence

Because so few studies related to prenatal stress address the adolescent population, a review of general adolescent stress was necessary. The perception of chronic or acute stress is highly individual and impacted by culture, social, and economic status (Lazarus & Folkman, 1984; Motzer & Hertig, 2004). This implies that situations and events that adolescents categorize as stressful may not be perceived as stressful by adults or by individuals with differing cultural and socioeconomic backgrounds. The level of stress experienced by adolescents can be trivialized by adults and even health care professionals, but even non-pregnant adolescents experience stress (LaRue & Herrman, 2008). Stress for non-pregnant adolescents is often related to school pressures, family and home life and social pressures (LaRue & Herrman, 2008). Adolescents living in poverty may be at increased risk for mental health problems related to the stressors associated with financial hardship and the environments in which they live (Dashiff, DiMicco, Myers, & Sheppard, 2009; Wadsworth & Berger, 2006). Seiffge-Krenke (2009) found that adolescents who are exposed to stressful situations early in the developmental stage of adolescence may not cope as well as individuals later in adolescence due to their inexperience employing coping skills. Meadows and colleagues (2006) similarly found that depressive symptoms decreased over the life course trajectory from puberty to young adulthood as adolescents gained more and improved coping skills. Additionally, choosing unhealthy coping behaviors may actually increase stress for the adolescent and create a cyclical pattern in which stress leads to even greater stress and symptomatology, such as anxiety and depression, or further negative behaviors (Seiffge-Krenke, 2000).

Pregnancy is considered to be a stressor at the level of a major life event for a healthy married adult woman. One study pointed to the combined effects of the typical stressors of adolescence and that of adjusting to pregnancy as the source of the poor infant outcomes often observed in adolescent pregnancy (Keenan, Sheffield, & Boeldt, 2007).

Anxiety

Anxiety is difficult to separate from stress since the two concepts typically coincide. Bay and Algase (2002) define anxiety as a heightened state of uneasiness related to a potential nonspecific threat. The responses related to anxiety include increased tension, worry, restlessness, and cardiovascular excitation (Bay & Algase, 2002). A reported increase in anxiety and stress during pregnancy was correlated with preterm delivery according to Glynn and colleagues (2008). Additionally, children were found to display emotional problems and attention disorders at the age of four when their mothers experienced high levels of anxiety during pregnancy (O'Connor, Heron, Golding, Beveridge, & Glover, 2002). However, no relationship was found between anxiety and preterm birth by Dayan and colleagues (2006).The findings related exclusively to anxiety during pregnancy are limited; most studies also examined depression.

Common Sources of Psychosocial Stress

Family response. It is commonly assumed, at least in developed countries like the United States, that a family's response to pregnancy during adolescence is negative, and frequently this is the case. However, the family's response may also be related to the

societal norms in their individual geographic region (Macleod & Weaver, 2003; Parsons, 2003). For example, pregnancy during adolescence is more likely to be desired and even seen as adaptive, especially in impoverished communities and among Hispanic and African American girls (Davies et al., 2003; Heavey, Moysich, Hyland, Druschel, & Sill; Rocca, Doherty, Padian, Hubbard, & Minnis, 2010). Also, the initial response of the family may differ from its continued response following resolution of any differences of opinion in how to handle the pregnancy. The emotional struggles that often accompany decisions regarding whether to terminate or continue the pregnancy and whether to keep the infant or allow it to be adopted may cause tremendous emotional turmoil within a family (Bartell, 2005).

Parental reactions of anger may stem from the inescapable realization of the adolescent's sexual activity, which may not be condoned; parents may also experience anger related to the loss of innocence in their child, or a feeling that they have somehow failed to parent adequately (Bartell, 2005). Feelings of betrayal by the adolescent have also been reported by the parents of pregnant adolescents (Dallas, 2004). Additionally, parents of pregnant adolescents may experience frustration over their changing role from parent to grandparent and to not feel adequately prepared for the transition (Dallas, 2004).

Difficulty communicating and poor relationship with parents prior to adolescent pregnancy also increased communication difficulty regarding the pregnancy among Latina adolescents (Lloyd, 2004). However, in the same study, Lloyd (2004) found that pregnancy often improved communication and relationships between the adolescent and her parents. When the prevailing attitude of the adolescent's unique cultural and societal norms are more accepting of pregnancy in adolescence, many adolescents actually report

positive family response and support, especially when the adolescent's own attitude regarding the pregnancy was positive (Macleod & Weaver, 2003).

Research regarding the response of the father's parents in the literature is extremely sparse. However, Davies and colleagues (2004) reported that most adolescent fathers in their study had positive family support. Interestingly, several participants in this particular study with African American adolescent males reported that their parents were actually excited about the pregnancy (Davies et al., 2004). Several parents of adolescent fathers questioned the paternity, and had concerns regarding their involvement in child care activities, increased responsibility, and an end to the freedom of their youth (Davies et al., 2004). Further studies are needed to confirm these findings.

Paternal response. The reaction of the father of the baby to the announcement of the pregnancy is also limited in research literature. However, Davies and colleagues (2004) reported that generally adolescent men do not desire for their partners to become pregnant and are only seeking to "hit and run". While most fathers did not intend for their partners to become pregnant (n = 14), 39% of the sample of adolescent fathers in the study by Davies and colleagues (2004) actually desired that their partners become pregnant (n = 12). Herrman (2008) reported that adolescent men are concerned about the financial implications of becoming a father and the negative implications for future romantic relationships. The limited research to date on the response to pregnancy by adolescent males requires more research, as it is yet relatively unexplored. The studies reviewed here both examined samples of minority or at risk youth.

Summary

To conclude, stress, or stress in combination with anxiety and depression has been shown to negatively impact the outcomes of birth and pregnancy in most of the studies considered, although there were a minority that did not find stress to be related to preterm birth or LBW. Some contradicting results may be explained by differences in timing, manner of measurement, or conceptualization of stress. Relatively consistent findings point to stress as a predictor of poor outcomes of pregnancy and birth. Therefore, it is important to describe the experience of stress for pregnant adolescents to develop effective coping and stress reduction strategies and possibly reduce the associated negative outcomes.

There are a limited number of studies that explore the relationship between psychosocial stress and negative pregnancy, birth, and developmental outcomes among pregnant adolescents. The majority of research in this area has targeted adult pregnant women. Further research is needed to describe the experience of stress from the perspective of a pregnant adolescent to more fully understand what interventions may be most effective in supporting this vulnerable group.

CHAPTER 3

METHODOLOGY

Purpose

The purpose of this qualitative research was to describe the adolescent's perception and experience of stress during pregnancy, and to illuminate which social, family, environmental, or any other experiences are deemed stressful to determine where interventions may be most needed and desired by the adolescent in hopes of impacting the negative sequelae associated with prenatal stress.

Research Questions

The following research questions were used for this study:

1. How do pregnant adolescents construct what is stressful?
2. How is the relationship between the adolescent and her family, peers, and significant other characterized?
3. Are there economic or other environmental factors that are characterized as stressful during adolescent pregnancy?

Conceptual Framework

Stress, Appraisal, and Coping

According to Lazarus and Folkman's (1984) model of stress, appraisal and coping stressors are perceived when an individual appraises a situation to tax or exceed

their resources; then depending on the context of the stressor, physiologic and behavioral coping mechanisms are utilized to bring the person back into homeostasis (Lazarus, 1993; Lazarus & Folkman, 1984) . The process of cognitive appraisal or perception of the stressor is influenced by the nature of the stressor and internal and external coping resources; a person's perception of a stressor is key in the degree of the stress response, as is the method of coping (Lazarus & Folkman, 1984). Appraisal is a highly individual process and different individuals may appraise the same situation in different ways (Lazarus & Folkman, 1984). In light of this and the qualitative perspective used in this research, pregnant adolescents may perceive stressors differently than their adult counterparts or their non-pregnant peers, which makes understanding their perspective and unique set of stressors key in assisting them in coping or eliminating the stressors.

Ever changing factors that affect the outcomes of stress in Lazarus and Folkman's model include antecedents and process variables (Lazarus & Folkman, 1984). Antecedent factors which affect the perception of the nature and degree of a particular stressor include personal factors such as intelligence, beliefs, and maturity, as well as social support from family and significant others, and other resources such as economic or environmental factors (Lazarus & Folkman, 1984). Other antecedent factors, such as poverty, poor nutrition, and lack of social support, may lead to increased vulnerability to stressors (Lazarus & Folkman, 1984).

Process variables include type of coping and appraisal of the stressor, both of which mediate the relationship between antecedents and outcomes of stressors (Lazarus & Folkman, 1984). Due to the individualistic nature of appraising a stressor, it is imperative to appreciate what adolescents identify as stressful from their perspective so that the

antecedents and process variables that are amenable to change can be part of interventions targeted toward this group.

Life Course Framework

The Life Course Framework will be utilized to examine the perception of stress in the life of pregnant adolescents. Life course theory seems to be particularly promising for the development of interventions to moderate these effects, because this framework addresses the normative timing or sequence of events in the life of a family and their relationship to societal norms, as well as ontogenetic development (White & Klein, 2008). Family development theory, which is one of the life course theories, maintains that if pregnancy during adolescence deviates in timing and sequence from societal norms it is likely to be experienced as stressful due to a number of disruptions in the normative path of family development (White & Klein, 2008). An aim of this research is to explore the life course perspective as it relates to the experience of stress during adolescent pregnancy. The life course perspective informs research in this area because of its focus on the impact of maternal stress during fetal development on health in later life (M. Lu et al., 2010). The trajectories of health are particularly vulnerable during the sensitive periods of fetal development and adolescence (Fine & Kotelchuck, 2010), which makes pregnancy for an adolescent a doubly susceptible period.

Individual life span theory is based in the ontogenetic development of an individual and the factors that affect this development (White & Klein, 2008). These factors are related to family environment and include biobehavioral pathways of transmission to the fetus during pregnancy and genetic risk factors or fetal programming, as well as allostatic

load (Kotelchuck, 2003; M. Lu et al., 2010). Schoon and colleagues (2002) note that it is the intermingling of social risk factors with the family environment and individual characteristics that determine the impact of these factors on the development of the individual.

Life course theory examines the individual's event history within the context of society, family, and timing of these events to evaluate the effects on development of the individual and the family life cycle (White & Klein, 2008). Bengston and colleagues (2005) note that the life course perspective highlights transitions and trajectories through the course of life, such as marriage, childbirth, and work that are intertwined with the trajectories of others, especially those of immediate family.

Application of life course perspective. Macmillan and Copher (2005) state that life course research is grounded in the proposition that human development is ordered according to societal rules over the life course. This is the basis for their interpretation of adolescent pregnancy wherein the timing and sequence of pregnancy determine its meaning (Macmillan & Copher, 2005). For example, the timing of pregnancy during adolescence was not outside societal norms for a large part of the 20th century, until the sequence of adolescent pregnancy, prior to marriage, became more prevalent (Macmillan & Copher, 2005). The determination of whether or not a development is consistent with family roles and norms depends upon internal family norms and societal or institutional norms. There are cultural and familial contexts in which unwed adolescent pregnancy is not contrary to expected family roles or norms and does not alter individual or family development trajectories.

The life course perspective has implications for reducing disparities among pregnant adolescents. Interventions that consider an integrative approach to improving the biological, psychological, behavioral, and social determinants of health prior to conception may well be more successful in reducing disparities in birth outcomes (M. C. Lu & Halfon, 2003). Life course theory suggests a long term commitment to public and women's health to improve outcomes for maternal child birth and developmental outcomes (M. C. Lu & Halfon, 2003). The strengths of life course theory include the global, holistic focus on individuals situated within the context of their families which is similar to that of nursing (Black, Holditch-Davis, & Miles, 2009), and its ability to link theoretical perspectives and levels of analysis (Macmillan & Copher, 2005).

Concepts

Several concepts are important in life course theory. First, *family change and family development*, two terms which may be used interchangeably, seem to have different meaning depending on which approach is used. From the perspective of child development or individual life course, ontogenetic change and development are the focus, but a sociological or family development perspective relates change and development to family stage and events (White & Klein, 2008). Second, *positions, norms, and roles* are concepts common to family life course theories. White and Klein (2008) define position within the family as a kinship structure defined by gender, marriage, or blood relationship, and generational relationships. Norms are societal rules that govern behavior, and family role is the combination of the norms associated with a specific position (Macmillan & Copher, 2005; White & Klein, 2008). Third, *family stage* or *context* is

common to family life course theories which is defined by events that change the organization or membership of the family (Macmillan & Copher, 2005; White & Klein, 2008). *Transition* is the fourth concept common to family life course theory and is related to change from one family stage to another such as from being single to being married (Macmillan & Copher, 2005; White & Klein, 2008).

Stressors, or stress stimuli, as described by Lazarus and Folkman (1984) are personal or environmental events that impose upon a person and may be characterized as major changes or daily hassles. The concept of *coping* may be divided into two types, as well. First, problem focused coping aims to change the situation, and second, emotion focused coping attempts to reduce the emotional distress associated with a stressor (Lazarus, 1993). *Appraisal* of a stressor is defined as the process of categorizing an encounter's impact on the individual's well-being (Lazarus & Folkman, 1984).

Propositions

The propositions that encompass these concepts vary within each perspective and depend on the level of analysis, but the following are shared as they relate to family development (Lazarus & Folkman, 1984; White & Klein, 2008):

- Development is a process regulated by timing and sequencing norms.
- When the normative ordering of events is out of sequence, the probability of later life disruption is increased.
- Interactions within family groups create internal norms, influenced by social norms.

- Personal and environmental antecedent factors interdependently influence cognitive appraisal and coping.
- Appraisal and coping mediate the relationship between antecedents and outcomes and determine the outcomes of stressful life situations.

Summary

While life course theory, as it pertains to birth outcomes, is still being developed and improved it provides a holistic lens through which to view individual and family development and to develop biological and psychosocial interventions that reduce the risk of negative birth and developmental outcomes. Applying life course theory to the understanding of psychosocial stress during adolescent pregnancy may yield interventions that will limit this stress and thus reduce the negative outcomes associated with adolescent childbearing on the ever intertwined maternal and family life course, as well as the developmental trajectory of the unborn child. First though, the pregnant adolescent's perception of stress must be more fully understood. Nursing research would benefit from the use of the life course theory as a theoretical foundation due to the implications for a lifelong approach to health and well-being and societal implications. Nurses are primary candidates for putting this theory into practice because of the focus on preventive care.

Design

Method

In keeping with the purpose of this study to describe the adolescent's perception and experience of stress exposures during pregnancy, qualitative descriptions were uti-

lized. Qualitative description is a naturalistic form of inquiry that values the phenomenon presented in its natural state, or as if it were not being studied (Sandelowski, 2000, 2010). The naturalistic and holistic perspective of data collected via qualitative inquiry is embedded in its context, which reveals complexities and does not seek to minimize variability (Miles & Huberman, 1994b). This research sought to explore the complex experience of stress perceived by pregnant adolescents in varying geographical and cultural contexts within the life course of the individual adolescent. Participants from rural, suburban, and urban geographic regions and as many varying ethnicities as feasible were included to gain the richest understanding of stress experienced by pregnant adolescents. Petersen and Leffert (1995) highlight the importance of considering the adolescent against the background of the life course, including the impact of prior childhood development and future expectations for adulthood. Thus, interviews with pregnant adolescents included past, present, and future oriented questions related to the perception of stress to gain a context for the perception of the pregnancy and any related stressors.

Exploratory descriptive studies employing qualitative description yield a summary of events, which are depicted in everyday language, staying close to the data as given (Nusbaum et al., 2008; Sandelowski, 2000, 2010). Additionally, the analysis of data derived via qualitative interviews can yield organized displays and vivid descriptions of findings that enhance the validity or confidence in those findings (Miles & Huberman, 1994a). These descriptive summaries are useful as they stand alone and contribute to the knowledge in a particular field, and also as a stepping stone to further more in depth inquiry (Sandelowski, 2000). This study will serve as a springboard for further interventional research with pregnant adolescents and their families.

Participants

Pregnant adolescents aged 15 to 19 years were recruited in central Alabama urban, suburban, and rural settings for participation in the study. Urban participants were recruited through a local community mentoring program for pregnant and parenting adolescent mothers. Suburban participants were recruited through flyers distributed in the case management office at a local hospital where the researcher is familiar. Additional participants were recruited in an obstetric clinic located in a rural town in central Alabama. Interviews were conducted in a setting the adolescent chooses and feels most at ease. Potential locations for the interviews included the adolescent's home, a public setting of the adolescent's choosing, or a private room in the setting where the participant is recruited (Appendix C).

Adolescents younger than 15 years were excluded because that age is typically defined as early adolescence and has been associated with poorer obstetric outcomes than the older group (Phipps, Rosengard, Weitzen, Meers, & Billinkoff, 2008; Phipps & Sowers, 2002). Also, adolescents considered to be in middle and late adolescence (ages 15-19 years) are targeted because of the likelihood that they have increased cognitive ability and psychological development that allows clearer decision making regarding participation and discussion of sensitive topics (Petersen & Leffert, 1995). While individuals between 17 and 20 years of age are often considered to be in late adolescence (Drake, 1996), those greater than 19 years old were excluded because that age group is typically included in research with pregnant adults. Additionally, the CDC reports adolescent pregnancy statistics among those less than 20 years of age (Hamilton, Martin, & Ventura, 2010; Pazol et al., 2011). Pregnant adolescents greater than 37 weeks gestation were ex-

cluded due to the inability to conduct follow-up interviews prior to the conclusion of the pregnancy.

Sampling

Urban, suburban, and rural settings were included to achieve a full description of the phenomenon of stress with a variety of demographic characteristics. Maximum variation purposeful sampling was employed to uncover cases that richly describe stress in adolescent pregnancy and continued until informational redundancy is reached (Sandelowski, 1995, 2000). That is, new cases were recruited until the data that was collected no longer presented any new themes or concepts and became repetitive of themes observed in previous participants' interviews. Data saturation will be said to have occurred and sampling will cease when no new information is found and the researcher's inferences are confirmed (Morse, 2007). An initial sample of 10-15 pregnant adolescents was recruited. Every effort was made to include pregnant adolescents of various ethnic backgrounds and minority status and socioeconomic status (SES) to ensure a broad range of responses. The Hollingshead four factor socioeconomic status (SES) scale will be administered to determine family SES (Hollingshead, 1975).

Recruitment

Eligible participants, known to be pregnant and between the ages of 15 and 19 years, were approached by the researcher with a written flyer describing the study that was provided at that time. The flyer listed study details and contact information for the principal investigator (PI). Contact information was gathered from any interested partici-

pants and potential interviews were scheduled. Also, flyers were posted in the recruiting sites so potential participants not in attendance when the PI was present at recruiting site may still be enlisted in the study. Any interested participants not initially approached by the PI were encouraged to call for more information. Further details regarding the intent and procedures of the study were provided to any interested participants by the PI upon contacting potential participants via phone or in person at the place of recruitment. An incentive of $10 was offered for each interview conducted (Appendix C).

Informed Consent

Written informed consent was obtained in person by the PI from any eligible and interested participants, as well as consent from a parent or guardian if the participant was less than 18 years of age. Participants were made aware that they were free to withdraw from the study at any time for any reason without penalty. The population under investigation was vulnerable in that they may be minors and because they were pregnant. Therefore, it is important to note that the risk involved in participation was minimal for mother and fetus, and included minor emotional distress related to the recall of stressful life events and experiences (Appendix A).

Data Collection

Following the consent process, the PI set up and conducted audio recorded anonymous one-to-one interviews with the participants, lasting 60-90 min. Interviews took place in a private space in the home of the adolescent or a private space in the clinic or recruiting site, whichever was preferable to the participant. Interviews followed a semi-

structured open ended guide (Appendix B). Triangulation, the use of multiple methods, sources, or vantage points to increase validity in findings, was accomplished by interviewing participants at two different times prior to delivery when possible and necessary to confirm or clarify findings (time triangulation) (Polit & Beck, 2008). Two interviews were conducted if there was ample time prior to delivery and if a follow up interview was necessary to clarify data gathered in the first interview. Interviewing urban, suburban, and rural dwelling participants will achieve triangulation of space (geography) and person (Polit & Beck, 2008). Field notes were made following any contact with the participants (phone or in person) and used to document the context of the interview; notes were recorded promptly following interviews, and any initial thoughts or impressions included (Thorne, Kirkham, & MacDonald-Emes, 1997). Field notes included the demeanor, appearance, and any other characteristics of the participants not discernible on audio recording. If the interview took place in the home setting of the adolescent, a physical description of the setting was included. Effort was made to ensure privacy and reduce distraction in the home setting by asking that household members allow the participant to speak privately with the PI without interruption if possible. All interviews were then transcribed verbatim by a transcriptionist certified in IRB privacy and confidentiality policies and checked for accuracy by the PI. Participants remained anonymous on audio recordings, identified only by code, and all communications remained confidential. Any names or identifiable characteristics were deleted in the transcript. All notes and transcribed data were stored on a password protected, encrypted Iron Key flash drive.

Analysis

Line by line coding is used in qualitative content analysis, wherein codes are generated from the data (Sandelowski, 2000), to identify recurring themes, words, or ideas integral to the perception of stress as a pregnant adolescent, with the intent to summarize categories of data described by participants. Initial codes will stem from research questions, but coding will be continuously responsive to emerging themes within the data. Qualitative content analysis is more reflexive and interactive than its quantitative counterpart as it flows from the data but stays closer to the surface of the data than other forms of qualitative analysis (Sandelowski, 2000). Content analysis in a qualitative study does not demand the data be interpreted but allows language to be treated solely as a vehicle of communication and not an interpretive structure (Sandelowski, 2000, 2010). This is appropriate in light of the descriptive nature of the study that aimed to discover the types of stressors perceived by pregnant adolescents. Codes were continuously refined as interviews were analyzed. Resulting themes were compared among urban, suburban, and rural groups or other organizing characteristics that emerged from the data and organized according to shared and dissimilar findings across groups. Any themes that were discerned to show differences among other comparative lines, such as race or SES, were also illuminated.

An audit trail of all codes and interpretations were maintained for future checking. The input of at least two seasoned qualitative researchers was sought as data was collected and analysis began to perform an inquiry audit that ensured dependability and trustworthiness (Polit & Beck, 2008).

CHAPTER 4

FINDINGS

A total of 11 adolescents were recruited and interviewed for the purpose of this research, which was to describe the perception and experience of stress from the perspective of pregnant adolescents. Approval for this study was received from the Institutional Review Board (IRB) of the University of Alabama at Birmingham (Appendix A). Two teens were successfully recruited in the first month with the original incentive of $10 for an audio taped interview lasting approximately 1-2 hr. However, after 2 months of unfruitful attempts at recruiting further subjects an addendum was submitted to the IRB to increase the incentive to $20. Following approval of the increase in incentive recruitment resumed at a productive pace. Recruiting took place over a period of 5 months at three sites. The sites were situated in an urban, suburban, and rural geographic location. The urban site was an inner city women's health clinic; the suburban site was a private OB/GYN clinic, and the rural site was a counselor's office of a high school which served a rural population. Flyers were posted and distributed in each of these locations that described the study and key stake holders at each site were identified and contacted frequently to check for potential participants.

Thirteen potential participants were identified and 11 of those agreed to participate. Two screened participants had recently delivered their baby and did not meet the study criteria. Screening and informed consent were done immediately prior to the interview for nine of the participants. The remaining two participants were leaving the office

upon screening and were met and interviewed at their next appointment or more convenient time. Waiting 24 hr following consent and scheduling a follow up meeting was considered a risk for attrition because many of the participants relied heavily on another person for transportation. Consent was also received from a parent or guardian when they were present with the adolescent. However, parental consent was not required because all of the participants were pregnant and legally able to make informed decisions for them at the time of the interview.

The participants ranged in age from 15-19 years old. The urban group consisted of 6 teens ages 15-19 years. There were two teens in the suburban group, ages 18-19 years, and three teens in the rural group who were 16-18 years old. Forty five percent of the participants were African American, 45% were Caucasian, and 9% were multi racial. All of the adolescents were between 13 and 36 weeks gestational age at the time of the interview. SES of each family was measured using the Hollingshead Four Factor Social Status Index (Hollingshead, 1975), and the results showed a diverse group from the lower to upper end of the scale. Fifty five percent of the participants resided with their mothers and siblings; the remaining participants lived with their grandmothers (18%), both parents (9%), both grandparents (9%), or with the father of the baby (9%). See Table 1 for details.

Table 1

Sociodemographic Characteristics (n = 11)

Characteristic	Frequency (%)	Mean	Range
Age in years		16.9	15-19
Rural		17.3	16-18
Suburban		18.5	18-19
Urban		16.2	15-19
Current grade in school		10.5	
Rural		11.7	11th-12th
Suburban		High school diploma	High school diploma
Urban			9th–High school diploma
Gestational age		27.6	13-36
Rural		28.3	21-35
Suburban		31.5	29-34
Urban		26	13-36
Hollingshead Social Status Factor*		31.3	19-61
Rural		39	27-61
Suburban		24.8	22-27.5
Urban		29.7	19-54
Resides			
Lives with both parents	1 (9)		
Lives with both grandparents	1 (9)		
Lives with mother	6 (55)		
Lives with grandmother	2 (18)		
Lives with father of baby	1 (9)		
Ethnicity			
African American	5 (45)		
Caucasian	5 (45)		
Multi-racial	1 (9)		

Note: *Hollingshead Four Factor Social Status Index (Hollingshead, 1975) combines education and employment status of immediate family or guardians to give an indication of socioeconomic status.

Themes

The qualitative content analysis of the transcribed interviews revealed four major themes in the data with several subthemes in each category (Appendix D). The most frequently discussed theme related to the response of family and others to the pregnancy. This was followed closely by concerns about the future or looking ahead. Social and physical changes, and plans for the future were the third most common theme, and finally, fears and concerns about safety and dependence on others were a frequently mentioned category. The participants discussed the experience of their pregnancy in terms of what had been difficult or stressful for them and also offered comments about the positive changes that were related to the pregnancy.

Stated and Perceived Responses

The most commonly discussed theme in all of the interviews related to the response or reaction to the pregnancy by the adolescent and her family, significant other or father of the baby, friends, church members, and even people out in public. All of the teens reported being personally shocked and fearful of the responses of their family especially their parents or guardian because they felt the parent would be disappointed or angry. This was a perception of or anticipation of the negative response that was found to be true in most of the cases.

Personal response. None of the participants in the study reported intending to become pregnant, and all of the teens stated in one way or another that they were shocked to find out they were indeed pregnant.

One teen described the shock of finding out she was pregnant,

> Well, when I found out I was pregnant it was a shock which was a shock to me cauz I didn't want to be pregnant, especially not this age and time. Cauz I didn't know what I was going to do, who was going to help me or nothing.

Other participants commented that they did not believe the result of the test and took several for confirmation.

> So I went to the store and I bought 2 pregnancy tests. They come 2 in a box. Was both of them positive but I didn't believe neither one of them. Then I went got me another one and I still didn't believe that one either. And so I say okay I'm gone go to the doctor tomorrow. So then the next day I got my neighbor to take me to Save a Life. And I took it there and she was like, yeah you're pregnant.

However, there was a general sense of taking responsibility for her actions with each of the teens. One in particular explicitly stated this sense of responsibility, "When you lay down with somebody you know what you're doing. You know what I'm saying? You know you're risks and your high factors and everything that people say you don't know, you already know." This teen was implying that she and other teens like her knew that they were risking pregnancy when they had sex.

Family response. The reaction to the news of the pregnancy by the girl's family was difficult for all of the participants. The teens consistently reported that their mothers and other guardians were disappointed and even angry at times. Frequently there were discussions regarding the implications of the pregnancy on the teen's future and her increased responsibilities because of the baby: "Then she said, she said 'I hope you gone take care, I hope you gone step up to the plate and take care of this responsibility." Another participant stated that her mother ended her financial and emotional support when she told her about the pregnancy,

> She told me, I'm not going to be mad. You're gonna have to leave and you're gonna have to do it by yourself. I can't do it and work. And she's pretty much done that. And that's been the hardest part. The lack of support from her.

One of the participants described her family's regret this way, "They weren't angry, they was just mad cause I ain't, I didn't come to them and tell them that I was sexual, having sexual activity. And they just wished they could've helped me to stop this from happening."

Some of the participants talked about family history and dynamics that impacted the response of her parents,

> My dad just like left the room like he was out of his body, he wasn't even in there. He was just like looking at the ceiling like, oh my gosh, cause my older sister when she turned 18, we call it backsliding. Like she went wild. She went crazy.

Another participant had a twin sister who was pregnant for the second time in two years at age 15. Her father was disappointed because he had hoped she had learned from her sister's experience. One participant discussed her grandmother's reaction and attempt to make her have an abortion,

> Granny, I'm pregnant. And she was, what? And then she was mad. She just didn't want to talk to me. She was mad. She was like, well you're fixing to have a abortion, and you know. And I was like Granny I don't want to have a abortion. She said okay. I don't know what you're going to do then. Because she said cauz I can't do it. She said you're fixing to have an abortion and I'll pay. I said Granny please don't make me do that. Please. And she was like, I was like, then I told, then the people say, like she can't make you have a abortion. I said okay. So then I said Granny, you can't make me do it. You can't make me do it. She was like, oh you'll see. You'll see. And then she just really just, it just blowed away. Just like you know, she just accepted it.

In most cases the initial reaction of the family changed from disappointed and angry to acceptance and support over time. There were a few participants however that experienced a long term negative change in their relationship with their own mother.

Significant other response. In nine of the interviews the significant other's response was similar to that of the teen. He was shocked and concerned about the implications for the future. In general, the significant other was a source of support and not stress. One participant described her significant other's sense of sharing in the responsibility,

> I wasn't worried about what he would say. Cause I know he wouldn't leave me or anything like that. And I mean he was just like he was kinda sad because he didn't want me to be no momma at no young age. But he said this was our consequences of having sex and he accepted it.

Several of the teens talked about the financial support that the father of the baby was providing or planned to provide once the baby was born. At least two of the teens in the urban group discussed concerns about where the significant other was getting the money to help her out,

> Oh um he's getting money but I don't know where. He say he working but he, he don't tell me where he working at. So I don't know. I hope he be safe wherever he getting the money from. I don't know. So. I don't want to have this baby and he's six feet under. I hope he ain't selling no drugs. I hope he ain't stealing. Cause that's what really be on my mind.

In two of the cases paternity was questioned by the significant other and this led to arguments and stress for the pregnant teen,

> And I said well you gotta take care of me to take care of the baby. I said cauz the baby's in me. I said so if I"m not eating right or if I"m not, if I"m stressed out cauz I'm so worried about you, that's not helping this baby. At all. I said cauz we stressing out about was you and what you're doing and where you're at and who you're with, I said it's not helping the situation.

Another teen who had an on again off again relationship with the father of the baby described arguing with his other girlfriend about his lack of support for the baby,

> And like he went to my first few doctor appointments with me. And then he stopped going cause of her. And cause she don't want him around me. I looked at her and I was like you must be his girlfriend for this week. And um I was like I'm

> going to let you know I”m pregnant by this man. He's not gonna do nothing for you. I mean, he's not doing nothing for the kid he got on the way. He not gonna do nothing for you. She got mad about that. Cause she didn't want to hear what I had to say.

Most of the teens remained in the relationship with their significant other and felt supported by them:

> He's been really great. He's been really awesome about it. He had a full ride at XXX and he ended up staying home and he goes to XXX State now. I feel like he was really scared. I think he was kinda scared about the same kind of stuff I was. College and his parents. And but he you know, tried to stay strong and he's done a pretty good job. He's done a pretty good job. I guess we're still both really scared. I don't think that goes away.

Friend response. Teens in all three geographic groups indicated that their friends had been somewhat supportive but that support tended to wane as the pregnancy progressed due to differing priorities and concerns.

One participant commented,

> I have lost a good bit of my friends and it's just, I mean, we haven't you know argued or anything. It's just they've just kind of, I can't do anything you know. I can't really go out on weekends. I can't spend money. Can’t you know. So we've just all grown distant.

Several other teens across geographic groups noted that you find out who your real friends are when you are pregnant, because those who weren’t true friends may gossip about you, let you down with empty promises of support, or just stop including you in social activities. One of the teens in the urban group described this sense of disappointment when her friends didn’t follow through with a promised baby shower:

> Some of them, some of them like I'm gone be there. Let me know when the baby shower is so I can buy him some of everything. It's gone be mighty nice. Some of them did not show. I called them, I text them, we still was talking on every day basis. So then they didn't show. So I was like, okay. They gone go their way, and I'll go my way.

In general though, there were more stories of friend support in the urban group than the other two groups combined.

Judgment. A sense of being judged, talked about, and disapproval was mentioned by several of the teens. This was experienced in several settings such as school, home, church, and even out in public while out shopping or looking for a job. Many of the participants felt indignant at the comments made, especially by strangers. However, there was not always a spoken word or objective action that led to the teens' feeling of being judged. Often it was a perception or subjective fear that caused the teen to feel that she was being judged. One participant described her experience in a store,

> I overheard like one of them in the store, they was like, she too young to be pregnant, having a baby. And I'm looking like you don't know my story, you don't know my life, so don't just judge me on being pregnant.

Two of the participants from the rural group described what it was like to go to school,

> Like I'll be sitting in class and girls make remarks. I can hear them make remarks about why do you want to be pregnant or something, talking to somebody else, not talking to me, but I don't know, it's just hard for me to get along with some people. Because of their mouth and the stuff they say.
> It's just embarassing. Now it's just kind of like, you know, whatever. Like I'm getting, I'm to the point where I'm like at peace about it, you know. It's happening. You've just got to take it. Let it happen. But it's just really bad. To be in school is just embarrassing.

A suburban participant also discussed what it was like to no longer be able to perform as a church pianist because she was pregnant,

> I quit going to my church for like 2 months just because nobody at my church knew yet. My parents knew. When my parents found out, I played on the piano one more time and then they took me off. Oh. I cried. I cried and cried. Cause I love playing the piano. Out of all the instruments I played, I love playing the piano. And when they took me off I'm like oh my gosh, I was like, they have no music now.

Finally, one of the urban participants recounted her experience of job hunting while pregnant,

> And I'm try I'm gone try I'm trying my best to look for a job but right now they not hiring pregnant women. And once they see that belly they'll know they don't care if you finish high school or not if you pregnant they don't want you on the job. The jobs that are available but none of them not available where they tell me they available then when I come in they see that belly and they don't want to hire me.

Looking Ahead

The next category included concerns about the future such as finances, finishing school or attending college, and caring for the baby. The teens were all looking ahead and attempting to make plans to take care of themselves and their baby.

Finances. Having enough money or the resources needed to provide for the baby was the second most common code found in the data set. One of the more succinct comments was from one of the urban participants, “When the baby come, it's never enough money to take care of a baby.” Another participant described concerns and plans regarding getting a job and working while having to think about finding childcare,

> I am gone get a job, trying to get hired where my grandma work. But that’s a fulltime job. It's stressful. And I'd be working from like 12 hour shifts but it's good money so and I can always trust my grandma with my child.

Another participant talked about the new financial responsibilities she had to assume because her mother would no longer provide them for her,

> So I pretty much have to support myself financially. I buy my own clothes. I have to pay for my copay at the doctor, I have to put gas in the car. I do drive her car. So she's let me do that. But I have to pay for gas, pay for clothes, pay for the vitamins and stuff. A lot of the baby stuff I've already paid for.

School . One of the sequelae of adolescent pregnancy and birth is the elevated high school dropout rate. Almost all of the teens who had not completed high school yet had plans to finish and get a diploma. Only one participant in the urban group intended to drop out and get a GED. Several teens discussed their renewed focus at school so that they could make good grades and be better able to provide for their child. The thought of becoming a mother was reported by many of the teens to give them direction and motivation,

> Well last year I was making really bad grades and I found out right before school was out last year that I was pregnant. And I was making horrible grades. And this year my grades are like so much better. And some of my teachers told me that me being pregnant made me smarter. It's just that I want to have good grades so I can be something in life. And not just be 16 and pregnant and not have nothing.

However, the teens also discussed the impact of the pregnancy on their ability to complete school under the circumstances. They talked about realities of work, childcare, attending school, and studying. One of the participants talked about the hardship this would be for her custodial grandmother,

> But then she was like, but one thing you can't do, you can't quit school. And I don't want to quit school. But then I have to like think about well, who's going to watch the baby while I'm at school, and who's going to do this and that, and my grandmother was like, I'll help you. She was like I'll watch the baby while you're at school, which is something I still don't have worked all the way out because of the fact I've got a 4-year-old brother is going to be at home with her, plus a newborn. And she's 62. I think that's going to be kind of hard on her. But then somebody was telling me about the JCCO. And they have a day care thing that you can send them to. Thinking about it but don't know.

Another participant talked about how school had become more difficult for her due to the pregnancy:

> Not necessarily the pregnancy itself but I guess all the factors surrounding it. The stress, it's like your mind's somewhere else. I've had to work more. So I don't get

> to study and stuff. So the pregnancy itself not so much, but the factors around it. Definitely affects my grades.

Changes

Pregnancy was not normative for any of the teens who participated in the study. Therefore, the pregnancy interrupted the anticipated life course trajectory for these teens and also their families of origin. There were changes in future plans for college and careers, changes in relationships, as well as physical changes that were stressful for the teens because of the undesired and unplanned nature of the pregnancy. However, there were also positive changes associated with the pregnancy in some relationships and in focus and motivation.

Relationships. For many of the teens there was a temporary negative effect on the relationship with family, but there were cases where the negative change had not resolved over time. One participant in the urban group grieved the change in her relationship with her mother,

> It's not the way I want it to be. It's very different. I mean, me and my momma we kinda lost touch because of this and my daddy, my daddy been more supportive than my mother and me and my mother, we was very close. But since I've been pregnant, she just lost our touch and that's kinda hurting because I want that close bond with my momma. But that's, I don't believe that's ever going to ever get back to that bond.

One of the teens from the rural group discussed her strained relationship with her family that she attributed to racial tension because the father of the baby was African American and she was Caucasian:

> I wish my mom would be here for me. She was here for my sister through her pregnancy but when I got pregnant it seemed like it didn't matter. It sorta hurts

> but I guess she just brush it off like it don't matter. It hurts in a way. And also my child is well, I want to say biracial. She's mixed. Her dad's mixed and I'm white so, she's still gone be part black. And my family, a lot of them, don't believe in that. Like my mom and them, they're sorta, they say they're not, but they are, racist. And my child shouldn't have to go through that. But she does. And I feel like if they're gonna be like that then I don't want neither, none of them around my child. Cause to me, all it takes is for one time somebody to call my child a name or disrespect my child cause she's black and it's gonna cause problems. Cause I feel like God made everybody. Maybe it was not his intention for whites and blacks to be together or whatever anybody says, but it's happening left and right these days. So they can't change it.

Social change. Changes in relationships with friends often led to social isolation. This social change was a frequently discussed theme in seven of the eleven interviews. At times this change was attributed to the teen's lack of spending money and other times it was associated with choosing to stay away from activities that would put the teen or the baby at risk. For example, one of the rural participants commented, "Well I obviously can't drink or smoke. And a lot of my friends like to party and so I obviously can't do that. So definitely that crowd is out." Another urban participant discussed her social isolation as it related to her physical safety,

> Can't go out and spend the night over friend's house. Can't really do everything that I used to do cause I'm gone kind of be stay in the house to make sure I'm safe and make sure don't nothing go wrong while I'm out. See, cause areas like this, you have to be very safe. Cause you know before then, when you wasn't pregnant, you could take off running and all that but now while you're pregnant and you're out like at parties and teen clubs you have to worry about fighting, the pushing, the shooting, the running and all that.

Personal change. Some of the social change was also attributed to physical and emotional change brought on by the pregnancy. Several of the teens cited fatigue and moodiness as reasons they no longer went out with their friends. One participant stated, "They said that I was acting moody. I was getting very lazy. They said I come in class

and just lay down and don't want to be bothered or touched." Another teen described it this way,

> It's just like you know it's like they, when I get around them, they want to do this and they want to go out and all that and I really, you know I don't want to be, I don't be in the mood to do all that. I be, all I do is sleep for real. I sleep all the time. It's changed. I used to stay up all I want to do is lay down and sleep.

One of the other urban participants attributed her social change to emotional liability which is commonly associated with the hormones of pregnancy:

> I just stay in my room and lay down cause I be so moody and I don't be like to get mad at folks so I just tell them I won't talk to you, but mess with you, I feel with them, everything still the same. They don't come around for real cause I tell them to stay away.

Change of plans for the future. Several of the teens spoke about how their pregnancy changed their plans or their parents' plans for their future, and how becoming pregnant would make reaching those goals more difficult if not impossible. One of the urban participants discussed her father's plan for her future,

> He was, he told me that that my twin sister just had a baby so why you ain't gone finish school and go to college and get married then have children? But I said I mean I didn't know. But even though I knew what I was doing, but you know I didn't know I was going to get pregnant. Really. It happened. So it didn't go as it planned.

A suburban participant also talked about the changes she was making in her college plans after she had to turn down a full music scholarship to a state university because of the pregnancy:

> But I still graduated in May with an advanced diploma so I went through the trigonometry and all the hard, very hard classes. And I got a scholarship to XXXX in XX City for two years. So. I'm going to go for Biology because I want to transfer to XXX to be an optometrist. And they moved my scholarship back till January

> so I can have the baby and take care of it for a few months and then January, hit the ground running for school.

The decision. Many changes in the lives of the participants in the study hinged on one major decision. The decision to keep the baby and not abort or give the baby up for adoption was also often a significant source of stress for the teen and her family. All 11 participants in this study had chosen to keep their baby. This was coincidental and not part of the study design. Some of the teens were pressured to get an abortion or give the baby up for adoption by their family:

> Well when I found out I was pregnant it was a shock which was a shock to me cauz I didn't want to be pregnant, especially not this age and time. Cauz I didn't know what I was going to do, who was going to help me or nothing. Where the money was going to come from, didn't think about a baby. And I was so scared to tell my grandmother. I was like oh my gosh, she's going to kill me. She's going to kick me out. She's going to do this, she's going to do that. And when I told her, she wanted me to have a abortion. She was like I'll pay for it, you just need to have abortion. You're not ready for this and all that. But I was scared to have abortion. And then when I went to Save a Life, they was telling me about how it can affect you in life and how some people have abortions and they can you know, it's always on their mind that they aborted a child and you know that it's not, the child didn't ask to be here, you know, and stuff like that. So then I made my decision when I heard all this bad stuff. I can't have a abortion. I can't do it. So then I thought, what about adoption? And I thought, ain't no way I can hold a baby in my stomach for 9 months and just give it away. I don't know why I feel that way but you got this inside a you, you feel her moving and everything. It just wouldn't be right to me.

Another urban teen talked about how her mother and the father of the baby had a different opinion than she did,

> When I told him, they was kind of me and his mother. Cause me and his mother, we was saying keep the baby. They didn't want to keep it. It was him and my mother against me and his mother.

One of the rural participants described a very different experience when her mom found out she was pregnant, “She said that she knows I'm young but there's nothing I can do about it now, and abortion is not even gonna happen. Or adoption.”

Fears and Concerns

The last major theme found in the data was the fears and concerns that the participants talked about. Being dependent on family members and having a strong desire to prove that she could take care of her responsibilities was a factor that weighed heavily on several of the teens. All of the teens appeared to have a strong sense of responsibility for their actions, and did not want to be a burden on their family. There were also concerns about being a good parent, and less frequently the health of the baby, and the delivery of the baby.

This sense of responsibility and desire to persevere was described by an urban participant:

> I still have problems but I ignore the problems and I just be like I can't wait to see my baby and get my baby so I can prove everyone wrong. I want to show everyone that me and him is going to make it with or without them and I'm still gone finish school and do what I have to do just to make this baby proud. And have a good life. So now when I look at it like it's a mistake but it's a good mistake that I can learn from. And it's gone make me better and strong. So now pregnancy, when I look at it, I look at it as a blessing.

One of the suburban participants described her anxiety about having everything she needed for the baby because she had to count on a family member to provide it,

> We don't have our crib yet or anything but his sister is supposed to get it. And just having all that put together and I don't want to like aggravate her about it or ask her about it all the time because she's buying it. I've got to get a breast pump. Which she's supposed to get too. Um, but that's just what worries me is if she don't get it, then I won't have it.

Other teens talked about their fear that they wouldn't be a good parent,

> You thinking that you won't be the ideal parent you know. You don't want to be a bad one and you really want to be the best one you can be. And sometimes situations can make it seem like you can't be. And that just makes it hard.

One of the urban participants summed up her feelings and fears about pregnancy this way, "Just it's really hard on your body. And you know it's really hard on your heart too because you don't think you can do it, and sometimes you want to just give up. But it's not that easy."

Summary

The experience of stress during adolescent pregnancy has many facets. However, the most frequently discussed themes were relational. The response to the pregnancy by family, significant other, and friends was the predominant theme. None of the participants had planned or desired to be pregnant at this time, but all of the teens were planning to keep their baby. There were many similarities across the three geographical groups and only a few differences. The suburban group was the only group who discussed having to keep the pregnancy a secret for as long as possible, and the urban group was the only group where physical safety was a concern. There were a total of 57 different codes applied to the transcripts, resulting in 4 major themes and 12 sub-themes.

CHAPTER 5

DISCUSSION, CONCLUSION, IMPLICATIONS, AND RECOMMENDATIONS

The purpose of this study was to describe the adolescent's perception and experience of stress during pregnancy, and to illuminate which social, family, environmental, or any other experiences are deemed stressful in light of her pregnancy. Qualitative content analysis was used for the analysis of data in order to remain true to the words used by the teens in the study (Sandelowski, 2010). The 11 pregnant adolescents who participated provided data regarding their daily experiences, relevant past experiences, and future hopes and concerns that they perceived as difficult or stressful. The results of the analysis yielded four overarching themes and eleven sub-themes which will be discussed in this chapter along with conclusions, implications, limitations, and recommendations for future research.

Discussion

Stated and Perceived Responses

The teens in this study communicated that the initial and often ongoing response to the pregnancy personally and from others was often a stressful experience. Because none of the teens who participated had intended to become pregnant at this point in their life, the response was typically negative from most people in their life. However, the initial response of the significant other and friends were a common exception.

Family members, particularly parents or guardians, were often shocked, disappointed, and angry that their daughter was pregnant at such a young age. Dallas (2004) noted that the mother's of pregnant teens often felt betrayed because they had told their daughter how to avoid becoming pregnant. When these emotions did not resolve over the course of the pregnancy, family relationships remained strained, and the teen felt a lack of emotional support. An anthropological study by Lesser and colleagues (1998) found that pregnant adolescent perceived a lack of family support as well. Additionally, when the family communication and relationships were dysfunctional prior to the pregnancy, they tended to remain that way during the pregnancy, findings that replicated those of Lloyd (2004). The negative responses of family members that led to ongoing relationship struggles linked this theme of "responses" to that of "changes" when there was a change in the characterization of the relationship due to the pregnancy.

There were, however, cases of families who rallied behind their teen to support her during this time bringing the family closer together. Cervera (1994) noted that family support was a common finding in the limited literature regarding family response to adolescent pregnancy, but that each family had a unique individual response that should be considered. Parsons (2003) succinctly stated, "Ultimately the health of the family determines how a crisis is resolved." For all of the teens in this study, adolescent pregnancy was viewed as a crisis.

The significant other or father of the baby was typically supportive when the teen told him she was pregnant. There were only three cases where the pregnant teen was no longer involved with the father of the baby, and two cases where he was questioning the paternity of the baby. When the father of the baby was no longer a romantic partner, he

tended to be a source of stress, especially in the cases where he was questioning paternity. There were other reasons for stress regarding the significant other, which included worry over where he was getting income without a job, concern that he might be involved in illegal activities, and quarrels which the teen often attributed to her own moodiness. There is very little literature regarding the maternal perception of paternal support in pregnant adolescents. However, Herzog and colleagues (2007) found that adolescent mothers were more satisfied with adolescent fathers involvement when they remained romantically involved and were a source of financial support.

The findings related to friends were mixed. Many of the teens still had at least a few supportive friends, but all of the teens had experienced some loss of friendships due to the pregnancy. The teens in the urban group tended to express that their friends were more supportive than teens in the rural and suburban groups. This finding is similar to those of Geronimus (2003) who found that adolescent pregnancy was often easily accepted and even beneficial in low-income urban environments.

Often though, an eventual loss of friends was attributed to a change in priorities that differed from the teen's friends, and at other times it was perceived to be due to a judgmental attitude regarding the pregnancy. The teens all alluded to an experience of learning who their true friends were after their pregnancy became known. In her focus groups, Herrman (2008) similarly found that teen parents and non-parenting teens agreed that teen pregnancy and parenting negatively impacted friendships.

A sense of public judgment was also a common finding related by teens in all three groups, which led to a sense of indignation or embarrassment. The teens perceived that others were talking about them out in public, at school, church, or even out shopping.

This perception prevented a few of the teens from attending church and at least one from continuing to look for a job. Other research similarly found that pregnant, as well as non-pregnant teens perceived this negative, judgmental attitude related to adolescent pregnancy (Herrman, 2008; Rentschler, 2003; Rosengard, Pollock, Weitzen, Meers, & Phipps, 2006). SmithBattle (2013) noted that the stigma associated with adolescent pregnancy added to social isolation and created barriers for pregnant and parenting teens.

The ongoing response to the pregnancy by the teen's friends and the perception of judgment in public linked the theme of "responses" to the theme of "changes" because these responses often led to the teen becoming socially isolated. Social isolation was reported by many of the teens who stated that they stayed at home now that they were pregnant, but the reasons for this varied. Among the most common reasons for no longer going out with friends was a lack of spending money because they were now paying for their own expenses and saving for the baby's needs. Also, a desire to keep themselves healthy and safe motivated several of the girls to stay away from parties that they might have attended in the past where there was drinking, smoking, or drug use. The threat of physical harm from fighting at teen parties in the urban group caused some teens to stay at home because they felt they could no longer flee while pregnant. The isolation from friends who were among the most accepting of the teens' pregnancy may lead to increased stress among pregnant adolescents due to the value of social support. Devereux and colleagues (2009) found that pregnant and parenting teens with greater social support reported less stress. This is particularly important if the pregnant teen is isolated from friends and her family is not a source of support, leaving the teen feeling alone.

Looking Ahead

Preparing to care for the baby was a concern for many of the teens. Finding a job, childcare, and providing the necessities for the baby like a crib and car seat, all while trying to attend school were stressors for most of the teens. Those teens with greater family support anticipated fewer difficulties providing for their needs and those of the baby. Consequently though, these teens often described feelings of guilt because their pregnancy had burdened their family with the financial responsibilities of another child. Parenting teens in studies by Herrman (2008) and SmithBattle (2003) also reported feelings of family burden. Teens in the present study expressed a desire for independence so that they no longer burdened their family or because they did not want to have to depend on others to provide for their needs.

Considering the risk that pregnant adolescents will become high school dropouts and raise their children in poverty (CDC, 2012), the teens' comments regarding school and plans for the future are particularly salient. Many of the teens reported that they intended to complete high school and some planned to go on to complete college; however, all of them acknowledged that these goals would be far more difficult to achieve while caring for a baby. This echoed the perspectives of pregnant and parenting teens in other studies (Herrman, 2008; Lloyd, 2004; Rentschler, 2003). The teen mother's renewed motivation to succeed in school was also noted in other literature regarding pregnancy in adolescence (Herrman, 2008; Rentschler, 2003; L. SmithBattle, 2000). The focus on succeeding in school reveals that the teens desire to become independent and provide for their own child. Nonetheless, high school dropout rates continue to reflect that only 50%

of teen mothers receive a high school diploma before age 22 years CDC, 2012). The difference in attitudes and graduation statistics points to a need for intervention in this area.

Changes

All of the teens in this study decided to keep their babies, a decision which was often met with resistance and one that marked a significant change for the teens' lives. When the choice to deliver and keep the baby was supported by the teen's family she experienced less stress and turmoil. Several of the teens reported that the decision to keep the baby was made by their parents, meaning they felt they would not be allowed to have an abortion. All of these teens readily agreed with that decision and discussed moral reasons for their family's' choices. Several other teens experienced strong opposition from their parent to their desire to deliver and keep the baby and were pressured to have an abortion. Ultimately though, the teen's choice was honored due to her legal rights. The literature regarding the resolution of adolescent pregnancy reflects that family is frequently highly involved in the decision and that the decision is complex and difficult (Bender, 2008; Coleman, 2006; Spear & Lock, 2003). Other stressful changes related to pregnancy such as isolation, relationships, and future plans were discussed in relationship to their precipitating factors.

Fears and Concerns

The teens also expressed fears and concerns about being a good parent. They desired to be the best parent possible but cited barriers that might prevent them from providing the best care or spending adequate time with their baby such as attending

school and the need to work as well. Several of the teens also discussed the sacrifices that would be necessary in their personal life, like not having time of their own to spend with friends. This was also found in other literature regarding adolescent pregnancy and parenting (Herrman, 2008; Rosengard et al., 2006).

There were a small proportion of teens that also feared labor and delivery and worried that the baby would not be healthy. Anderson and McGuiness (2008) through postpartum interviews also found that adolescents feared the pain of childbirth and some even experienced it as traumatic.

Conclusions

While some of the stressors that pregnant teens experience are similar to those of adult pregnant women, there are experiences unique to pregnancy during adolescence that are experienced as stressful. Specifically, social isolation, and public judgment or stigmas were experienced by the teens in this study. Additionally, the perception of other stressors common to those experienced by pregnant adults may be appraised differently by teens due to their limited life experience, degree of family support, and ability to make mature decisions (Seiffge-Krenke et al., 2009).

The vulnerability of pregnant adolescents to a lack of support and increased demands with limited resources makes this population susceptible to the impact of stress on birth and developmental outcomes. Because the most prevalent stressors reported by the teens in this study were relational, it appears that the teens appraise relationships to be where intervention and support would be most desired. Focusing on interventions to support the adolescent's family, decrease social isolation, and empower these teens to carry

out their desires to complete their education and pursue career goals may decrease the sequelae of prenatal stress.

Implications

The findings of this study begin to bridge the gap between the limited research regarding adolescent prenatal stress and the fuller body of research linking prenatal stress to negative pregnancy outcomes in adults. Further research confirming the pathways linking stress during the prenatal period and poor birth outcomes is still needed, especially in the adolescent population. This description of stress during pregnancy from the perspective of pregnant adolescents illuminates the topics that are significant to teens, thus giving direction to further research and interventions in this area. The results of this research could be used to develop screening tools that would be valid in assessing stress in pregnant adolescents where adult stress and anxiety instruments have been previously used.

These results are important for nursing practice, as well. The perspectives of these teens can bring empathy and guidance to obstetric and public health nursing practice. By incorporating assessment of prenatal stress into the care for pregnant adolescents, nurses and other health care practitioners alike can provide guidance and support that is specific to the needs of pregnant teens in order to reduce the stress they experience during pregnancy. Feldman (2007), in a study regarding prenatal attachment among 129 minority pregnant adolescents, found that having less stress improved prenatal attachment, which in turn was linked to decreased pregnancy risks. Similarly, Macleod and Weaver (2003) also reported that teen's satisfaction with social support from friends and family during pregnancy was positively associated to attitudes regarding the baby. Research also pro-

vides evidence for practitioners to promote social and family support as a key to improving pregnancy and developmental outcomes in this population. Devereux and colleagues (2009) noted that social support was negatively associated with stress, and that prenatal social support was positively associated with support at two and six months after the baby was born. Consequently, practitioners should seek targeted ways to improve support and reduce stress for pregnant teens to impact the outcomes in this population.

In addition to social and family support, educational support is imperative in this population in order to assist the often highly motivated pregnant teen in accomplishing her academic and career goals. Nurses who are knowledgeable about the pregnant teen's educational rights and school based programs that offer academic and parenting support are able to assist her in bettering outcomes for herself and her child. SmithBattle (2007) and Mangino (2008) both found that school related support was pivotal in teen mothers' success in graduating from high school.

Limitations

The lack of Latina adolescents was a limitation in this study, specifically because the population of Latina adolescents has one of the highest adolescent birth rates in the nation (CDC, 2012). In future research, a strong effort should be made to include this group in studies regarding adolescent pregnancy.

Additionally, follow up phone calls were included in the study design if the interview data needed clarification. These phone calls were not implemented for any of the participants because the principal investigator did not deem it necessary at the time. The

use of follow up phone calls may be helpful in further research with pregnant adolescents to follow the teens through their pregnancy and to assess birth outcomes.

The nature of qualitative interviewing makes it necessary to assume that any information communicated by the participants is true and accurately reflects the life and perception of the participant. During one of the interviews included in this study the participant communicated information about her volunteer work that did not seem possible, calling the validity of the rest of her interview into question. A decision was made to include the interview in the study because of the philosophical stance of qualitative inquiry, which assumes that the experience of the participant is subjective.

Strengths

Qualitative interviews revealed descriptions from the perspective of the teen that richly described their experiences in a way that is unlikely with other research methods. The geographic and socioeconomic backgrounds of the teens in this study were varied and included teens from impoverished to affluent segments of society. The varied nature of the teens socioeconomic and geographic groups, revealed surprisingly similar findings.

Recommendations

The results of this study point to the need for further research, as well as a consideration of a change in nursing practice. First, additional research is needed to confirm the biological linkages between psychosocial stress and poor birth and developmental outcomes in the adolescent population. Second, screening for stress during the prenatal period would be helpful in determining which teens were most at risk and would benefit from

intervention. Third, facilitating family and social support for pregnant teens would be impactful for both the teen and her child because of the positive impact of social support on stress. Finally, further academic support for pregnant adolescents is indicated because of their reported high levels of motivation, but low levels of graduation.

In summary, pregnant adolescents experience stress that is different from pregnant adults and would benefit from interventions that target relational and academic needs in order to reduce the stress that they frequently reported. This reduction in psychosocial stress in the lives of pregnant adolescents may reduce the negative outcomes currently associated with adolescent pregnancy and birth.

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APPENDIX A

INSTITUTIONAL REVIEW BOARD APPROVAL FORMS

THE UNIVERSITY OF ALABAMA AT BIRMINGHAM

Institutional Review Board for Human Use

Form 4: IRB Approval Form
Identification and Certification of Research
Projects Involving Human Subjects

UAB's Institutional Review Boards for Human Use (IRBs) have an approved Federalwide Assurance with the Office for Human Research Protections (OHRP). The Assurance number is FWA00005960 and it expires on January 24, 2017. The UAB IRBs are also in compliance with 21 CFR Parts 50 and 56.

Principal Investigator: KNIGHT, CANDACE C

Co-Investigator(s):

Protocol Number: **X120129008**

Protocol Title: *Adolescent Prenatal Stress*

The IRB reviewed and approved the above named project on 12-12-12. The review was conducted in accordance with UAB's Assurance of Compliance approved by the Department of Health and Human Services. This Project will be subject to Annual continuing review as provided in that Assurance.

This project received EXPEDITED review.

IRB Approval Date: 12-12-12

Date IRB Approval Issued: 12-12-12

Marilyn Doss

Marilyn Doss, M.A.
Vice Chair of the Institutional Review
Board for Human Use (IRB)

Investigators please note:

The IRB approved consent form used in the study must contain the IRB approval date and expiration date.

IRB approval is given for one year unless otherwise noted. For projects subject to annual review research activities may not continue past the one year anniversary of the IRB approval date.

Any modifications in the study methodology, protocol and/or consent form must be submitted for review and approval to the IRB prior to implementation.

Adverse Events and/or unanticipated risks to subjects or others at UAB or other participating institutions must be reported promptly to the IRB.

470 Administration Building
701 20th Street South
205.934.3789
Fax 205.934.1301
irb@uab.edu

The University of
Alabama at Birmingham
Mailing Address:
AB 470
1530 3RD AVE S
BIRMINGHAM AL 35294-0104

THE UNIVERSITY OF ALABAMA AT BIRMINGHAM

Institutional Review Board for Human Use

Form 4: IRB Approval Form
Identification and Certification of Research
Projects Involving Human Subjects

UAB's Institutional Review Boards for Human Use (IRBs) have an approved Federalwide Assurance with the Office for Human Research Protections (OHRP). The Assurance number is FWA00005960 and it expires on January 24, 2017. The UAB IRBs are also in compliance with 21 CFR Parts 50 and 56.

Principal Investigator: KNIGHT, CANDACE C

Co-Investigator(s):

Protocol Number: **X120129008**

Protocol Title: *Adolescent Prenatal Stress*

The IRB reviewed and approved the above named project on 2-21-12. The review was conducted in accordance with UAB's Assurance of Compliance approved by the Department of Health and Human Services. This Project will be subject to Annual continuing review as provided in that Assurance.

This project received EXPEDITED review.

IRB Approval Date: 2-21-12

Date IRB Approval Issued: 2-21-12

Marilyn Doss

Marilyn Doss, M.A.
Vice Chair of the Institutional Review
Board for Human Use (IRB)

Investigators please note:

The IRB approved consent form used in the study must contain the IRB approval date and expiration date.

IRB approval is given for one year unless otherwise noted. For projects subject to annual review research activities may not continue past the one year anniversary of the IRB approval date.

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The University of
Alabama at Birmingham
Mailing Address:
AB 470
1530 3RD AVE S
BIRMINGHAM AL 35294-0104

Informed Consent Document

TITLE OF RESEARCH: Adolescent Prenatal Stress

IRB PROTOCOL: **X120129008**

INVESTIGATOR: Candace Knight

SPONSOR: University of Alabama at Birmingham School of Nursing

Department of Family/Child Health and Caregiving

Explanation of Procedures

I am asking you to take part in a research study. The purpose of this research study is to find out what teenagers who are pregnant think is stressful so that I can find ways to help reduce stress for pregnant teens in the future. There are no experimental procedures in this research study.

I would like for you to consider talking with me about your experience since you have been pregnant. If you agree to participate, you will take part in a private interview with me to talk about things that you might consider to be stressful like family, friends, school, the father of your baby, money, or other things you feel are difficult since you have been pregnant. I will also ask you about what school you attend, who lives with you, your parent's education and job, and your ethnicity. You may refuse to answer any of the questions at any time. The interview will be audio taped and will take about an hour to an hour and a half of your time. I can come to your home to do the interview, or you can choose to do the interview in the clinic where you see your doctor. It may be necessary for me to call you on the phone after our interview to clarify what you told me, but this may not be needed in all cases. This follow up interview will take approximately 20 minutes. There will be a total of 15 young women enrolled in the study.

Risks and Discomforts

It is possible that you might become upset during the interview as we talk about topics that are difficult for you. If this happens, we can stop the interview until you are no longer upset or stop the interview completely. If needed, I will refer you to someone to help you cope with these feelings. It is also possible that you might become tired of sitting during the interview. If this happens, we can pause the interview while you get up and walk around and stretch. When you feel ready, we can start the interview again. There is also a small potential risk for loss of confidentiality if someone other than the participant inadvertently saw an email sent to set up the interview.

Information for Women of Childbearing Potential

Other research has linked stress during pregnancy to low birth weight infants and premature delivery of infants. If you think that talking about things that are difficult in your life may cause you stress then you may not want to participate.

Benefits

You may not personally benefit from your participation in this research. However, your participation may help to find ways to support pregnant teens in the future.

Alternatives

Your alternative is to not participate.

Confidentiality

Information obtained about you for this study will be kept confidential to the extent allowed by law. However, research information that identifies you may be shared with the UAB Institutional Review Board (IRB) and others who are responsible for ensuring compliance with laws and regulations related to research, including people on behalf of the UAB School of Nursing and the Office for Human Research Protections (OHRP).The results of the study may be published for scientific purposes. However, your identity will not be given out. If you choose to do the interview in your home, there is a risk that others who live in your home may inadvertently discover that you are pregnant if they did not already know which would compromise your confidentiality.

Refusal or Withdrawal Without Penalty

Whether or not you take part in this study is your choice. There will be no penalty if you decide not to be in the study. If you decide not to be in the study, you will not lose any benefits you are otherwise owed. You are free to withdraw from this research study at any time. Your choice to leave the study will not affect your relationship with this institution or the clinic which referred you to the study.

You may withdraw your consent at any time by deciding not to answer questions without explanation or by calling Candace Knight at the number listed on the last page of this form.

Cost of Participation

There is no cost to you for taking part in this study except for the time it takes to complete the interview.

Participant's Initials_____

Payment for Participation in Research

You will be paid $10 in cash at the time the interview is complete. If you withdraw from the study in the middle of the interview you will be paid the entire $10 for the partial information you have provided and at the same time be withdrawn from the study.

Questions

If you have any questions, concerns, or complaints about the research, please contact Candace Knight. She will be glad to answer any of your questions. Candace Knight's number is 205-996-7625. Candace Knight may also be reached after hours at 205 566-7734.

If you have questions about your rights as a research participant, or concerns or complaints about the research, you may contact the Office of the IRB (OIRB) at (205) 934-3789 or 1-800-822-8816. If calling the toll-free number, press the option for "all other calls" or for an operator/attendant and ask for extension 4-3789. Regular hours for the OIRB are 8:00 a.m. to 5:00 p.m. CT, Monday through Friday. You may also call this number in the event the research staff cannot be reached or you wish to talk to someone else.

Legal Rights

You are not waiving any of your legal rights by signing this informed consent document.

Signatures

Your signature below indicates that you agree to participate in this study. You will receive a signed copy of this document.

Signature of Participant Date

Signature of Investigator Date

University of Alabama at Birmingham
AUTHORIZATION FOR USE/DISCLOSURE OF HEALTH INFORMATION FOR RESEARCH

What is the purpose of this form? You are being asked to sign this form so that UAB may use and release your health information for research. Participation in research is voluntary. If you choose to participate in the research, you must sign this form so that your health information may be used for the research.

Participant name: _____
Research Protocol: **Adolescent Prenatal Stress**

UAB IRB Protocol Number: X120129008
Principal Investigator: Candace Knight
Sponsor: University of Alabama at Birmingham School of Nursing

What health information do the researchers want to use? All medical information and personal identifiers, including past, present, and future history, examinations, laboratory results, imaging studies and reports and treatments of whatever kind related to or collected for use in the research protocol.

Why do the researchers want my health information? The researchers want to use your health information as part of the research protocol listed above and described to you in the Informed Consent document.

Who will disclose, use and/or receive my health information? The physicians, nurses and staff working on the research protocol (whether at UAB or elsewhere); other operating units of UAB, HSF, UAB Highlands, The Children's Hospital of Alabama, Callahan Eye Foundation Hospital and the Jefferson County Department of Public Health, as necessary for their operations; the IRB and its staff; the sponsor of the research and its employees; and outside regulatory agencies, such as the Food and Drug Administration.

How will my health information be protected once it is given to others? Your health information that is given to the study sponsor will remain private to the extent possible, even though the study sponsor is not required to follow the federal privacy laws. However, once your information is given to other organizations that are not required to follow federal privacy laws, we cannot assure that the information will remain protected.

How long will this Authorization last? Your authorization for the uses and disclosures described in this Authorization does not have an expiration date.

Can I cancel the Authorization? You may cancel this Authorization at any time by notifying the Director of the IRB, in writing, referencing the Research Protocol and IRB Protocol Number. If you cancel this Authorization, the study doctor and staff will not use any new health information for research. However, researchers may continue to use the health information that was provided before you cancelled your authorization.

Can I see my health information? You have a right to request to see your health information. However, to ensure the scientific integrity of the research, you will not be able to review the research information until after the research protocol has been completed.

Signature of participant: _____ Date: _____
or participant's legally authorized representative: _____ Date: _____
Printed Name of participant's representative: _____
Relationship to the participant: _____

Rowell S. Ashford, II, MD
Annie McCartney, CRNP

Emily Bell, MD
Yocunda Clayton, MD

To whom it may concern:

This letter is to inform you that I have granted my permission for Candace Knight, RN to recruit participants for her dissertation project, "adolescent prenatal stress", from my obstetric clinic in Ensley, Alabama. The address and contact information are included above. I have discussed the details of the proposed study with Candace, and I am comfortable with the study protocol.

Sincerely,

Rowell Ashford, M.D.

1925 Avenue E • Birmingham, AL 35218
Phone: (205) 788-5164 • Fax (205) 788-5167

March 7, 2012

Jack B. Freeman, M.D.
John M. Morgan, M.D.
William E. Somerall, Jr. M.D.
Heidi K. Straughn, M.D.
Brookwood Women's Health, P.C.
2006 Brookwood Medical Center Drive
Suite 202, Women's Medical Plaza
Birmingham, AL 35209
(205) 397-8850

To whom it may concern:

This letter is to inform you that I have granted my permission for Candace Knight, RN to recruit participants for her dissertation project, "adolescent prenatal stress", from my obstetric clinic in Birmingham, Alabama. The address and contact information are included above. I have discussed the details of the proposed study with Candace, and I am comfortable with the study protocol.

Sincerely,

Jack B. Freeman, M.D. Date

3/29/12

John M. Morgan M.D. Date

MARCH 29, 2012

William E. Somerall, Jr. M.D. Date

3/29/12

Heidi K. Straughn M.D Date

Pell City High School
1300 Cogswell Avenue
Pell City, Alabama 35125
Phone (205) 338-2250

Helene Bettinger
Principal

June 19, 2012

To Whom It May Concern:

Candace Knight will be conducting research with some of our current and previous students for her doctorate dissertation. All students and parents of students will be given the opportunity to decline participation. However, if permission is given, our students will be interviewed here at our high school campus.

We are interested to see the results of this research and feel it could only be beneficial for our school. Thank you for this opportunity. We look forward to working with Candace and UAB.

Sincerely,

Helene Bettinger

Helene Bettinger

APPENDIX B

POSSIBLE INTERVIEW QUESTIONS/TOPICS

Possible Interview Questions/Topics

1. How are things going with your pregnancy?
2. How did you find out you were pregnant?
3. How did you feel about being pregnant initially/now?
4. How did the people in your life react to the news of your pregnancy?
5. Has being pregnant made anything difficult for you?
6. How has your life changed since you've known you were pregnant?
7. Has the pregnancy changed anything for you in the future?
8. Do you have the financial support that you need?
9. Is school different now that you're pregnant?
10. Do you have any other concerns?
11. If you were involved in religious institutions/activity prior to pregnancy, has that changed since you've been pregnant?
12. How is your relationship with the father of the baby?
13. How is your relationship with your family?
14. Do you spend time with peers like you did before you became pregnant?

*These questions are not all inclusive, but a general guide to cover topics brought out in the review of literature and the theoretical framework. Questions may change slightly after initial interviews and analysis of data.

APPENDIX C

RECRUITMENT FLYER

Are You Pregnant and 15-19 Years Old?

A research study is being conducted on the topic of stress and pregnancy. Pregnant young women are needed for interviews about stress. Interviews will take place in your home, clinic, or location of your choice. Interviews will last approximately 1-2 hours and participants will receive $20 for the interview.

If you are interested please call Candace Knight, RN

UAB School of Nursing

(205) 566-7734

APPENDIX D

CODING LEGEND AND TABLE

CODEBOOK

1. PER RESP: Personal response to the pregnancy, how does teen react to the pregnancy initially and after having time to cope – “shocked” “I didn’t believe it” “wasn’t disappointed”
2. SO RESP: Response of the significant other to the pregnancy- “he wasn’t mad or upset, he was happy”
3. FAM DYN: Family dynamics, influence of family history on present response and perception of pregnancy – “she (twin sister) had a baby when she was fifteen”
4. CHNG PLANS: Change of plans, things didn’t go as planned
5. FAM RESP: Family response to the pregnancy, how it felt to tell family members about the pregnancy – “It was hard” “my dad still wants me to get my diploma”
6. PER RESP: Personal responsibility, taking responsibility for your actions – “I knew what I was doing but you know I didn’t know I was gonna get pregnant”
7. ACCPT: Acceptance, it is what it is, now I have to deal with it the best I can – “we’re taking it day by day”
8. PERC FAMILY: Teen’s perception of the family’s reaction – “I knew he’d be disappointed”
9. PERC FRE: Teen’s perception of her friend’s reaction – “I thought they was gone be like my mother and my daddy”
10. FRE RESP: Response of teen’s friends to pregnancy – “They was talking about being the godmother and talking about being an auntie and talking about they gone buy booties and outfits, blankets, bottles, pacifiers, going up to the hospital.”
11. PHYS CHNG: Physical changes attributed to pregnancy – “I just be sleepy a lot”
12. FUT PLANS: Future plans for school, work, marriage, housing – “I want to get a job. I want to be independent”
13. FIN: Finances, does she have her needs met, meeting her needs – “it's never enough money to take care of a baby”
14. PUB PERC: Teen’s perception of the public perception of pregnant teen, what people in the grocery store think of me and my pregnant belly - “I overheard like one of them in the store, they was like, she too young to be pregnant, having a baby.”
15. SO CONC: Significant other concerns, concerns about her significant other’s safety, reliability – “I hope he be safe wherever he getting the money from. I don't know. So. I don't want to have this baby and he's six feet under”
16. BABY CONC: Concerns about the baby’s wellbeing – “what if she come out not alive?
17. JUDG OTHR: Judgment of others - “And I'm looking like you don't know my story, you don't know my life, so don't just judge me on being pregnant. I mean you never, maybe somebody in your family was pregnant at a young age. It's some, every family out there, somebody been pregnant at a young age so you just can't judge me just because you're not young and pregnant. Maybe sooner or later while you're talking about me you may be in the situation.”

18. ISO: Isolation, not going out with friends, staying home, disconnected from peers – “But sometimes I feel left out “
19. SOC CHNG: Social change, different pattern of social interaction related to pregnancy – “I really don't go to parties or have fun and dance and this and that, skate or, I don't do stuff like that. I used to.”
20. FAM RELT: Family relationships, how the family’s reaction to pregnancy impacts relationship with teen – “But since I've been pregnant, she just lost our touch and that's kinda hurting because I want that close bond with my momma”
21. REGRET: Regret, remorse- “I feel like I made a big mistake but will go on”
22. PERSEVR: Perseverance, the notion that I can get through this and we will both be ok – “…but will go on”
23. FEAR LBR: Fear of labor, pain of delivering baby – “I know it's gone hurt but some people tell me that the mother dies”
24. BABY CNTRD: Baby centered instead of self centered, all of the focus of others has shifted to baby, feeling left out – “I mean that's all really I every time I talk to someone it's mainly about a baby. Not about me.”
25. SO RELT: Relationship with significant other – “I argue with him, I start arguing with him for no reason but sometimes I be thinking I don't even know why we're arguing. But so you know, he's supporting me a lot”
26. SECRET: No one else can know/find out – “You wasn’t even supposed to have a boyfriend so I couldn’t tell anybody”
27. PER BKG: Personal background that influences current relationships – “I went to jail and I couldn't get it together, I kept failing drug tests, kept getting in trouble”
28. CONSEQUENCE: Consequences of actions – “since I was on probation, I had to go to jail for 3 days”
29. RELY OTHR: Reliance on family or others for personal or financial needs – “don't have our crib yet or anything but his sister is supposed to get it”
30. HOUS: Instability in housing, getting kicked out of the house – “So when Mom was like, you need to leave, I called her. I was like, Mom's kicking me out. Can I come stay with you?”
31. FEAR RESP: Fear of how others will respond to the pregnancy – “And I was scared to tell her take me to the doctor but I had to tell her and she took me to the doctor cause she was like you might be pregnant by you staying with that boy”
32. SO FAM RLT: the relationship of the significant other’s family with the pregnant teen – “I'm real close with his family”
33. SO FAM DYN: Significant other’s family dynamics – “His mom and his sister. His father's not in his life”
34. SO RSBLT: The responsibility of the significant in the pregnancy (ie., he is as guilty as she is) – “But he said this was our consequences of having sex and he accepted it”
35. BABY PLANS: plans to have the baby cared for while she works or attends school – “between his momma cause she stay at home or we gone put it in daycare”

36. SIB RESP: Response of the teen's sibling(s) to the pregnancy – "She happy now cause of the baby and it's getting closer to the time for the baby to come"
37. POS CHNG: Positive change – "It's made me brighter and it's making me to do choose to do right things and stay on the right path for not only me but for my child"
38. PHYS DIS: Physical discomfort related to pregnancy – "You gone be in pains some nights, gone wake up hurting"
39. HLTH CONC: personal health concerns – "Worrying about your health and trying to cope with it"
40. BABY CARE: Infant care – "I know how to change diapers and feed a baby and how much you're supposed to feed it and when and stuff like that. But cause I mean I got a baby cousin too and I keep him a lot. To help me get ready for my child"
41. FOB RELT: Relationship with the father of the baby (when he is not her boyfriend) – "We're not together. But we're friends now"
42. DEC: Decision about the pregnancy (ie., to keep, adopt, or abort) – "talked about abortion but I don't believe in abortion at all and I don't really think I could do an adoption cause I think I would eventually want the baby so I just decided to keep him"
43. FAM RESP FOB: Response of the family to the father of the baby – "Um well she was more concerned about the father that she doesn't particularly care about him"
44. SAFE: Physical safety during the pregnancy – "Cause you know before then, when you wasn't pregnant, you could take off running and all that but now while you're pregnant and you're out like at parties and teen clubs you have to worry about fighting, the pushing, the shooting, the running and all that"
45. BDY IMG: Body image – "cause I mean I don't want to look weird"
46. SPIR: Spirituality, reaction at church – "I do intend on the baby believing in God cause I don't want anything bad to happen. But I don't go to church or anything"
47. FOB RESP: Response of the father of the baby (not her boyfriend/significant other) – "Well he already has another, a daughter, who's about 5, so, but he can't see her so he's more excited about this"
48. FOB RSLT: Responsibility of the FOB in the pregnancy and doing his part to support the baby – "I can't remember where he works cause he just started like a week ago"
49. PARENT: Concerns about parenting – "you thinking that you won't be the ideal parent you know. You don't want to be a bad one and you really want to be the best one you can be. And sometimes situations can make it seem like you can't be. And that just makes it hard."
50. HELP: Things that would be helpful (resources, education) – "I think a lot of things would be like really helpful cause it's like so much for me to take"
51. CONF OTHR: Conflict with others – "And I told her, I said um you can't stop him from being a part of his child's life. I don't want him"
52. PATER: Paternity being questioned – "He was just like go get me proof that you're pregnant. And that's what I did. He thinks it's somebody else's kid."
53. RAC TEN: Racial tension – "And my family, a lot of them, don't believe in that. Like my mom and them, they're sorta, they say they're not, but they are, racist. And my child

shouldn't have to go through that. But she does. And I feel like if they're gonna be like that then I don't want neither, none of them around my child."

54. PERC SELF: Perception of self – "I used to be a sweet little, nice little girl. I'm always angry and I'm always hungry now. And if I don't get what I want at a certain time I want it, I throw a fit and then 20 minutes later I'm like what happened."
55. EMO: Emotional lability, moodiness, mood swings – "Emotions and like I can look at something and it's not even nothing to cry about and I'll look at a picture and I'll just start crying. It's horrible. I cry like 3 times a day now"
56. RELT OTHR: Relationships with others – "I started going out and fighting and just and I was fighting for no reason at all. Just people just didn't like you or what you was wearing or you know want to mug you at a party or something"
57. UNDERSTAND: Desire for understanding, empathy of others – "It's just like there, it's a very small amount of people that understand I guess what I'm going through."

CODE	A1	A2	A3	A4	A5	A6	B1	B2	C1	C2	C3	SUM	SUM A	SUM B	SUM C
PER RESP	5	6	5	2	1	3	5	4	2	1	5	39	22	9	8
SO RESP	1	4	1	2	2	0	3	0	1	2	1	17	10	3	4
FAM DYN	4	9	2	4	1	6	4	3	8	0	3	44	26	7	11
CHNG PLANS	4	0	1	0	0	0	0	0	0	0	2	7	5	0	2
FAM RESP	5	5	5	5	7	6	2	8	2	7	7	59	33	10	16
PER RESP	5	6	5	2	1	3	5	4	2	1	5	39	22	9	8
ACCPT	3	0	0	0	0	2	0	1	1	0	1	8	5	1	2
PERC FAM	2	1	3	2	0	1	1	0	0	0	0	10	9	1	0
PERC FRE	1	0	0	1	3	0	0	0	1	0	0	6	5	0	1
FRE RESP	1	0	0	2	4	1	1	1	0	2	2	14	8	2	4
FUT PLANS	2	3	4	3	1	3	4	4	2	2	1	29	16	8	5
PHYS CHNG	3	1	3	3	2	2	1	0	1	0	0	16	14	1	1
FIN	8	1	4	2	2	4	4	4	2	3	9	43	21	8	14
PUB PERC	5	0	0	0	2	0	0	1	0	0	1	9	7	1	1
SO CONC	2	1	0	1	0	0	0	2	1	0	0	7	4	2	1
BABY CONC	2	4	0	0	0	1	0	0	0	1	0	8	7	0	1
JUDG OTHR	3	3	1	2	3	1	0	4	3	1	1	22	13	4	5
ISO	4	1	0	0	5	4	0	0	3	1	1	19	14	0	5
SOC CHNG	1	3	2	0	4	1	2	0	2	1	4	20	11	2	7
FAM RELT	1	2	0	3	0	0	0	0	3	0	0	9	6	0	3
REGRET	1	1	0	0	0	0	0	0	1	0	0	3	2	0	1
PERSEVR	2	0	1	0	2	0	0	2	2	0	0	9	5	2	2
FEAR LBR	1	1	0	1	1	0	0	0	1	0	0	5	4	0	1
BABY CNTRD	1	2	0	0	0	0	0	0	2	0	1	6	3	0	3
SO RELT	1	5	1	0	2	0	0	0	8	0	2	19	9	0	10
SECRET	0	0	0	0	0	0	3	6	0	0	0	9	0	9	0
PER BKG	0	0	0	0	0	0	2	0	1	0	0	3	0	2	1
CONSEQUENCE	0	0	0	0	0	0	1	1	0	0	0	2	0	2	0
RELY OTHR	0	0	1	1	0	1	4	1	2	0	1	11	3	5	3
HOUS	0	1	0	1	0	0	3	3	0	2	2	12	2	6	4
FEAR RESP	0	1	0	0	1	0	1	4	0	0	1	8	2	5	1
SO FAM RLT	0	0	1	0	1	0	0	0	0	0	2	4	2	0	2
SO FAM DYN	0	1	0	0	0	0	0	0	0	0	0	1	1	0	0
SO RSBLT	0	1	0	1	1	0	1	3	5	3	0	15	3	4	8
SIB RESP	0	1	2	1	0	0	1	0	0	1	1	7	4	1	2
BABY PLANS	0	3	0	1	0	5	1	0	1	1	0	12	9	1	2
POS CHNG	0	3	0	0	0	0	2	0	0	1	0	6	3	2	1
PHYS DIS	0	2	2	1	2	1	3	4	1	2	0	18	8	7	3
HLTH CONC	0	4	0	3	1	0	2	0	1	0	2	13	8	2	3
BABY CARE	0	1	3	0	0	0	0	0	0	0	0	4	4	0	0
FOB RELT	0	0	2	0	0	6	0	0	0	0	0	8	8	0	0
DEC	0	0	1	3	4	6	0	0	0	3	1	18	14	0	4

FAM RESP FOB	0	0	1	0	1	0	0	0	0	0	0	2	2	0	0
SAFE	0	0	1	0	2	2	0	0	0	0	0	5	5	0	0
BDY IMG	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0
SPIR	0	0	1	3	3	0	3	5	3	0	1	19	7	8	4
FOB RESP	0	0	3	0	0	3	0	0	0	0	0	6	6	0	0
FOB RSBLT	0	0	1	0	0	5	0	0	0	0	0	6	6	0	0
PARENT	0	0	2	0	0	2	0	0	0	0	1	5	4	0	1
HELP	0	0	2	0	0	0	0	0	0	1	2	5	2	0	3
CONF OTHR	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1
PATER	0	0	0	0	0	0	0	0	2	0	0	2	0	0	2
RAC TEN	0	0	0	0	0	0	0	0	4	0	0	4	0	0	4
PERC SELF	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0
EMO	0	0	0	2	4	0	0	1	0	0	0	7	6	1	0
RELT OTHR	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0
UNDERSTAND	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1
												684	393	125	166