Published in final edited form as:

MCN Am J Matern Child Nurs. 2018 ; 43(5): 265–270. doi:10.1097/NMC.0000000000000460.

Interpersonal Relationships among Black Couples and Depressive Symptoms during Pregnancy

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Abstract

Objective—The purpose of this study was to examine associations of the mother-father relationship and social support with depressive symptoms during pregnancy among Black mothers and fathers.

Methods—Fifty Black mother-father dyads from the Midwest completed a packet of questionnaires that included conflict with partner, social support, depressive symptoms and socio-demographic characteristics.

Results—Twenty-four percent of mothers and 16% of fathers had Center for Epidemiological Studies-Depression (CES-D) scores ≥ 23, which have been correlated with major depression diagnosis. There were no differences in depressive symptoms between mothers and fathers. Fathers reporting high depressive symptoms were not more likely to be partnered with mothers reporting high depressive symptoms. Controlling for age, higher levels of conflict with partner and lower levels of social support predicted higher levels of depressive symptoms for both mothers and fathers.

Clinical Implications—Black expectant mothers and fathers may be at risk for clinical depression. Fathers experienced comparable levels of depressive symptoms with mothers, indicating the need to consider fathers' psychological adjustment during pregnancy. Higher levels of conflict with partner and lower levels of social support predicted higher levels of depressive

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There is no conflict of interest.

symptoms for both parents. Maternal-child nurses should assess for mothers' as well as fathers' experiences of depressive symptoms and the mother-father relationship when providing prenatal care.

Keywords

depression; fathers; mothers; social support

Introduction

Depression is prevalent among pregnant and postpartum women. A meta-analysis indicated that 9.2% of women in high-income countries (as defined by the World Bank classifications) and 19.2% of women in low- and middle-income countries have prenatal depression, and the rates are similar during the postnatal period (9.5% and 18.7%, respectively) (Woody, Ferrari, Siskind, Whiteford, & Harris, 2017). A recent review of 16 longitudinal studies on antenatal and postnatal depression reported the mean rate of depression during pregnancy was higher (17.2) compared with the mean rate of depression during the postpartum period (13.1%) (Underwood, Waldie, D'Souza, Peterson, & Morton, 2016). A prior review reported that as many as 18.4% of women are depressed during pregnancy, with 12.7% of women reporting symptoms indicative of major depression (Gavin et al., 2005). Some individual studies suggest that pregnant Black women have rates of depressive symptoms as high as 20-50% (Giurgescu, Misra, et al., 2015; Orr, Blazer, & James, 2006). Although research suggests that pregnant Black women are at risk for depressive symptoms, research on Black fathers' depressive symptoms during the prenatal period is limited.

Fathers experience depressive symptoms during the pre- and post-natal periods. A meta-analysis reported that 12.5% of fathers in North America experience depressive symptoms during their partner's pregnancy and first year after birth (Cameron, Sedov, & Tomfohr-Madsen, 2016). A systematic review reported that fathers' stress levels increased from the antenatal period to birth; and higher levels of stress were associated with anxiety, depression and psychological distress (Philpott, Leahy-Warren, FitzGerald, & Savage, 2017). These results suggest that fathers experience depressive symptoms during the prenatal period.

According to Bronfenbrenner's Ecological model, the relationship between an individual and his/her environment is bidirectional; each having a significant influence on the other (Bronfenbrenner, 1979). The model encompasses the interplay between the intrapersonal (i.e., individual health), the interpersonal (family and support systems), community, institutional, and finally, public policy decisions (Bronfenbrenner). According to the Ecological model, the interpersonal level (family and support systems) influences the intrapersonal level (i.e., individual health). Our study examined the relationship between interpersonal (conflict with partner, social support) and intrapersonal (depressive symptoms for both mothers and fathers) levels.

Better understanding of prenatal depressive symptoms for both fathers and mothers requires an examination of the couple relationship. A systematic review reported that a problematic/dissatisfied relationship with the partner was a risk factor for anxiety and depression among pregnant women (Biaggi, Conroy, Pawlby, & Pariante, 2016). However, among the seven

studies that assessed problematic/dissatisfied relationship as a risk factor for anxiety and/or depression, only one study was conducted in the United State and the majority of women were Caucasian (Biaggi et al., 2016; Records & Rice, 2007). A systematic review that examined correlates of paternal pre- and post-natal depression reported that poor relationship satisfaction with the pregnant woman was related to depressive symptoms among fathers (Wee, Skouteris, Pier, Richardson, & Milgrom, 2011). However, the majority of studies included in the review were not conducted in the United States (Wee et al., 2011). In one of the few studies conducted in the United States, Bronte-Tinkew Moore, Matthews, and Carrano, (2007) used data from the Fragile Families and Child Wellbeing Study with a sample of 2,137 resident fathers, of which 68% were Black. They found that a poor quality of the father-mother relationship was related to depression among fathers at 12 months after the child's birth after controlling for social and demographic covariates (Bronte-Tinkew et al.). Taken together, these findings suggest that dissatisfaction with mother-father relationship is a risk factor for maternal and paternal depression; however, further investigation of the relationship between partner conflict and depressive symptoms during pregnancy for Black fathers and mothers is needed.

Social support during pregnancy is important in understanding prenatal depressive symptoms among fathers and mothers. Pregnant and postpartum Black women who reported higher levels of social support reported lower levels of depressive symptoms (Giurgescu, Misra, et al., 2015; Giurgescu, Zenk, et al., 2015). Greater support from the baby's father was related to fewer depressive symptoms among pregnant and postpartum Black women who were partnered with the father of the baby (Edwards et al., 2012). Father support was not significantly related to depressive symptoms among Black women who were either in a friendship or had no relationship with the father of the baby (Edwards et al., 2012). A systematic review reported lack of social support as a risk factor for paternal prenatal and postnatal depressive symptoms (Wee et al., 2011). However, the majority of the studies included in the review did not focus on prenatal depressive symptoms for Black fathers but rather postnatal symptoms (Wee et al., 2011).

Studies to date have generally focused on mothers rather than fathers. Those studies that have included fathers have rarely been conducted in the United States, particularly including Black families, and have primarily examined postpartum rather than prenatal depressive symptoms. Our study examined the associations of relationship conflict and social support with depressive symptoms among Black expectant mothers and fathers. Our research questions were:

Research Question 1: Are rates of prenatal depressive symptoms similar for mothers and fathers?

Research Question 2: Are prenatal depressive symptoms influenced by conflict with partner and social support for both mothers and fathers?

Hypothesis 1. Higher levels of conflict with partner will predict higher levels of depressive symptoms for both mothers and fathers.

Hypothesis 2. Higher levels of social support will predict lower levels of depressive symptoms for both mothers and fathers.

Methods

Design and Sample

Using a cross-sectional design, couples were recruited through prenatal clinics at two local Midwestern sites. Eligibility criteria for women were: self-identified as Black, singleton pregnancy, in the second trimester, and 18 years or older. We excluded women with multiple pregnancies (e.g., twins). Eligible criteria for men were self-identified as Black and 18 years or older. This study is based on 50 mother-father dyads. The regression analysis included three predictors (age, social support, and conflict with partner). A sample size of 50 is sufficient to achieve a power of 0.80 for $\alpha < .05$ and three independent variables in the multiple linear regression (Munro, 2005).

Procedures

This study was approved by the Institutional Review Boards of the two universities involved in the study. Staff members who recruited participants received training in protection of human subjects. Recruitment involved staff explaining the study to potential participants at prenatal appointments, posting flyers in medical clinics, and attending collaborative community events (e.g., community baby shower). Interest forms were completed by potential participants and collected weekly from the clinics for follow-up contact by the research assistant. Pregnant women who expressed an interest in participating were asked to bring the father of their baby into the study. Eligible fathers and mothers completed an informed consent prior to data collection. Mothers and fathers completed separate interviews with a trained interviewer matched by race and gender. A \$25 gift card was provided to each mother and father completing the interview (total \$50 per couple). Data were collected from two clinics between July 2007 and May 2010.

Measures

Depressive Symptomatology—The Center for Epidemiologic Studies Depression Scale (CES-D) (Radloff, 1977) was used to measure depressive symptoms. This scale is a 20-item scale to measure levels of depressive symptoms within the past month, with emphasis on depressed mood in the general population. Scores on the CES-D scale of ≥ 16 are considered clinically relevant depressive symptoms (Radloff, 1977), and CES-D scores ≥ 23 have been correlated with depression diagnosis (Orr, Blazer, James, & Reiter, 2007). The CES-D was correlated with a number of other depression and mood scales supporting its construct validity (Radloff, 1977). Cronbach's alpha in this study was 0.88 for mothers and 0.85 for fathers.

Conflict with Partner—Both fathers and mothers responded to the 5 items subscale (e.g. mother/father criticizing the other) of the Social Networks in Adult Relations Scale (Antonucci, 1986; Kahn & Antonucci, 1980) used in the Jackson et al. (2004) National Survey of American Life study. The subscales ask about negative interactions in their relationship with the other parent of the baby on a 5-point scale (*strongly disagree* to

strongly agree). Cronbach's alpha was 0.73 for mothers and 0.69 for fathers. Each individual's mean response to these questions was calculated and used for analysis. A higher score indicates greater conflict with the other parent of the baby.

Social Support—Eleven items of the Medical Outcomes Study Social Support Survey were used to measure social support (Sherbourne & Stewart, 1991) by asking respondents on a 5-point scale (*none of the time* to *all of the time*) how often specific kinds of support are available to them when they need it. Examples include “someone you can count on to listen when you need to talk”, “someone to help with daily chores if you were sick”, and “someone to love and make you feel wanted”. Cronbach's alpha was 0.89 for mothers and 0.90 for fathers. Mean of all responses was taken for each individual with a higher score indicating greater social support from a variety of sources.

Sample Characteristics—The research team developed questionnaires to collect mothers' and fathers' sociodemographic characteristics.

Analysis Strategy

Descriptive statistics (mean, standard deviation, frequency) were computed to examine mothers' and fathers' characteristics.

Research Question 1: Are rates of prenatal depressive symptoms similar for mothers and fathers? Depressive symptoms were compared between mothers and fathers using a Chi-squared test, a Wilcoxon signed ranks test, and bivariate correlation.

Research Question 2: Are prenatal depressive symptoms influenced by conflict with partner and social support for both mothers and fathers? Bivariate and multivariate analysis were conducted for both mothers and fathers. Separate correlation matrices were created for mothers and fathers to examine the associations among depressive symptoms, conflict with the partner and social support measures for both mothers and fathers. Separate multiple regression analyses were constructed for mothers and fathers to address the research hypotheses for the study. A standard measure of age was dichotomized for use as a control in this analysis. Mothers' and fathers' ages were split about their respective median ages in years (25.5 and 27); mothers were categorized as either 25 and younger (0), or 26 and older (1), whereas fathers were either 26 and younger (0), or 27 and older (1). Age, social support, and conflict with partner were regressed on CES-D for both mothers and fathers. General social support and conflict with partner were centered and analyzed for interaction with age. No significant interactions were detected in the analysis.

Results

Sample characteristics

Descriptive statistics are presented in Table 1. Average age of mothers was 26.2 years and average age of fathers was 27.8 years. The mothers were between 22-28 weeks pregnant. There was a discrepancy in self-report of marital status between mothers and fathers with 66% of mothers reporting that they are married or living with the partner and 50% of fathers reporting that they are married or living with the partner. Our data show that 76% of mothers

and 74% of fathers graduated high school or passed a high school equivalency test (e.g., GED). Overall, 52% of fathers and 46% of mothers were employed. Majority of our participants had a household income of less than \$30,000 (62% of mothers and 58% of fathers). The CES-D scale was split into groups indicating low depressive symptoms (CES-D scores ≤ 15) and clinically relevant depressive symptoms (CES-D scores ≥ 16). We found that 54% of the mothers had CES-D scores ≥ 16 and 38% of fathers had CES-D scores ≥ 16 . We also created an additional group of severe depressive symptoms (CES-D scores ≥ 23 , which have been correlated with depression diagnosis). We found that 24.0% of mothers had CES-D scores ≥ 23 and 16.0% of fathers had CES-D scores ≥ 23 (see Table 1).

Research Question 1: Are rates of prenatal depressive symptoms similar for mothers and fathers? A paired analysis for depressive symptoms within couples was conducted using a Chi-squared test of equal distribution, a Wilcoxon signed ranks test, and bivariate correlation. The Chi-squared test compared the distribution of clinically relevant depressive symptoms (CES-D scores ≥ 16) of mothers and fathers using a cross-tabulation. The Chi-squared test indicated no significant difference in distribution across cells, meaning that mothers reporting clinically relevant depressive symptoms were not more likely to be partnered with fathers reporting clinically relevant depressive symptoms. Results from the Wilcoxon signed ranks two-tailed test indicated that there was no difference between depressive symptoms within couples ($p = 0.172$). The Pearson r correlation coefficient between mothers' and fathers' depressive symptoms was positive ($r = 0.124$) but small and nonsignificant.

Research Question 2: Are prenatal depressive symptoms influenced by conflict with partner and social support for both mothers and fathers? *Hypothesis 2.1.* Higher levels of conflict with partner will predict higher levels of depressive symptoms for both mothers and fathers. At the bivariate level, conflict with partner was positively correlated with CES-D scores for both mothers ($r = .418, p < .001$) and fathers ($r = .417, p < .001$) (see Table 2). At the multivariate level, higher levels of conflict with partner predicted higher levels of depressive symptoms for both mothers and fathers (see Table 3). *Hypothesis 2.2.* Higher levels of social support will predict lower levels of depressive symptoms for both mothers and fathers. At the bivariate level, social support was negatively correlated with CES-D scores for both mothers ($r = -.460, p < .001$) and fathers ($r = -.378, p < .001$) (see Table 2). At the multivariate level, higher levels of social support predicted lower levels of depressive symptoms for both mothers and fathers (see Table 3).

Overall, this model predicts depressive symptoms for both mothers and fathers, indicating the similar influence of conflict with the partner and social support variables on depressive symptoms for both mothers and fathers. The model explained 31% of the variance in mothers' depressive symptoms and 26% of the variance in fathers' depressive symptoms.

Discussion

Findings suggest that both Black mothers and fathers had high levels of depressive symptoms. We found that 54% of the mothers and 38% of fathers had CES-D scores ≥ 16 , which represent clinically relevant depressive symptoms. Twenty-four percent of mothers

and 16% of fathers had CES-D scores ≥ 23 , which have been correlated to depression diagnosis (Orr et al., 2007). Other researchers reported that among Black women 25-50% have CES-D ≥ 16 , and 20-28% have CES-D scores ≥ 23 during pregnancy (Giurgescu, Misra, et al., 2015; Giurgescu, Zenk, et al., 2015; Orr et al., 2006).

According to the Ecological model, the interpersonal level (family and support systems) influences the intrapersonal level (e.g., individual's health). This study examined the relationship between interpersonal (conflict with partner, social support) and intrapersonal (depressive symptoms for both mothers and fathers) levels. Higher levels of conflict with partner and lower levels of social support predicted higher levels of depressive symptoms for both parents. Our findings expand previous research, which has noted the association between poor relationship satisfaction and depressive symptoms during pregnancy and the postpartum period among multiethnic samples of mothers and fathers (Biaggi et al., 2016; Wee et al., 2011). Given that conflict with partner and social support both achieved significance in the model and did not interact (in a statistical sense), our findings indicate that social support does not moderate the effect of partner conflict on depression. We found that conflict with partner and social support independently predict prenatal depression for both mothers and fathers.

Limitations

Study findings must be considered within the context of several limitations. Our sample does not represent all father-mother dyads, but is instead composed of Black fathers and mothers who are above the adolescent age range. Our findings may not hold for mother-father dyads of younger ages or of different race/ethnic groups. Almost half of our participants were not currently working. The majority had a household annual income of less than \$30,000. Therefore, the results cannot be generalized to couples from higher socioeconomic status. Our analysis is also limited in that we did not control for socioeconomic status or other potentially confounding variables in the regression model. While these data were available, our small sample size prohibited including more covariates. Such variables may account for variance in depressive symptoms similar to that explained by our main predictors, an important area of exploration. We were limited by reliance on the self-report CES-D scale. The CES-D is validated for use in assessing depressive symptoms, however, a diagnosis of depression cannot be made with this measure.

Clinical Implications

These findings may be of special interest to maternal-child nurses who provide care to expectant parents. Nurses should assess expecting mothers and fathers for depressive symptoms. We found that 24% of mothers and 16% of fathers had CES-D scores ≥ 23 , which have been correlated with depression diagnosis (Orr et al., 2007). Prenatal clinics providers and administrators should evaluate screening tools for depressive symptoms that would be appropriate for their pregnant women and expectant fathers. For example, the Patient Health Questionnaire (PHQ-9) is a 9-items instrument that asks about symptoms of depression within the past two weeks (e.g., little interest or pleasure in doing things; feeling down, depressed or hopeless; feeling bad about yourself or that you are a failure or have let

yourself or your family down). The PHQ-9 is easy to administer and has been used in clinical practice. Better screening for depression may make treatment more salient or more accessible. The recommendation to screen for depressive symptoms for expectant fathers parallels to pediatricians providing screening and resource referrals for postpartum depression for mothers during infant visits and to women's health care providers providing referrals and treatments for sexually transmitted infections to partners during prenatal and well woman care. It is difficult to address a person who is not the "patient" but future efforts could attempt to find ways to link the fathers to resources for screening and treatment for depressive symptoms through the mother.

Relationship conflict may be of particular importance in predicting depressive symptoms. Nurses should assess for negative interaction and social support, as our findings indicate that these factors are associated with mothers' and fathers' depressive symptoms during the prenatal period. A list of local community resources and online support groups could be provided for couples who experience conflict in their relationship (see Table 4).

Conclusion

Both mothers and fathers reported high levels of depressive symptoms. We did not find that mothers' depressive symptoms predicted fathers' depressive symptoms, nor did we find that these symptoms were significantly correlated or greater for one partner within the relationship. Higher conflict between partners and lower social support predicted higher depressive symptoms for both fathers and mothers. We, therefore, recommend that prenatal depression screening be broadened to include fathers, and that screening ask about negative interactions between couples and about social supports.

Acknowledgments

The study was funded by the Michigan Interdisciplinary Center on Social Inequalities, Mind and Body. We thank the mothers and fathers who participated in the study.

References

- Antonucci TC. Social support networks: A hierarchical mapping technique. *Generations*. 1986; 10:10–12.
- Biaggi A, Conroy S, Pawlby S, Pariante CM. Identifying the women at risk of antenatal anxiety and depression: A systematic review. *Journal of Affective Disorders*. 2016; 191:62–77. DOI: 10.1016/j.jad.2015.11.014 [PubMed: 26650969]
- Bronfenbrenner U. *The Ecology of Human Development: Experiments by Nature and Design*. Cambridge, MA: Harvard University Press; 1979.
- Bronte-Tinkew J, Moore KA, Matthews G, Carrano J. Symptoms of major depression in a sample of fathers of infants: Sociodemographic correlates and links to father involvement. *Journal of Family Issues*. 2007; 28(1):61–99. DOI: 10.1177/0192513X06293609
- Cameron EE, Sedov ID, Tomfohr-Madsen LM. Prevalence of paternal depression in pregnancy and the postpartum: An updated meta-analysis. *Journal of Affective Disorders*. 2016; 206:189–203. DOI: 10.1016/j.jad.2016.07.044 [PubMed: 27475890]
- Edwards RC, Thullen MJ, Isarowong N, Shiu CS, Henson L, Hans SL. Supportive relationships and the trajectory of depressive symptoms among young, African American mothers. *Journal of Family Psychology*. 2012; 26(4):585–594. DOI: 10.1037/a0029053 [PubMed: 22888784]

- Gavin NI, Gaynes BN, Lohr KN, Meltzer-Brody S, Gartlehner G, Swinson T. Perinatal depression: A systematic review of prevalence and incidence. *Obstetrics and Gynecology*. 2005; 106(5 Pt 1):1071–1083. DOI: 10.1097/01.AOG.0000183597.31630.db [PubMed: 16260528]
- Giurgescu C, Engeland CG, Templin TN. Depressive symptoms predict negative birth outcomes in African American women: A pilot study. *Journal of Midwifery and Women's Health*. 2015; 60(5): 570–577. DOI: 10.1111/jmwh.12337
- Giurgescu C, Misra DP, Sealy-Jefferson S, Caldwell CH, Templin TN, Slaughter-Acey JC, Osypuk TL. The impact of neighborhood quality, perceived stress, and social support on depressive symptoms during pregnancy in African American women. *Social Science and Medicine*. 2015; 130:172–180. DOI: 10.1016/j.socscimed.2015.02.006 [PubMed: 25703670]
- Giurgescu C, Zenk SN, Templin TN, Engeland CG, Dancy BL, Park C, et al. Misra DP. The impact of neighborhood environment, social support and avoidance coping on depressive symptoms of pregnant African American women *Women's Health Issues*. 2015; 25(3):294–302. DOI: 10.1016/j.whi.2015.02.001 [PubMed: 25840930]
- Jackson JS, Torres M, Caldwell CH, Neighbors HW, Nesse RM, Taylor RJ, et al. Williams DR. The National Survey of American Life: A study of racial, ethnic and cultural influences on mental disorders and mental health. *International Journal of Methods in Psychiatric Research*. 2004; 13(4):196–207. DOI: 10.1002/mpr.177 [PubMed: 15719528]
- Kahn RL, Antonucci TC. Convoys over the life course: Attachment, roles, and social support. In: Baltes PB, editor *Life-span development and behavior*. Vol. 3. New York: Academic Press; 1980. 254–283.
- Munro BH. *Statistical Methods for Health Care Research*. 5th. New York: Lippincott Williams & Wilkins; 2005.
- Orr ST, Blazer DG, James SA. Racial disparities in elevated prenatal depressive symptoms among black and white women in eastern North Carolina. *Annals of Epidemiology*. 2006; 16(6):463–468. DOI: 10.1016/j.annepidem.2005.08.004 [PubMed: 16257228]
- Orr ST, Blazer DG, James SA, Reiter JP. Depressive symptoms and indicators of maternal health status during pregnancy. *Journal of Women's Health*. 2007; 16(4):535–542.
- Philpott LF, Leahy-Warren P, FitzGerald S, Savage E. Stress in fathers in the perinatal period: A systematic review. *Midwifery*. 2017; 55:113–127. DOI: 10.1016/j.midw.2017.09.016 [PubMed: 28992554]
- Radloff LS. The CES-D Scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*. 1977; 1(3):385–401.
- Records K, Rice M. Psychosocial correlates of depression symptoms during the third trimester of pregnancy. *Journal of Obstetric, Gynecologic, and Neonatal Nursing*. 2007; 36(3):231–242.
- Sherbourne CD, Stewart AL. The MOS Social Support Survey. *Science and Medicine*. 1991; 32:705–714.
- Underwood L, Waldie K, D'Souza S, Peterson ER, Morton S. A review of longitudinal studies on antenatal and postnatal depression. *Archives of Women's Mental Health*. 2016; 19(5):711–720. DOI: 10.1007/s00737-016-0629-1
- Wee KY, Skouteris H, Pier C, Richardson B, Milgrom J. Correlates of ante- and postnatal depression in fathers: A systematic review. *Journal of Affective Disorders*. 2011; 130(3):358–377. DOI: 10.1016/j.jad.2010.06.019 [PubMed: 20599275]
- Woody CA, Ferrari AJ, Siskind DJ, Whiteford HA, Harris MG. A systematic review and meta-regression of the prevalence and incidence of perinatal depression. *Journal of Affective Disorders*. 2017; 219:86–92. DOI: 10.1016/j.jad.2017.05.003 [PubMed: 28531848]

Callouts

- Approximately 24% of mothers and 16% of fathers were at risk for clinical depression.
- Higher levels of conflict with partner and lower levels of social support predicted higher levels of depressive symptoms for both mothers and fathers.
- Maternal-child nurses should assess for mothers' as well as fathers' experiences of depressive symptoms.

Table 1
Sample Characteristics

Variable	Mothers (N=50)	Fathers (N=50)
	Mean ± Standard deviation (range)	Mean ± Standard deviation (range)
Age	26.2±5.8 (18, 39)	27.8±7.4 (18, 54)
CESD ^a	17.5±10.8 (0, 45)	14.6±9.8 (0, 48)
Conflict with Partner	2.61±0.93 (1.00, 5.00)	2.70±0.97 (1.00, 5.00)
Social Support	4.32±0.63 (2.18, 5.00)	4.32±0.72 (2.27, 5.00)
	Number (Frequency)	Number (Frequency)
Marital Status		
Married/ living with a partner	33 (66%)	25 (50%)
Not married/ living with a partner	17 (34%)	25 (50%)
Graduated HS or passed HS equivalency test		
Yes	38 (76%)	37 (74%)
No	9 (18%)	8 (16%)
Employment Status		
Currently working	23 (46)	26 (52)
Not currently working	26 (52)	23 (46)
Household income last year		
\$9,999	10 (20%)	9 (18%)
\$10,000-19,999	13 (26%)	8 (16%)
\$20,000-29,999	8 (16%)	12 (24%)
\$30,000	13 (26%)	15 (32%)
CESD scores		
15	23 (46%)	31 (62%)
16	27 (54%)	19 (38%)
CESD scores		
22	38 (76%)	42 (84%)
23	12 (24%)	8 (16%)

^aNote: CESD: Center for Epidemiological Studies-Depression; HS: High School; the numbers (%) in some cells do not add up to 50 (100%) due to missing data;

Table 2
Correlation Matrix and Descriptive Statistics of Key Study Variables (Mothers'
correlations in bold)

	1	2	3	4
1. CES-D scores	1	-0.150	0.418 ^{**}	-0.460 ^{**}
2. Age	-0.081	1	-0.098	0.165
3. Conflict with Partner	0.417 ^{**}	0.032	1	-0.472 ^{**}
4. Social Support	-0.378 ^{**}	0.243	-0.305 [*]	1

^{*}
p < 0.05 level (2-tailed)

^{**}
p < 0.01 level (2-tailed)

Table 3
Interpersonal Relations Regressed on Depressive Symptoms

Depressive Symptoms During Pregnancy				
Predictors	Mothers		Fathers	
	B	SE	B	SE
Age (Dichotomized)	-4.835	2.654	3.004	2.729
Conflict with Partner	3.290 *	1.609	3.118 *	1.417
Social Support	-4.961 *	2.394	-4.308 *	1.966
F	6.993 **		5.079 **	
R-Square	0.313		0.257	

* $p < 0.05$

** $p < 0.01$

Clinical Implications

Table 4

Screen for depressive symptoms both pregnant women and the fathers of their babies using self-reported reliable tools
Assess mother-father relationship as dissatisfaction and conflict in the relationship predicts depressive symptoms for parents.
Provide resources available in the community for support groups to couples during the prenatal period.