Original Study

Partner Support and Impact on Birth Outcomes among Teen Pregnancies in the United States

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A B S T R A C T

Purpose: Despite hypothesized relationships between lack of partner support during a woman's pregnancy and adverse birth outcomes, few studies have examined partner support among teens. We examined a potential proxy measure of partner support and its impact on adverse birth outcomes (low birth weight (LBW), preterm birth (PTB) and pregnancy loss) among women who have had a teenage pregnancy in the United States.

Methods: In a secondary data analysis utilizing cross-sectional data from 5609 women who experienced a teen pregnancy from the 2006-2010 National Survey of Family Growth (NSFG), we examined an alternative measure of partner support and its impact on adverse birth outcomes. Bivariate and multivariable logistic regression were used to assess differences in women who were teens at time of conception who had partner support during their pregnancy and those who did not, and their birth outcomes.

Results: Even after controlling for potential confounding factors, women with a supportive partner were 63% less likely to experience LBW [aOR: 0.37, 95% CI: (0.26-0.54)] and nearly 2 times less likely to have pregnancy loss [aOR: 0.48, 95% CI: (0.32-0.72)] compared to those with no partner support.

Conclusions: Having partner support or involvement during a teenager's pregnancy may reduce the likelihood of having a poor birth outcome.

Key Words: Teenager, Birth weight, Health survey, Partner, Pregnancy outcome

Introduction

In 2010, the rate of pregnancy in the US was 34.3 per 1,000 women in the 15-19 year age group.[1] Although the rate has decreased 9% since 2009, it is still higher when compared to other Western industrialized nations.[1,2] Despite the decrease in overall rate, racial disparities in teen pregnancy rates and complications persist.[3] Teen pregnancies not only account for over $10 billion of US healthcare costs, but they are also linked to a wide variety of consequences for the mother, including incarceration, failure to complete high school, and poor birth outcomes.[1,4] Studies have shown that teenage pregnancies are associated with an increase in pregnancy complications such as premature labor, low birth weight, intrauterine growth restriction, and perinatal mortality.[5–8] Birth weight is an important determinant of infant health and survival. Infants born with low birth weight (<2500 g) are a major contribution to rates of infant mortality and are also at increased risk for both immediate health problems and long-term health problems.[9,10] In 2007, the average medical costs for a healthy baby for the first year of life were $4,551.[11] For a preterm baby, the average costs were $33,200.[12] Decreasing the numbers of preterm births would decrease the number of low birth weight babies and in turn, reduce infant mortality.[13]

During the course of a woman's pregnancy, social support is essential to both her health and well-being.[14] Stress, including anxiety and depression, is a key risk factor in the etiology of poor birth outcomes such as preterm birth and low birth weight.[15] Lack of social support or perceived social support during pregnancy has been associated with increased stress and anxiety.[16,17] Limited improvement in birth outcomes in response to current interventions, including stress reduction,[18,19] indicates that our understanding of both the biological impact of stress on the mother and its relation to birth outcomes is inadequate. Paternal involvement has been examined in relation to birth outcomes,[20–23] particularly as a moderator of the stress-poor birth outcome axis.[15] Paternal support may moderate or alleviate the stress on pregnant women which in turn may decrease a woman's chance of having a poor birth outcome.[24] Paternal age, education, occupation, physical characteristics, and socio-economic status have all been examined in relation to their partner having adverse birth outcomes[20,25–27]; however, findings have often been inconsistent.

Paternal, or partner, support during pregnancy has been difficult to define and to quantify. Some studies have defined paternal involvement from a social standpoint, examining his feelings towards or affection for the partner,[24] criticism of the partner,[24] willingness to offer financial support or talking about feelings, and reliability in

The authors indicate no conflicts of interest.

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1083-3188/$ - see front matter
http://dx.doi.org/10.1016/j.jpag.2013.08.002

child care.[24,28] Others have looked at how the partner's behavior has changed since finding out about the pregnancy (listening to worries, helping with errands, showing he cared).[29] Some have even examined the presence or lack of paternal name on the birth certificate as indicative of support,[20,30] while others have studied paternal wantedness of pregnancy, father's attitudes and behaviors during pregnancy and father's substance abuse (smoking and alcohol intake) as indicators of level of involvement by the father.[31,32] Feldman et al[33] looked at a baby's father support scale, which asked if the father would provide financial assistance if it was needed, would be there if he was needed, and if he would provide help when the baby comes. Findings showed that married women reported a significantly greater support from the baby's father than women who were not married, suggesting that marital status may be indirectly associated with birth weight.[33] Stapleton et al[34] looked at partner support as prenatal support from the baby's father with a combination of 2 measures, with a combination of 2 measures, support effectiveness and pregnancy-specific received support, and its relation to postpartum maternal emotional distress.

Previous research has examined paternal involvement and support on poor pregnancy outcomes among teenagers and women over twenty years of age,[35] women 20 years of age and above,[30] and only among married women (regardless of age).[36] Turner et al[28] looked at 3 indices of support: partner, family and friend and their relationship to poor pregnancy outcomes among teenagers in Canada and found a relationship with support and low birth weight. Only 1 researcher to date has looked exclusively at partner support and birth outcomes among teenage pregnancies in the United States.[20] The purpose of our study was to examine the association between an indicator of partner support and poor birth outcomes—low birth weight, preterm birth, and pregnancy loss—among a national sample of female respondents who were teens at the time of their pregnancy from the National Survey of Family Growth (NSFG).

Methods

This secondary study utilized cross-sectional data from the 2006-2010 National Survey of Family Growth (NSFG). The NSFG, conducted by the National Center for Health Statistics (NCHS) at the Centers for Disease Control and Prevention, is a national household survey from 110 primary sampling units (major areas) using probability sampling methods. Teens, females, Blacks and Hispanics are oversampled to maximize generalizability and to allow a focus on particular groups of public health interest. The NSFG collects information on family life, marriage, pregnancy and preconception related topics as well as men's and women's health. Once households are selected, a screen is conducted to see if anyone aged 15-44 is living the in the household, including those residing away from home, and then 1 member is randomly selected to be interviewed. Respondents ages 18 and older provided informed consent, while those aged 15-17 provided assent after parental consent. The 2006-2010 NSFG utilized a continuous design, allowing for more questions to be added to the survey each year, and contains 22,682 face-to-face quantitative interviews. Interviews were conducted by trained female interviews from Michigan's Institute for Social Research using computer-assisted personal interviewing with response cards and a list of definitions of terms. Respondents are compensated for their time.[37] The 2006-2010 NSFG sample is representative of the U.S. household population aged 15-44, with 12,279 woman and 10,403 men. The 2006-2010 NSFG response rate was 77%.

Female respondents who are not pregnant or have never been pregnant are asked the respondent questionnaire. Those who are pregnant or have been pregnant are then asked the pregnancy questionnaire. Data from the female respondent and female pregnancy respondent files were combined through the NSFG data use protocol. Participants who were less than 20 years of age at the time of conception for (any of) their pregnancy(ies) were defined as having a teen pregnancy. The sample utilized for analysis was 5609 females who were 10-19 years of age at time of conception and any parity.

Our primary exposure of interest was alternative or *proxy measure of partner support or involvement*, referred to throughout the paper as partner support. Although research has examined partner support and other paternal support, we chose partner support because there was no definitive way of knowing whether the male was the baby's father or the woman's partner or both. Women were asked about their partner's attitude toward the pregnancy of interest. Positive support was measured as the *woman reporting that her partner felt* that the timing of pregnancy was the "right time" or if the respondent was either married or cohabiting at the time of pregnancy. Lack of support was defined as the *woman reporting that her partner felt* that the pregnancy was either "later or overdue", "too soon, mistimed", "didn't care, indifferent", "unwanted", or "don't know, not sure" (Fig. 1). Primary outcomes of interest included low birth weight (birth weight <2500 grams), preterm birth (respondents $<$ 37 weeks gestation), and whether the infant was not alive at time of delivery, pregnancy loss (spontaneous abortion (miscarriage), induced abortions, or stillbirth). The NSFG includes induced abortion among their "pregnancy loss" coding, and we chose to keep that as an indicator of pregnancy loss due to literature supporting lack of partner support and induced abortions.[38–41]

A variety of risk factors for the outcome and for the exposure of interest were examined. These included, at time of conception, education (9^{th} or less, 10^{th} grade-12^{th} grade, and more than 12^{th} grade), race (white, black, other), ethnicity (Hispanic or non-Hispanic), income (less than $10,000, less than $15,000, less than $30,000, and $30,000 or higher), and smoking status during pregnancy, if the respondent was living with biological or adoptive parents or no parents at all (proxy for parental support), and first trimester entry into prenatal care.

Statistical Analyses

We used descriptive statistics to examine partner support status, birth outcomes, and respondent characteristics.