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Mental Health Care Use in Relation to Depressive Symptoms among Pregnant Women in the United States

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SUMMARY

We examined mental health care use in relation to depressive symptoms (PHQ-9 10) among a nationally representative sample of pregnant women using data from the National Health and Nutrition Examination Survey 2005–2012. Logistic regression models estimated crude and adjusted odds ratios for mental health care use in past year in relation to depressive symptoms. While 8.2% (95% CI: 4.6–11.8) of pregnant women were depressed, only 12% (95% CI: 1.8–22.1) of these women reported mental health care use in past year.

Keywords

pregnancy; depression; mental health care; treatment; access

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Disclosures

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Previous presentation

None

Introduction

Major depressive disorder is the leading cause of disability among women of reproductive age (World Health Organization 2008) and a major public health concern. One in 8 women experience perinatal depression (Gavin et al. 2005) which is associated with negative birth (Grote et al. 2010), infant (Britton et al. 2001), and child outcomes (Deave et al. 2008).

Perinatal depression is also under-diagnosed and under-treated (Byatt et al. 2012). Despite legislation and numerous recommendations to screen for perinatal depression, screening remains controversial because screening alone does not translate into improved outcomes (Thombs et al. 2014). While much of the legislation and recommendations have focused on detection and treatment of postpartum depression, more than 50% of women with postpartum depression enter pregnancy depressed or have an onset during pregnancy (Wisner et al. 2013). Thus, it is critical to detect and treat depression during pregnancy. There is a dearth of studies examining mental health care use among pregnant women as it relates to symptoms of depression. Thus, the purpose of this study is to examine mental health care use in relation to depressive symptoms among pregnant women.

METHODS

We analyzed data from the National Health and Nutrition Examination Survey (NHANES) 2005–2012, a nationally representative survey of the civilian non-institutionalized population in the US. NHANES first asked about mental health care use in 2005–2006. NHANES includes a household interview and a physical examination in a mobile examination center (MEC) that includes laboratory tests, physiological measurements, and additional interviews (Curtin et al. 2012). Additional information about NHANES can be found at www.cdc.gov/nhanes. All participants provided written informed consent. The University of Massachusetts Medical School Institutional Review Board determined that this study did not require their oversight because analyses included only publically-available de-identified data. Women were included in the analytic sample if they were aged 20–44 years, pregnant as determined by a positive urine or serum hCG test, and had information available about depressive symptoms and mental health care use.

During the home interview, women were asked, “During the past 12 months, have you seen or talked to a mental health professional such as a psychologist, psychiatrist, psychiatric nurse, or clinical social worker about your health?” Respondents that answered “yes” to this question were defined as having used mental health care and those that answered “no” were defined as not having used having mental health care. Participants who refused to answer or who answered “don’t know” were excluded from the analysis.

At the Mobile Examination Center, depressive symptoms were assessed using the Patient Health Questionnaire (PHQ-9), a nine-item self-report questionnaire that has been widely validated for use in primary care settings (Kroenke et al. 2001). Interviewers asked participants the nine items about the frequency of symptoms of depression over the past 2 weeks. Response categories of “not at all,” “several days,” “more than half the days” and “nearly every day” were scored from 0 to 3. We summed these nine items for a total PHQ-9

score. The total PHQ-9 scores were categorized into not depressed (score of < 10) or depressed (score ≥ 10). In general adult populations, PHQ-9 scores of 10 or above are indicative of depression with a sensitivity of 74%–88% and specificity of 88%–91% (Kroenke et al. 2001). In pregnant populations, its sensitivity and specificity (Kroenke et al. 2001) are comparable to those of the Edinburgh Postnatal Depression Scale (EPDS), a broadly accepted and commonly used depression screening tool in pregnant populations (Flynn et al. 2011).

We examined several potential confounders. Demographic characteristics were self-reported and included age, race/ethnicity (categorized as non-Hispanic White, non-Hispanic Black, Mexican American/other Hispanic, and other race/multi-racial), education, marital status, and household poverty status. Education was categorized as less than high school, high school graduate/GED or equivalent, some college or associates degree, and college graduate or above. Marital status was categorized as married, living with partner, or widowed/divorced/separated/never married. Poverty status was measured by the poverty income ratio (PIR) expressed as a percentage of the federal poverty threshold (0%–199%, 200–399%, 400%, or not provided). Women reported their current month of pregnancy. Gravidity was categorized as 1, 2, 3, or ≥ 4 pregnancies. Health insurance status was categorized as currently uninsured, current coverage but time without coverage in the past 12 months, and continuous insurance coverage for the past 12 months. Participants reported whether they had consumed alcohol within the past 12 months and whether they had ever used marijuana or hashish, methamphetamines (including crack, crystal, ice, or speed), heroin, or cocaine (including crack cocaine or free base).

All analyses were weighted to represent pregnant women nationally. Characteristics of depressed and non-depressed women were compared by using t-tests for continuous variables, and chi-square tests for categorical variables. Logistic regression models estimated crude and adjusted odds ratios (ORs) and 95% confidence intervals (95% CIs) for access to mental health care in the past year in relation to depression. We included covariates in the adjusted model that were associated both with depression and mental health care access with $p < 0.20$. All analyses were conducted using SAS (Version 9.3, SAS Institute Inc, Cary, NC).

RESULTS

Of the 502 pregnant women aged 20–44 years in NHANES 2005–2012, we excluded women missing PHQ-9 data ($n=39$), resulting in an analytic sample of 463 pregnant women which represents 2,581,833 women nationally. One in twelve pregnant women (8.2%; 95% CI: 4.6–11.8%) reported symptoms of depression. Characteristics of women in relation to depressive symptoms are presented in Table 1.

Twelve percent of women with depressive symptoms and 4% of non-depressed women reported mental health care use in the past year (Table 2). After adjusting for PIR and race/ethnicity, women with symptoms of depression had 3.5 times increased odds of mental health care use in the past 12 months (95% CI=1.1–11.0; Table 2).

DISCUSSION

To our knowledge, this is the first study to describe mental health care use among a nationally representative sample of U.S. pregnant women in relation to depressive symptoms. Consistent with the range estimated in prior studies (Gavin et al. 2005), 8.2% of pregnant women reported symptoms suggestive of depression. While we found that while pregnant women with depressive symptoms were three times more likely to have accessed mental health care in the past year than non-depressed pregnant women, only 12% of pregnant women with depressive symptoms reported having accessed mental health care. Our study builds on prior research (Byatt et al. 2012) and suggests that mental health care use is low among a nationally representative sample of pregnant women.

Women with depressive symptoms were less likely to be married and more likely to be poor, less educated, and lack consistent insurance coverage. This is consistent with prior research suggesting that less educated socioeconomically diverse women are at increased risk of perinatal depression (Segre et al. 2007). Interventions aimed to engage pregnant women in and increase mental health care use may need to target vulnerable populations of women who may have limited financial resources, lack social supports, and/or are uninsured.

Strengths of the current study include generalizability to pregnant women across the United States. Screening for depression was conducted using a well-validated screening tool, the PHQ-9 (Kroenke et al. 2001) (Flynn et al. 2011). However, due to the constraints of the available data we also were not able to assess other potentially important covariates such as past psychiatric history. Respondents were also not asked when or why mental health care was used, and whether that use was because of depression related to pregnancy. NHANES did not inquire about whether women received depression treatment from a non-mental health provider, thus it is possible that a subset of women categorized as not receiving mental health care, may have received depression treatment from a non-mental health specialist. For example, women may have received treatment with an antidepressant from an obstetric or primary care provider. Another limitation is the timing of the depressive symptoms in relation to treatment. The PHQ-9 captures symptoms during the past 2 weeks yet mental health care use included use during the past 12 months, a wider range of time than depressive symptoms, and including time before pregnancy. Women were on average, in their fifth month of pregnancy, and it is possible that additional women may have had symptoms of depression during pregnancy either before or after assessment of depressive symptoms.

In summary, only one in eight pregnant women with depressive symptoms reported mental health care use in the past year. In order to promote maternal and child health, it is essential that pregnant women are able to engage in and access effective, evidence-based treatments for depression. This mission may be realized by developing and evaluating multi-disciplinary interventions or models of perinatal depression care that can be broadly disseminated in low-resource, real-world settings.

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Table I

Characteristics of pregnant women in relation to depressive symptoms: NHANES 2005–2012, mean (SE) or % (95% CI)

	Depressed	Non-depressed
Sample N	45	418
Weighted N	211,584	2,370,249
Age (years)	27.7 (1.1)	28.8 (0.4)
Race/ethnicity		
Non-Hispanic White	26.3 (5.0, 47.5)	55.4 (47.2, 63.7)
Non-Hispanic Black	23.6 (7.7, 39.4)	13.1 (8.6, 17.6)
Mexican American/ other Hispanic	41.1 (21.9, 60.2)	21.3 (16.0, 26.5)
Other race/ multi-racial	9.1 (0.0, 22.1)	10.2 (5.5, 14.9)
Poverty-to-income ratio (PIR)		
0–199%	65.6 (48.6, 82.5)	30.7 (25.1, 36.3)
200–399%	20.5 (4.0, 37.0)	25.3 (18.7, 32.0)
400+ %	3.0 (0.0, 6.7)	39.0 (31.1, 46.8)
Missing	11.0 (0.3, 21.6)	5.0 (2.4, 7.6)
Education		
Less than high school	47.7 (26.1, 69.3)	16.1 (12.2, 20.0)
High school graduate/GED or equivalent	17.0 (1.4, 32.6)	16.1 (11.5, 20.8)
Some college or AA degree	25.3 (10.8, 39.8)	32.8 (27.3, 38.3)
College graduate or above	10.0 (0.0, 23.6)	35.0 (28.1, 41.9)
Marital Status		
Married	41.9 (23.0, 60.8)	71.3 (65.2, 77.5)
Living with partner	29.6 (11.6, 47.7)	10.5 (6.6, 14.3)
Widowed, divorced, separated, never married	28.4 (12.8, 44.0)	18.2 (12.7, 23.7)
Mean month of pregnancy	5.0 (0.4)	5.5 (0.2)
Gravidity		
One pregnancy	13.7 (0.0, 28.2)	22.4 (15.2, 29.6)
Two pregnancies	18.9 (5.4, 32.5)	27.9 (21.7, 34.0)
Three pregnancies	12.9 (1.6, 24.2)	25.5 (20.3, 30.8)
Four or more pregnancies	54.4 (35.6, 73.2)	24.2 (17.7, 30.8)
Health insurance status		
Currently uninsured	29.3 (8.9, 49.7)	14.2 (10.2, 18.3)
Current coverage but time without coverage in past 12 months	25.7 (10.2, 41.3)	17.3 (12.5, 22.1)
Continuous insurance coverage for past 12 months	44.9 (26.0, 63.9)	68.4 (61.6, 75.2)
Alcohol use in past 12 months	59.7 (44.5, 74.9)	56.7 (49.7, 63.7)
Ever used marijuana	60.5 (44.5, 76.5)	45.4 (37.0, 53.9)
Ever used methamphetamines	2.6 (1.1, 4.2)	0.8 (0, 2.4)
Ever used heroin	0.7 (0, 1.9)	0.6 (0, 2.0)

	Depressed	Non-depressed
Ever used cocaine	9.9 (5.0, 14.8)	6.2 (0, 13.6)

OR= odds ratio; CI=confidence interval;

* Adjusted for poverty-to-income ratio (PIR) and race/ethnicity

Table II

Mental health care use in past 12 months in relation to depressive symptoms among pregnant women:
NHANES 2005–2012

	Mental health care use, % (95% CI)	Crude OR (95% CI)	Adjusted* OR (95% CI)
Depression			
Non-depressed	4.1 (1.3, 6.9)	(Reference)	(Reference)
Depressed	12.0 (1.8, 22.1)	3.2 (0.9, 10.9)	3.5 (1.1, 11.0)
Race/ethnicity			
Non-Hispanic white	5.0 (0.7, 9.3)		(Reference)
Non-Hispanic black	4.6 (0.0, 10.6)		0.8 (0.1, 4.5)
Mexican American/other Hispanic	5.9 (2.2, 9.7)		0.9 (0.3, 3.2)
Multiracial/other race/ethnicity	0.6 (0.0, 2.0)		0.1 (0.01, 0.8)
Poverty-to-income ratio (PIR)			
0–199%	4.5 (1.3, 7.7)		(Reference)
200–399%	3.0 (0.0, 6.5)		0.7 (0.2, 3.6)
400% or greater	5.0 (0.0, 10.8)		1.4 (0.4, 5.8)
Missing PIR	12.0 (0.0, 25.3)		3.6 (0.9, 15.2)

OR= odds ratio; CI=confidence interval;

* Adjusted for poverty-to-income ratio (PIR) and race/ethnicity