The Role of Social Support During Pregnancy for African American Women

By

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I. Introduction

The idea that social context affects health is an old concept that has since taken new meaning in the light of health disparities and health care reform in the United States. As efforts to address differences in health outcomes become a major focus in health care, it is important to understand not only how social context affects health, but also the variation in the social contexts themselves.

Observational studies suggest that social support contributes to reduction of preterm birth and low birthweight; however, previous reviews of intervention trials report limited evidence that social support improves gestational age or birthweight. These trials vary in the type of support provided, (i.e., educational, emotional, referral services), in the training of persons providing the support (nurse or lay health worker, or both) and in the intensity of the intervention. Previous studies have shown that low birthweight, preterm birth, and infant mortality rates differ based on race and ethnicity. However, few trials developed interventions that consider how the social context, or cultural experiences of African American women influence their social support needs.

The purpose of this paper is three-fold: to describe how social support influences the experience of pregnancy for African American women; to review intervention studies of social support for pregnant African American women; and lastly, to present recommendations for future research and programming on social support for African American women.

II. Methods

Articles for this review were selected through searches on PubMed using the search terms “social support” “pregnancy” “outcome” “intervention” and “African American.” Based on the search results, a total of 91 articles were selected. Relevant research with African American (AA) women comprising at least 50% of the study sample or that had specific analyses and conclusions for African Americans in comparison to other ethnic groups was used for the current literature and the main analysis of this review. A snowball technique was also used to find relevant research based on citations within selected articles that met the inclusion criteria. Studies that were conducted outside of the United States, had a predominately (>50%) non-
African American sample, or no African American specific analyses were excluded. This review was limited to studies conducted in the United States in order to avoid differences in interpretations of findings due to national variations in the African American social experience.

The final analysis of social support and pregnancy outcomes included five studies with randomized control trial, observational, and qualitative analytic methodologies.

III. Background on Social Support

Social support has four major categories: emotional, instrumental, appraisal, and informational.\(^3,4\) Emotional support is love, care, and sympathy from others.\(^4\) Instrumental, also known as tangible support, is help or assistance with specific needs such as transportation, child care, or money. Appraisal support refers to help with decision-making and feedback. Lastly, informational support is provision of advice or knowledge. These categories of support are one of the primary mechanisms in which social context affects health.

A review by Cohens and Wills\(^5\) concluded that social support exhibits effects on well-being through two main types of support, emotional and instrumental. According to the stress-buffering hypothesis, social support is protective against life stressors. In particular, Cohen and Wills explained that emotional support, which includes appraisal, encouragement, motivation, buffers against various stressors. Whereas instrumental support, which includes tangible or practical help, is effective during the acuity of a stress event. Overall, social support is an important asset during a stressful life event, such as pregnancy.

IV. Descriptions of social support during pregnancy for African American women

Early studies showed that social support was protective against pregnancy complications.\(^6,7\) More recent studies have further described the relationship of social support
and pregnancy, showing a positive correlation with maternal preparation, positive interpretation and psychological well-being during pregnancy. However, the availability of social support differs among ethnic groups. A 1993 study found that AA pregnant adolescents had significantly lower total functional (instrumental and emotional) support scores than white pregnant adolescents. This lack of support places mothers at risk for isolation and has been associated with inadequate parenting competence.

Focusing on the social context for AA women, Mullings et al. conducted the Harlem Birth Right Project, an in-depth community participatory study that combined participant observation, focus groups, ethnographic surveys, and longitudinal case studies of AA women. This study described the social context of pregnancy and motherhood for women across different social strata. A lack of instrumental support characterized the environment for this particular population. For low-income women, a deficiency of resources was a chronic stressor. In contrast, an uncertainty of resources was a chronic stressor for middle-income women. Across social status, however, pregnancy intensified active efforts to secure consistent resources, instrumental support in particular. Mullings et al. concluded that interventions for AA women’s reproductive health should be sensitive to support network fragility and incorporate resources that reinforce network ties.

Historically, external sociopolitical and economical factors have increased the proportion of female-headed households. Mullings et al described how AA women from Harlem have developed female-centered support systems as a coping strategy. A decade later, a qualitative study also noted the significance of this female-centered support system during pregnancy. Accordingly, mothers and other women, especially those with birth experience, provide essential validation through appraisal and informational support during pregnancy. Furthermore, these
women are an important source of instrumental support during the perinatal period.\textsuperscript{14} Partners, however, are still a very important source of validation and overall well-being for the pregnant mother.\textsuperscript{13} Interestingly, AA women most often reported that pregnancy was first recognized by their social support systems, either partner, family, or close friends.\textsuperscript{15,16}

Overall, AA women use their partners, family and friends to receive all four types of support during pregnancy. In addition, women were willing to live under less than ideal financial circumstances in order to benefit from the emotional and appraisal support received from their community. The AA community provides safety nets for those with inadequate social support, including churches and schools.\textsuperscript{12,13,17} Although health care institutions are essentially a part of the safety net as well, advice and recommendations from health care providers may be perceived as irrelevant or inconsistent with cultural norms, and health care professionals are generally a not a primary means of informational support.\textsuperscript{16,18}

V. Clinical studies of social support interventions for pregnant African American women (Table 1, Appendix A)

Norbeck, DeJoseph, Smith\textsuperscript{19} evaluated nurse home visits and telephone contact among a sample of Medicaid eligible women during mid-pregnancy. This study had two phases, the first of which consisted of focus groups and individual interviews with low-income AA pregnant women. Findings of this qualitative phase demonstrated emotional support from a woman’s mother or male partner relationship was essential. Instrumental and informational were not identified as crucial. Consequently, the intervention used in the randomized control trial phase of the study targeted women with inadequate support by providing an emotionally supportive relationship. “Support nurses” administered four in-home sessions based on standardized written protocols approximately every two weeks with telephone contact between sessions. Using the
Norbeck Social Support Questionnaire (NSSQ),\textsuperscript{20,21} 319 AA women were tested for inadequate social support. A previous study\textsuperscript{22} noted lack of support from specific sources was a stronger determinant of outcomes than the total support score. Therefore, low support in this study was defined as a NSSQ score less than 28 from a woman’s mother or partner or a combined score of less than 36. Among the 114 women identified as having low social support, the rate of low birthweight (<2500 grams) in the intervention group (n=56) was 9.1% compared to 22.4% in the control group (n=58) (p < .05).\textsuperscript{19} The study concluded a reduction in low birthweight when social support interventions were directed at AA women with inadequate support.

That same year, a study in South Carolina compared the effect of a home visiting program on prenatal care use, low birthweight, and preterm birth.\textsuperscript{23} This study was based on a pilot intervention in rural South Carolina that showed reduction in low birthweight among adolescent participants,\textsuperscript{24} and was subsequently scaled up to included both rural and urban counties across the state. The Resource Mothers Program (RMP) involved intensive training of local community paraprofessional women to deliver social support to primiparous teenagers through monthly home visits during pregnancy, presence in the hospital and at delivery, and regular home visits up to one year postpartum. Resource mothers provided instrumental, informational, and emotional support through a standard protocol for each visit. Participants were recruited through community outreach and referrals, but young, unmarried, and AA women were specifically targeted for this intervention. Outcome variables of interest included low birthweight (< 2500 grams) and preterm birth (< 37 weeks gestation). The main study groups were the intervention group (n=1901, 77% African American, 83% unmarried) while the control group consisted of participants from counties without RMP (n=4,613, 55% African American, 67% unmarried). A second control group was added from the same counties that had the RMP in
order to have a more comparable sample composition to the intervention group (n=712, 71% African American, 74% unmarried). Logistic regression analysis found that unmarried women participating in RMP were less likely to have a preterm birth than unmarried participants in both the first and second control groups (Control 1: OR = 0.81 (CI = 0.70 – 0.95); Control 2: OR = 0.74 (CI = 0.58-0.94)). There was no effect on low birthweight. A subset analysis with only AA teenage participants confirmed that unmarried program participants were less likely to have a preterm birth than non-participants (Control 1: OR = 0.83 (0.71-0.98); Control 2: OR = 0.74 (CI = 0.58-0.95)). Low birthweight remained unchanged. Overall, this study found a reduction in preterm birth particularly among unmarried AA program participants.

A randomized control trial with 619 Medicaid eligible women at high risk for pregnancy complications evaluated the efficacy of an enhanced prenatal care model.25 Risk was a based on analyses of medical factors associated with low birthweight among Medicaid-eligible AA women. Program eligibility required a risk score of 10 or higher. The intervention group (n=318) had additional prenatal visits that included 40-minute health education group sessions as well as 40-minute sessions with a nurse provider. On-site childcare, transportation, and evening hours were also available. The control group (n = 301) received usual care. Birthweight, gestational age, intrauterine growth restriction, neonatal health status, and maternal health and delivery outcomes were examined. No statistically significant differences in outcome measures were seen between groups. However, rates of preterm births (10.6% vs. 14.0%) and very low birthweight of <1000 grams (1.9% vs. 3%) were lower in the intervention group. Fewer cesarean deliveries (13.8% vs. 17.2%) and stays in neonatal intensive care units (10.7% vs. 15.0%) were also seen in the study group. While there were no significant changes in outcomes, women’s
satisfaction with care, knowledge of risk factors, and perceived mastery of life significantly increased \((p < .05)\) with this augmented prenatal care model.

An ongoing trial in Memphis, Tennessee is showing promise in reducing adverse pregnancy outcomes and addressing health disparities. The BLUES (Building Lasting Unshakeable Expectations into Successes) program was designed to target low-income, high risk minorities.\(^{26}\) In 2007, Shelby County, Tennessee had one of highest rates of infant mortality in the country at 12.7\(^{27}\), compared to the national average of 6.8.\(^{28}\) Even more concerning, was the fact that the rate for AAs was more than 3 times the rate of whites.\(^{27}\) The BLUES program consists of group clinic visits with health education sessions open to families and individual case management with referrals to community resources from pregnancy until the child’s second birthday. Analysis of 392 mother-child pairs showed that BLUES participants had lower rates of prematurity, low birth weight, and infant mortality compared to mothers who were program eligible but did not enroll.\(^{26}\) In fact, preliminary program evaluation has shown that the infant mortality rate for program participants has been 1 per 1000 live births.\(^{29}\) Additionally, mothers who participated in group educational session had lower rates of low birthweight (1.83% vs. 9.69%) and preterm birth (1.31% vs. 7.85%) compared to mothers who chose to receive individual instruction.\(^{26}\) Since September 2012, the BLUES program has been conducting an ongoing randomized controlled trial with approximately 1,650 participants from two counties from pregnancy to the child’s second birthday.\(^{29}\) The BLUES program plans to become a national model and a billable program for decreasing infant mortality.

VI. Observational studies of social support interventions for pregnant African American women
Herman et al.\textsuperscript{30} qualitatively evaluated a pilot study of comprehensive web-based social support for pregnant nulliparous women (n=19). The Healthy Pregnancy Website included pregnancy-related health information, ask-a-nurse, and a discussion board. The website also contained culturally appealing aspects, including images and narratives from African Americans and a spirituality page. The purpose of the study was to examine acceptability, usage patterns, and content analysis of such a website among pregnant AA women. Nineteen young (average age of 20), primiparous, low risk, single participants between 14 and 16 weeks gestation had access to the website for 3 – 4 months. They visited the discussion board most often and visited the nutrition, physical activity, and stress management information pages least often. The authors suggest that comparison with others similar to oneself is an important coping strategy that is available through such web pages. Of note, participants initiated a page to share ultrasounds. The study concluded that a discussion board is the most effective way to deliver informational social support and share pregnancy concerns on a website.

Lastly, Los Angeles has taken an innovative approach by shifting social support from a high-risk approach to a population approach.\textsuperscript{31} Focus groups with 55 pregnant or postpartum women identified the desire for emotional and instrumental support from family and friends along with respect and courtesy from strangers. As a result, “One hundred intentional acts of kindness toward a pregnant woman”\textsuperscript{31} was started. These acts were distributed throughout the community to encourage a change in the value and treatment of pregnant women. The overall purpose was to increase reproductive social capital and redefining the response to pregnancy on a community level.

VII. Conclusions
There are very few studies that address social support during pregnancy specifically tailored for African American women. Of these, two clinical studies have shown a significant reduction in low birthweight and preterm birth. While others show promise in finding similar positive outcomes, there is no consistent evidence about causal relationship between social support and pregnancy outcomes. Currently, there is no consensus regarding measures of social support or effective characteristics of social support interventions.

When considering the two interventions that showed statistically significant reduction in adverse pregnancy outcomes, there is a particular pattern that can be seen in the design of the intervention and in sample selection. Both Norbeck et al and Rogers et al used empirical data as a basis for their interventions. This suggests that empirical data, specific to the population of interest, is an important characteristic of effective interventions.

Furthermore, Norbeck et al sampled pregnant women with inadequate support. Rogers et al showed a significantly lower rate of preterm births among the unmarried women who received the program. A previous study found that marital status was a predictor of partner support, indicating that marital status is an indirect marker for support status. This suggests that social support interventions are more effective for women with inadequate support at baseline. Both studies provided women with culturally appropriate emotional support. Norbeck et al used “support nurses” trained on a protocol that provided an emotionally supportive relationship. The Rogers et al study selected women from the community “with personal warmth, successful personal parenting experience, knowledge of community resources, and evidence of natural leadership.”

Klerman et al selected a high-risk population based on medical risk to receive educational and instrumental social support, and found no noted difference in outcomes among study
intervention and control groups. This is consistent with earlier social support trials that showed no treatment effects when medical risk or demographics were the basis for study eligibility.\textsuperscript{1,7,33} Therefore, sample stratification or program eligibility based on adequacy of support may be an important characteristic for effective interventions for African American women, along with the provision of emotional support.

Preliminary evidence from the BLUES project as well as qualitative analysis of the support website suggest that the mode of delivery of an intervention in groups may be another characteristic of an effective intervention. This can be further explained by Coffman & Ray’s theory of mutual intentionality.\textsuperscript{34} This grounded theory was developed from a qualitative analysis that explored the support processes for low-income AA women during high-risk pregnancy and postpartum. Mutual intentionality describes a transactional process of social support between the woman and her support giver, characterized by a need as a causal condition, a mutual relationship, active giving and receiving, and reciprocal support. The needs are divided into continuous support, usually given by partners, family or friends, or situational support, given by professionals or other community leaders. When the relationship between the woman and the support giver is noted to be mutual, this fosters trust. Lack of mutuality can be perceived as negative and controlling. At the core of the mutual relationship is intentional giving and receiving, which is characterized by motivated action and responsiveness on both sides.

Another core component is the reciprocal support given between the two parties while the initial need is met. Thus, the relationship is both a resource in itself as well as an outcome of the support process. This desire for a reciprocal support relationship may underlie some of the observational patterns seen in the cited studies. This evidence is insufficient to make a conclusive relationship between group interventions and pregnancy outcomes for AA as of yet.
However, it does suggest the value theoretical framework in choosing and implementing targeted interventions.

VIII. Recommendations

- Current evidence suggests that social support influences pregnancy outcomes for AA women, but is insufficient for conclusive statements. There is developing evidence that interventions target populations with inadequate support.

- Additional randomized controlled trials are needed to provide more conclusive evidence for the effect of social support on pregnancy outcomes. Further studies should clarify the effects of different types of culturally specific social support interventions on pregnancy outcomes for AA women.

- Future intervention studies should have an empirical or theoretical basis in order to effectively target pregnant AA women.

- Future studies should also look at other aspects of the social context of pregnancy including social networks and other social resources that were out of the scope of this review.

Because health disparities, particular among ethnic groups, continue to characterize many health outcomes in the United States, it will be important to provide culturally relevant research and programming that reinforce strengths and minimize shortcomings present in different communities.

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## Appendix A

### Table 1 – Studies examining the effect of social support interventions on pregnancy outcomes for African American women

<table>
<thead>
<tr>
<th>Authors (year)</th>
<th>Study design</th>
<th>Social support measure</th>
<th>Description of intervention</th>
<th>Study population</th>
<th>Key findings</th>
<th>Conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norbeck, DeJoseph, &amp; Smith (1996)</td>
<td>RCT</td>
<td>Norbeck Social Support Questionnaire; low support = score &lt; 28 from either mother or husband/partner, or combined score of &lt; 36</td>
<td>4 standardized face to face sessions at 2 week intervals, telephone contact in between</td>
<td>114 Medicaid-eligible AAW, ages 18-34, 16-26 weeks gestation, identified as low-support (56 = study, 58 = control)</td>
<td>The rate of LBW (&lt;2500 grams) was 9.1% in intervention group, 22.4% in control group (p &lt; 0.05).</td>
<td>Reduction in LBW</td>
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<td>Rogers, Peoples-Sheps, &amp; Suchindran (1996)</td>
<td>Observational; cohort</td>
<td>Trained community paraprofessional women provided social support through structured home visits to teenagers</td>
<td>1,901 = study, 77% AAW, 83% unmarried 4,613 = control 1, 55% AAW, 67% unmarried 712 = control 2, 71% AAW, 74% unmarried</td>
<td>Unmarried teenagers less likely to have a PTB (Control 1: OR = 0.81(CI = 0.70-0.95); Control 2: OR = 0.74 (CI = 0.58-0.94) compared to control. No significant effect on LBW. Subset analysis of AA unmarried teens (Control 1: OR = 0.83 (0.71-0.98); Control 2: OR = 0.74(CI = 0.58-0.95) compared to control)</td>
<td>Unmarried teenagers less likely to have a PTB (Control 1: OR = 0.81(CI = 0.70-0.95); Control 2: OR = 0.74 (CI = 0.58-0.94) compared to control. No significant effect on LBW. Subset analysis of AA unmarried teens (Control 1: OR = 0.83 (0.71-0.98); Control 2: OR = 0.74(CI = 0.58-0.95) compared to control)</td>
<td>Reduction in PTB for unmarried teenagers</td>
</tr>
<tr>
<td>Klerman et al (2001)</td>
<td>RCT</td>
<td>Study specific risk assessment scale</td>
<td>Augmented prenatal care included</td>
<td>619 AAW, Medicaid eligible,</td>
<td>No statistically significant difference</td>
<td>No reduction in adverse</td>
</tr>
<tr>
<td><strong>BLUES project (ongoing)</strong></td>
<td><strong>RCT</strong></td>
<td><strong>Group clinic visits &amp; individual case management with referrals to community resources from pregnancy to child’s 2nd birthday</strong></td>
<td><strong>n = 1,650</strong></td>
<td><strong>Program participants have had IMR 1 per 1000</strong></td>
<td><strong>Reduction in LBW, PTB, and IMR</strong></td>
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**RCT** = Randomized Controlled Trial, **AAW** = African American Women, **LBW** = Low Birthweight, **PTB** = Preterm Birth, **IUGR** = Intrauterine Growth Restriction, **NICU** = Neonatal Intensive Care Unit, **IMR** = Infant Mortality Rate