

## Depression Prevalence and Incidence Among Inner-City Pregnant and Postpartum Women

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A sample of 192 financially impoverished, inner-city women was assessed for clinical depression twice during pregnancy and once postpartum. At the first and second antepartum interviews, respectively, 27.6% and 24.5% of the women were depressed, controlling for pregnancy-related somatic symptoms. Postpartum depression was found among 23.4% of women. These rates are about double those found for middle-class samples. Particularly heightened risk for antepartum depression was found among single women who did not have a cohabiting partner. African American and European American women did not differ in rates of depression. Antepartum depression was a weak but significant risk factor for postpartum depression.

Depression during pregnancy and postpartum has important consequences for the mother and child (Buesching, Glasser, & Frate, 1986; Cutrona, 1982; O'Hara, Neunaber, & Zekoski, 1984; O'Hara, Zekoski, Philipps, & Wright, 1990; Whiffen, 1988; Zura-  
vin, 1989). Research on pregnancy and depression has increased markedly, but little research has examined the phenomenon of depression during pregnancy and the postpartum among poor women (Steer, Scholl, & Beck, 1990), despite the fact that this combination of risk factors would potentially be quite powerful in precipitating depression (Belle, 1990; Collins, Dunkel-Schetter, Lobel, & Scrimshaw, 1993; Dohrenwend & Dohrenwend, 1981). It is believed that lower socioeconomic status (SES) and ethnicity are related to clinical depression, but most studies of these populations have relied on self-report measures of depressive mood or symptoms (Kaplan, Roberts, Camacho, & Coyne, 1987; Weissman, Leaf, & Bruce, 1987; see also Belle, 1990, for a review). Studies of middle-class samples suggest that findings for depressive mood do not necessarily

generalize to clinical depression (Gotlib, Whiffen, Mount, Milne, & Cordy, 1989).

### Poverty, Gender, and Depression

A variety of factors contribute to the prevalence of mental disorder among those of low SES (Dohrenwend & Dohrenwend, 1981; Kessler et al., 1994). These include higher frequency of chronic stressful life events, less control over the occurrence of stressors, and most compellingly, increased vulnerability to the negative effects of stressful events. This increased vulnerability might, in part, emanate from increased childrearing responsibilities, and especially, coping with chronic helplessness, hopelessness, alienation, and marginalization (Allen & Britt, 1983; Belle, 1990; Dohrenwend & Dohrenwend, 1981). Lower SES is a risk factor for depression, in particular (Holzer et al., 1986, in Belle, 1990), with relative risk of 1.79 when the lowest and highest SES groups are compared and controlling for gender and age. Bruce, Takeuchi, and Leaf (1991) reported an odds ratio for depression of 2.29 for those in poverty compared with those who are not poor after adjusting for age, gender, ethnicity, and history of depression.

Because African Americans are disproportionately represented among the poor, they are also likely to have higher depression rates, but whether they differ from poor Whites has not been empirically established. Graham (1992) cautions that studies of African American and European American groups typically use samples that are not economically comparable (usually poorer Blacks) and that this leads to risk of stereotyping about the psychological fragility of African Americans.

Gender is another risk factor for depression, which is diagnosed at higher rates among women (Cleary, 1987). For low-SES women, the consequences of depression are also potentially more severe than for affluent women. Poverty entails the ab-

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sence of resources that could buffer the impact of a debilitating condition such as depression, including material resources to pay for services (e.g., childcare and mental health services), and emotional resources, such as a supportive and available partner (McLanahan, 1983; McLoyd, 1990; Wilson & Neckerman, 1987). Poor women face a host of burdens that higher SES women do not and that can often be exacerbated by an episode of depression (Allen & Britt, 1983; Wilson & Neckerman, 1987).

### Pregnancy and the Postpartum Period

Pregnancy and the postpartum have been found to be periods of high risk for depression (e.g., Buesching, Glasser, & Frate, 1986). Depression occurring during pregnancy and the postpartum is poorly understood, even in higher SES populations (Cutrona, 1983; Pfost, Stevens, & Lum, 1990; Whiffen, 1988) among whom the bulk of research is conducted. Debate over whether postpartum depression represents a unique disorder or is essentially the same as depression occurring at other times has not been resolved (Atkinson & Rickel, 1983), although the emerging picture suggests that the major difference between postpartum depression and nonpostpartum depression is severity, with postpartum depression being a milder disorder, comparable with an adjustment disorder (Whiffen & Gotlib, 1993). Postpartum nonpsychotic depression has also begun to be distinguished from the postpartum blues and from postpartum psychotic affective disorders (Cutrona, 1982; O'Hara & Zekoski, 1988).

Much of the literature on this topic relies on self-report measures of depressive symptomatology, sometimes using cutoff scores to establish "diagnoses." Over the past decade, researchers have begun to use more standardized clinical interview formats to more accurately assess depression (Endicott & Spitzer, 1978; Gotlib, Whiffen, Wallace, & Mount, 1991; O'Hara et al., 1984). This has increased the comparability of data and is an improvement over studies that rely on the less clinically relevant phenomenon of depressive symptomatology. Using better validated and more standardized measures, investigators have found evidence that true rates of clinical depression are close to 10% (Gotlib et al., 1989), but such estimates are not clearly generalizable beyond White, middle-class women.

There is currently mixed evidence regarding the relationship of SES to pregnancy-related depression. Cutrona (1982) and O'Hara and Zekoski (1988) in their reviews concluded that SES was not typically found to be related to postpartum depression. Gotlib et al. (1989) also failed to find a relationship between demographic variables and postpartum depression. However, they did find that depression during pregnancy was related to being younger, less educated, and having more children, even within their rather homogeneous middle-class sample. In one major British study, it was even found that pregnancy was more likely to be linked to distress for middle-class women (Watson, Elliott, Rugg, & Brough, 1984). In general, O'Hara and Zekoski (1988) concluded that across the literature, few demographic variables have consistently been found to be related to depression around the time of pregnancy.

Social support has been found to be related to lower depres-

sion among pregnant women (Norbeck & Tilden, 1983; Stemp, Turner, & Noh, 1986), including those of low SES (Collins, Dunkel-Schetter, Lobel, & Scrimshaw, 1993). Once again, however, studies have relied on self-reports of symptoms. Hence, there is virtually no evidence that social support is related to clinical depression. By relying on self-report, these studies also suffer from potential method confounding, as women are asked to self-report both their social support and depression.

Social support research suggests that, rather than more support being better, it is the difference between presence and absence of a potentially supportive other that is critical (Hobfoll & Vaux, 1993). This is especially relevant given that as many as half of low-income women are single and do not have a partner (marriage and partner status being related but not the same; U.S. Bureau of the Census, 1991). Support may be gleaned from other sources, but partner support is especially critical around the period of pregnancy and delivery (Hobfoll, 1986). Support research has also increasingly focused on support perception. Less is known about environmental or role measures of support, such as the presence or absence of a partner. There has been virtually no study of partner status and depression during and after pregnancy for any SES group, and single women are typically excluded from analysis (O'Hara & Zekoski, 1988).

### Study Overview

This investigation represents an attempt to increase our knowledge of the prevalence and incidence of depression associated with pregnancy and the postpartum among low-SES women. Our primary intention was to document the extent inner-city women experience clinical depression during pregnancy and postpartum. In addition, we were interested in examining whether other demographic factors substantially altered their rates of depression. We generally did not expect other demographic factors to predict clinical depression within this population, given the overwhelming effect of poverty and its correlates (i.e., low education, poor job opportunities, etc.). However, we predicted that single-parent status would be related to greater depression because of the potential protective effects of having a partner.

### Method

#### *Participants*

Participants were 252 women recruited over a 2.5-year period from among the patient population at three obstetrics clinics for low-income women located in a mid-sized midwestern city. Completed records were obtained on 192 women, yielding a completion rate of 76.2%. The attrition rate was quite low (13.5%) in comparison with other prospective studies of inner-city samples, with the remaining 26 participants (10.3%) being excluded because of incomplete diagnostic information. Women were approached for participation who were (a) between 17 and 40 years of age, (b) at 16 to 24 weeks of gestation, and (c) free of serious medical complications at intake. Charts were screened for complications by medical personnel. Women who met the criteria were randomly assigned to the study (i.e., other studies were operating at the

clinics). The characteristics of these women are presented in Table 1. Only African American and European American women were selected because there were too few women from other ethnic groups to include them in analyses. Women below the age of 17 or above the age of 40 were excluded because of their increased risk for pregnancy complications and the resulting increase in care given by medical staff.

Participants averaged 24.5 years of age. They were almost uniformly on public assistance. Their income level places them among the most poor urban groups. A small percentage of women reporting larger incomes were including parental income in their reports, but on child-birth most of them obtained their own residence to qualify for welfare (bringing their income to 0 outside of welfare). Sixty-seven percent already had a child, two thirds were not employed, and 37% were single with no partner.

To determine if differences existed between the 192 completers and the 34 women who did not complete the study, we performed a series of one-way analyses of variance (ANOVAs) and  $2 \times 2$  chi-square analyses on demographic and outcome variables. African American women were significantly less likely to complete the study,  $\chi^2(1, N = 226) = 14.12, p < .001$ . African American women who left the study were also likely to be single, but most African American single women remained in the study, allowing us to generalize to this subgroup. We also analyzed for marital status, which permitted further understanding of this subgroup. No differences were found in remaining demographic variables

or the outcome variables. We examined the effects of ethnic status to both control for and understand any differential generalizability for the African Americans and European Americans.

### Procedure

Women were invited to participate by medical personnel during obstetric clinic visits. The study was explained, and women were assured that their medical care was in no way contingent on their participation. After confidentiality procedures were explained, consent forms were signed by interested women. Most of the women approached agreed to participate (approximately 80%).

Participants were interviewed three times, once during the second trimester, once during the third trimester (approximately 7 to 9 weeks before expected delivery), and once 7 to 9 weeks after the expected delivery date. They received payments for each interview of \$10, \$15, and \$20, respectively. Completers were eligible to win TV sets through a lottery conducted each year of the study.

Interviews were generally conducted at the medical facility or at participants' homes. Interviews lasted 1 to 1.5 hr. Interviewers were a culturally diverse group of female psychology graduate students trained on the interview materials using didactic, videotaped, and role-play procedures. Staff met regularly to discuss issues of cultural sensitivity and to maintain standardized procedures.

### Instruments

For this investigation, we used interview data related to demographics, family characteristics, and depression. Demographic variables collected included age, household income, educational level, and employment status. Family characteristics included marital status, history of miscarriages, and number of children. All instruments were administered orally to promote rapport and avoid error caused by variability in reading ability.

Clinical depression was assessed at all three interviews using a modified version of the Schedule for Affective Disorders and Schizophrenia (SADS; Endicott & Spitzer, 1978). O'Hara et al. (1984) adapted this semistructured interview for use with pregnant and postpartum women. Diagnoses of current (within the past month) affective disorder (major or minor) were made based on the Research Diagnostic Criteria (RDC; Spitzer, Endicott, & Robins, 1978). Interviewers rated participants on a 6-point scale for dysphoria and each of eight categories of depression symptoms. The item assessing suicidality had a 7-point scale. The eight categories of major depression symptoms were appetite disturbance (increased-decreased appetite and weight gain-loss were all rated separately), sleep disturbance (decreased-increased sleep were rated separately), fatigue, loss of interest, guilt, impaired concentration, suicidal ideation, and motor disturbance (psychomotor agitation and retardation were rated separately). Three of the eight categories (appetite, sleep, and motor disturbance) had two or more symptoms associated with them, resulting in a total of 13 possible symptoms. Seven minor symptoms (e.g., irritability, self-pity) were also assessed as present or absent.

Scores on each major symptom assessed were adjusted to remove the physical effects of pregnancy (O'Hara et al., 1984), thus providing a more stringent approach to diagnosis of depression than has generally been used. A diagnosis of current (definite or probable) major depression was made if the woman was rated as having (a) scored at least a 3 on the dysphoria question with that dysphoric episode lasting for a period longer than 7 days, and (b) had at least four of the eight major depression categories rated as present. A diagnosis of current (definite or probable) minor depression was made if the woman was rated as having (a) scored at least a 3 on the dysphoria question with that dysphoric

Table 1  
*Demographic Characteristics of the Sample*

Variable	Statistic
Age (years)	
<i>M</i>	24.5
<i>SD</i>	5.1
Range	17-40
Ethnicity (%)	
African American	27.1
European American	72.9
Education	
% Continuing high school	24.0
% High school graduate	55.7
% Postsecondary education	20.3
Range (years)	7-16
Family income level (%)	
Below \$5,000	28.1
\$5,001-10,000	24.3
\$10,001-15,000	21.1
\$15,001-20,000	14.1
\$20,001 and above	12.4
Marital status (%)	
Cohabiting	20.8
Single	37.5
Married	37.5
Married-not cohabiting	4.2
No. of miscarriages	
% who had 0	75.8
% who had 1	17.9
% who had 2 or more	6.3
Range	0-5
Total children	
% with 0	32.8
% with 1	32.8
% with 2	18.2
% with 3 or more	16.1
Range	0-7
Employed (%)	32.3

episode lasting for a period longer than 7 days, and (b) had a total of at least three major symptom categories or minor symptoms rated as present. It should be noted that a diagnosis of major depression by the criteria of the *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed., rev.; American Psychiatric Association, 1987) is comparable with RDC criteria for a diagnosis of definite major depression. This differs from probable major depression only in minimum length of the episode (two weeks for a definite episode or one week for a probable episode).

Interviewers were trained on prepared tapes and role plays until their ratings were consistent with those of two experienced clinicians involved in the project and until they achieved inter-rater agreement above .90. Comparisons with experienced clinicians increases the validity of interviewers' ratings. Furthermore, reliability of SADS data was assessed through follow-up interviews conducted on approximately 30 women 2 to 3 weeks after the initial interview. Agreement was above .85, sufficiently high, given that depression levels and symptoms would be expected to fluctuate to some degree over a period of weeks.

A shortened version of the Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) was administered orally while the participant was able to follow along using a laminated written copy provided to her. This shortened version was developed after pilot data indicated that BDI scores were inflated by the somatic symptoms of pregnancy and includes Items 1-14 of the original BDI. Items assessing physical symptoms such as sleep problems and eating difficulties that are commonly reported by nondepressed pregnant women are a potential source of confound for studies assessing depression during pregnancy (Troutman & Cutrona, 1990; Whiffen, 1988). Huffman, Lamour, Bryan, and Pederson (1990) divided the BDI into three conceptually derived clusters in order to investigate this issue during pregnancy. Our scale corresponds to their Cognitive-Affective and Residual clusters, and the items we omitted correspond to their Somatic cluster. In addition, Volk, Pace, and Parchman (1993) performed confirmatory factor analysis on the 13-item short form of the BDI that has been developed for use in primary care settings, and similarly found empirical support for a dual-factor model distinguishing nonsomatic symptoms from somatic symptoms. By removing confounded items, both a more conservative and a more accurate test is obtained. The instrument also becomes more comparable with diagnostic criteria that are designed to tease out physically based somatic symptoms in establishing diagnosis (O'Hara et al., 1984).

Because the BDI has high internal reliability there should be little harm in reducing the number of items from 21 to 14, unless reliability is consequently reduced, which it was not. The BDI is a frequently employed measure of depressive symptomatology (Rehm, 1981), and has been used in many studies involving pregnant women (e.g., Steer et al., 1990; Whiffen, 1988). Internal reliability was .78.

## Results

### *Preliminary Analysis*

Given the paucity of research on inner-city women, we wished to check the construct validity of the RDC method by comparing it with a second method of evaluating depression. We compared BDI scores at initial and postpartum interviews for women who were not depressed ( $M_s = 6.432$  and  $3.724$ , respectively), had minor depression ( $M_s = 10.419$  and  $8.290$ , respectively), or had major depression ( $M_s = 12.955$  and  $11.286$ , respectively) according to the RDC criteria. These BDI scores are comparable to scores on the 21-item test of ( $M = 9.648$ ,  $M = 5.586$ ;  $M = 15.629$ ,  $M = 12.435$ ;  $M = 19.433$ ,  $M =$

$16.929$ ), respectively, if correcting for the number of items. Using one-way ANOVAs, we found that groups differed at initial interviews  $F(2, 189) = 25.077$ ,  $p < .0001$ , and postpartum interviews,  $F(2, 187) = 38.152$ ,  $p < .0001$ . Post hoc multiple range tests indicated that all three groups significantly differed from one another at these times. These results demonstrate the ability of the RDC to adequately discriminate among BDI scores, thus giving further support to our application of the RDC as a valid diagnostic aid.

### *Prevalence of Prepartum and Postpartum Depression*

Eighty women (41.7%) met the RDC criteria for either major or minor depression during either of the two antepartum assessments. The point prevalence estimates for the first and second pregnancy assessments were 27.6% and 24.5%, respectively. Of the 80 cases diagnosed as experiencing prenatal depression, 24 (30.0%) remained depressed at the postpartum assessment (see Figure 1). For rates of major, minor, and total depression at each time point, see Table 2.

Forty-five women experienced either a major or a minor depression during the postpartum period, yielding a point prevalence estimate of 23.4%. Twenty-one (46.7%) of these women exhibited postpartum depression in the absence of prepartum depression. A  $z$  test for the difference between two proportions revealed that the occurrence of prepartum depression significantly increased the likelihood of postpartum depression ( $p < .05$ ) (Hamburg, 1987).

### *How Family and Demographic Characteristics Affect Depression Diagnostic Status*

To study the influence of family and demographic characteristics on depression, we reduced diagnosis to two categories, depressed (at either of the two antepartum assessments) and nondepressed (at both of the two antepartum assessments). Because of the dichotomous nature of the dependent variable (depression diagnostic status) and the fact that the split between the group size exceeded 25/75%, logistic regression analyses were performed (Tabachnick & Fidell, 1989).

In the first pair of analyses, depression diagnostic status during pregnancy and during postpartum were separately regressed on family characteristics (partner status, number of children, and number of miscarriages). The nature of the partner status variable warranted dummy coding. Partner status was divided into four binomial categories: married (vs. not married), married not cohabiting (vs. married and cohabiting), cohabiting (vs. not cohabiting), and single (vs. not single). As Table 3 indicates, only marital status predicted depression antepartum, with single, noncohabiting women being at greater risk ( $B = 0.5880$ ,  $p < .05$ ). The model adequately fit the data (goodness of fit  $\chi^2[184, N = 190] = 189.05$ ,  $p = 0.38$ ), although the  $-2$  log likelihood statistic indicated that a better model could be found ( $\chi^2[184, N = 190] = 247.76$ ,  $p < .01$ ). None of the family variables predicted postpartum depression (see Table 3).

We conducted a second pair of logistic regression analyses to investigate the effect of demographic characteristics on

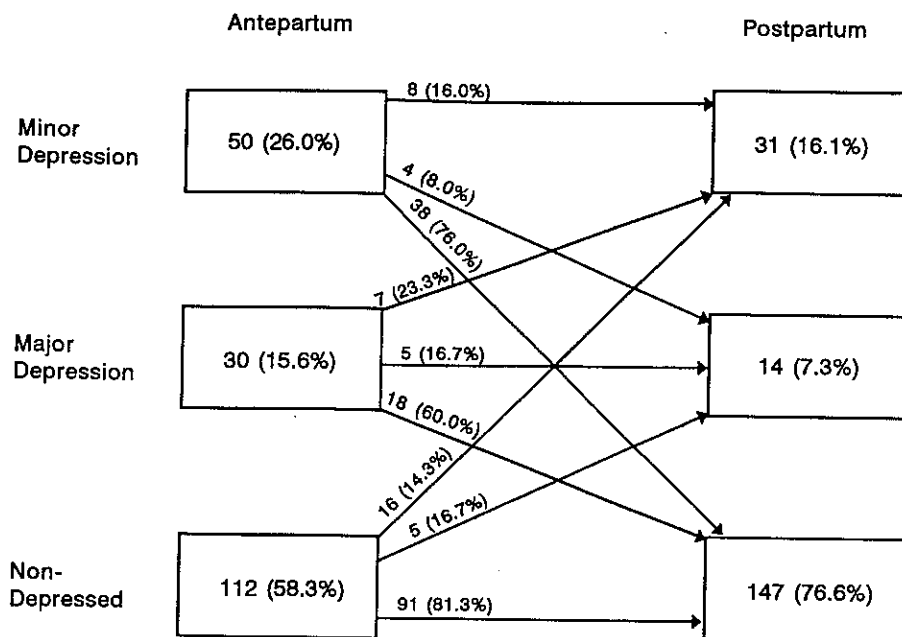


Figure 1. Changes in prevalence of clinical depression among women during and after pregnancy.

depression diagnostic status. Diagnostic status during pregnancy and diagnostic status postpartum were each regressed on age, ethnic status, education, family income level, and employment. None of the demographic variables significantly predicted depression diagnostic status during pregnancy or postpartum (see Table 4).

#### *How Family and Demographic Characteristics Affect Incidence of Postpartum Depression Status in the Absence of Antepartum Depression*

Next, we looked only at women who were depressed at postpartum, dividing them between those who were not depressed earlier and those who were depressed at either antepartum assessment. We then conducted two separate regression analyses on this subsample to investigate whether we could distinguish new onset of depression from other cases. We regressed this dichotomous outcome variable (new onset-not new) on (a) the same family characteristics and (b) the same demographic characteristics used in the previous regression analyses. None

of the family or demographic characteristics significantly predicted new cases of depression (see Table 3 and Table 4).

#### Discussion

Our principle goal was to identify the prevalence and incidence of depression during pregnancy and postpartum for an economically impoverished, mixed-ethnicity sample. At all three assessment points, we found rates of depression to be more than twice those reported for middle-class samples (Cutrona, 1983; Gotlib et al., 1991; O'Hara, 1986). Thus, as has been found for emotional disorders generally (Belle, 1990; Bruce et al., 1991), low SES status is a significant risk factor for depression associated with pregnancy and the postpartum. Rates of minor depression were particularly elevated, whereas rates of major depression were fairly similar to those reported for middle-class samples (Whiffen, 1992). Rates of major depression, however, were especially high at the first antepartum assessment, which is when women were first having to adjust to the fact of their pregnancy.

Antepartum depression was a significant risk factor for postpartum depression, but this relationship was a weak one. The incidence of new cases at the postpartum assessment further suggests that there is a great deal of movement, with many new cases and many women no longer depressed who were depressed earlier (see also Kumar & Robson, 1984). This latter finding is critical because it extends the similar outcomes drawn from middle-class samples on this issue (Gotlib et al., 1989) to a lower class sample, thus allowing us to take a step closer to saying that it is a general psychological principle, not a culture-bound principle (Triandis & Brislin, 1984).

As we expected, clinical depression was not affected to a great

Table 2  
*Prevalence Rates for Major and Minor Depression*

Time	Major depression		Minor depression		Total depression	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Second trimester	22	11.5	31	16.1	53	27.6
Third trimester	8	4.2	39	20.3	47	24.5
Postpartum	14	7.3	31	16.1	45	23.4

Table 3  
*Depression Diagnostic Status During Pregnancy and Postpartum and Incidence of Postpartum Depression Status in the Absence of Antepartum Depression Regressed on Family Characteristics*

Variable	Diagnostic status during pregnancy		Diagnostic status postpartum		Incidence of new-onset postpartum depression <sup>a</sup>	
	B	SE	B	SE	B	SE
Marital status						
Cohabiting	.5880*	.2334	.1444	.2525	-.6450	.5123
Single	.0181	.1750	-.0429	.2032	-.0784	.3685
Married-not cohabiting	.2039	.3866	-.3316	.3928	-.0330	.6816
Total no. of children	-.0511	.1445	-.0855	.1666	.5478	.3160
No. of miscarriages	-.2248	.2850	.0826	.3095	-.4197	.5706
Goodness of fit	$\chi^2(184, N = 190) = 189.05,$ $p = .38$		$\chi^2(184, N = 190) = 190.29,$ $p = .36$		$\chi^2(39, N = 45) = 44.48,$ $p = .25$	

Note. The family characteristic variables were all entered in one step.  
<sup>a</sup> Participants in this analysis include only those depressed at postpartum.  
 \*  $p < .05$ .

degree by family and demographic variables within this inner-city, low-income sample. This is in keeping with O'Hara and Zekoski's (1988) review noting few indications that demographic variables affect depression during pregnancy. The only additional family factor contributing to depression was lacking a cohabiting partner. This effect was only found during pregnancy, and not postpartum. As Thoits (1982) suggests and as Feggetter, Cooper, and Gath (1981) found, single parenthood is an additional burden for women. The period during which women confront the fact that they will have these new burdens may be the critical crisis phase and the time when women would benefit the most from partner support. Single women may also experience increased family conflict on becoming pregnant but may gain acceptance and aid once the child is born.

The fact that other family and demographic factors, including ethnic status, did not affect prevalence or incidence of depression suggests that poverty itself is the primary factor influencing depression. In this context of overall minimal economic re-

sources, differences in education level and employment status do not appear highly relevant. It may be that, for inner-city mothers, higher education and employment represent very little in terms of prospects for advancement of one's economic or social resources because of lack of child care availability and the unlikelihood of job opportunities. In addition, family resources may not alleviate depression for these poor women because of the emotional costs of dependence (Kessler, McLeod, & Wethington, 1985). This may also differentiate clinical depression from depressive mood, which is influenced by these factors, both in our study (Gallagher, Hobfoll, Ritter, & Lavin, 1993), and in others (Gruen, 1993).

The finding that being single and not cohabiting was related to clinical depression during pregnancy has major public health implications. Given that, among the poor and ethnic minorities, almost half of pregnant women are single (U.S. Bureau of Census, 1991) and that the association between marital status and depression has not been adequately studied in the context of

Table 4  
*Depression Diagnostic Status During Pregnancy and Postpartum and Incidence of Postpartum Depression Status in the Absence of Antepartum Depression Regressed on Demographic Characteristics*

Variable	Diagnostic status during pregnancy		Diagnostic status postpartum		Incidence of new-onset postpartum depression <sup>a</sup>	
	B	SE	B	SE	B	SE
Age	-.0110	.0303	.0071	.0351	.1185	.0775
Ethnicity	-.1086	.1715	-.2134	.2110	.6750	.4302
Education	-.0260	.2422	.0742	.2829	-.3194	.5100
Family income	-.0330	.0964	-.0317	.1142	.0728	.2207
Employed	.1007	.1622	.0936	.1873	-.6548	.3973
Goodness of fit	$\chi^2(179, N = 185) = 184.91,$ $p = .37$		$\chi^2(179, N = 185) = 184.84,$ $p = .37$		$\chi^2(37, N = 43) = 42.45,$ $p = .25$	

Note. The demographic characteristic variables were all entered in one step.  
<sup>a</sup> Participants in this analysis include only those depressed at postpartum.

pregnancy (O'Hara & Zekoski, 1988), it cannot be assumed that past research can be generalized to these women. Implied in the current social debate about the impact of the breakdown of the family is the assumption that marriage is the protective factor, but our results suggest that another lifestyle choice, cohabitating with a partner, still serves a protective function. Future research should examine how different kinds of relationships provide different kinds of support, but we encourage researchers to look further at relationship status per se and not to restrict their focus to support perceptions, as both are potentially important factors (Hobfoll & Vaux, 1993).

Care should be taken in generalizing our findings for ethnic status, however. It is possible that the historic openness of industry in this city to African Americans and the absence of strict ghettoization found in many U.S. cities may have limited the pervasive effect of ethnic status found in other studies of pregnancy (e.g., David & Collins, 1991). Notwithstanding these reservations, there is other evidence that poverty, rather than ethnicity, is the crucial risk factor for mental disorder. Studying anxiety, Norbeck and Anderson (1989) also failed to find greater psychological distress for African Americans versus European Americans from similar economic standings. Taken together, this begins to suggest that assumptions about the greater psychological distress of African Americans may be, in part, a confound of class, African Americans often being poorer than European Americans in previous studies (Graham, 1992).

It might also be argued that the reported rates of depression were inflated because of interviewer bias. We took special care to prevent this by selecting interviewers and trainers from different ethnic groups and socioeconomic backgrounds and by frequently "recalibrating" interviewers by continued use of training tapes and recomparison to the judgments of experienced clinicians. We also did not disseminate rates of depression as we progressed, so as not to provide interviewers a marker level that might bias their perceptions. Furthermore, if judgments were biased, we would expect the bias that African Americans are more likely to be depressed because of the additional stress of racism to also have emerged in the data, which it did not. Finally, our clinical ratings are consistent with our BDI scores, which were also quite high, but did not differ by ethnicity (Gallagher et al., 1993).

It might also be suggested that we should have collected a middle-class comparison sample. However, such suggestions would double the size, expense, and taxing of resources of studies of lower class and ethnic minority samples. Just such impediments have prevented publication of similar research (Graham, 1992). Furthermore, unless the same standard is applied to research on European American middle-class samples (i.e., to have a comparative lower class or ethnic minority comparison group), it sets an unfair standard that is in conflict with current suggested standards for ethnic and economic equity in research (Anderson, in press).

Although there are limits to any study, we took care to be rigorous by including the strengths of the most methodologically sophisticated previous studies (Gotlib et al., 1989, 1991; O'Hara et al., 1984). We felt this was critical because of the difficulty of publishing studies on lower class and ethnic minority samples. Indeed, the rate of publication on such samples

has actually decreased over the past 20 years, leaving a serious knowledge gap (Graham, 1992). Typical of this trend, less than 3% of the articles in major American Psychological Association journals examined African Americans during the period of 1985 to 1990, and one third of these did not properly consider the potential confound of SES (Graham, 1992).

We noted earlier that single, African American women were more likely to drop out of the study. Had they remained, we might have found significant ethnic differences in depression. However, our analysis suggests that such differences, nevertheless, might have been most reasonably attributable to their single status, not their ethnicity. Furthermore, the low attrition rates argue against any particular sampling bias. We also considered the possibility that women were trying to "please" us by reporting that they were depressed in a psychological study. We looked at self-esteem scores, however, and found these to indicate generally high self-esteem, suggesting that women were not "faking bad" (i.e., trying to appear more debilitated than they were). Nevertheless, until many more studies have been published on the topic for similar samples, we cannot be assured that these or other sampling problems did not affect our data.

Clearly, such high rates of depression indicate a need for intervention. The extent of the problem suggests that preventative and treatment groups might be appropriate means of intervention, as unchecked depression represents a risk for the mother and her child (Zuravin, 1989). An increased awareness of the problem by medical staff might also lead them to provide more efficacious medical treatment, especially because depression could interfere with women's understanding and follow-up of medical directives. However, because stressful social conditions appear to be the major underlying factor, only changes on this level will be likely to have substantive public health impact.

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