The relationship between maternal social support during the prenatal term and birth weight

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The relationship between maternal social support during the prenatal term and birth weight

by

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A thesis submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of

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Abstract

This study examined the relationship between birth weight status and a mother’s social support status during her prenatal term. Using infants and mothers from the Early Childhood Longitudinal Study – Birth Cohort (n = 10,700), three types of social support were examined: father support, religiosity, and community/neighborhood support. Analysis of variance and block regression indicated that, overall, social support did not play a significant role in determining the birth weight of these infants. While certain aspects of social support were statistically significant (e.g., father attending a birth class with mother, participating in community service, and being able to ask spouse/partner for advice and help with the child) and are unarguably important for the mother to receive both during the prenatal term and following the birth of the child, the results of this study do not provide clear evidence that social support helps to predict an infant’s birth weight. The limitations of the research, particularly in relation to the sample and dataset, may have contributed to the limited findings related to the major questions of this study.
Chapter 1. Introduction

Low birth weight is one of the top three causes of infant mortality in the United States today, with congenital malformations and sudden infant death syndrome filling the other two. Together, these three account for 44% of all infant deaths in the U.S., with low birth weight alone accounting for 16% of all infant deaths (Matthews, Menacker, & MacDorman, 2003). In the current study I examined several variables associated with the prenatal period, including social support such as the amount of father involvement, community and neighborhood support, and the role of religiosity, that may affect the baby’s birth weight in hopes of discovering ways to decrease the propensity of low birth weight infants and therefore infant mortality rates in the United States.

Two basic groups of babies are born with a lower birth weight. Some infants are born prematurely and are therefore at a lower weight due to a shorter gestational period, and some are born at full gestational term but still are underweight. Because of these variations in the occurrences of low birth weight, it is difficult to determine what is causing both premature births and full gestational term low birth weights. What is clear is that many times these lower birth weight infants are at a greater disadvantage in their infancy as well as into early childhood, and even into adulthood than are children with normal birth weight. While most low birth weight infants will function normally, they are more likely than normal birth weight infants to experience school problems, subnormal growth that is often still evident in adolescence, slower psychomotor growth, and other health problems such as cerebral palsy, which is the most common abnormality found in low birth weight children (Hack, Klein, & Taylor, 1995). According to Paneth (1995), approximately 20% of low birth weight (1500-2500 grams: 3 pounds, 5 ounces–5 pounds, 8 ounces) and very low birth weight infants
(under 1500 grams: 3 pounds, 5 ounces) will experience some form of serious handicap, such as cerebral palsy, epilepsy, blindness, or deafness, and about one-third will experience difficulties in school. Additionally, children who are born at a lower birth weight show lower scores on intelligence tests than children who are born at a normal weight, even controlling for sociodemographic variables (Hack et al.).

Unfortunately, not all mothers recognize the seriousness of delivering a low birth weight infant (Paneth, 1995). In a British study of mothers who had previously given birth to low birth weight infants, 37% of the mothers did not view having a low birth weight infant as a problem (Rajan & Oakley, 1990). Interestingly, 63% of these same mothers said their baby had been in an intensive care unit and over 70% reported their baby had experienced problems after birth. Further, 15% said they did not think their child currently was developing at an age-appropriate pace and 42% said they were still worried about their child’s continuing development.

In 1985, the Institute of Medicine promoted enrollment of all pregnant women into a prenatal care program in an effort to help reduce the number of low birth weight infants, which eventually helped lead to an expansion in Medicaid eligibility to lower income women, helping previously ineligible pregnant women obtain Medicaid and thus enable them to receive prenatal care. In a recent study, Hack et al. (2002) examined a group of young adults who had been born between 1977 and 1979 with a very low birth weight and a group of similar aged adults who had been born at a normal birth weight. When comparing the two groups, and after adjusting for both gender and socioeconomic status, these researchers found that compared to the normal birth weight group, the very low birth weight group had a lower high school graduation rate, lower average IQ, and lower academic achievement scores. Men,
but not women, from the very low birth weight group were also less likely to have enrolled in postsecondary education. These findings suggest that education difficulties persist into young adulthood for these lower birth weight children.

The purpose of the current study was to determine if social support is influencing the birth weight of infants in order to determine how or if these variables can be altered or changed to most benefit the infant. I focused more on variables that potentially are less fixed, such as the involvement of the father and community and religious support. Additionally, I examined some more ascribed characteristics such as maternal ethnicity, socioeconomic status, maternal age, and prenatal and medical care including nutrition, cigarette smoking, and alcohol use, as these variables play an undeniable role in the development and birth of the infant. Identifying which of these variables potentially has the most impact on the development of the fetus is imperative to help decrease the number of low birth weight infants in today’s society.

Prenatal medical care, while widely varying, is usually initiated within the first trimester of pregnancy, with contact with medical personnel becoming more frequent as the pregnancy progresses. For a typical full-term pregnancy a woman may have between 10 and 14 prenatal visits in which she receives physical exams, screenings for a variety of medical conditions for both her and her child, and information about resources for any additional counseling services (Alexander & Korenbrot, 1995).

Prenatal care has been identified as one of the best prevention methods mothers can take advantage of to protect both her and her unborn child (Alexander & Korenbrot, 1995); but as a somewhat broad term it is often difficult to pinpoint exactly what constitutes prenatal care for a woman. To specify, in the current study prenatal care will be encompassed by
discussing three of its main elements, as identified by Alexander and Korenbrot: (a) psychosocial (smoking and substance abuse) (b) nutritional and (c) medical.

Programs designed to intervene with expecting mothers who may not otherwise receive prenatal treatment mainly focus on improving the women’s health conditions to prevent low birth weight infants and rarely focus on the social aspect of prenatal care (Hughes & Simpson, 1995). Expectant mothers who have low levels of education, lower-paying jobs, live in poverty, and have less social support are more at-risk for adverse birth outcomes than are mothers who do not experience these disadvantages (Hughes & Simpson, 1995). For these reasons, the current study focused on the social support the mother receives, mainly from the father of her child, other family and/or neighborhood support, and church or other religious organizations as the importance of these social aspects throughout the prenatal term are understudied and often ignored.

Social support is defined as “resources provided to an individual by members of a personal social network” (Badr, 2001, p. 126). This can be interpreted many ways and is difficult to break down and define operationally. The term “social support” is very complex and multi-faceted and this complexity can be a hindrance to its being defined similarly every time it is studied, depending on what a particular researcher chooses to include in his or her definition of social support.

**Theoretical Framework**

The foundation for examining whether social support can play a role in birth weight of a child is based on Urie Bronfenbrenner’s bioecological systems theory (Bronfenbrenner & Ceci, 1994), which is grounded in the theory that the child develops within a bidirectional, complex system of relationships with close, personal contacts as well as extended
neighborhoods and communities (Berk, 2002). Before the ecological systems theory, the
traditional view by most researchers was the child was only affected by his or her immediate
surrounding environment. Bronfenbrenner expanded this view by theorizing that a child
exists within a four-tiered environment, starting with the most immediate surroundings and
ending with the child’s cultural values, norms, and ideals that affect the all the other tiers of
the environment. Examining the development of the child then means examining the
immediate environment as well as the larger environment.

Bronfenbrenner stressed the importance of realizing that all relationships are
bidirectional and have a lasting effect of development, and identified four levels of
environment within which a child exists. The innermost level is the microsystem, and
consists of the child’s most immediate surrounding such as parents and siblings. The second
level of the environment is the mesosystem, which contains the connections between the
immediate relationships, such as the home, child-care centers, schools, churches, and
neighborhood. For example, because of the reciprocal interactions in these relationships, the
interactions between parents and child care providers can affect the child and the child-parent
relationship can affect the caregiver-child relationship.

The third level, which includes the social situations that do not include the child but
that affect their experiences indirectly, is the exosystem. The parent’s workplace can affect
the child indirectly by what kind of benefits, maternity leave, and flexibility they provide and
is an example of exosystem support. Finally, the uppermost tier is the macrosystem, which
consists of cultural values, norms, laws, and customs. Cultural norms that place child care
and education as a priority will provide children more positive experiences within the other
three tiers of relationships and settings (Berk, 2002).
This complex series of environmental influences on the child affects the child’s growth and development, because the child is at the middle of the ever-changing system (Seefeldt & Barbour, 1998). The child is affected by not only his or her immediate and gradual environment, but Bronfenbrenner also stresses the role that genetics plays in affecting all areas of development and growth. That role can be altered as well by the ever-changing environment all of which are constantly interacting with each other (Bronfenbrenner & Ceci, 1994).

Using Bronfenbrenner’s theory, social support can be seen within the many tiers of the ecological systems theory. The three types of social support chosen for the current study (father support, neighborhood/community support, and religiosity) are encompassed within the microsystem, mesosystem, and exosystem, and affect the child both directly and indirectly. The interaction of genetics and environment can also be seen within Bronfenbrenner’s theory. Seefeldt and Barbour (1998) gave an example of this interaction between genetics and environment, saying that if smoking or drinking during pregnancy is acceptable within a certain culture (macrosystem), this type of personal habit can interact with the genetics and affect an unborn child.
Chapter 2. Review of Literature

In this section I will examine previous research on the variables that may affect the birth weight of infants. I will first examine what previous research has shown concerning the involvement of the father, social support both from other family members and/or the community, and religiosity. Do these play a role throughout the prenatal term to determine whether a child will have a low birth weight? I will also look at prenatal care, including cigarette smoking, nutrition, and medical care, and its role in determining the health and birth weight of an infant. Finally I will look at how low birth weight rates differ according to ethnic groups, socioeconomic status, and maternal age, all of which are uncontrollable variables that may directly or indirectly have an impact on birth weight.

Social Support

In the current study, father involvement, community support, and religiosity of the mother during the prenatal term were variables of interest in relation to low birth weight. The next two sections examine previous research in these areas. The results reported in this section on father involvement are mixed in terms of whether having the father involved during the pregnancy is related to the birth weight of the infant. Results were similarly mixed for community support, and only a few studies examined how religiosity plays a role in prenatal care and they too had mixed results. These are some of the gaps I am hoping to begin to fill in the current study.

Father involvement. I examined the marital status of the mother as well as the father’s involvement with the pregnancy and birth. Marital status is considered an indicator of both economic and social support; mothers who are married may have healthier prenatal practices,
because they were encouraged to do so by their partner and/or had the financial means to do so, which thus may have a positive effect on fetal growth (Matthews et al., 2003).

Research has indicated that marital status can have an impact on birth outcomes. Having the support of both the woman’s partner and her family was associated with receiving more adequate prenatal care (Augustyn & Maiman, 1994). Women who are married are also at less risk of delivering low birth weight babies than are single mothers (Jesse & Alligood, 2002; Jones & Bond, 1999; Matthews et al., 2003). In fact, in 2001 the infant mortality rate for infants of unwed mothers was 9.7 for every 1,000 births, which is 80% higher than the infant mortality rate for married mothers (Matthews et al.), but little research has focused on the impact of a father’s involvement in cases of unmarried parents.

Padilla and Reichman (2001) studied unmarried parents to determine how father involvement affected birth weight and found that mothers who were currently residing with the father of their baby were less likely to birth a low birth weight baby than were mothers who were not cohabitating with the father but still romantically involved with him. These same researchers also reported that if the mothers were receiving financial support from the father they were at lower odds of having a low birth weight baby.

Further, Reichman and Teitler (2006) examined over 4,500 births from urban populations to examine the association between paternal age and birth weight. They found that even when controlling for the infant’s gender and the mother’s ethnicity, age, marital status, and health insurance, fathers over age 34 were significantly more likely to have low birth weight babies. The researchers suggested that biological variables associated with aging might play a role as well as social factors such as little social or financial support. This
research suggests paternal involvement and age might be playing a larger role than previously thought and may be deserving of more attention.

Because the infants in the current study were born in the year 2001, it is important to examine the type of relationship the parents were in in addition to being married or not married. With many couples not marrying but choosing to cohabit instead, it is important to look at this type of relationship rather than lumping all unwed people into one category. In a study of over 2,000 infants born mainly to unmarried mothers (77% were unmarried) of diverse ethnicity, Teitler (2001) measured father involvement and the type of relationship between the parents (married, cohabiting, romantic, or non-romantic) to determine if this relationship had an effect on the infant’s birth weight and the mother’s prenatal care and health behaviors. Similar to other studies, Teitler also found that unmarried mothers were twice as likely to give birth to low birth weight infants as were married mothers, and among unmarried parents those who were cohabiting, and who it would seem should be receiving more partner support, were no less likely to deliver a low birth weight infant than were those who were not cohabiting.

Interestingly, Teitler (2001) found that father involvement had the strongest effect on prenatal care, with married mothers exhibiting healthier behaviors (prenatal care, drinking, drug use, and smoking) than unmarried mothers and the lowest effect on low birth weight. Teitler says, “Overall, the less involved the parents are with one another, the worse the outcomes. All measures of involvement are positively associated with early prenatal care and marriage, father’s last name and the composite measure of father involvement predict smoking, drug use, and to some extent, smoking during pregnancy” (p. 416). These results
indicate that father involvement is very beneficial to the mother during the pregnancy, but the impact of involvement on birth weight was less clear.

*Family and/or Community support.* Although variables such as low socioeconomic status and increased life stressors due to poverty have adverse affects on birth outcomes, these effects can be eased with help from other protective variables such as support from family and friends. “Collectively, these studies indicate that it may not be socioeconomic status alone that negatively influences birth outcomes, but rather the relative life circumstances of mothers, including variables that either exacerbate or counteract the effects of socioeconomic status” (Padilla & Reichman, 2001, p. 432).

Nordentoft et al. (1996), in a study of over 2,000 pregnant Copenhagen women, found the strongest predictors for delivering a low birth weight baby were lack of social support, cigarette smoking, and lack of maternal education. To clarify, in this study social support was measured by asking the mother is she was cohabitating, if she had someone to confide in, if at least once a week she was seeing family and friends, and if at least once of month was she attending activities, meetings, or other community events. In another study, Feldman, Dunkel-Schetter, Sandman, and Wadhwa (2000) reported that social support significantly predicted fetal growth among 247 primarily Latina and European-American women. They suggested, however, that rather than affecting the time the baby was born, prenatal social support is associated with birth weight through fetal growth processes throughout the pregnancy. In this study, social support was measured by a 7-item family support scale, a 10-item father support scale, and a 40-item scale measuring tangible support, appraisal support, self-esteem support, and belonging support. Participants were asked how much they agreed (from strongly disagree to strongly agree) with each question.
In another study examining 319 African American pregnant women, Norbeck, DeJoseph, and Smith (1996) found that social support intervention was successful in reducing the number of low birth weight infants born to these African American women who previously had been identified as having inadequate social support. Inadequate social support in this study was a determinant of support usually from the pregnant woman’s mother or male partner. Women were randomly assigned to one of the two groups and post hoc analyses revealed comparable group composition. These researchers reported the frequency of low birth weight infants (under 2500 grams) for women in the intervention group was 9.1%, compared to 22.4% in the control group. The effectiveness of this intervention is important and lends hope to reducing the rate of low birth weight infants born to African American women from its current position of twice the rate for White women.

Religiosity. Religiosity is a subjective measure because it is not easily empirically defined and therefore not examined often in connection with birth outcomes. Carothers, Borkowski, Lefever, and Whitman (2005) defined religiosity as “involvement in church and contact with and dependence on church officials and members” (pg. 263). Few studies have examined how either maternal spirituality or maternal religiosity, an aspect of spirituality, is related to the birth weight of a baby. Researchers examining Mexican-Americans suggest that religiosity may present certain advantages in birth outcome for women of this ethnic group (Magaña & Clark, 1995). However, Jesse and Alligood (2002) reported that among 120 Tennessee women ages 14 to 44 (89% were White and 70% had at least a high school education), active religiosity was associated with shorter length of gestation at birth. In this study spirituality was measured on a ten-item scale for a summed score that indicated the importance of religion in the subject’s life. However, it is important to note that the
Tennessee women were mostly White and Protestant while the Mexican-Americans were Latina/Hispanic and Catholic. Additionally, Joshi et al. (2005) found no connection between birth weight and religion among 230 women from India. Because of these inconsistent findings more research is needed in this area to further examine the effects a mother’s religiosity might have on the birth weight of her baby.

**Prenatal Care**

For mothers who are at risk for delivering a low birth weight infant, it is absolutely essential that they receive prenatal care. To assess accurately whether mothers are at risk for delivering an infant of low birth weight, and, if so, whether the baby is growing as expected, prenatal care needs to begin as soon as possible. Receiving prenatal care, especially for at-risk mothers, can better help identify and prevent low birth weight when started while in the first trimester of pregnancy.

Matthews et al. (2003) reported that in 2001, mothers who had received prenatal care (patient education and early recognition of symptoms that may require monitoring or intervention) while still in their first trimester were at a lower risk for infant mortality than those mothers who waited until after their first trimester or received no prenatal care. The mothers who waited to seek prenatal care until after their first trimester or who received none had an infant mortality rate of 8.5 per 1000, 37% higher than mothers who received prenatal care within their first trimester of pregnancy.

**Cigarette smoking.** Smoking during pregnancy can also have adverse effects on both the development of the fetus and birth weight of the infant. According to Chomitz, Cheung, and Lieberman (1995), smoking during pregnancy slows the development of the fetus and is the largest risk factor for delivering a low birth weight infant. Between 20% and 30% of all
low birth weight infants are born to mothers who smoked cigarettes during pregnancy; thus the low birth weight may have been avoided by the mother not smoking during the prenatal term. Not surprisingly, the rate of having a low birth weight infant increases as the number of cigarettes smoked during pregnancy increases (Chomitz et al.).

Substances within tobacco products such as nicotine, carbon monoxide, and cyanide can be passed on to the fetus through the fetal blood supply (Matthews et al., 2003). “These substances restrict the growing infant’s access to oxygen and can lead to adverse pregnancy and birth outcomes such as low birth weight, pre-term delivery, intrauterine growth retardation, and infant mortality” (Matthews et al., p. 6). Using infant mortality statistics, these same authors demonstrated that the risk for adverse health outcomes in infants of mothers who smoke was 62% higher at 10.5 for every 1000 births, compared to 6.5 per 1000 for nonsmokers.

Alcohol use. Although the exact amount of alcohol and its impact on an unborn child are not well established, heavier alcohol use, or more than two drinks daily, is considered excessive and not recommended to pregnant women (Chomitz et al., 1995). The use of alcohol during pregnancy has been linked to birth abnormalities known as fetal alcohol syndrome. Some characteristics of children born with fetal alcohol syndrome are low birth weight, facial abnormalities, poor coordination, learning disabilities, and mental retardation or low IQ, among others. The Center for Disease Control reported that the rate of fetal alcohol syndrome ranges between 0.2 and 1.5 per 1,000 live births in the United States. Fetal alcohol syndrome is one of the most preventable conditions leading to birth defects and mental retardation (U.S. Department of Health and Human Services, 2006).
Nutrition. It is logical to think that nutrition would play a role in the weight of an infant. The more nutrients the mother is ingesting, the more nutrients the baby will receive and thus would result in higher birth weight and vice versa. Mothers need some extra calories and nutrients during pregnancy to ensure that both she and her child are receiving enough, particularly protein, iron, folic acid, other B vitamins, and other nutrients that need to be increased during this time (Chomitz et al., 1995).

Chomitz et al. (1995) also reported that women who had gained 22 pounds or less throughout their pregnancy were two to three times more likely to have a full-term baby who was low birth weight than mothers who had gained more than 22 pounds. The average amount of weight gained throughout pregnancy is 30 pounds. But while supplemental calories have been somewhat effective at reducing low birth weight rates, it has not been shown to contribute greatly to reducing the rate of low birth weight infants in the United States (Paneth, 1995). Maternal nutrition and subsequent weight gain throughout pregnancy is moderated by many variables including maternal height and weight, socioeconomic status, past eating styles, cigarette smoking, and drug use (Chomitz et al.).

Medical care. While only a small portion of mothers may need screenings for certain medical conditions, it is still important to rule out any potential risk factors that could have an effect on the birth weight of the infant. Sexually transmitted diseases, infections, diabetes, and hyper-tension-related complications are all examples of medical conditions that put a mother at risk for a low birth weight infant (Institute of Medicine, 1985). Because of this, throughout the duration of her prenatal visits, mothers will receive many screenings, including screenings for maternal hypertension, renal disease, sickle cell disease, third trimester bleeding, multiple pregnancy, and heart disease (Alexander & Korenbrot, 1995). In
addition, the mother will receive an ultrasound examination to inspect the condition of the fetus, the placenta, and the amniotic fluid to monitor and ensure the fetus is growing at an optimal rate (Alexander & Korenbrot).

**Ethnicity**

Although it is unknown whether ethnicity is directly linked to birth weight, we do know that mothers in some ethnic groups are more at risk for delivering a low birth weight infant than others. According to Paneth (1995), African Americans have the highest rates of delivering an infant of low birth weight, while Asian Americans have the lowest rates, followed by Whites, with Native Americans and Hispanic Americans having slightly higher rates than Whites. For White women, the rate of having a low birth weight baby (6%) is less than half the rate for African American women (13%) (Chomitz et al., 1995). When examining marital status along with ethnicity, however, White women over the age of 20 who were unmarried were found to be at the greatest risk of delivering a low birth weight infant of all groups of mothers (Bennett, 1992).

**Socioeconomic Status**

“A vital area for reducing low birth weight rates may lie with improving socioeconomic conditions” (Alexander & Korenbrot, 1995, p. 112). This is because maternal education, maternal age, marital status, nutrition, smoking, and high stress levels all tend to reflect socioeconomic status, and these can affect low birth weight (Chomitz et al., 1995). Socioeconomic status has one of the largest impacts on a person’s health. As socioeconomic status decreases, risk for poor health outcomes increases (Hughes & Simpson, 1995). Improvements in education, child care, and employment as well as making prenatal care and
other resources more easily accessible to a wider array of the population may be key factors in reducing the number of low birth weight infants (Institute of Medicine, 1985).

Reime et al. (2006), using data collected in 1990, 1995, and 1999 from over 180,000 German mothers, found that after controlling for possible confounding variables (maternal age, marital status, nationality, occupational status, smoking, prenatal care, psychosocial stress, obesity, short stature, short inter-pregnancy interval, chronic conditions, and several obstetrical risk factors such as pregnancy-induced hypertension), mothers who were single, unemployed, considered working class, or were over the age of 39 were more at risk than other mothers to deliver a low birth weight infant. They concluded that social inequalities between the groups of women were mostly to blame for the differences.

Chomitz et al. (1995) also reported that mothers with less than a high school education, teenage mothers, older mothers, or single mothers were more likely to deliver a low birth weight infant. These factors could be due to lifestyle factors that are directly related to socioeconomic status such as elevated stress levels, which can lead to cigarette smoking, and poorer nutrition, which can lead to less weight gain during pregnancy.

Maternal Age

In the current study, I also included the age of the mother to determine if maternal age is significantly correlated with the baby’s weight at birth. Matthews et al. (2003) reported the greatest infant mortality rates were from teenage mothers or mothers over the age of 40. They explained these findings by suggesting low socioeconomic status may play a role in the younger mothers and pregnancy complications related to higher maternal age (e.g., gestational diabetes mellitus and hypertensive disorders) may play a role in the older group.
Chapter 3. Methodology

Participants

The sample for this study came from data collected by The National Center for Education Statistics (NCES), the Early Childhood Longitudinal Study, Birth Cohort (ECLS-B). The total sample of participants consisted of approximately 10,700 children who were born in 2001 and are being followed from birth to their entry into kindergarten. Of the total sample, 51% ($n = 5,450$) were male and 49% ($n = 5,250$) were female. The majority of participants were White, non-Hispanic (54%). The remainder were Hispanic (26%), Black, non-Hispanic (14%), Asian/Pacific Islander, non-Hispanic (3%), and other, non-Hispanic (4%). Asian/Pacific Islander children, American Indian and Alaska native children, Chinese children, moderately low birth weight children (1,500-2,500 grams), very low birth weight children (under 1,500 grams), and twins were oversampled. All infants were selected from birth certificate records and were only included with full permission from their parents/guardians. The age at first assessment was between 6 and 22 months.

The birth certificate records indicated that 93% ($n = 9,857$) of the infants were born within the normal birth weight range (over 2,500 grams), 6% ($n = 661$) were considered moderately low birth weight (1,500-2,500 grams), and 1% ($n = 136$) were very low birth weight (under 1,500 grams). Since low birth weight is one of the top causes of infant death, the number of low birth weight infants (especially very low birth weight) in this data set may be underreported due to the lack of accounting for children who were born to mothers under the age of 15 or died prior to age 9 months.

The mothers ranged from 15 to over 40 years old. Almost half (48%) had a high school diploma/GED/some college/VOTECH (vocational/technical school), while 27% had
less than a high school degree and 25% had a Bachelor’s degree or higher.

Socioeconomically, 77% of the infants’ families were at or above the poverty threshold, while 23% reported being below that threshold. English was the primary language spoken in the majority of the homes (81%), and 19% reported a non-English language as the primary language spoken at home.

**Procedure**

Prior to beginning the study, I sought permission of the Institutional Review Board (IRB) at Iowa State University to conduct the study. The IRB determined that the project did not meet the definition of human subject research according to the federal guidelines, 45 CFR 46, so I proceeded with the project (see Appendix A).

The children in the original study were selected from birth certificate records, containing information on date of birth and gender, and were obtained from the National Center for Health Statistics (NCHS). NCHS also provided information on the race and ethnicity of the parents, parent education, mother’s marital status, and information on the mother’s pregnancy history, prenatal care, medical and other risk factors during the pregnancy, as well as complications during labor and birth. Abnormal birth conditions, congenital anomalies, APGAR scores, and other health characteristics of the child were also obtained from NCHS.

**Measures**

At approximately 9 months of age, the children were administered their first assessment using trained assessors to videotape parent-child interactions within the home. The primary caregiver (usually the mother) was administered a computer-assisted interview by the trained assessor and fathers were administered a questionnaire. Information regarding
prenatal care and delivery was also collected from the National Center for Health Statistics, as noted above. Both the parent interview and the early care and educator provider interview, administered at a later date, have been translated into Spanish for families who use Spanish as the primary language in their home. For families whose primary home language was other than English or Spanish and who felt more comfortable using that language during the assessments and interviews, translators were utilized when available.

During the 9-month assessment, children were administered tests focusing on physical, cognitive, and socioemotional domains, including the Bayley Short Form-Research Edition (BSF-R), the Nursing Child Assessment Teaching Scale (NCATS), and measurements were taken of each child’s length/height, weight, middle upper arm circumference (MUAC), and head circumference (the latter for very low birth weight babies only). Because the focus of the current study was on prenatal factors and how they impacted birth weight, these 9-month assessments are not applicable to the current study. Only the data from the 9-month Parent Interview and the 9-month Resident Father Questionnaire were used for the current study (see Appendix B).

Father involvement. Father involvement was defined by questions taken from the 9-month Resident Father Questionnaire. This questionnaire was answered by biological fathers who were currently involved and living with their child. These questions included asking the fathers if he bought items for the child, whether he attended a child birth class with the mother, and the pregnancy timing for the father. These questions were all coded with a high number indicating high support and a lower number indicating lower support. Additionally, although not directly support factors, marital status and the age of the father were also examined here, as these may also impact support and birth weight. To clarify, these two
items were not part of the Resident Father Questionnaire but were obtained from birth certificate records. Marital status was coded such that married is coded as “1” and not married is coded as “2”.

*Family and/or community support.* Community support was defined by multiple questions taken from the 9-month Parent Interview under the Social Support and Community Support sections. This questionnaire was answered mainly be biological mothers, and included questions about who the mother would ask for help with the care of her child, if she got together with her neighbors, if she participated in community service, etc. Most of the questions were coded with a low number indicating high support and a high number indicating low support, with the exception of the questions about getting together with neighbors. This question was coded so that a high number indicated high support and a low number indicated lower support.

*Religiosity.* Religiosity was defined by three questions taken from the Social Support and Community Support sections within the 9-month Parent Interview and these were again answered mainly by the biological mother. Although questions inquiring about support both monetary and morally from church members as well as their “level” of faith would have been ideal in determining whether religiosity plays a role in birth weight, the questions used for the original study and thus in the current study asked about attendance to religious services as well as if the mother would ask clergy or church members for help or support in the care of her child. Attending religious services was coded so that lower attendance was coded with a lower number indicating low support, while the questions about asking help from a clergyman or church members were coded such that a low number indicated asking for more
help and thus a higher level of support and high number indicated asking for less help and thus a lower level of support (see Table 1).

*Birth weight status.* Birth weight status was used as the dependent variable to see if any of the above social support variables were affecting birth weight. Within the data set, birth weight status is a composite variable that has taken all birth weights and been broken down into three separate categories of birth weight: normal, moderately low, and very low. The normal birth weight category consists of babies born over 2500 grams, the moderately low birth weight category includes infants between 1500 and 2500 grams, and the very low birth weight category includes all infants born under 1500 grams.

In addition, an effort was made to include question MH035 concerning cohabitation (see Appendix B) but since the response format allowed for a positive response only if the mother and biological father previously cohabitated but no longer lived together (thus omitting those who both had cohabitated and the biological father was still present). The question seemed to elicit a somewhat meaningless response, and thus was omitted.
<table>
<thead>
<tr>
<th>Variable Name</th>
<th>Response Scale Coding for Amount of Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ask Care for Child From</td>
<td></td>
</tr>
<tr>
<td>No One</td>
<td>1 = high, 2 = low</td>
</tr>
<tr>
<td>Spouse/Partner</td>
<td>1 = high, 2 = low</td>
</tr>
<tr>
<td>Ex-Spouse/Partner</td>
<td>1 = high, 2 = low</td>
</tr>
<tr>
<td>Mother/Father</td>
<td>1 = high, 2 = low</td>
</tr>
<tr>
<td>Friend/Neighbor</td>
<td>1 = high, 2 = low</td>
</tr>
<tr>
<td>Counselor/Clergy</td>
<td>1 = high, 2 = low</td>
</tr>
<tr>
<td>Church Members</td>
<td>1 = high, 2 = low</td>
</tr>
<tr>
<td>Married or Not Married</td>
<td>1 = married, 2 = not married</td>
</tr>
<tr>
<td>Get Together w/ Neighbors</td>
<td>0 = low, 4 = high</td>
</tr>
<tr>
<td>Attend Religious Services</td>
<td>0 = low, 4 = high</td>
</tr>
<tr>
<td>Participate in Community Service</td>
<td>1 = high, 2 = low</td>
</tr>
<tr>
<td>Received Parenting Help/Advice</td>
<td>1 = high, 2 = low</td>
</tr>
<tr>
<td>How Close to Mother</td>
<td>1 = high, 2 = low</td>
</tr>
<tr>
<td>How Close to Father</td>
<td>1 = high, 2 = low</td>
</tr>
<tr>
<td>Dad Discussed Pregnancy Before Birth</td>
<td>1 = high, 2 = low</td>
</tr>
<tr>
<td>Dad did Birth Class w/ Mom</td>
<td>1 = high, 2 = low</td>
</tr>
<tr>
<td>Dad Bought Items for Child</td>
<td>1 = high, 2 = low</td>
</tr>
</tbody>
</table>
Research Questions and Data Analysis

The primary research questions that guided the current study are:

1. Is there an association between the amount of father involvement and birth weight?
2. Is there an association between the amount of community support and birth weight?
3. Is there an association between religiosity and birth weight?

To examine the current research questions, all infants participating in the study were included in the analysis. This method was chosen over selecting a sample of infants to ensure that missing data and selection bias were not compromising the results of the analysis (Levy & Lemeshow, 2003). In addition, a new weight was applied to all variables to ensure that the sum of the weights for each observation replicated the sample size.

To begin to work with the data related to the research questions, I first examined the descriptive statistics for key characteristics (gender, ethnicity, and birth weights) of the participants and organized those data in a table. Next, I examined Pearson correlations to determine whether father involvement, family and/or community support, and religiosity were related to birth weight status. I also conducted factor analysis of the social support variables of interest in the study to attempt to find an overall social support value or multiple social support factors. Finally, I conducted a block regression analysis to determine how well social support would predict birth weight.
Chapter 4. Results

Prior to beginning the major analyses of this data, demographic characteristics (race/ethnicity, sex, and birth weight) of the children were examined to gain a clearer picture of what the sample looked like (see Table 2). It was clear that the numbers in each cell of the dependent variable would be quite different, so although the data previously had been weighted using a set of weights described in the data tape, a new weight was applied to all the variables used in this study to ensure that the sum of the weights for each observation replicated the sample size. In addition, means and standard deviations for all social support variables by the dependent variable were computed (see Table 3).

Correlation Analyses

A large correlation matrix that included all the variables of interest in the study was estimated. Portions of the correlation matrix were then extracted to determine which social support variables were associated with birth weight (see Table 4). There was a significant relationship (based on two-tailed $p$-value < .05) between birth weight status and being able to ask a partner or spouse for help or advice in the care of the child, $r = .024, p < .05$. Significant correlations also were found between birth weight and participating in community service ($r = .032, p < .01$), receiving parenting help or advice ($r = -.023, p < .05$), how close the respondent is to her father ($r = .021, p < .05$), the father’s attendance at a child birth class with the mother ($r = .046, p < .01$), and whether the mother was married or not ($r = .056, p < .01$).
Table 2
Descriptive Statistics (Birth Weight Status, Race/Ethnicity, Gender) of All Children in the Study

<table>
<thead>
<tr>
<th>Birth Weight Status</th>
<th>Gender</th>
<th>White</th>
<th>Black or African American</th>
<th>Hispanic, Race Specified</th>
<th>Hispanic, No Race Specified</th>
<th>Asian</th>
<th>Native Hawaiian or other Pacific Islander</th>
<th>Amer. Indian or Alaska Native</th>
<th>More than 1 Race</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>Male</td>
<td>2753</td>
<td>672</td>
<td>837</td>
<td>443</td>
<td>146</td>
<td>11</td>
<td>27</td>
<td>177</td>
<td>5066</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>2573</td>
<td>609</td>
<td>848</td>
<td>409</td>
<td>129</td>
<td>7</td>
<td>24</td>
<td>192</td>
<td>4791</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>5326</td>
<td>1281</td>
<td>1685</td>
<td>852</td>
<td>275</td>
<td>18</td>
<td>51</td>
<td>369</td>
<td>9857</td>
</tr>
<tr>
<td>Moderately Low</td>
<td>Male</td>
<td>157</td>
<td>55</td>
<td>51</td>
<td>21</td>
<td>9</td>
<td>1</td>
<td>1</td>
<td>13</td>
<td>308</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>158</td>
<td>90</td>
<td>53</td>
<td>26</td>
<td>11</td>
<td>0</td>
<td>1</td>
<td>14</td>
<td>353</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>315</td>
<td>145</td>
<td>104</td>
<td>47</td>
<td>20</td>
<td>1</td>
<td>2</td>
<td>27</td>
<td>661</td>
</tr>
<tr>
<td>Very Low</td>
<td>Male</td>
<td>30</td>
<td>17</td>
<td>11</td>
<td>6</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>68</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>30</td>
<td>18</td>
<td>11</td>
<td>5</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>68</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>60</td>
<td>35</td>
<td>22</td>
<td>11</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>136</td>
</tr>
<tr>
<td>Overall Totals for Race</td>
<td>5701</td>
<td>1461</td>
<td>1811</td>
<td>910</td>
<td>297</td>
<td>19</td>
<td>53</td>
<td>402</td>
<td>10,654</td>
<td></td>
</tr>
</tbody>
</table>
Table 3
Means, Total Number, and Standard Deviations for all Social Support Variables by Three Levels of Birth Weight

<table>
<thead>
<tr>
<th></th>
<th>Ask Care for Child - No One</th>
<th>Ask Care for Child - Spouse/Partner</th>
<th>Ask Care for Child - Ex-Spouse/Partner</th>
<th>Ask Care for Child - Mother/Father</th>
<th>Ask Care for Child - Friend/Neighbor</th>
<th>Ask Care for Child - Counselor/Clergy</th>
<th>Ask Care for Child - Church Members</th>
<th>Get Together w/ Neighbors</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Normal Birth Weight</strong></td>
<td>Mean</td>
<td>1.99</td>
<td>1.55</td>
<td>1.95</td>
<td>1.41</td>
<td>1.71</td>
<td>1.98</td>
<td>1.98</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>9,867</td>
<td>9,867</td>
<td>9,867</td>
<td>9,867</td>
<td>9,867</td>
<td>9,867</td>
<td>9,878</td>
</tr>
<tr>
<td></td>
<td>Std. Dev.</td>
<td>.104</td>
<td>.498</td>
<td>.211</td>
<td>.491</td>
<td>.454</td>
<td>.123</td>
<td>.139</td>
</tr>
<tr>
<td><strong>Moderately Low Birth Weight</strong></td>
<td>Mean</td>
<td>1.98</td>
<td>1.59</td>
<td>1.95</td>
<td>1.43</td>
<td>1.73</td>
<td>1.98</td>
<td>1.98</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>662</td>
<td>662</td>
<td>662</td>
<td>662</td>
<td>662</td>
<td>662</td>
<td>662</td>
</tr>
<tr>
<td></td>
<td>Std. Dev.</td>
<td>.126</td>
<td>.491</td>
<td>.223</td>
<td>.495</td>
<td>.447</td>
<td>.140</td>
<td>.140</td>
</tr>
<tr>
<td><strong>Very Low Birth Weight</strong></td>
<td>Mean</td>
<td>2.00</td>
<td>1.61</td>
<td>1.96</td>
<td>1.44</td>
<td>1.75</td>
<td>1.98</td>
<td>1.99</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>137</td>
<td>137</td>
<td>137</td>
<td>137</td>
<td>137</td>
<td>137</td>
<td>137</td>
</tr>
<tr>
<td></td>
<td>Std. Dev.</td>
<td>.064</td>
<td>.490</td>
<td>.195</td>
<td>.498</td>
<td>.436</td>
<td>.129</td>
<td>.107</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>Mean</td>
<td>1.99</td>
<td>1.55</td>
<td>1.95</td>
<td>1.41</td>
<td>1.71</td>
<td>1.98</td>
<td>1.98</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>10,666</td>
<td>10,666</td>
<td>10,666</td>
<td>10,666</td>
<td>10,666</td>
<td>10,666</td>
<td>10,666</td>
</tr>
<tr>
<td></td>
<td>Std. Dev.</td>
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<td>.497</td>
<td>.212</td>
<td>.491</td>
<td>.453</td>
<td>.125</td>
<td>.139</td>
</tr>
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</table>
Table 3 (continued)

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Attend Religious Services</th>
<th>Participate in Community Service</th>
<th>Received Parenting Help/Advice</th>
<th>How Close to Mother</th>
<th>How Close to Father</th>
<th>Father Discussed Pregnancy Before Birth</th>
<th>Father Attended Birth Class w/ Mother</th>
<th>Father Buys Things for Child</th>
<th>Married or Not Married</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal Birth Weight</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>9,873</td>
<td>9,876</td>
<td>9,874</td>
<td>9,875</td>
<td>9,870</td>
<td>5,850</td>
<td>5,850</td>
<td>5,856</td>
<td>9,875</td>
<td></td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>1.513</td>
<td>.440</td>
<td>.309</td>
<td>1.060</td>
<td>1.333</td>
<td>.258</td>
<td>.497</td>
<td>.292</td>
<td>.559</td>
<td></td>
</tr>
<tr>
<td>Moderately Low Birth Weight</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>661</td>
<td>662</td>
<td>662</td>
<td>662</td>
<td>661</td>
<td>339</td>
<td>339</td>
<td>342</td>
<td>662</td>
<td></td>
</tr>
<tr>
<td>Very Low Birth Weight</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>137</td>
<td>137</td>
<td>137</td>
<td>137</td>
<td>137</td>
<td>71</td>
<td>71</td>
<td>71</td>
<td>137</td>
<td></td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>1.483</td>
<td>.376</td>
<td>.364</td>
<td>1.109</td>
<td>1.397</td>
<td>.326</td>
<td>.432</td>
<td>.312</td>
<td>.733</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>10,671</td>
<td>10,675</td>
<td>10,674</td>
<td>10,674</td>
<td>10,669</td>
<td>6,260</td>
<td>6,260</td>
<td>6,268</td>
<td>10,673</td>
<td></td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>1.512</td>
<td>.438</td>
<td>.312</td>
<td>1.063</td>
<td>1.338</td>
<td>.261</td>
<td>.497</td>
<td>.291</td>
<td>.571</td>
<td></td>
</tr>
</tbody>
</table>
Table 4
Correlations Between Birth Weight Status and Social Support Variables

<table>
<thead>
<tr>
<th>Social Support Variables</th>
<th>Birth Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ask Care for Child – No One</td>
<td>-.004</td>
</tr>
<tr>
<td>Ask Care for Child – Spouse/Partner</td>
<td>.024*</td>
</tr>
<tr>
<td>Ask Care for Child – Ex-Spouse/Partner</td>
<td>-.002</td>
</tr>
<tr>
<td>Ask Care for Child – Mother/Father</td>
<td>.014</td>
</tr>
<tr>
<td>Ask Care for Child – Friend/Neighbor</td>
<td>.013</td>
</tr>
<tr>
<td>Ask Care for Child – Counselor/Clergy</td>
<td>-.007</td>
</tr>
<tr>
<td>Ask Care for Child – Church Members</td>
<td>.004</td>
</tr>
<tr>
<td>Married or Not Married</td>
<td>.056**</td>
</tr>
</tbody>
</table>

Table 4 (continued)

<table>
<thead>
<tr>
<th>Social Support Variables</th>
<th>Birth Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Get Together w/ Neighbors</td>
<td>-.011</td>
</tr>
<tr>
<td>Attend Religious Services</td>
<td>-.016</td>
</tr>
<tr>
<td>Participate in Community Service</td>
<td>.032**</td>
</tr>
<tr>
<td>Received Parenting Help/Advice</td>
<td>-.023*</td>
</tr>
<tr>
<td>How Close to Mother</td>
<td>.010</td>
</tr>
<tr>
<td>How Close to Father</td>
<td>.021*</td>
</tr>
<tr>
<td>Discussed Pregnancy Before Birth</td>
<td>.024</td>
</tr>
<tr>
<td>Father Attended Birth Class w/ Mom</td>
<td>.046**</td>
</tr>
<tr>
<td>Father Buys Things for Child</td>
<td>-.004</td>
</tr>
</tbody>
</table>

Note. The number of participants for each variable is approximately 10,666; except for the last 3 variables, for which \( n \) is approximately 6,700.  
* \( p < .05 \). ** \( p < .01 \).
Factor Analysis

Factor analysis then was conducted to determine if one overall social support factor or multiple factors could be obtained. The question concerning marital status was deleted from the factor analysis because the presence of the marital status item caused the items in the factor analysis to appear to load randomly across components in the matrix. The rotated component matrix (see Table 5) and scree plot (see Figure 1) are shown below. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was .574 and the approximate chi-square value for the Bartlett's Test of Sphericity (\(df = 120\)) = 4,091.753 (\(p < .001\)).

Although the factor analysis showed a clean 7-factor solution, upon further consideration it was felt that only factors 3 and 4 and two items in factor 5 would be usable, since they were the only three factors whose items were scored using the same response scale (i.e., 1-2 [yes/no]). Factor 1 combined items that used a 1-5 scale and a 1-2 scale, factors 2 and 8 combined items that used a 1-2 scale and a 0-4 scale, factor 5 combined items that used a 1-14 scale and a 1-2 scale, and factors 6 and 7 remained 1-item factors (see Appendix B for coding and Table 5 for factor item combinations).

The three factors that contained variables that were coded using the same metric (factors 3 and 4, and two items in factor 5) were each summed, creating three new variables. These new factors were used in analysis of variance (ANOVA) models to determine if the combined items would have more impact on birth weight than items individually. When the two items that loaded together in Factor 3 (both relating to religious support) were summed and the four in Factor 4 (relating to partner/spousal support, and friend/neighbor support) were summed and used in ANOVAs, they were not significant and thus did not add anything
<table>
<thead>
<tr>
<th>Test/Interview Items</th>
<th>Factors</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>How Close to Mother</td>
<td>.794</td>
<td>.052</td>
<td>-.024</td>
<td>.028</td>
<td>-.015</td>
<td>.057</td>
<td>-.002</td>
</tr>
<tr>
<td>How Close to Father</td>
<td>.647</td>
<td>.133</td>
<td>-.076</td>
<td>.010</td>
<td>.177</td>
<td>.054</td>
<td>-.224</td>
</tr>
<tr>
<td>Ask Care for Child–Mother/Father</td>
<td>.601</td>
<td>-.139</td>
<td>.203</td>
<td>.158</td>
<td>-.089</td>
<td>-.316</td>
<td>.303</td>
</tr>
<tr>
<td>Participate in Community Service</td>
<td>-.017</td>
<td>.769</td>
<td>.024</td>
<td>.073</td>
<td>-.116</td>
<td>-.045</td>
<td>.095</td>
</tr>
<tr>
<td>Attend Religious Services</td>
<td>-.115</td>
<td>-.739</td>
<td>-.087</td>
<td>.045</td>
<td>-.104</td>
<td>.002</td>
<td>.002</td>
</tr>
<tr>
<td>Ask Care for Child–Counselor/Clergy</td>
<td>-.029</td>
<td>.006</td>
<td>.779</td>
<td>.005</td>
<td>.016</td>
<td>-.022</td>
<td>-.003</td>
</tr>
<tr>
<td>Ask Care for Child–Church Members</td>
<td>.021</td>
<td>.093</td>
<td>.776</td>
<td>.028</td>
<td>.042</td>
<td>.012</td>
<td>-.014</td>
</tr>
<tr>
<td>Ask Care for Child–Spouse/Partner</td>
<td>-.164</td>
<td>.117</td>
<td>-.001</td>
<td>.566</td>
<td>.165</td>
<td>-.326</td>
<td>-.270</td>
</tr>
<tr>
<td>Father Discussed Pregnancy Before Birth</td>
<td>.077</td>
<td>.001</td>
<td>-.111</td>
<td>.543</td>
<td>.043</td>
<td>.077</td>
<td>.201</td>
</tr>
<tr>
<td>Ask Care for Child–No One</td>
<td>-.093</td>
<td>.152</td>
<td>-.036</td>
<td>-.519</td>
<td>.060</td>
<td>-.041</td>
<td>.233</td>
</tr>
<tr>
<td>Ask Care for Child–Friend/Neighbor</td>
<td>.009</td>
<td>.166</td>
<td>.270</td>
<td>.490</td>
<td>-.057</td>
<td>.030</td>
<td>.184</td>
</tr>
<tr>
<td>Father Buys Things for Child</td>
<td>-.016</td>
<td>-.235</td>
<td>.006</td>
<td>-.111</td>
<td>.687</td>
<td>-.153</td>
<td>.186</td>
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</table>
Table 5 (continued)

<table>
<thead>
<tr>
<th>Test/Interview Items</th>
<th>Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Get Together with Neighbors</td>
<td>-.060</td>
</tr>
<tr>
<td>Father Attended Birth Class with Mother</td>
<td>.106</td>
</tr>
<tr>
<td>Ask Care for Child – Ex- Spouse/Partner</td>
<td>-.009</td>
</tr>
<tr>
<td>Received Parenting Advice or Help</td>
<td>-.069</td>
</tr>
</tbody>
</table>


Figure 1. Scree plot.
new. When the two items that were coded with the same scale in Factor 5 (both relating to father support) similarly were added to form one factor, the resulting ANOVA effect was significant, consistent with one of the items in the single-item ANOVA (father attends birth class with mother) but the other item (father buys things for child) was not significant in the single-item ANOVA.

Three of the factors (factors 2, 4, and 5) have items that load in the opposite direction. The two items comprising factor 2 have loadings with opposite signs (.769 and -.739), which result at first glance could appear to stem from a time constraint, leading to the initial conclusion that participants either had time to participate in community service or to attend religious services, but not both. However, after inspecting the coding of both items, and seeing that the items were coded in opposite directions, with a low score indicating more community service and a high score indicating attending more religious services, the direction of the signs is logical since they were scored in opposite directions.

In factor 4, the items also contain opposite signs for the loadings within this factor (.566, .543, .490 and -.579). This seems logical since three questions ask respondents if they discussed the pregnancy before birth and if they would ask their spouse or partner or friends and neighbors for help or advice in the care of their child, while the other is asking if they would not ask anyone for help or advice.

Finally, the items for factor 5 also have loadings with opposite signs (Get Together with Neighbors = -.554, Father Buys Things for Child = .687, Father Attends Birth Class with Mother = .469). This could be a time constraint issue; if the father is providing a higher level of support, the mother may not have time or need to spend as much time with
neighbors, whereas if the father is not providing a high level of support, spending time with neighbors may be a necessary or high-priority way to gain social support.

Factor 1 includes the variables How Close to Mother, How Close to Father, and Ask Care for Child–Mother/Father, with eigenvalue of 1.487 (9.291% explained variance), and extraction communalities of .638, .527, and .646 for those three variables, respectively. Factor 2 includes the variables Participates in Community Service and Attends Religious Services, and eigenvalue of 1.374 (8.588% explained variance), with extraction communalities of .623 and .580 for the individual variables.

Factor 3 contains Ask Care for Child–Counselor/Clergy and Ask Care for Child–Church Members, and had eigenvalue of 1.359 (8.492% explained variance), with extraction communalities of .608 and .614. Factor 4 includes the variables Ask Care for Child–Spouse/Partner, Father Discussed Pregnancy before Birth, Ask Care for Child–No One, and Ask Care for Child–Friend/Neighbor with eigenvalue of 1.292 (8.077% explained variance) and extraction communalities of .567, .361, .362 and .379, respectively. Factor 5 includes the variables Father Buys Things for Child, Get Together with Neighbors, and Father Attends Birth Class with Mother with eigenvalue of 1.109 (6.929% explained variance) and extraction communalities of .597, .467, and .416.

Factor 6 includes only Ask Care for Child–Ex-Spouse/Partner, with eigenvalue of 1.101 (6.833% explained variance) and extraction communality of .833. Finally, Factor 7 contains only one variable, Receiving Parenting Help or Advice, with eigenvalue of 1.077 (6.730% explained variance) and extraction communality of .580.

Thus, although it was hoped that the remaining 16 support items could be folded into a single factor or small number of factors, the factor analysis ultimately did not indicate a
small number of usable factors but rather 7 factors, some of which were one-item factors and many with items which could not be added together. After serious deliberation and trial statistical analyses using the workable 2.5 factors, it was decided that each item would be analyzed separately since social support could not be defined as one variable or a few variables in this study. This is somewhat consistent with findings from Crase, Hockaday, and McCarville (2007) on social support for pregnant, parenting, and nonpregnant, nonparenting adolescents.

**Analyses of Variance**

After the decision not to use the 7 factors, one-way ANOVA models were estimated separately for the effect of birth weight (3 levels) and each of the items comprising the type of social support of interest in the current study: father support, family and/or community support, and religiosity. Bonferroni (assuming equal variances) and Games-Howell (assuming unequal variances) post hoc tests were used to examine the results further for mean differences across groups. Means, total number, and standard deviations for all social support variables are shown in Table 3.

For the variables within the father support category a significant relationship was found between birth weight group [3 levels] and whether the father attended a child birth class with the mother (2 levels), $F(2, 6257) = 7.519, p < .001$. Babies who were in the very low birth weight group had fathers who were significantly less supportive than babies in the normal and moderately low birth weight group (see Table 6). A significant result also was found between birth weight status (3 levels) and whether or not the mother was married (2 levels), $F(2, 10,670) = 19.097, p < .001$. Mothers who were married were more likely to give birth to a normal birth weight infant than mothers who were not married. There were no
significant results for the remaining father support items (Father Discussed Pregnancy Before Birth [2 levels], Father Bought Items for Child [2 levels], and Father Age.

Table 6
Analysis of Variance for Significant Father Support Variables by Three Levels of Birth Weight (see Table 5 for all means, total n, and standard deviations)

<table>
<thead>
<tr>
<th>Community Support Variables</th>
<th>Child Birth Weight Status</th>
<th>Mean Differences</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Father Attended Birth Class w/ Mother</td>
<td>Normal Birth Weight</td>
<td>Mod. Low Birth Weight</td>
<td>-.050</td>
</tr>
<tr>
<td></td>
<td>Normal Birth Weight</td>
<td>Very Low Birth Weight</td>
<td>-.206</td>
</tr>
<tr>
<td></td>
<td>Mod. Low Birth Weight</td>
<td>Very Low Birth Weight</td>
<td>-.156</td>
</tr>
<tr>
<td>Married or Not Married</td>
<td>Normal Birth Weight</td>
<td>Mod. Low Birth Weight</td>
<td>-.130</td>
</tr>
<tr>
<td></td>
<td>Normal Birth Weight</td>
<td>Very Low Birth Weight</td>
<td>-.125</td>
</tr>
<tr>
<td></td>
<td>Mod. Low Birth Weight</td>
<td>Very Low Birth Weight</td>
<td>.005</td>
</tr>
</tbody>
</table>

None of the variables under religious support (Ask Care for Child–Counselor/Clergy [2 levels], Ask Care for Child–Church Members [2 levels], and Attend Religious Services [5 levels] were significantly related to the child’s birth weight. However, after examining the variability in the answers given by the respondents, most participants responded “No” to the questions Ask Care for Child–Counselor/Clergy (n = 10,502) and Ask Care for Child–Church Members (n = 10,461). There was more variance for responses about whether the respondents attended religious services, but the lack of variability in the other variables may have had an impact on the results of this test.
For variables in the community support category, a significant result was found between Ask Care for Child–Spouse/Partner (mother would ask her partner/spouse for help and/or advice in the care of the child (2 levels) and birth weight, $F(2, 10663) = 3.369, p < .05$ (see Table 7). Mothers who named their spouse as someone they felt they could ask for help and advice in the care of their child were more likely to have a high birth weight infant than mothers who did not name their spouse. However, using Bonferroni and Games-Howell post hoc examinations, this relationship did not appear to be significant. “The inconsistent results are a consequence of applying tests under difference circumstances. The robust ANOVA (and regular ANOVA) tests for differences simultaneously among all group means, whereas the Bonferroni and other multiple comparison methods test for pairwise (two-group) differences only” (M.C. Shelley, II, personal communication via e-mail, June 17, 2007).

Birth weight of the infant and Participates in Community Service (2 levels) also were significantly related, $F(2, 10,671) = 5.400, p < .01$. Mothers who reported participating in community service were more likely to be in a higher birth weight category than mothers who did not participate in community service. Interestingly, a significant effect was found for how close the mother was to her own father (4 levels), $F(2, 10,665) = 3.368, p < .05$, with mothers who gave birth to a normal birth weight baby reported being significantly closer to their own father than mothers who gave birth to moderately low birth weight babies.

None of the remaining community support variables (Ask Care for Child–No One (2 levels), Ask Care for Child–Mother/Father (2 levels), Ask Care for Child–Mom/Dad In-Law (2 levels), Ask Care for Child–Friend/Neighbor (2 levels), Get Together with Neighbors (5 levels), Received Parenting Help or Advice (2 levels), and How Close to Mother (4 levels) were related to the child’s birth weight.
Table 7
Analysis of Variance for Significant Community Support Variables by Three Levels of Birth Weight

<table>
<thead>
<tr>
<th>Community Support Variables</th>
<th>Child Birth Weight Status</th>
<th>Mean Differences</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ask Care for Child-Spouse/Partner</td>
<td>Normal Birth Weight</td>
<td>Mod. Low Birth Weight</td>
<td>-.045</td>
</tr>
<tr>
<td></td>
<td>Normal Birth Weight</td>
<td>Very Low Birth Weight</td>
<td>-.057</td>
</tr>
<tr>
<td></td>
<td>Mod. Low Birth Weight</td>
<td>Very Low Birth Weight</td>
<td>-.011</td>
</tr>
<tr>
<td>Participate in Community Service</td>
<td>Normal Birth Weight</td>
<td>Mod. Low Birth Weight</td>
<td>-.039</td>
</tr>
<tr>
<td></td>
<td>Normal Birth Weight</td>
<td>Very Low Birth Weight</td>
<td>-.093</td>
</tr>
<tr>
<td></td>
<td>Mod. Low Birth Weight</td>
<td>Very Low Birth Weight</td>
<td>-.053</td>
</tr>
<tr>
<td>How Close to Own Father</td>
<td>Normal Birth Weight</td>
<td>Mod. Low Birth Weight</td>
<td>-.137</td>
</tr>
<tr>
<td></td>
<td>Normal Birth Weight</td>
<td>Very Low Birth Weight</td>
<td>-.064</td>
</tr>
<tr>
<td></td>
<td>Mod. Low Birth Weight</td>
<td>Very Low Birth Weight</td>
<td>.073</td>
</tr>
</tbody>
</table>
Finally, a series of stagewise linear regression models were estimated to examine the specific contribution of each predictor variable to the birth weight of the child (see Table 8). The first block included characteristics of the mother, including age and race/ethnicity, often discussed in the research literature as having an effect on her child’s birth weight. The sex of the child also was included in the first block. Prenatal factors that were discussed in the review of literature and have been shown to have an impact on the birth weight of an infant, including the mother’s report of prenatal care, the amount of smoking and drinking during the prenatal period, and the overall income and food security of the household were included in the second block.

The third block included the 17 social support items discussed in the factor analysis above, encompassing father support, family and/or community support, and religiosity. Preliminary analyses showed no significant correlations between the independent variables.

Results from the regression block indicated that age and ethnicity of the mother, as well as sex of the child, were significant predictors of the child’s birth weight. The second block revealed that the adequacy of prenatal care utilization, receiving an ultrasound during the pregnancy, the place the delivery takes place (hospital being more likely to deliver a normal birth weight child than a freestanding birth center), and household income also were significant predictors of the birth weight of the child.

These variables provided the largest impact on whether the infant is born at a normal or low birth weight, demonstrating the importance of decisions made during the prenatal period. The Beta (standardized regression coefficient) values in the third block revealed that attending religious services and the father buying items for the child were predictors of
birth weight but increased the $R^2$ value by only .005. The latter statistic is also important as an example of relatively low values of additional prediction being statistically significant due to the large sample size in this data set.

Table 8
Hierarchical Regression Analyses Predicting Birth Weight of Infants ($n = 6,056$)

<table>
<thead>
<tr>
<th>Predictor Variables</th>
<th>$R^2$</th>
<th>Adjusted $R^2$</th>
<th>$R^2$ Change</th>
<th>$F$</th>
<th>$B$</th>
<th>Std. Error</th>
<th>Beta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block 1</td>
<td>.015</td>
<td>.015</td>
<td>.015</td>
<td>31.415***</td>
<td>.019***</td>
<td>.005</td>
<td>.044</td>
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<td>Age of Mother</td>
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<td></td>
</tr>
<tr>
<td>Race/Ethnicity of Mother</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child Sex</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Block 2</td>
<td>.037</td>
<td>.033</td>
<td>.021</td>
<td>12.043***</td>
<td>.273***</td>
<td>.032</td>
<td>-.110</td>
</tr>
<tr>
<td>Adequacy of Prenatal Care Utilization</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Mother Highest Education Level</td>
<td>.008</td>
<td>.022</td>
<td>.007</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Place of Prenatal Visit</td>
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<td>.049</td>
<td>-.017</td>
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<tr>
<td>Eat During Pregnancy</td>
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<td>.101</td>
<td>-.009</td>
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<tr>
<td>Smoke During Pregnancy</td>
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<td>.112</td>
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<tr>
<td>Drinking During Pregnancy</td>
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<td>.123</td>
<td>.012</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Safe Meds During Pregnancy</td>
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<td>.142</td>
<td>-.015</td>
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<tr>
<td>Ultrasound During Pregnancy</td>
<td>.225*</td>
<td>.110</td>
<td>.026</td>
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<td></td>
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<tr>
<td>Weight Gain During Pregnancy</td>
<td>.235</td>
<td>.315</td>
<td>.009</td>
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</tr>
<tr>
<td>Place of Delivery</td>
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<td>.152</td>
<td>.040</td>
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<tr>
<td>Take Vitamins or Supplements</td>
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<td>.068</td>
<td>.017</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Father Highest Education Level</td>
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<td>.021</td>
<td>-.002</td>
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<tr>
<td>Household Income</td>
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<td>.014</td>
<td>.077</td>
<td></td>
<td></td>
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<td>Household Food Security</td>
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<td>.094</td>
<td>-.016</td>
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<tr>
<td>Smoked at Least 100 Cigarettes</td>
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<td>.070</td>
<td>.011</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Alcoholic Drinks Last 3 Months</td>
<td>-.332**</td>
<td>.110</td>
<td>-.039</td>
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</table>
Table 9 (continued)

<table>
<thead>
<tr>
<th>Predictor Variables</th>
<th>R^2</th>
<th>Adjusted R^2</th>
<th>Change</th>
<th>F</th>
<th>B</th>
<th>Std. Error</th>
<th>Beta</th>
</tr>
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<tbody>
<tr>
<td>Block 3</td>
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<td>.005</td>
<td>7.258***</td>
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<tr>
<td>Ask Care of Child - No One</td>
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<td>.377</td>
<td>.004</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ask Care of Child - Spouse/Partner</td>
<td>-.024</td>
<td>.066</td>
<td>-.005</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ask Care of Child - Old Spouse/Partner</td>
<td>.007</td>
<td>.158</td>
<td>.001</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ask Care of Child - Mother/Father</td>
<td>-.121</td>
<td>.071</td>
<td>-.024</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ask Care of Child - Friend/Neighbor</td>
<td>-.072</td>
<td>.071</td>
<td>-.014</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ask Care of Child - Counselor/Clergy</td>
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<td>.250</td>
<td>-.021</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Ask Care of Child - Church Member</td>
<td>.073</td>
<td>.225</td>
<td>.004</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Get Together with Neighbors</td>
<td>.033</td>
<td>.029</td>
<td>.015</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attend Religious Services</td>
<td>.046*</td>
<td>.023</td>
<td>.028</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participate in Community Service</td>
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<td>.074</td>
<td>-.017</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Received Parenting Help or Advice</td>
<td>.175</td>
<td>.107</td>
<td>.021</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How Close to Own Father</td>
<td>-.058</td>
<td>.033</td>
<td>-.024</td>
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<tr>
<td>How Close to Own Father</td>
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<td>.026</td>
<td>.018</td>
<td></td>
<td></td>
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<tr>
<td>Father Attend Birth Class with Mother</td>
<td>-.028</td>
<td>.068</td>
<td>-.006</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Father Buy Things for Child</td>
<td>.220*</td>
<td>.111</td>
<td>.026</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Discussed Pregnancy Before Birth</td>
<td>.037</td>
<td>.131</td>
<td>.004</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married or Not Married</td>
<td>-.087</td>
<td>.101</td>
<td>-.012</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < .05. ** p < .01. *** p < .001.
Chapter 5. Discussion

The purpose of the current study was to investigate whether maternal social support during the prenatal term played a significant role in determining the birth weight of her infant. The data for the study were part of the Early Childhood Longitudinal Study–Birth Cohort data set. The results from the statistical analyses provide little evidence that social support was a large contributor to the birth weight of this particular group of infants. Although only 6 out of the 17 social support variables examined were correlated with birth weight, the correlations were small. Asking a spouse or partner for help or advice for the care of the child, participating in community service, receiving parenting help or advice, how close the respondent was to her father, whether or not the father attended a birth class with the mother, and the current marital status of the mother were the six social support variables significantly correlated with the infant’s birth weight.

Second, the ANOVAs conducted on each type of social support and birth weight revealed few significant results. None of the religiosity variables had significant effects on birth weight and the father support ANOVA revealed only one significant result—fathers who attended a child birth class were less likely to have a low birth weight infant than fathers who did not attend a child birth class with the mothers. This finding is in contrast to Reichman and Teitler (2006), who found that father’s age was significantly associated with birth weight, but consistent with finding from Teitler (2001), who found that while father involvement was beneficial during pregnancy, it did not significantly impact birth weight. Also, mothers who were married were more likely to have a normal birth weight child than mothers who were not married. This finding is similar to Teitler’s report that unmarried mothers were twice as likely to give birth to a low birth weight child, and that cohabitation
did not have an impact on the birth weight of the child. The lack of a significant relationship between religiosity and birth weight was reminiscent of the inconsistent findings of other studies related to religiosity, including Joshi et al. (2005), who reported no connection between birth weight and religion among 230 women from India.

Being able to ask her spouse or partner for advice or help for the care of her child increased the mother’s chances of having a higher weight infant, and mothers who participated in community service were more likely to have infants with normal birth weights than mothers who responded they had not participated in any type of community service. However, these findings were less conclusive than findings by Nordentoft et al. (1996) who reported social support as one of the strongest predictors for delivering a low birth weight baby. Also, mothers who were closer to their own fathers were more likely to have a higher birth weight baby. This could be for reasons of moral, emotional, and monetary support.

Third, when a factor analysis was performed to examine if the three “arm-chair” types of support value would present themselves along some clear lines or if all the items would form a large social support factor, the results were inconclusive. The 16 social support items (after omitting the item concerning marital status) used in the factor analysis could not be combined to fit together well enough for an overall social support factor nor a small number of factors to be discerned. Several explanations could account for this. The information was collected through a computer assisted interview conducted by trained interviewers and many of the questions were open-ended, allowing the participants to answer freely, being prompted only if their initial response was minimal. Thus the answers may have been broad enough to not easily collapse into a single overall score. It may perhaps be that social support, being a multi-faceted construct, is difficult, if not impossible, to define operationally and therefore
cannot be measured as a single variable, at least in relation to prenatal development, as indicated by Crase et al. (2007).

Finally, a block regression confirmed the inconclusiveness of the hypothesis that social support plays a crucial role in the birth weight of an infant. First, demographic characteristics were applied to the regression, followed by prenatal variables previously found to have an effect on birth weight (Alexander & Korenbrot, 1995; Chomitz et al., 1995; Matthews et al., 2003; Paneth, 1995). When the social support variables were added to the regression, they did not make a significant impact on the overall prediction of a child’s birth weight; whether the mother attended religious services and whether the father bought items for the child were the only items among the social support variables that were significantly predictive of birth weight.

**Limitations**

The first limitation of this research is the type of sample used in this study. While the sample was large and both low and very low birth weight infants were oversampled, all infants were identified through their birth certificate records. This makes it impossible to include mothers whose infants did not survive to determine their prenatal social support level. Since low birth weight is one of the top causes of infant death, not having these mothers whose babies did not survive is a major limitation to this study.

As mentioned in the forefront of this study, defining social support is a difficult task. The combination of several variables in an attempt to measure social support was not successful at capturing the domains of maternal support within this study. Future research should focus on the development of a scale that adequately measures maternal social support during their prenatal term.
Another limitation is that the data for this study were collected when the child was approximately nine months of age. While much information was obtained from birth certificate records, all information gathered from the mother and father was retrospective and could represent skewed or biased information or memory lapses.

Finally, children who were born to mothers under the age of 15, who died before the age of 9-months, and who were adopted at or shortly after birth were not included in the study. Since mother’s age has been shown to impact birth weight status and because low birth weight is one of the top three causes of infant death, (Matthews et al., 2003) it may be that the infants who were born to the younger mothers or who died prior to 9 months were low birth weight infants. Thus, low birth weight infants may be underreported in this study, and this is another limitation to this study.

Conclusions and Implications

While this study focused on a small portion of the data collected from the original sample, the hope was that this particular investigation would bring us one piece closer to completing the puzzle of contradictory findings in the area of research related to maternal social support and low birth weight infants. Although there is some empirical evidence that supports the hypothesis that maternal social support during the prenatal term affects birth weight, the research of prenatal social support in general is lacking because of its vague definition, so it has been impossible to connect empirically specific components of support with birth weight.

Future research using this data set may want to break down variables further in order to study different aspect of support. Examining only fathers who were involved, specific types of marital status, and breaking mother’s age into particular age brackets may be better
for capturing specific types of effects on prenatal care and birth weight. Further, because
twins and triplets are more likely to be born at a lower birth weight because of shorter
gestational age and not necessarily for social support contributions, controlling for multiple
births or separating them and analyzing them separately would be another beneficial way to
utilize this rich data set.

Regardless of its impact during the prenatal period, social support – emotional,
monetary, and/or spiritual – is an unarguably important factor for the mother to experience
both during the prenatal term and following the birth of the child. Future research in this area
should focus on determining the most effective ways to measure social support reliably to
develop a scale that measures all of the social support aspects considered in this study. In
terms of prenatal support, further research where mothers are interviewed during their
prenatal term is necessary to determine fully the importance of mothers having these
different kinds of support and the impacts of this support on birth weight and other factors of
the infant’s early development.
References


DATE: March 19, 2007

TO: Kate Halverson
c/o Dr. Sedahilia Jasper Crase, 2361C Palmer

CC: Dr. Sedahilia Jasper Crase
    2361C Palmer

FROM: Jan Canny, IRB Administrator
       Office of Research Assurances

SUBJECT: IRB ID Number: 07-160

The Chair of the Institutional Review Board has reviewed the project
"Prenatal Factors Influencing Low Birth Weight Infants" and
determined that the project does not meet the definition of human
subject research according to the federal guidelines, 45 CFR 46.

Because this project does not need IRB approval, you can proceed with
the project. We do, however, urge you to protect the rights of your
participants in the same ways that you would if IRB approval were
required. This includes providing relevant information about the
project to the participants. Best practices would include in the e-mail
recruitment message a statement of the voluntary nature of
participation. However, this is up to your discretion.

Any modification of this project should be communicated to the IRB to
determine if the project still meets the definition of not being research.
If it is determined that approval is needed, then an IRB proposal will
need to be submitted and approved before proceeding with data
collection.
Appendix B

The following are social support questions taken from the Social and Community Support sections of the 9-month Parent Interview.

SECTION SS - SOCIAL SUPPORT

Words that are in italics indicate words that correspond to variable names in the tables and text in the results and discussion sections above.

SS002PRE
The next questions are about people you turn to for support. Think about people who are not living here who you would ask for help.

SS025
Who would you ask for help or advice about the care of \{CHILD\} \{and \{TWIN\}\}?

IF RESPONDENT NAMES ONLY ONE PERSON, PROBE: Anyone else?

CODE ALL THAT APPLY.

0 NO ONE (SS029BX)
1 MY SPOUSE/PARTNER (SS029BX)
2 FORMER SPOUSE/PARTNER (SS029BX)
3 MY MOTHER/FATHER (SS029BX)
4 MY MOTHER-IN-LAW/FATHER-IN-LAW (SS029BX)
5 MY GRANDMOTHER/GRANDFATHER (SS029BX)
6 SPOUSE'S GRANDMOTHER/GRANDFATHER (SS029BX)
7 SISTER/BROTHER (SS029BX)
8 AUNT/UNCLE/Cousin (SS029BX)
9 BABY'S OTHER PARENT (SS029BX)
10 FRIEND/NEIGHBOR (SS029BX)
11 COUNSELOR/MINISTER/RABBI/OTHER CLERGY (SS029BX)
12 MEMBERS OF CHURCH/OTHER ORGANIZATION (SS029BX)
13 CO-WORKERS (SS029BX)
14 GROWN CHILD (SS029BX)
15 NURSE (SS029BX)
16 FAMILY DOCTOR (SS029BX)
17 STAFF AT CLINICS (SS029BX)
18 SOCIAL WORKER (SS029BX)
19 CHILD CARE PROVIDER (SS029BX)
91 OTHER (SPECIFY)
REFUSED (SS029BX)
DON'T KNOW (SS029BX)

SS027
ENTER OTHER PERSON WHO COULD GIVE HELP OR ADVICE ABOUT CARE OF {CHILD}{AND {TWIN}}, OTHER SPECIFY TEXT.

SS029BX

CS (COMMUNITY SUPPORT)

SECTION CS - COMMUNITY SUPPORT
CS002PRE
These next questions ask about your community involvement.
CS005
DISPLAY INSTRUCTIONS:
If respondent is an adoptive or foster mother (IN040=2 or 4) or is an adoptive or foster father (IN045=2 or 4), display “began living with you”. Else display “was born”.
If FS030 = 1, display "and {NAME OF SPOUSE/PARTNER}.
If there is a twin, display "and {TWIN}" and "were".

Since {CHILD}{AND {TWIN}} {began living with you/ {was/were} born}, how often do you {AND {NAME OF SPOUSE/PARTNER}} get together socially with friends or neighbors? Would you say. . .

SHOW CARD CS1
0 Never,
1 Less than once a month,
2 About once or twice a month,
3 About once a week, or
4 Several times a week?
REFUSED
DON'T KNOW

CS010
How often did you attend religious services in the past year? Was it . . .

SHOW CARD CS2
0 Never,
1 About once or twice,
2 Several times during the year,
3 About once or twice a month, or
4 Nearly every week or more?
REFUSED
DON'T KNOW

CS015
Do you participate in any ongoing community service activity, for example, volunteering at a school, coaching a sports team, or working with a church or neighborhood association?
1 YES
2 NO
REFUSED
DON'T KNOW

How close {do/did} you feel to your {mother/mother-figure}? Would you say...

SHOW CARD RI1
1 Extremely close,
2 Quite close,
3 Fairly close, or
4 Not very close?
5 NOT APPLICABLE
REFUSED
DON'T KNOW

RI064
DISPLAY INSTRUCTIONS:
IF RI030=1 or RI035=1 display “father”.
Else display “father-figure”.
IF RI045=1 (BIOLOGICAL FATHER IS NO LONGER LIVING), display “did”.
Else, display “do”.

How close {do/did} you feel to your {father/father-figure}? Would you say…

SHOW CARD RI1
1 Extremely close,
2 Quite close,
3 Fairly close, or
4 Not very close?
5 NOT APPLICABLE
REFUSED
DON'T KNOW

DISPLAY INSTRUCTIONS:
If respondent is {CHILD} {and {TWIN}}’s biological mother (IN040 = 1), display “Since you became pregnant with {CHILD} {and {TWIN}}”.
Else if respondent is an adoptive or foster mother (IN040=2 or 4) or an adoptive or foster father (IN045=2 or 4), display “Since {CHILD} {and {TWIN}} began living in your household”. Else display “Since {CHILD} {and {TWIN}} {was/were} born”.

Now I have some questions about your household's experiences with various community agencies. {Since you became pregnant with {CHILD} {and {TWIN}}/Since {CHILD} {and {TWIN}}} began living in your household/{Since {CHILD} {and {TWIN}}} {was/were} born, have you or anyone in your household received…
a. Job training or employment assistance? HELP AVAILABLE
b. Education assistance, for example, GED, college, learning to read, or English as a Second Language?
c. Help with housing? HELP AVAILABLE
d. Help with or advice for parenting? HELP AVAILABLE
e. Mental health services? HELP AVAILABLE

1 YES
2 NO
REFUSED
DON'T KNOW

The following are relationship status questions taken from the Marital History and Partner Relationship section of the 9-month Parent Interview.

MH005
Next are a few questions about your marital history. Are you now…

1 Married,
2 Separated,
3 Divorced,
4 Widowed, or
5 Have you never been married? (MH012BX)
REFUSED (MH012BX)
DON'T KNOW (MH012BX)

MH033BX
IF RESPONDENT IS THE BIOLOGICAL PARENT (FS040=1 OR FS045=1) AND EITHER: HAS NO SPOUSE/PARTNER IN THE HOUSEHOLD (FS030 ^=1) OR PERSON FLAGGED AS SPOUSE/PARTNER IS NOT THE BIOLOGICAL PARENT (PERSON FLAGGED AT FS035 DOES NOT HAVE FS045=1 OR FS050=1), GO MH035.
ELSE GO TO MH068BX

MH035
DISPLAY INSTRUCTIONS:
If MH025=1 (YES), display "Before you got married, did", else display, "Did".
If respondent is child's biological mother (flagged in FS), display "father".
If respondent is child's biological father (flagged in FS), display "mother".
If there is a twin, display "and {TWIN}".

{Before you got married, did/Did} you ever live together with {CHILD} {and {TWIN}}'s biological {father/mother} in a marriage-like relationship?
FATHER SUPPORT

The following are father support questions taken from the 9-month Resident Father Questionnaire.

Q21. Did you do any of the following before your child was born? Did you…
*For each item, mark (X) one response Yes/No*

a. Discuss how your spouse/partner’s pregnancy was going with her? ......................
b. See a sonogram or ultrasound of the baby? ..............................................
c. Listen to the baby’s heartbeat? ..............................................................
d. Feel the baby move? ............................................................................
e. Attend childbirth classes or Lamaze classes with your child’s mother? ..............
f. Buy things for the child? ............................................................................
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