Public Health Briefs

Chronic Stressors and Maternal Depression: Implications for Prevention

SUEZANNE T. ORR, PHD, SHERMAN A. JAMES, PHD, BARBARA J. BURNS, PHD, AND BRUCE THOMPSON, PHD

Abstract: We report on the use of an instrument to measure exposure to stressors among 149 women presenting with their children for pediatric care at an urban primary care center. Overall, 38.3 percent of the women had significant levels of depressive symptoms; 71.4 percent of those in the "high stress" group had an adjusted prevalence odds ratio of 5.00 [95% CI = 2.12, 11.82]. We conclude that screening in the pediatric office is feasible for identifying women at high risk of becoming depressed. (*Am J Public Health* 1989; 79:1295–1296.)

Introduction

The prevalence of significant levels of depressive symptomatology is quite high among mothers of young children.[1,2] Most such women have regular and continuing contact with a pediatrician, thus placing the pediatrician in a position to detect maternal depression. In a prior study of mothers bringing children into an urban primary care center,[3] we found the overall prevalence of significant levels of depressive symptomatology to be around 35 percent. Maternal depression has been shown to be correlated with significant physical and mental health, and school/behavioral problems among school-aged children.[4–7] Thus, high levels of depressive symptomatology have implications for the well-being of children.

Many factors are associated with increased risk of depression among women, including exposure to psychosocial stressors, lower socioeconomic status, and single parenthood. Of these factors, exposure to psychosocial stressors may be of special importance.[8–11]* Exposure to stressors, unlike demographic factors, may be amenable to interventions that could reduce depressive symptoms. Ilfeld and others have demonstrated in large community-based studies that exposure to stressors is present *prior* to the onset of depression.[8,11,12] Thus, "screening" women for exposure to stressors could lead to the development of preventive interventions.

In this paper, we present data collected from women presenting with their children in a large pediatric practice who were administered a questionnaire to assess exposure to stressors, and an instrument to measure depressive symptoms.

Methods

Data were collected during April–May 1984 at an urban pediatric primary care practice based at Sinai Hospital in Northwest Baltimore city. Mothers of children ages 5–10 were eligible for inclusion if they presented with a child for any type of pediatric care during the study period. The age restriction was imposed because one study instrument was designed for use as part of a larger research effort to identify and reduce risks for school and behavioral problems. The refusal rate was less than 5 percent.

Exposure to stressors was assessed using the Social Environment Inventory (SEI), a self-report instrument which measures exposure to acute (i.e., life events) and chronic stressors (e.g., financial, marital, employment, housing problems).[13]

Depressive symptomatology was measured using the Center for Epidemiologic Studies Depression Scale (CES-D).[14] Contingency tables were constructed to evaluate potential associations between the independent variables and CES-D category (0-15, 16 or above), and prevalence odds ratios were calculated as a measure of the strength of associations.[15] A multiple logistic regression analysis was performed in order to evaluate the associations between each independent variable and depression (as a dichotomy), controlling for the effects of all of the other independent variables. The beta coefficients and standard errors from the logistic model were used to calculate adjusted odds ratios and 95 percent confidence intervals.

Results

During the study period, 149 women were administered the study instruments. As shown in Table 1, approximately 56 percent of the women were single parents; 84 percent were Black; 20 percent had less than a high school education.

Overall, 38.3 percent of the sample scored in the depressed range (16 or greater) on the CES-D, similar to the proportion depressed in our previous report.[3] As shown in Table 1, exposure to stressors was significantly associated with risk for depressive symptomatology. The prevalence of depression among mothers scoring in the upper third of scores on the SEI was about three times that of women scoring in the lowest or middle thirds of scores on the SEI, and the adjusted prevalence odds ratio was 5.00 (95% CI = 2.12, 11.82). Terms to represent exposure-confounder interactions were not included in the model, since there appeared to be homogeneity of effects across strata of the confounders.

Discussion

These data suggest a rather high prevalence of depressive symptomatology, especially among mothers exposed to high

*Longfellow C, Dill D, Makosky V, Zur-Szpiro S: Stressful Life Conditions and the Mental Health of Mothers. Paper presented at the Annual Meeting of the American Psychological Association, Los Angeles, California, 1981.

TABLE 1—Prevalence of Depressive Symptoms, and Odds Ratios by Demographic and Psychosocial Factors

Variable	N (149 total)	Percent Depressed	Unadjusted Prevalence Odds Ratio	Adjusted Prevalence Odds Ratio	95% CI for Adjusted Prevalence Odds Ratio
Marital Status					
Single, separated, divorced	82	47.6	2.72	1.62	.70–3.74
Married	64	25.0	+		
++					
Race					
Black	125	43.2	5.32	3.32	.84–13.09
White	24	12.5	+		
Education					
<12 yrs	29	55.2	2.34	1.82	.67–4.96
≥12 yrs	119	34.5	+		
+++					
Exposure to Stressors					
High	42	71.4	7.4	5.00	2.12–11.82
Mod, Low	107	25.2	+		

+ Reference category.
++3 missing observations for this variable.
+++1 missing observation for this variable.

levels of psychosocial stressors, the strongest predictor of depressive symptoms in the multiple logistic regression model.

An obvious limitation of these data is their cross-sectional nature. Women who have high levels of depressive symptomatology may systematically inflate self-reports of exposure to psychosocial stressors, or depression may lead to problems with family and children. Alternatively, there are sound empirical reasons to believe that the occurrence of life stress precedes the onset of depressive symptomatology.[8,11,12]

A woman who scores 10 or more on the stressor measure can be considered to be at high risk of being depressed. Most of the measured stressors are of a chronic nature, rather than transient events. It may be possible to develop primary preventive interventions that reduce exposure to some stressors or, alternately, enhance the skills or resources of the women to cope with psychosocial stressors. In this connection, prior research has shown that as the number of stressors to which a woman was exposed increased, so did the risk of depression.[8] One might infer then that reducing the number of stressors to which a woman was exposed could lead to a reduction in risk of depression. Such interventions might include referrals for assistance with child care, or housing, or other such programs. Working to improve the social conditions of mothers and children may be an effective means to reduce their exposure and/or vulnerability to socioenvironmental stressors and associated higher risks of maternal depression. This, in turn, may lead to decreased risk of physical and mental illness and school problems among children.

APPENDIX

The Social Environment Inventory (SEI)

The SEI is a self-report instrument which measures exposure to acute (i.e., life events) and chronic stressors (e.g., financial, marital, employment, housing problems). (It also has items to measure access to social support, but these were not included in the present analysis). The instrument was designed to be administered in the pediatric primary care setting to women with school age children, ages 5–10. It has been tested for both reliability and validity. The reliability assessment focused on reproduceability of scores over a 30-day period. Spearman's rank order correlation coefficient over the 30-day time period for exposure to stressors was .74. The validity assessment focused on construct validity. A measure of construct validity was depression, since exposure to stressors among women is known to be associated with depression. It was found that high levels of exposure to stressors as measured by the

SEI was significantly associated with an increased risk of depression (prevalence ratio = 3.7, p < .001). Additional analyses were conducted to determine if SEI stressor scores were associated with race or maternal education. Neither of these factors was significantly associated (using the chi square statistic for analysis) with SEI scores, suggesting that something other than those sociodemographic variables examined explained variation in scores.

The number of affirmative responses (i.e., experiencing a stressor) on the SEI are summed into a total "stress" score. In keeping with earlier analyses, scores were divided into approximately equal tertiles. For this analysis, the women with scores in the upper third (score of >10) were compared with those in the lower two-thirds.

REFERENCES

1. Zuckerman B, Beardslee W: Maternal depression: An issue for pediatricians. Pediatrics 1987; 79:110–117.
2. Belle D: Introduction. In: Belle D (ed): Lives in Stress: Women and Depression. Beverly Hills: Sage Publications, 1982; 11–23.
3. Orr ST, James SA: Maternal depression in an urban pediatric practice: Implications for health care delivery. Am J Public Health 1984; 74:363–365.
4. Weissman MM, John K, Merikangas KR, et al: Depressed parents and their children: General health, social, and psychiatric problems. Am J Dis Child 1986; 140:801–805.
5. Weissman MM, Gammon D, John K, et al: Children of depressed parents: Increased psychopathology and early onset of major depression. Arch Gen Psychiatry 1987; 44:847–853.
6. Weissman MM, Prufoff BA, Gammon GD, Merikangas KR, Leckman JF, Kidd KK: Psychopathology in the children (ages 6–18) of depressed and normal parents. J Am Acad Child Psychiatry 1984; 23:78–84.
7. Weissman MM, Paykel ES, Klerman GL: The depressed woman as mother. Soc Psychiatry 1972; 7:98–108.
8. Ilfeld FW: Current social stressors and symptoms of depression. Am J Psychiatry 1977; 134:161–166.
9. Roy A: Vulnerability factors and depression in women. Am J Psychiatry 1978; 133:106–110.
10. Paykel ES, Myers JK, Dienelt MN, et al: Life events and depression—A controlled study. Arch Gen Psychiatry 1969; 21:753–760.
11. Lin N, Dean A, Ensel W: Social Support, Life Events, and Depression. New York: Academic Press, 1986.
12. Kaplan GA, Roberts RE, Camacho TC, Coyne JC: Psychosocial predictors of depression: Prospective evidence from the Human Population Laboratory Studies. Am J Epidemiol 1987; 125:206–220.
13. Orr ST, James SA, Charney E: A social environment inventory for the Pediatric office . J Dev and Behav Ped (in print).
14. Radloff L: The CES-D Scale: A self-report depression scale for research in the general population. J Appl Psychol Measure 1977; 1:385–401.
15. Kleinbaum DG, Kupper LL, Morgenstern H: Epidemiologic Research: Principles and Quantitative Methods. Belmont, CA: Lifetime Learning Publications (Wadsworth, Inc), 1982.