Prevalence of Maternal Depressive Symptoms in Low-Income Hispanic Women

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Background: Maternal depression can have significant repercussions for the health and well-being of mothers and children. In primarily white middle-income populations, approximately 15% of mothers experience depression. Among ethnically and socioeconomically diverse populations, the prevalence of maternal depression has not been as well established. However, the highest rates have been observed among low-income women. Because information about minority, underserved women is particularly sparse, we utilize data from the San Mateo County, California, Prenatal to Three project to describe the prevalence and self-recognition of depressive symptoms among low-income Hispanic mothers of infants and toddlers.

Method: Telephone interviews of a random sample of women who received Medicaid and gave birth in San Mateo County provided our sample of 218 nonpregnant Hispanic mothers. High levels of depressive symptoms were defined as a score of ≥ 10 on the Edinburgh Postnatal Depression Scale (EPDS). We performed descriptive analyses and analyses of variance.

Results: Twenty-three percent of mothers reported high levels of depressive symptoms. Half of them recognized a need for help with depression.

Conclusions: High levels of maternal depressive symptoms were prevalent among the Hispanic women on Medicaid, but only half of the women experiencing these symptoms identified themselves as needing help with depression.

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Unrecognized and untreated depression in people of all ages, genders, and ethnicities in the United States is a serious public health problem. Depression is one of the leading causes of disability and can have long-term effects not only for the person experiencing the depression, but also for those who care for and interact with that person. Depression in mothers of young children is of particular concern, because experts have determined that maternal depression not only can negatively impact the woman but may also have many negative consequences for a child's development,[1–6] pediatric health care utilization,[7] and follow-up with pediatric preventive practices.[8]

Many mothers of young children are depressed. It is estimated that between 10% and 47% of mothers with young children are depressed.[9–12] While it is commonly accepted that maternal depression is widespread, the prevalence varies widely depending on differences in definitions or diagnostic criteria; age groups of women and children; and/or ethnic, racial, and socioeconomic groups. One significant limitation in establishing the exact prevalence is that there have been no large epidemiologic studies of maternal depression in the United States. Individual studies are limited to specific socioeconomic or ethnic populations or specific cohorts of women (i.e., adolescent mothers), and many have relatively small sample sizes.

A second important limitation is that an exact definition of maternal depression does not exist. Maternal depression may refer to depression experienced by mothers of children of any age but most often is applied to mothers of children preschool aged or younger. Thus, maternal depression includes but is not equivalent to postpartum depression. For the purposes of this study, we will use the "traditional" definition of maternal depression, referring to mothers of children preschool aged or younger who are experiencing a depression. Another contributing factor to the wide range of prevalence rates is the varying definitions of depression used in research. Depression may be narrowly defined, such as meeting the DSM-IV-TR criteria for major depression through a structured clinical interview, or it may be more broadly defined. Most studies invoke a broader definition, using validated self-report measures such as the Center for Epidemiologic Studies Depression Scale (CES-D), Beck Depression Inventory, or Edinburgh Postnatal Depression Scale (EPDS) to report high levels of depressive symptomatology rather than a diagnosis of depression. While the merits and limitations of each of these definitional approaches have been argued,[13] self-report measures have the advantages of being simple and inexpensive to administer as well as being able to detect mild depressive states that may be particularly important in maternal depression.

A vulnerable group that has been largely ignored is poor minority mothers of young children. Studies that describe the prevalence of postpartum or maternal depression among poor, Hispanic women are virtually nonexistent. Yonkers and colleagues[14] described postpartum depression rates among 604 Hispanic women who were followed in publicly funded inner-city maternal health clinics in Dallas, Tex. They found 35% of women at 3 weeks postpartum and 26% at 4 weeks postpartum scored 12 or greater on the EPDS and/or 18 or greater on the Inventory of Depressive Symptomatology.[14] Slightly higher percentages were found among African American women with rates of 45% and 34%, respectively. When the definition of postpartum depression was restricted to DSM-IV criteria for major depressive disorder and determined by the Structured Clinical Interview for DSM-IV (SCID) at 5 weeks postpartum, the rates were between 4.8% and 7.4% for Hispanic women and between 6.8% and 12.3% for African American women. This study concluded that the rates of major depressive disorder among this socioeconomically and ethnically diverse group were not higher than those reported among Caucasian, middle-class groups.[14] In a longitudinal study of 66 low-income, multiparous Mexican American women, Martinez-Schallmoser and colleagues[15] found 53% scored 16 or above on the CES-D at 6 weeks postpartum. Finally, Wolf and colleagues[16] found between 34% and 47% of mothers in 3 separate studies (2 in Costa Rica, 1 in Chile) assessed with the CES-D met the cutoff for depression (≥ 16). This study reinforces the cross-cultural nature of maternal depression and its prevalence among Hispanic women worldwide.

With the Hispanic community rapidly growing to become the largest minority group in the United States, it is particularly important to understand the extent, severity, and effects of maternal depression in this population. Research suggests that Hispanic women, particularly Mexican American adolescent girls,[17] have higher rates of depression than non-Hispanic women[18] but are less likely to be identified as depressed.[19] In San Mateo County, California, behavioral risk factor survey data show that the lifetime prevalence of depression in Hispanics is 37%, which is higher than the prevalence in the general population of 25%.[20] Despite higher prevalence rates, minorities access mental health services at lower rates than nonminorities.[21,22]

We utilized data from the 1999–2000 San Mateo County, California, Prenatal to Three (PTT) parental survey to describe the prevalence of, and associations with, maternal depressive symptoms in low-income Hispanic mothers of children aged 6 to 18 months.

METHOD

Data were originally collected for the San Mateo County Health Services PTT initiative as part of a program evaluation. The PTT program is a county-wide initiative designed to improve the health care system for low-income families and children. The program provides integrated health, mental health, and substance abuse services through a comprehensive service model to pregnant women and mothers of children under 4 years of age. It includes service coordination with numerous ancillary services in the public, private, and nonprofit sectors. Details of the program and interventions are described in the 2002 PTT Initiative evaluation report (San Mateo County Health Services Prenatal to Three Report; 2002, San Mateo, Calif.).

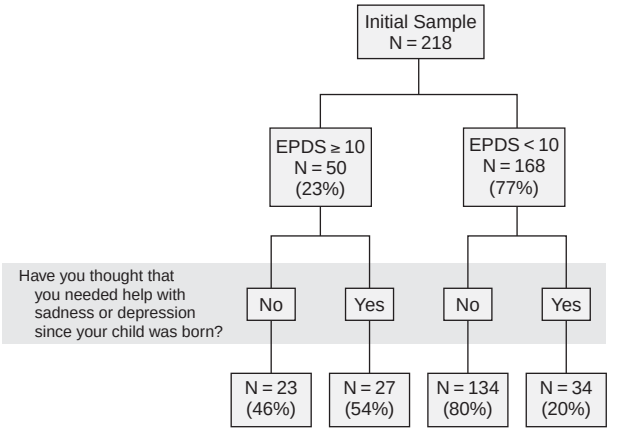
Original data were collected between February and April 2001 through telephone surveys conducted in Spanish or English based upon subject preference. To ensure validity of the survey, the interview was translated into Spanish and back-translated into English.

The initial sample included 1700 women who received Medicaid and gave birth in San Mateo County between February 1, 1999, and June 30, 2000. Medicaid records were used to identify the mother's most recent phone number. One thousand names were randomly selected and 842 eligible subjects identified. Surveyors attempted to contact 684 women to obtain a sample of 300 women. Of those contacted (N = 356), 300 were eligible and participated in the study, 30 participated in the pilot study, and the remaining 26 refused or were ineligible. All interviews were completed and included in the data set. Ap-

Table 1. Sample Characteristics of Hispanic Mothers (N = 218)

Variable	Value
Age, y	
Mean (SD)	26.5 (5.6)
Range	16–44
Education, mean (SD), y	8.8 (3.7)
Born outside of the United States, %	89
Self-identified nationality, %	
Mexican or Mexican American	78
Other Hispanic or Latino	22
Spanish interview, %	89
Married, %	86
Employed, %	35
Primiparous, %	35
No. of children, mean (SD)	2.11 (1.16)
Premature infant, %	6
Child with health problems at birth, %	13
Index child's age at interview, %	
6–12 mo	40
13–18 mo	58
< 6 mo or age not recorded	2

Figure 1. Low-Income Hispanic Mothers of Young Children (N = 218) Who Self-Identified as Needing Help With Depression



proval was obtained from the Mills-Peninsula Hospital institutional review board.

For this study, we limited the sample to biological mothers of index children aged 6 to 18 months, self-identified as Hispanic, who were not pregnant during the interview (N = 218). Pregnant mothers were excluded to avoid confounding depression during pregnancy with depression during the 6 to 18 months postpartum. We limited the sample to Hispanic mothers because the cell sizes for the other ethnic groups were too small to provide reliable estimates.

Measures

Telephone survey. The San Mateo County Parental Survey is a 30-minute telephone interview designed to evaluate the PTT Program. It was adapted from the Johns Hopkins University survey of parents participating in their "Healthy Steps for Young Children Program."[23] The survey uses a skip format where an affirmative answer leads to another question and a negative answer discontinues the line of questioning.

Depression scale. Depressive symptoms were measured by the EPDS.[24] It is a 10-item self-report scale that has been validated in English and Spanish,[24–27] as a telephone screening tool,[28] in ethnically diverse populations,[24–30] and in community samples.[28,30–32] It was originally designed to assess depressive symptoms in women who have recently given birth but has been validated as a depression screening tool in nonpostpartum women[33] and has been used to identify prevalence of depression in pregnant and postpartum Latino women.[14] It has a sensitivity of 90% to 100% and a specificity of 78% to 88% for the identification of major and minor depression with a cutoff score of 10 or greater.[24,25,27,32] In the PTT survey, English[24] or Spanish[27] versions were given based on the subject's language preference. The EPDS was chosen for this study because of its validated forms in English and Spanish, its simplicity, and its validation as a telephone screening tool.

We utilized demographic data (Table 1), total EPDS scores, and specific EPDS items in our analysis.

Analyses

High maternal depressive symptoms were defined as an EPDS score of 10 or greater for prevalence estimates. Percentages were calculated to determine prevalence of high levels of depressive symptoms, suicidal ideation, and a history of mental health treatment. Analyses of variance (ANOVAs) were used to evaluate the relationship between maternal depressive symptoms (mean EPDS scores) and demographic and child health measures. Self-recognition of depression was defined as a "yes" answer to the survey question, "Have you thought that you needed help with sadness or depression since your child was born?"

RESULTS

Sample Characteristics

As shown in Table 1, the sample was comprised of Hispanic mothers primarily in their mid-20s with less than a high school education. Most were immigrants, married, and not employed outside the home. Most had older children in addition to the index child; more were mothers of toddlers than of infants.

Prevalence of Maternal Depression

The prevalence of high levels of depressive symptoms (EPDS score ≥ 10) was 23% (N = 50). Of these 50 women, 54% (N = 27) thought they needed help with sadness or depression since their child's birth (Figure 1). When a

Table 2. Association of Individual Risk Factors to Mean EPDS Score by ANOVA

Risk Factor	EPDS Score, Mean (SE)	F	df	p Value
Age, y				
< 20	8.58 (1.07)	3.22	2,204	.04*
20–30	5.70 (0.39)			
> 30	5.78 (0.70)			
Education, y				
< 12	5.99 (0.38)	0.61	1,217	.43
≥ 12	5.42 (0.61)			
Country of origin				
United States	5.61 (0.99)	0.05	1,217	.83
Non–United States	5.84 (0.34)			
Marital status				
Married	5.70 (0.34)	0.73	1,217	.39
Not married	6.48 (0.85)			
Employment				
Yes (employed/ maternity leave)	5.76 (0.53)	0.01	2,216	.99
No (unemployed)	5.85 (0.41)			
Student or other	5.67 (1.93)			
Parity				
Primiparous	5.92 (0.54)	0.06	1,217	.80
Multiparous	5.75 (0.40)			
Index child's age, mo				
6–12	5.91 (0.51)	0.10	1,213	.75
13–18	5.70 (0.42)			
Spanish interview				
Yes	5.88 (0.34)	0.35	1,217	.55
No	5.26 (0.99)			
Have you EVER seen a mental health specialist in your life?				
Yes	7.22 (0.83)	3.37	1,217	.07
No	5.57 (0.34)			
Premature infant or < 5 lb				
Yes	6.21 (1.27)	0.10	1,215	.75
No	5.80 (0.33)			
Children < 2 years apart				
Yes	6.44 (0.81)	0.72	1,217	.40
No	5.70 (0.35)			
Child with health problems at birth				
Yes	4.79 (0.89)	1.56	1,216	.21
No	5.98 (0.34)			
Have you thought that you needed help with sadness or depression since your child was born?				
Yes	8.75 (0.56)	38.66	1,217	< .001**
No	4.67 (0.35)			
Did your primary doctor or other health professional talk with you about these feelings?				
Yes	8.41 (0.96)	0.24	1,60	.63
No	9.09 (0.91)			
Did they refer you to a mental health specialist?				
Yes	12.30 (1.37)	12.34	1,28	.002**
No	6.37 (0.99)			

*Statistically significant at $p < .05$.
**Statistically significant at $p < .01$.
Abbreviations: ANOVA = analysis of variance, EPDS = Edinburgh Postnatal Depression Scale.

more stringent criterion (EPDS score ≥ 12) was used, 13% (N = 28) of women met the criteria, and of these 28 women, 64% (N = 18) answered "yes" to needing help with sadness or depression. The mean (SE) EPDS score was 4.67 (0.35) for women who did not identify themselves as needing help with depression and 8.75 (0.56) for women who did identify a need for help with depression. Thirty-two (15%) of the 218 women self-reported a history of mental health treatment, while 13 (6%) reported suicidal ideation as defined by answering "quite often" or "sometimes" to the EPDS question "The thought of harming myself has occurred to me."

Relationship of Risk Factors to Mean Depression Scores

Results of the ANOVAs for 15 risk factors and their relationship to EPDS scores are listed in Table 2. Adolescent mothers and mothers who reported that they needed help for depression or were referred to a specialist had higher EPDS scores. History of mental health treatment showed a trend toward predicting high depression scores but was not statistically significant.

DISCUSSION

This study provides important information about maternal depressive symptoms among an understudied population of women—low-income, immigrant, Hispanic mothers of young children. The prevalence of EPDS scores consistent with clinically significant depressive symptoms was between 13% and 23%, depending on the cutoff score used (≥ 12 and ≥ 10 respectively). Our findings are similar to the prevalence found among young and lower-income non-Hispanic mothers of young children.[14,34] The prevalence of EPDS scores greater than or equal to 12 (13%) is approximately half that found among Latina women evaluated with a screening tool in the immediate postpartum month in Dallas, Tex. (26%–35%).[14] The lower rate of depressive symptoms found in our group may reflect a variety of factors. Because we used data from San Mateo County, California, which has a county-wide initiative to improve health care access and to integrate health care services, it is possible that PTT interventions decreased the prevalence of depression at the time of the survey. Another possibility is that among low-income Hispanic women, there is a lower prevalence of depressive symptoms among mothers of children between 6 months and 18 months of age than among mothers of newborns (3–4 weeks of age). The disparate rates may reflect demographic differences in the comparison groups that can affect rates of depressive symptoms (i.e., age, marital status, social support, and/or cultural differences including acculturation and ethnic identification). Finally, our study used only EPDS scores as criteria for determining clinically depressive symptomatology, while Yonkers

and colleagues[14] used a cutoff score on 1 of 2 different screening tools (EPDS or the Inventory of Depressive Symptomatology), thereby possibly increasing the percentage of positive screens. Our study design precluded testing these hypotheses, but these differences suggest areas for further study.

Among this group of immigrant, low-income, married, and unemployed mothers, being an adolescent was the only demographic factor related to higher depression scores. Studies of non-Hispanic mothers have found similar increased rates of depression among adolescents.[35] Adolescent mothers may have additional risk factors, regardless of race or ethnicity, that increase their likelihood for maternal depression. Because this sample was homogeneously low-income, as defined by their Medicaid status, and Hispanic, we could not explore the effects of socioeconomic status or ethnicity as independent risk factors for maternal depression.

We found that only about half (54%) of the women who were currently experiencing high levels of depressive symptoms recognized themselves as depressed or needing help with depression. Although this rate is slightly higher than previous studies in which 44% of women in primary care[36] and 32% of women with postpartum depression[37] recognized their depression, it is still unacceptably low. The reason for our relatively higher self-detection rate is unknown. We hypothesize that a broad question ("Have you thought that you need help with sadness or depression since your child was born?") rather than a specific question ("Do you feel that you are depressed?") may be conducive to affirmative answers. Conversely, it is important to note that 20% of women who did not have high levels of depressive symptoms at the time of assessment did report that they thought they had needed help with depression sometime during the interim since their child's birth. The open nature of the question with regard to the timing of the need for help with depression "since your child was born" leads us to believe that some women may have been depressed and improved with or without treatment prior to the telephone survey.

Limitations

There are 4 primary limitations of this study: (1) The sample is restricted to those with telephones. Women without telephones or who could not be contacted probably represent a population at greater risk of depression. (2) The survey was designed to evaluate a program and was not designed to answer the specific aims of this study. (3) The EPDS specifically targets feelings during the last 7 days. Thus, these data indicate the mother's most recent psychological state, and these states may be transient. However, the EPDS has been validated in this population with cutoff scores correlating highly with minor or major depressive episodes, which are, by definition, not transient, and therefore likely reflects an accurate estimate of the prevalence of clinically depressed women among this population. (4) The study population was limited to Hispanic women receiving Medicaid. Therefore, the findings may not be generalizable to other populations of Hispanic women or to non-Hispanic women.

Contribution of This Study

Most studies of Hispanic mothers are conducted in clinic populations affiliated with academic institutions, and the majority of studies focus on the immediate postpartum period. The strengths of this study are its utilization of a random community sample of underserved women about whom very little is known in regard to prevalence of maternal depression and its focus on mothers of older infants and toddlers beyond the 4- to 6-week postpartum period. It is the beginning of information upon which to understand the burden of depression among this population and upon which further research may be designed to evaluate the effects and possible interventions.

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