

DISPARITIES IN DETECTION AND TREATMENT HISTORY AMONG MOTHERS WITH MAJOR DEPRESSION IN LOS ANGELES

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Objective. We sought to determine disparities in detection and treatment histories among a group of racial and ethnically diverse mothers with major depression.

Method. Our sample included 276 racially and ethnically diverse mothers who participated in the Los Angeles Family and Neighborhood Survey and who were classified with major depression based on the Comprehensive International Diagnostic Interview—Short Form. We used logistic regression to assess the association between demographic factors and previous detection with major depression, mental health specialty use, and the use of a primary care physician among these women. The demographic factors examined included race and ethnicity, immigration status, marital status, education, income, body mass index (BMI), maternal age, number of children, children's ages, history of emotional problems, and history of diabetes.

Results. Results indicated that 69% of mothers had not been previously detected with major depression nor had they sought mental health treatment in the 12 months before the interview. The odds of having been previously diagnosed with major depression were significantly higher among White and single mothers, as well as among mothers with higher BMIs and those with a history of emotional problems. Nonimmigrant mothers without emotional problems had a higher odds of having seen a mental health specialist in the 12 months before the interview compared with immigrant mothers without emotional problems; no differences in mental health treatment were found between nonimmigrant and immigrant mothers with emotional problems. Finally, African-American mothers and those with a history of diabetes had significantly higher odds of seeing a primary care physician compared with Hispanic mothers and those with no history of diabetes, respectively.

Conclusion. Our analyses of a population of depressed mothers living in Los Angeles highlight the need for identification and treatment of racial minority and immigrant mothers.

Introduction

There is growing concern about the low rates of detection and care for depression among mothers (Chan et al., 2006). The problem is not a lack of effective treatments, as evidenced by the large number of studies that show successes of antidepressant drug treatment and therapy in helping mothers with depres-

sion (Dennis, 2005; Miranda et al., 2003; O'Hara, Stuart, Gorman, & Wenzel, 2000; Revicki et al., 2005; Wisner et al., 2004). Rather, the problem seems to lie in low rates of detection (Chaudron et al., 2005; Epperson, 1999).

There is evidence to suggest that there are disparities in rates of detection by race and ethnicity. For example, Borowsky et al. (2000) find that, after controlling for physician and type of insurance, African-Americans patients had lower odds of being diagnosed with mental health problems by a physician compared with Whites. Balsa, McGuire, and Meredith (2005) concluded that problems with communication are the primary cause of these differences in detection by race

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and ethnicity. Lewis-Fernandez, Das, Alfonso, Weissman, and Olfson (2005) similarly argued that the low rates of detection they find among Hispanics are driven by language differences, health literacy barriers, somatic presentations, and description of their symptoms of depression.

There is also evidence that minorities and immigrants are less likely to seek and/or receive treatment for depression and choose different types of care for depression (Borowsky et al., 2000; Lagomasino et al., 2005; Vega, Kolody, Aguilar-Gaxiola, & Catalano, 1999). Several studies find poverty to be the main cause of these differences in treatment (Balsa et al., 2005; Chow, Jaffee, & Snowden, 2003), yet many find racial differences remain even when socioeconomic status is accounted for (Borowsky et al., 2000; Lagomasino et al., 2005; Vega et al., 1999). Alegria et al. (2007) concluded that lower rates of treatment among certain groups of Hispanics are accounted for entirely by the lower rates of detection, as discussed. However, Dwight-Johnson, Sherbourne, Liao, and Wells (2000) also found differences in treatment rates to be correlated with treatment preferences and knowledge about depression. For instance, African-Americans and those with greater knowledge about counseling preferred counseling to treat depression rather than medication, compared with Whites and those less informed about counseling. Chow et al. (2003) also argue that racial and ethnic differences in paths of access (e.g., who gave the referral to the caregiver) play a major role in the type of treatment chosen. Other factors that explain disparities in detection and treatment include hesitation to seek treatment because of a lack of information, infrequent contact with medical professionals, lack of access to specialists, distrust of the health care system, and a lack of resources to cover medical costs (Anderson et al., 2006; Dwight-Johnson et al., 2000; McGuire et al., 2008; Sherbourne, Dwight-Johnson, & Klap, 2001).

Given the importance of detection in treatment, the goal of this study was to determine disparities in self-reported detection history and self-reported treatment histories among a group of racial and ethnically diverse mothers with major depression. This study focuses on a subsample ($n = 276$) of mothers who screened positive for major depression during wave one of the Los Angeles Family and Neighborhood Survey (L.A.FANS). Results from our original study on the entire sample, which included 1,856 mothers (15% of whom screened positive for major depression), showed that non-Hispanic White mothers had 1.67 times the odds of having major depression than Hispanic mothers (95% confidence interval [CI], 0.99–2.80; Lara-Cinisomo & Griffin, 2007) in this sample. Herein, we have used logistic regression to assess the association between demographic factors and previous detection with major depression, mental health

specialty use, and the use of a primary care physician among depressed mothers in the L.A.FANS sample. The demographic factors examined included race and ethnicity, immigration status, marital status, education, income, body mass index (BMI), maternal age, number of children, children's ages, history of emotional problems, and history of diabetes.

Methods

L.A.FANS Study Design

This study was based on data from wave 1 of L.A.FANS, which was fielded in a sample of 65 census tracts throughout Los Angeles County in 2000–2001. L.A.FANS was based on a stratified, multistage, clustered sampling design (see Sastry, Ghosh-Dastidar, Adams, & Pebley, 2006, for more detail). Tracts within each strata were sampled with probabilities proportional to the population size of the tract, and to achieve an oversampling of poor families, 20 tracts were sampled in both the poor and very poor strata and 25 tracts were sampled in the non-poor stratum. Next, census blocks were sampled within each tract with probabilities proportional to the block population size, and all dwelling units in sampled blocks were listed. Fifty households were sampled within each block and screened, and approximately 40–50 households were interviewed in each tract, for a total sample size of 3,090 households.

Data Collection

L.A.FANS included both in-person interviews and a survey of neighborhoods (see Sastry, et al., 2006). In-person interviews were conducted by trained data collectors. Respondents provided informed consent, which was approved by a Human Subjects Protection Committee, before the interview was administered. Computer-Assisted Personal Interviewers were used to conduct these interviews. Interviews were conducted in Spanish or English, depending on the participant's preference.

Sample

As noted, the original study was based on 1,856 mothers. The analysis for this paper was based on the 276 mothers who met criteria for major depression using the Comprehensive International Diagnostic Interview—Short Form (CIDI-SF) during the wave-one interview. The CIDI-SF focuses on the 12 months before the screening and identifies mothers who meet the criteria for a diagnosis of major depression. For this paper, we refer to these mothers in the study as “depressed.”

Unweighted descriptive statistics for the analytic sample are reported in Table 1. Four racial and ethnic groups were represented in the data. The largest group was Hispanics (60%), followed by non-Hispanic

Table 1. Descriptive Statistics for Analysis Sample*

	<i>n</i>	%
Depressed mothers (<i>n</i> = 276)		
Race and ethnicity		
White non-Hispanic	63	23
Hispanic	166	60
Black non-Hispanic	37	13
Asian/Pacific Islander	10	4
Immigration status		
Immigrant	156	57
Nonimmigrant	120	43
Economic resources (\$)		
Income (M ± SD)	39,791 ± 59,313	
Assets (M ± SD)	79,596 ± 342,752	
Marital status		
Married	152	55
Cohabitating	35	13
Single	89	32
Education		
Less than college	246	89
College and Beyond	30	11
Depressed mothers (<i>n</i> = 276)		
Body weight		
Underweight (BMI < 18.5)	0	0
Normal weight (BMI 18.5–24.9)	89	32
Overweight (BMI 25.0–29.9)	118	43
Obese (BMI > 30)	69	25
Age (M ± SD)	36.15 ± 9.07	
No. of children	2.05 ± 1.10	
Child composition		
≥1 infant [†]	31	11
≥1 preadolescent child [‡]	212	77
Only adolescents [¶]	33	12
History of emotional problems		
Yes	53	19
No	223	81
History of diabetes		
Yes	29	11
No	247	89

* Unweighted.

[†] At least 1 infant (child under the age of one year) in the household, although household could include one or more children between 1 and 17 years of age.

[‡] This variable identifies mothers with at least one child between 1 and 14 years of age but with no infants and can include an adolescent between 15 and 17 years of age.

[¶] This variable identifies mothers with one or more child between 15 and 17 years of age but no children from any other age groups.

Whites (23%); 13% of mothers were non-Hispanic Blacks and 4% were Asian/Pacific Islanders. Maternal age ranged from 17 to 67 years (mean, 36.15; standard deviation, 9.07).

Measures

L.A.FANS screened for major depression using the CIDI-SF, an international protocol adopted by the World Health Organization (Kessler, Andrews, Mroczek, Ustrun, & Wittchen, 1998). This instrument screens for a major depressive episode during the 12-month period preceding the interview and estimates the probability that a respondent had major depression

based on the *Diagnostic and Statistical Manual of Mental Disorders, 4th edition* criteria for a major depressive episode (Wang & Patten, 2002). Based on a standard cutpoint, participant probability scores were dichotomized to indicate whether a woman has major depression (e.g., has a probability score ≥ 0.55) or not. The CIDI-SF is a valid, reliable diagnostic interview and has been shown to have 93% classification accuracy for major depressive disorders (Kessler et al., 1998).

Detection history. The first dependent variable of interest was a self-report of previous detection. Specifically, mothers were asked, "Has a doctor ever told you that you have major depression?" Responses were dummy coded, with those who endorsed the question coded equal to 1 and others coded equal to 0.

Self-reports of diagnosed major depression are subject to the same potential for measurement error as other self-reports of medical conditions. Most of the studies that compare self-reports of medical conditions focus on chronic physical conditions such as heart disease, diabetes, and cancer (Harlow & Linet, 1989; Newell, Girgis, Sanson-Fisher, & Savolainen, 1999; Okura, Urban, Mahoney, Jacobsen, & Rodeheffer, 2004; St Sauver et al., 2005). These studies found that agreement varies by condition, with the highest level of agreement on conditions that are well-defined and easily diagnosed. Furthermore, Okura et al. (2004) found that women, younger people, and those with higher levels of education have higher levels of agreement across reports. Fendrich, Johnson, Wislar, and Nageotte (1999) used a sample drawn from an inner-city medical center to compare parent reports of child psychiatric and orthopedic outpatient care use to medical records. The study found greater accuracy on reports of psychiatric care use and decreasing accuracy with time since reported use, indicating that memory is the important factor influencing misreporting rather than fear of social stigma. Baker, Stabile, and Deri, (2004) discuss the superiority of specific questions, such as "Have you been diagnosed with major depression by a physician/doctor in the last 12 months?" over more general questions such as "Have you ever been told by a doctor you have depression?" and argue that these questions are less subject to measurement error and more comparable across studies.

Mental health specialty use. The second dichotomous dependent variable was a self-report of whether a mother sought treatment by a psychiatrist, psychologist, or a counselor in the 12 months before the interview. Duration of treatment was not assessed. We note that this outcome only captures mental health specialty use. The variable was dummy coded, with mothers who reported having seen a mental health professional in the 12 months before the interview coded equal to 1 and others coded equal to 0. This self-reported variable

is the best proxy for mental health treatment available in our data.

Primary care use. Our third outcome of interest was self-report of the use of a primary care physician or nurse in the previous 12 months before the interview date. Specifically, respondents were asked “In the past 12 months, that is since [month specified] of last year, about how many times have you seen a doctor, nurse, or other health professional about your health?” In our study, we refer to this as “primary care use.” The L.A.FANS dummy coded responses as to whether or not they saw a doctor or nurse in the past year.

Although the purpose for the primary care visit was not part of the interview protocol, we chose to examine this outcome because the research shows that more than 50% of patients seeking care for depression do so in primary care settings, and the use of primary care to both diagnose and treat depression is becoming more common over time (Stafford, MacDonald, & Finkelstein, 2001; Wang et al., 2005). Additional studies have shown that women, people over age 65, minorities, people with lower levels of education, and people with physical conditions are more likely to seek care for depression in a primary care setting (Cooper-Patrick, Crum, & Ford, 1994; Gaynes et al., 2007; Leaf et al., 1988). Several of these studies indicate that the differences in care type (e.g., physician versus mental health professional) are driven by attitudes about, and interpretation of, symptoms rather than by actual symptomatic differences. For this study, we used the same coding created by the L.A.FANS. That is, mothers who reported having seen a primary care professional in the 12 months before the interview were coded as 1, with others coded as 0.

Explanatory variables. Race and ethnicity, and immigration status were the primary maternal characteristics of interest. Unlike in the original study, where we examined 3 immigration status categories (undocumented, documented, and nonimmigrant), here we chose to collapse undocumented and documented mothers into 1 group, which we refer to as immigrant, and compared these mothers with nonimmigrant mothers, because results from the univariate models fit here indicated no significant differences existed between undocumented and legal immigrants in detection history and treatment history. Thus, immigration status was dummy coded, with immigrant mothers coded as the reference group.

We also included covariates reported in the original study, such as family income, family assets, maternal marital status, maternal education, BMI, number of children, and child age composition (Lara-Cinisomo & Griffin, 2007). Family income includes income for all members of the nuclear family from all sources (Lara-Cinisomo & Griffin, 2007). Total family assets

include savings accounts, property, and business investments, as well as ownership of stocks and bonds. Income and assets were included as log-transformed continuous variables in our models to account for skewness in these measures. For the purposes of reporting our bivariate results in Table 2, these variables were dichotomized into those with values less than or equal to the median and those with values greater than the median.

Finally, to control for possible comorbidity, we included self-reported history of emotional problems and other mental health problems and self-reported history of diabetes. Participants were asked the following stem question: “Has a doctor ever told you that you have . . .” with “emotional, nervous, or psychiatric problems” as 1 condition and “diabetes” as another. Self-reports of diagnosed emotional problems are subject to the same potential for measurement error as self-reports of diagnosed depression, although the specificity of the question should minimize this error for both. Several studies report other mental health problems in patients with depression (Gaynes et al., 2007; Ohayon & Schatzberg, 2002; Sartorius, Ustun, Lecrubier, & Wittchen, 1996; Simon & VonKorff, 1995). In particular, results from previous studies have shown elevated risk of depression among those diagnosed with type 2 diabetes (Arroyo et al., 2004; Carnethon et al., 2007). A history of emotional problems or other mental health problems were labeled “emotional problems” and was dichotomized with “no” as the reference group. Similarly, a history of diabetes was dummy coded with “no” responses as the omitted group.

Analysis Plan

The primary analysis goal was to identify factors associated with previous detection of major depression and mental health use among depressed mothers, while paying special attention to race and ethnicity and immigrant status differences. As a secondary analysis, we also examined factors associated with primary care use among our sample of depressed mothers. For each outcome, we used logistic regression models and χ^2 tests that appropriately controlled for the sampling design used in the L.A.FANS. Specifically, three aspects of the L.A.FANS design must be accounted for when analyzing the data: stratification of tracts by poverty level, clustering of women within tracts, and use of sampling weights equal to the inverse probability that a woman was sampled for the study. Controlling for the clustering of women within neighborhoods ensured that our regression models had unbiased standard error estimates. Controlling for the stratification and use of the sampling weights in the regression models ensured that our inferences would be generalizable to the population from which these women were sampled (i.e., all neighborhoods and households in Los Angeles County). The SVY

Table 2. Weighted Frequencies* and Weighted Percent Distributions for Outcomes of Interest by Key Covariates With Statistically Significant Differences in the Probability of a Given Outcome Between Groups Within One Demographic Factor Assessed Through Bonferroni Corrections and Denoted by Three asterisks (*p*-values < .05/36)

	Detection History		Mental Health Specialty Use		Primary Care Use	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Total	56	21	48	18	228	85
Race and ethnicity						
White non-Hispanic	30	40***	25	33***	68	90
Hispanic	15	10	13	9	122	81
Black non-Hispanic	6	23	6	21	26	98
Asian/Pacific Islander	3	24	4	41	9	83
Immigration status						
Immigrant	17	12	14	10***	119	82
Nonimmigrant	38	31	34	28	110	89
Log income						
Lower 50%	29	22	18	14	106	81
Top 50%	27	20	31	23	123	90
Log assets						
Lower 50%	28	23	14	11	102	83
Top 50%	27	19	39	27	127	88
Marital status						
Single	27	31	21	24	74	86
Cohabiting	6	22	3	10	26	87
Married	23	15	26	17	130	85
Education						
Less than college	51	21	39	16	203	84
College and beyond	5	20	10	38	26	97
Body weight						
Underweight (BMI > 18.5)	0	0	0	0	0	0
Normal weight (BMI 18.5 - 24.9)	14	15	19	21	76	83
Overweight (BMI 25.0 - 29.9)	21	18	20	17	98	85
Obese (BMI < 30)	22	34	11	17	57	89
Age						
≤35	17	14	17	14	102	83
>35	39	27	32	22	127	88
No. of children						
Only 1 child	30	31	17	18	82	85
>1 child	26	15	33	19	148	86
Child composition						
≥1 infant	2	9	5	20	23	85
≥1 preadolescent child	43	21	35	17	171	84
Only adolescents	12	32	10	27	35	93
History of emotional problems						
Yes	35	66***	23	43***	51	95
No	21	10	26	12	178	83
History of diabetes						
Yes	78	33	7	22	32	99***
No	6	19	42	18	196	83

* Weighted frequencies rounded; weighted total sample size = 268.

*** *p* < .001.

(survey) command in STATA was used to control for these three factors in our logistic regression models.

Our analysis proceeded in two steps. First, we examined differences in the probability of detection, mental health specialty use, and use of a primary care physician by race and ethnicity, immigration status, income and asset categories, marital status, education, weight, maternal age, number of children, child age composition, history of emotional problems, and history of diabetes in bivariate models. The analyses for detection history, mental health specialty use, and use

of a primary care physician were done separately. Rao-Scott χ^2 statistics were calculated to test for statistically significant differences across all groups while adjusting for the stratification and clustering of the sample design and incorporating sample weights (Lee & Forthofer, 2006). Additionally, statistical significance was assessed using Bonferroni corrections to avoid finding erroneous associations in the presence of multiple testing.

Next, we estimated separate multivariate logistic regression models for the probability of previous

detection of depression, mental health specialty use, and use of a primary care physician to determine which demographic variables were still significantly associated with our outcomes after controlling for all the other factors. For each set of models, all 2-way interaction terms were fit and significance was assessed at the .05 level. Additionally, post-estimation tests were conducted to determine whether there were significant differences between the other race and ethnicity categories versus one another on the odds of each outcome (e.g., Black vs. White; White vs. Asian; and Black vs. Asian); significance was assessed at the .05 level. All logistic regression models appropriately controlled for stratification, clustering, and sampling weights.

Results

The results of our weighted analysis indicated that 69% (185 mothers) of the depressed mothers who screened positive for major depression using the CIDI-SF had not been previously identified with major depression by a doctor nor had they sought mental health treatment in the last 12 months (Figure 1). Only 8% of the weighted sample (21 mothers) said they had been previously told by a physician that they had major depression or were diagnosed with major depression and had sought health treatment in the 12 months preceding the interview. An additional 10% (27 mothers) reported they had never been diagnosed with major depression but had sought mental health treatment in the 12 months before the interview. The remaining 13% of mothers ($n = 35$) had been previously diagnosed but had not sought treatment in the 12 months preceding the interview. Given our primary interest in mental health treatment history, Figure 1 focuses on mental health treatment history only. As Table 2 shows, the vast majority of depressed mothers in our sample sought care from a primary care physician during the 12 months before the date of the interview.

Table 2 shows the weighted distribution of detection and treatment history by key demographic variables, with statistically significant differences in the probability of a given outcome between groups within 1 demographic factor assessed through Bonferroni corrections and denoted by three asterisks (e.g., p -values $< 0.05/36$). The family-wise error rate for the Bonferroni correction is .05 in this analysis. The results indicate that White depressed mothers were almost twice as likely to have been previously detected with major depression compared with ethnic and racial minorities in the study, and Hispanics have the lowest rates of detection (10%). Nonimmigrant depressed mothers had significantly higher rates of mental health specialty use (28%) than immigrant depressed mothers (10%). Mothers with a history of emotional problems also had significantly higher detection rates (66%) and mental health specialty use (43%) compared with mothers with no reported history of emotional problems. A self-reported history of diabetes was associated with higher primary care use. Ninety-nine percent of mothers with a history of diabetes reported primary care use in the 12 months before the study interview compared with their counterparts (83%).

Table 3 shows results from the multivariate logistic regression models of detection history, mental health specialty use, and primary care use. The first column shows the results from the multivariable model for the probability of having been previously detected with major depression. After controlling for key covariates, the results indicate that race and ethnicity differences found in the bivariate analysis remained significant. White depressed mothers had odds of being identified with major depression that were more than 6 times greater than they were for Hispanic depressed mothers (OR, 6.56; 95% CI, 1.23–34.97). Differences found by immigration status in the univariate analysis did not persist after controlling for maternal race and ethnicity, marital status, education, income, BMI, age, number of children, child age composition,

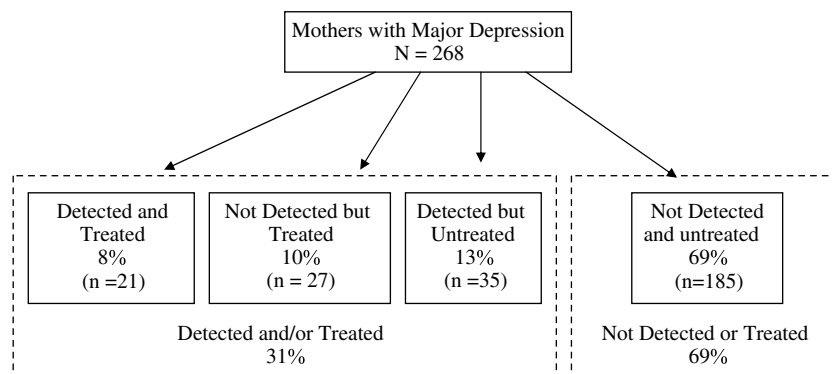


Figure 1. Weighted summary statistics on self-reported detection and self-reported treatment histories for the 276 (weighted total sample size = 268) mothers with major depression in wave one of L.A.FANS. Notes: "Detected" defined as report that physician told respondent she had major depression. "Treated" defined as report of having seen a psychiatrist, psychologist, or counselor for a health problem or check-up in the past 12 months. We refer to this as "mental health specialty use" in our regression models.

Table 3. Odds Ratios and 95% CIs From Multivariate Weighted Logistic Regression Models for Indicators of Detection History, Mental Health Specialty Use, and Primary Care Use[†]

	Model 1 Detection History OR (95% CI)	Model 2 Mental Health Specialty Use OR 95% CI)	Model 3 Primary Care Use OR (95% CI)
Race and ethnicity			
Non-Hispanic White	6.56 (1.23–34.97)*	2.62 (0.74–9.28)	1.77 (0.63–4.99)
Black	0.87 (0.11–7.10)	0.96 (0.27–3.45)	12.33 (1.87–81.23)**
Hispanic	1.0	1.0	1.0
Asian/Pacific Islander	3.31 (0.34–32.39)	7.42 (0.65–84.75)	0.60 (0.07–4.88)
Immigration status			
Immigrant	1.0	1.0	1.0
Nonimmigrant	1.29 (0.31–5.37)	5.76 (1.84–18.05)**	0.94 (0.34–2.64)
Economic resources			
Log income [‡]	0.89 (0.73–1.08)	1.02 (0.70–1.49)	1.21 (0.98–1.50)
Log assets [‡]	1.07 (0.88–1.31)	1.09 (0.92–1.29)	1.02 (0.91–1.14)
Marital status			
Single	4.48 (1.16–17.30)*	1.84 (0.54–6.30)	0.98 (0.32–3.00)
Cohabiting	2.08 (0.51–8.52)	0.51 (0.11–2.27)	1.88 (0.53–6.72)
Married	1.0	1.0	1.0
Education			
Less than college degree	1.0	1.0	1.0
College degree	0.32 (0.06–1.74)	1.85 (0.67–5.12)	6.99 (0.70–69.55)
BMI	1.14 (1.04–1.25)**	0.99 (0.99–1.12)	1.04 (0.95–1.14)
Age	1.04 (0.98–1.11)	0.98 (0.92–1.05)	0.99 (0.93–1.04)
No. of children	0.99 (0.63–1.54)	1.45 (0.82–2.57)	1.35 (0.84–2.16)
Children			
≥1 infant	1.26 (0.28–5.63)	1.71 (0.45–6.53)	0.69 (0.19–2.49)
≥1 preadolescent child/no infants	1.0	1.0	1.0
Only adolescents	1.16 (0.26–5.11)	2.12 (0.57–7.96)	2.94 (0.67–12.96)
Comorbid health conditions			
History of emotional problems			
No	1.0	1.0	1.0
Yes	31.98 (10.09–101.29)***	20.36 (3.78–109.69)***	3.61 (0.82–15.91)
Nonimmigrant *emotional problems	—	.12 (0.01–1.01)*	—
Diabetes			
No	1.0	1.0	1.0
Yes	1.51 (0.49–4.61)	1.56 (0.44–5.55)	34.89 (2.88,423.25)**

[†] $N = 276$. The outcomes are listed in each column and the predictor variables are listed in the rows with the reference category for each categorical variable denoted by a 1.0.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

[‡] Log income and log assets are continuous variables in these models.

history of emotional problems, or history of diabetes. Additional significant predictors of detection include marital status, BMI, and history of emotional problems. Single depressed mothers had more than four times greater odds of being detected with major depression compared with married depressed mothers (OR, 4.48; 95% CI, 1.16–17.30); increasing BMI was positively associated with the probability of having been identified with major depression (OR, 1.14; 95% CI, 1.04–1.25). Depressed mothers with a history of emotional problems had significantly higher odds of having been previously identified with major depression compared with depressed mothers with no self-report of emotional problems (OR, 31.98; 95% CI, 10.09–101.29). Results from the post-estimation test indicated that White depressed mothers had 7 times greater odds of being detected than Black mothers

(OR, 7.53; 95% CI, 1.81–31.33; results were obtained through regression output used for compiling Table 3). No significant 2-way interactions were found in the model of detection history and, therefore, none were included in the final model reported herein.

The second column of Table 3 shows the results for having sought mental health treatment in the 12 months before the interview (see Model 2). The only two factors significantly associated with seeking mental health treatment were nonimmigrant status and history of emotional problems. We also found a significant interaction effect between nonimmigrant status and reported history of emotional problems. Including this interaction in the model, we found that the effect of immigration status on the odds of seeing a mental health specialist disappears among mothers with emotional problems. In particular, among depressed

mothers without emotional problems, nonimmigrant mothers had a 5.76 times higher odds of having seen a mental health specialist in the 12 months before the interview compared with immigrant mothers (OR, 5.76; 95% CI, 1.84–18.05), whereas there was no difference between nonimmigrant and immigrant depressed mothers among mothers with emotional problems (OR, .69; 95% CI, .15–3.06; results were obtained through regression output used for compiling Table 3). Race and ethnicity were not significantly associated with mental health specialty use. As expected, having a history of emotional problems significantly increased the odds of mental health care use for all mothers. (The odds ratio for immigrant depressed mothers was 20.36 [95% CI, 3.78–109.69].)

Finally, results from our third model (see the third column in Table 3) indicate that there were significant racial and ethnic differences in the use of a primary care physician among depressed mothers in our study. Black depressed mothers had a more than 12 times higher odds of having sought primary care physician in the 12 months before the study interview compared with Hispanic depressed mothers (OR, 12.33; 95% CI, 1.87–81.23). Results also indicated that only one of the two comorbid conditions included in model 3 was significant. The results show that depressed mothers who reported being told that they had diabetes had close to 35 times higher odds of having sought primary care in the 12 months before the study interview compared with depressed mothers who did not report having diabetes (OR, 34.89; 95% CI, 2.88–423.25). The post-estimation test also indicated that White depressed mothers had significantly lower odds of primary care use than Black depressed mothers (OR, 0.14; 95% CI, 0.02–0.90); Asian/Pacific Islander depressed mothers also had lower odds of primary care use compared with Black mothers (OR, .05; 95% CI, 0.00–0.68). No significant 2-way interactions were found in the model of primary care use; therefore, none were included in the final model reported herein.

Discussion

Our analyses of a population of depressed mothers living in Los Angeles demonstrated that race and ethnicity were significantly associated with both detection and primary care use. Among depressed mothers, White depressed mothers had better odds of having been detected with major depression compared with both Hispanic and Black depressed mothers. However, Black depressed mothers had significantly better odds of having sought primary care use than White depressed mothers. Additionally, depressed mothers who reported a history of diabetes had significantly higher odds of having sought primary care use compared with depressed mothers with no reported his-

tory of diabetes. Given that diabetes requires ongoing treatment, it is not surprising to see that depressed mothers with diabetes had significantly higher odds of having sought primary care use in the 12 months before the interview. Still, the detection and primary care use results demonstrate important racial and ethnic disparities after controlling for diabetes and other key factors, with Hispanic mothers having lower odds of detection and primary care use. It is estimated the approximately 50%–75% of individuals with depressive disorders are underdiagnosed and undertreated in primary care settings despite the availability of screening tools and treatments (Depression Guideline Panel, 1993a, b; Katon et al., 2001; Miranda & Muñoz, 1995; Mulrow et al., 1995; Muñoz et al., 1995). Furthermore, previous investigators have shown that Hispanic mothers are less likely to seek mental health treatment or to discuss depressive symptoms with their primary care provider (Borowsky et al., 2000; Hu, Snowden, Jerrell, & Nguyen, 1991; Padgett, Patrick, Burns, & Schlesinger, 1994). Our findings also support previous research that has shown that mental health disorders are more often detected in Whites compared with other racial groups (Borowsky et al., 2000). However, Blacks with knowledge about depression have higher odds of seeking treatment compared with Whites (Dwight-Johnson et al., 2000). Specifically, Black depressed mothers in our sample had a more than 12 times higher odds of primary care use than White depressed mothers in our sample.

Results also revealed disparities by immigrant status. We found that nonimmigrant depressed mothers without emotional problems were more than five times as likely to have sought mental health treatment compared with depressed immigrant mothers without emotional problems. Given that the vast majority (86%) of our immigrant population were Hispanic mothers, we believe the immigrant status differences found relate to differences between Hispanic immigrant mothers and nonimmigrant mothers of all race and ethnicities. However, we were unable to formally test this hypothesis. With only 276 depressed mothers in our sample, our analysis lacked sufficient power to detect significant 2-way interactions between our key predictors of major depression. Of particular interest would be to detect interactions that may exist between race and ethnicity and immigration status, as well as the interactions these variables may have with the other covariates studied in this paper. Still, our results support previous findings, which suggest that ethnic minorities and immigrant populations are less likely to seek mental health treatment (Lagomasino et al., 2005; Vega et al., 1999). Some researchers suggest that this might be the case because ethnic minorities and immigrants may rely on family networks when experiencing psychological distress instead of seeking

professional help (Vega et al., 1999). Others argue that it may be the result of a lack of health care coverage, language and cultural barriers, and low health literacy (Lewis-Fernandez et al., 2005).

Results from our analyses indicated that maternal characteristics, such as age, number of children, or and child age composition were not significant. However, marital status and BMI were significant associated in the detection of major depression. As Borowsky et al. (2000) have demonstrated, single depressed mothers had significantly higher odds of having been previously detected compared with married depressed mothers. With respect to BMI, mothers with higher body weight were more likely to have been previously detected with major depression. However, our results also show that single depressed mothers and depressed mothers with higher BMIs did not have higher odds of seeking treatment, highlighting the gap between previous diagnosis and treatment for these depressed mothers. This finding also highlights the importance of actual depression screening by physicians and other health professionals among depressed mothers who are at increased risk of being underidentified and the importance of follow-up for patients diagnosed with major depression. Although additional analyses are required to disentangle the links between marital status, body weight, depression diagnosis, and mental health treatment to determine directionality, it is equally—if not more—important to determine factors preventing these depressed mothers from seeking treatment.

Although this study provides a detailed look at detection and treatment history among a sample of diverse depressed mothers in Los Angeles, we acknowledge some limitations. First, the validity of self-report data is always suspect because of the possibility of response bias, which occurs when participants respond to items in a socially acceptable manner rather than in a completely truthful manner. However, a review of the literature shows that self-reports do, generally speaking, provide accurate data (e.g., Calsyn, Allen, Morse, Smith, & Tempelhoff, 1993; Goldberg, Seybolt, & Lehman, 2002).

A second limitation is the lack of information about the purpose of the primary care and mental health specialty care visit. Without this information, we cannot determine whether depression was the reason for treatment use. However, we can use primary care and mental health use as proxies to determine care patterns among depressed mothers in our study. Thus, our study captures use well, which was the intention.

Third, mothers were asked if they had ever been told by a doctor that they have major depression, emotional problems, or diabetes, which raises issues about temporality and reliability of self-reported detection histories. Mothers could have been told they had major depression, emotional problems, or diabetes years

before the study interview. Therefore, we are unable to determine whether detection occurred during the selected timeframe (i.e., 12 months before the study interview). Future studies should provide more specific timeframes and ask more detailed questions about previously detected histories, including whether medication or referrals were provided and whether tests had been conducted to confirm the health providers “diagnosis.”

Fourth, although this study focused on a diverse group of depressed mothers, it is limited to Los Angeles County, which limits the generalizability of the results to populations of depressed mothers from similar urban areas in the United States.

Finally, the weighted analysis of this sample leads to rather large CIs for many of our estimated odds ratios and thus yields less certainty about the exact magnitude of our key effects, particular in regard to the effects of race and ethnicity on our outcomes as well as the primary care use outcome. Future studies that could reduce these uncertainties would be useful.

Despite these limitations, this study has multiple strengths, including the inclusion of a racially and ethnically diverse sample of mothers. In fact, the results highlight the importance of including a diverse population. The results also reveal important disparities in mental health treatment by immigration status, with immigrant depressed mothers having lower odds of mental health use than nonimmigrant depressed mothers. Additionally, all our models controlled for comorbidity, including history of emotional problems, a strong predictor of both identification and treatment in this population whose exclusion from the models could have yielded confounded results. An added contribution of this study is the longitudinal perspective and the level of investigation. Therefore, when L.A.FANS follow-up data collection is complete, we will examine the impact of these disparities over time across neighborhoods. Finally, this study has clinical implications. The racial and ethnic disparities in detection and primary care use highlight the importance of physician training to both identify depression within their settings and the importance of providing information to ethnic minority women about the benefits of speaking with their primary care provider about mental health concerns they may have. With regard to mental health services use, this study highlights the importance of reaching out to immigrant mothers to inform them about the various mental health treatment options available and the benefits of seeking mental health treatment.

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