

Data Report

Perinatal Depression in
New Hampshire Resident Women
2013 - 2016

New Hampshire PRAMS Team
Maternal and Child Health Section
Division of Public Health Services
Department of Health and Human Services
29 Hazen Drive, Concord NH 03301



November 2018

Disclaimer

Research reported in this publication was supported by the National Center for Chronic Disease Prevention & Health, of the Centers for Disease Control and Prevention (CDC), under Award Number U01DP006208 for the Pregnancy Risk Assessment Monitoring System. The content does not necessarily represent the official views of the CDC.

Suggested citation

Perinatal Depression in New Hampshire Resident Women, 2013-2016; Maternal and Child Health Section, Division of Public Health Services, New Hampshire Department of Health and Human Services; November 2018.

For more information

Contact Paulette Valliere, paulette.valliere@dhhs.nh.gov or prams@dhhs.nh.gov

Perinatal Depression in New-Hampshire resident women

Depression affects around 1 in 10 women in the age group 18-44 years, and women living with depression have a greater likelihood of substance use/misuse or developing a chronic disease,¹ according to the Centers for Disease Control and Prevention (CDC). “Almost 9 out of 10 women with depression have one or more chronic disease risk factors (smoking, binge or heavy drinking, and physical inactivity) or chronic conditions (diabetes or obesity).”² Despite its prevalence, depression often remains under the radar. “About 6 out of 10 women with depression do not receive a diagnosis”³ and only about half receive treatment. There are many reasons for not receiving care, including its potential costliness, doubts about the efficacy of treatment, and possible stigma attached.⁴

The American College of Gynecologists and Obstetricians (ACOG) has found that “perinatal depression, which includes major and minor depressive episodes that occur during pregnancy or in the first 12 months after delivery, is one of the most common medical complications during pregnancy and the postpartum period, affecting one in seven women.”^{5,6}

During pregnancy, levels of estrogen and progesterone increase and reach a peak. “In the first 24 hours after childbirth, hormone levels quickly drop back to normal, pre-pregnancy levels. Researchers think this sudden change in hormone levels may lead to depression.”⁷

Risk Factors for Depression

Experiences or conditions that may put some women at a higher risk for depression can include:⁸

- Stressful life events
- Low social support
- Previous history of depression
- Family history of depression
- Difficulty getting pregnant
- Having a multiple birth, like twins or triplets
- Being a teen mom
- Preterm (before 37 weeks) labor and delivery
- Pregnancy or birth complications
- Having a baby who has been hospitalized

“Maternal depression, alone or in combination with other risks, can pose serious but often unrecognized barriers to healthy early childhood development and school readiness, particularly for low-income young children,” according to the National Center for Children in Poverty.⁹ The harmful effects of maternal depression can start even before birth and can undermine critical early relationships and social interactions, as well as early childhood safety and health management. “The cumulative impact of depression in combination with other parental risks to healthy parenting (such as poverty, substance abuse, domestic violence, or prior trauma) is even greater.”¹⁰

ACOG reiterates the importance of identifying and providing treatment to pregnant and postpartum women with perinatal depression (PND) because “untreated PND and other mood disorders can have devastating effects on women, infants, and families. Several screening instruments have been validated for use during pregnancy and the postpartum period.”¹¹ ACOG further emphasizes that screening alone “is insufficient to improve clinical outcomes and must be coupled with appropriate follow-up and treatment when indicated; clinical staff in obstetrics and gynecology practices should be prepared to initiate medical therapy, refer patients to appropriate behavioral health resources when indicated, or both.”¹²

The Pregnancy Risk Assessment Monitoring Survey (PRAMS)

PRAMS is a surveillance project of the CDC, conducted through cooperative agreements with state health departments. PRAMS collects self-reported data on maternal attitudes and experiences shortly before, during and after pregnancy. In New Hampshire (NH), PRAMS-eligible women are all NH residents who have a live birth in one calendar year. Approximately one in 12 women are randomly selected and asked to participate between two and six months after giving birth. Out-of-state births to NH residents are included in the sampling plan due to the high proportion of births occurring out-of-state (approximately 9.0% annually).

Data collected through PRAMS are linked to birth certificate data, allowing the survey data to be weighted to reflect the total population of resident women who have a live birth. Sampling, non-response and non-coverage weights are applied. Population estimates are obtained using the analysis weights and survey design variables. See the [NH PRAMS 2016 Data Book](#) [external link] for more information.

Report Methodology and Data analysis

The PRAMS survey (Phase 7 in 2013-2015; Phase 8 in 2016) assessed depression during the perinatal period through the following questions:

During your most recent pregnancy, did you have... Depression? Yes / No

Since your new baby was born, has a doctor, nurse, or other health care worker told you that you had depression? Yes / No

Since your new baby was born, how often have you felt down, depressed, or hopeless? Always / Often / Sometimes / Rarely / Never

Since your new baby was born, how often have you had little interest or little pleasure in doing things? Always / Often / Sometimes / Rarely / Never

Affirmative answers (‘yes’ or ‘always’/‘often’) to questions on depression during pregnancy (2016) and postpartum depression (2013-2016) were combined to create a new variable for perinatal depression (PND) across the four-year data set. This new variable may underestimate the true prevalence of PND since there is no data on depression during pregnancy in the 2013-2015 period.

Analysis for this report was done using SAS survey analysis procedures for complex survey design (version 9.4). Associations between PND and other factors assessed by the survey as well

as some demographic variables from the birth certificate are examined. All comparisons show a statistically significant difference, except when specified otherwise.

NB: when the number of respondents is less than 10, or the relative standard error is greater than 0.30, estimates are statistically unreliable and therefore not reported. Differences characterized as ‘significant’ have a 95% probability of being truly different, and not the result of random chance.

Results

Depression during pregnancy was reported by 16.5% in 2016, and 12.8% reported being told they had depression after the delivery (the survey in 2013-2015 did not collect this information).

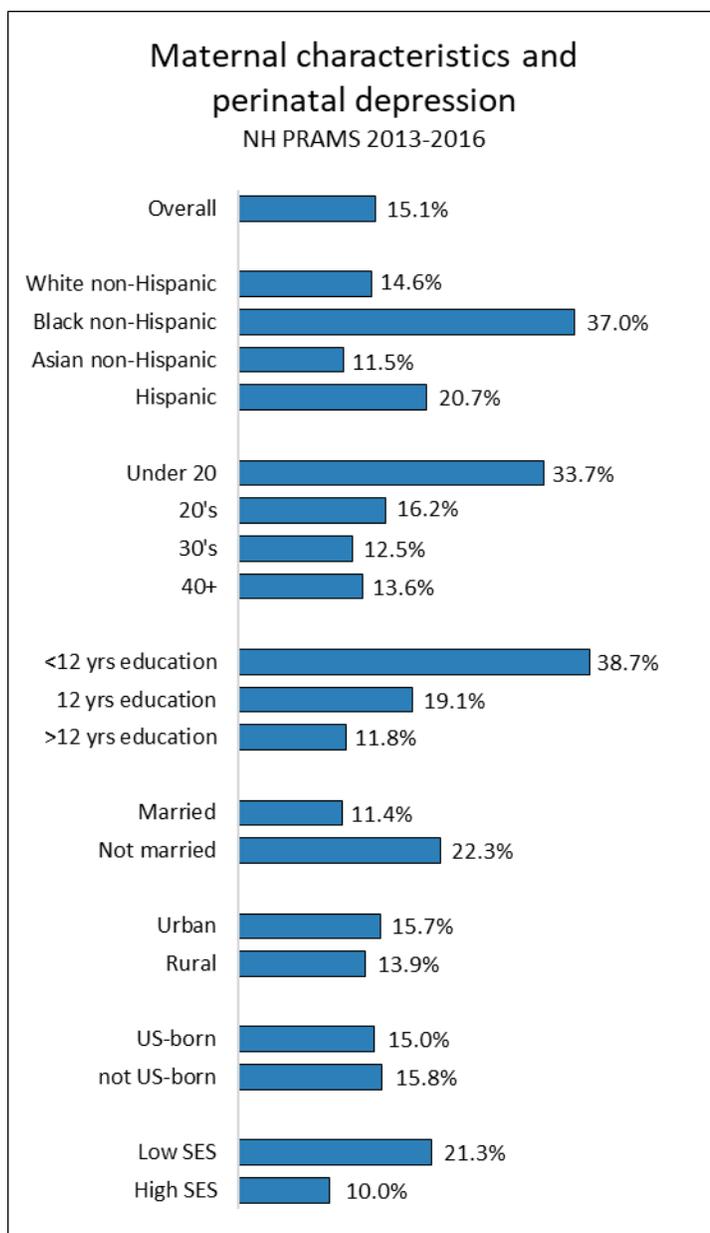
Postpartum depression was reported by 11.9% in 2013-2016. This is a summary measure of depression, based on an answer of “always” or “often” to a question about feeling down, depressed or hopeless, or a question about having little interest or pleasure in doing things.

When considering the entire perinatal period, it was found that 15.1% of women overall experienced PND (see a more detailed presentation of the data in the addendum Indicators Table).

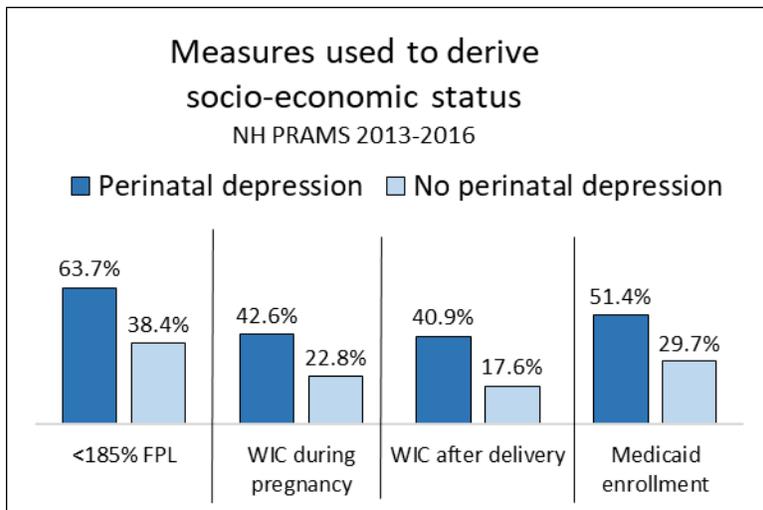
A breakdown of PND by maternal characteristics shows that the groups which most often report PND are:

- Black non-Hispanic women
- Teen mothers
- Women with less than a high school education
- Women who are not married
- Women of low socio-economic status (SES)

NB: not all levels within each category shown on the graphic above are significantly different from each other.



Socio-economic status (SES) has a strong association with PND. Low SES was determined by combining total household income at or below 185% of the federal poverty level, WIC enrollment during or since pregnancy, or Medicaid enrollment. These four individual measures were also examined separately. It was found that among women with PND, 63.7% were living on an income of less than 185% of the Federal Poverty Level, compared with 38.4% of those without PND.

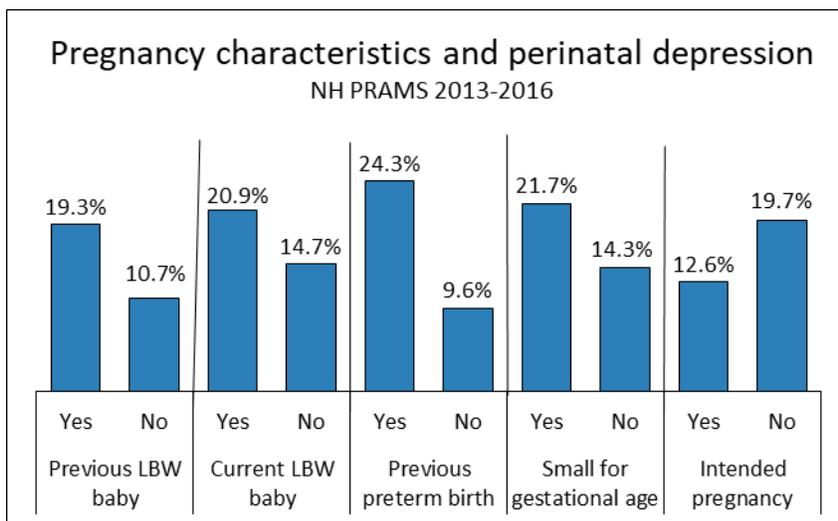


Regarding WIC participation, 42.6% of those with PND utilized WIC services during pregnancy, and 40.9% since giving birth; compared with 22.8% and 17.6% respectively, among those without PND.

Medicaid enrollment during or since pregnancy has similar findings, with 51.4% of those with PND enrolled in Medicaid, compared with 29.7% of those with no PND.

* * * * *

Several characteristics of pregnancy were found to be associated with PND, including low birth weight (LBW; defined as 2500 grams/5.5 pounds, or less). Among women who previously had a baby, when the baby from the previous pregnancy was of low birth weight, 19.3% had PND, compared to 10.7% of those who did not previously have a low birth weight baby.



Among women whose baby from the most recent pregnancy was of low birth weight, 20.9% had PND, compared with 14.7% among those whose baby was of normal or higher birthweight.

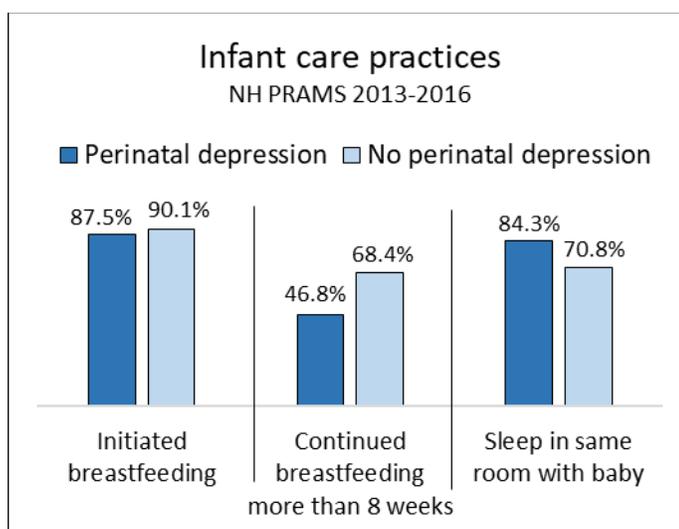
Similarly, among women who previously had a baby, previously having a preterm baby (born earlier than three weeks before the due date) was associated with PND, with 24.3% of women with a previous preterm baby having PND, compared to 9.6% among those who did not previously have a preterm baby.

21.7% of women whose baby was small for gestational age (10th percentile or smaller) had PND, compared with 14.3% among women whose baby was bigger.

And among women whose pregnancy was intended (defined as wanting the pregnancy then or sooner), 12.6% had PND; among women with an unintended pregnancy (wanting the pregnancy later, not at all, or not sure), 19.7% had PND.

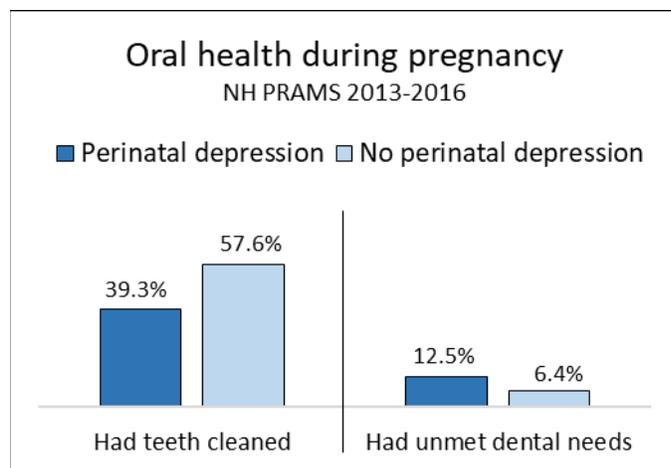
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Some infant care practices vary among women with and without PND. Women who had PND initiated breastfeeding at essentially the same rate as those without PND (87.5% vs. 90.1%, which is not statistically different). However, their rate of breastfeeding continuation beyond eight weeks was significantly less, at 46.8% vs. 68.4%.



84.3% of women with PND slept in the same room with their baby (as recommended by the American Academy of Pediatrics), compared with 70.8% of those without PND.

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Oral health indicators were examined, among women with PND and those who did not have PND.

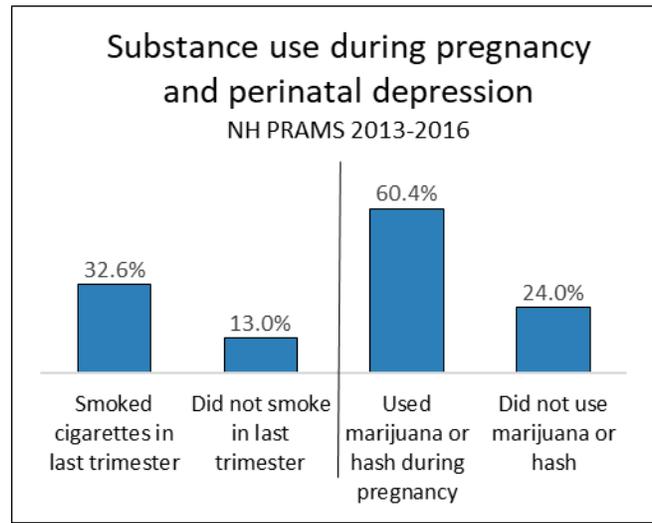
It was found that among women who reported PND, 39.3% had their teeth cleaned during pregnancy and 12.5% had unmet needs* for dental care, compared with 57.6% having their teeth cleaned and 6.4% having unmet dental needs among those without PND.

[*Unmet need is defined as needing but not getting dental care for a problem.]

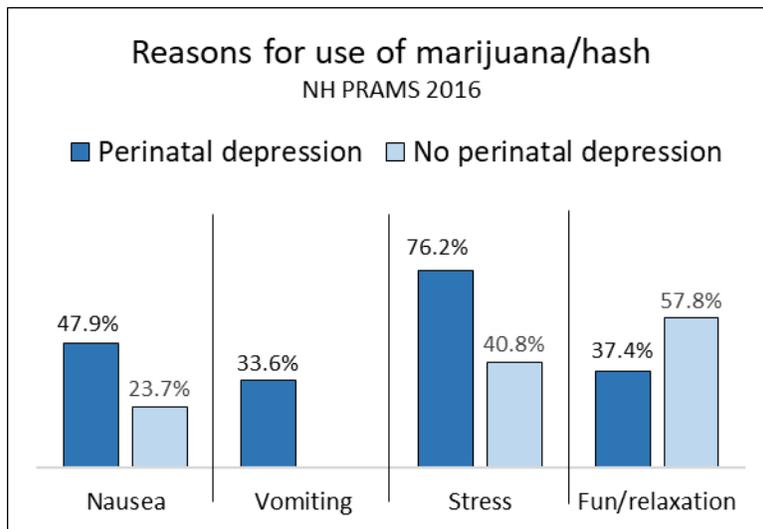
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Substance use was also examined for an association with PND, and a higher prevalence of PND was found among users. Of women who smoked cigarettes in the last trimester of pregnancy, 32.6% reported PND, compared to 13.0% of those who did not smoke at that time.

And of users of marijuana or hash during pregnancy, 60.4% reported PND, compared to 24.0% of those who did not use marijuana or hash during pregnancy.



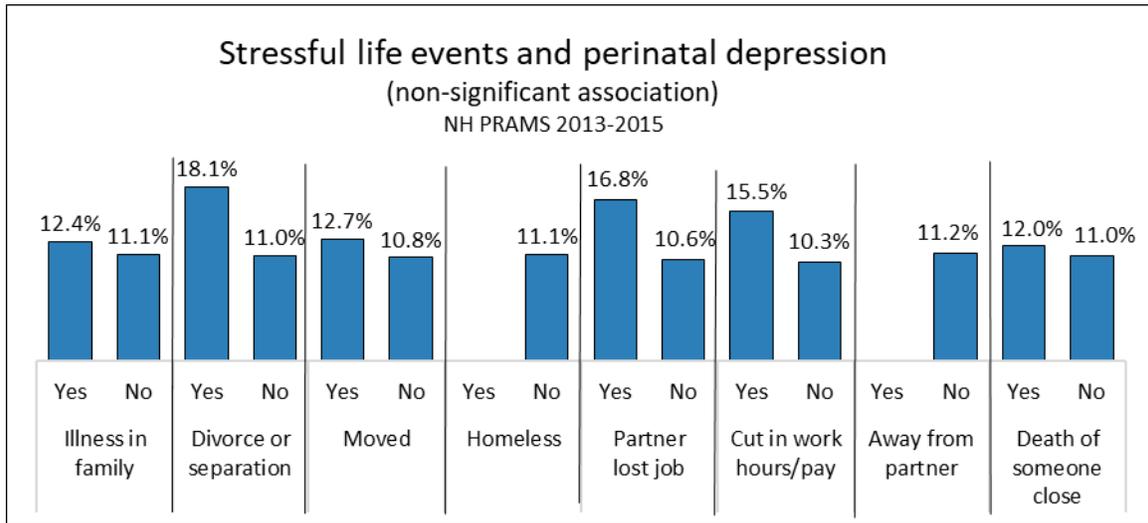
Among those with PND who used marijuana or hash at any time, 47.9% did so to relieve nausea, 33.6% to relieve vomiting, 76.2% to relieve stress, and 37.4% for fun or relaxation. Women without PND who used marijuana or hash at any time had a different profile of reasons for use, with 23.7% using it to relieve nausea, very few (number too small to report) to relieve vomiting, 40.8% to relieve stress, and 57.8% for fun or relaxation.



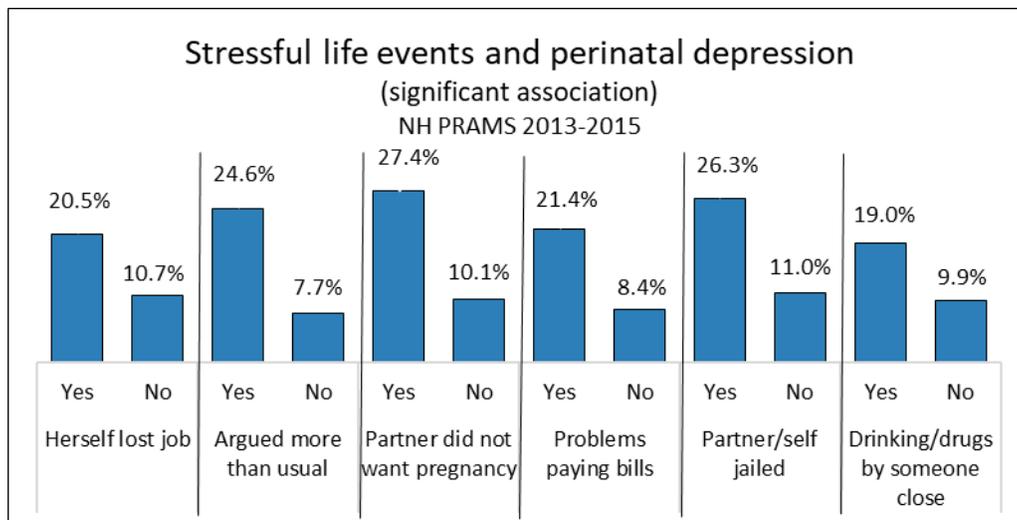
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A variety of stressful life events experienced throughout the perinatal period may perhaps contribute to or be influenced by PND. The following graphic depicts the prevalence of PND stratified by the presence or absence of various stressors; these differences are not significantly different at the 95% confidence level. The non-significant stressors include: illness in the family, divorce or separation, moving to a new address, the partner losing his/her job, a cut in work

hours or pay, or the death of someone close (the numbers of ‘yes’ answers about being homeless or being away from the partner for an extended time were small and non-reportable).



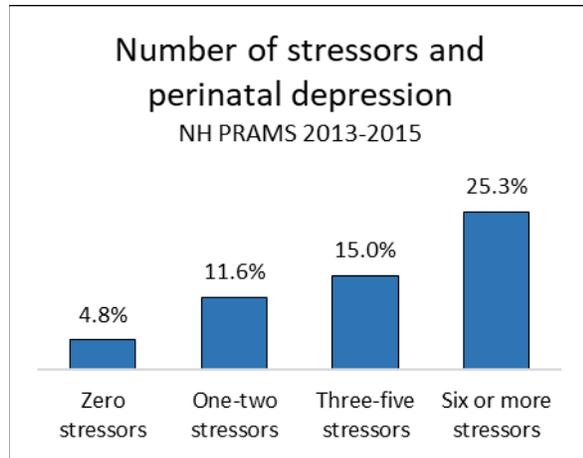
Stressful life events that did show a significant association with PND (i.e. their presence is associated with a significantly higher prevalence of PND) include: losing her job, arguing with her partner more than usual, the partner not wanting the pregnancy, problems paying bills, herself or her partner being jailed, and drinking or drug use by someone close.



It is noteworthy that many but not all stressors (both significant as well as non-significant) are related to SES, and contribute to or possibly result from increased poverty. And only some of these SES-related factors show an association with PND.

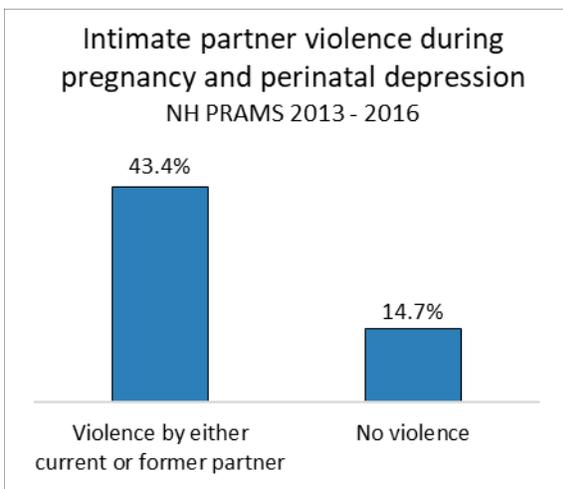
The key point regarding stressful life events is that as their number increases, PND becomes more prevalent:

- among women who report zero stressors, 4.8% have PND;
- among women who report one-two stressors, 11.6% have PND;
- among women who report three-five stressors, 15.0% have PND;
- among women who report six or more stressors, 25.3% have PND.



There is a statistically significant difference (at the 95% confidence level) between the group with zero stressors, and the group with one-two stressors; likewise, a statistically significant difference between the group with one-two stressors and the group with six or more stressors.

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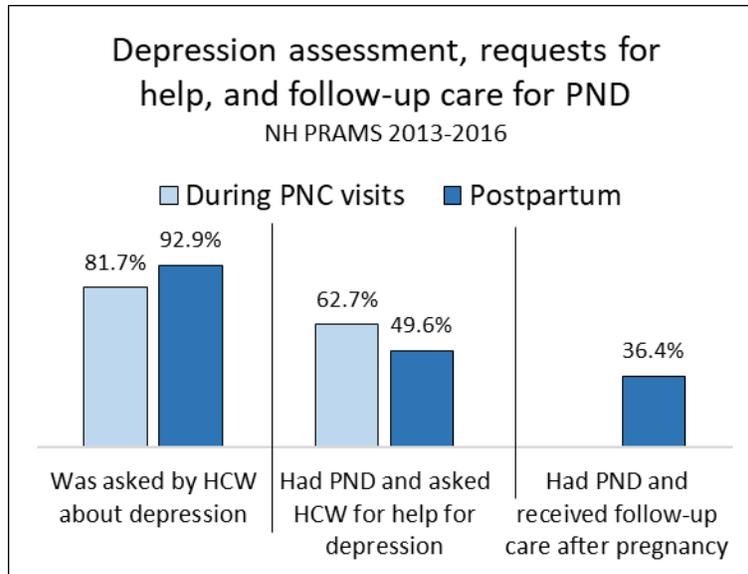


Intimate partner violence (IPV) is a significant public health issue. Data from the 2011 National Intimate Partner and Sexual Violence Survey (NISVS) shows that more than one in five women in the US have experienced IPV in their lifetime.¹³ Among NH women who reported experiencing IPV during pregnancy, either by a current or former partner, 43.4% had PND, compared with 14.7% of those who did not experience IPV.

[intimate partner violence by a former partner was not assessed prior to 2016, so the combined prevalence by a current or former partner may be underestimated]

* * * * *

As can be seen in the data collected by the PRAMS survey and reported here, PND is frequent and is associated with a wide variety of conditions and behaviors. Nevertheless, screening for depression is not always practiced, even fewer women ask for help than are screened, and fewer still receive follow-up care, as shown in the following graphic:



During their prenatal care (PNC) visits, approximately four out of five (81.7%) women were asked about depression by a health care worker (HCW); and approximately two out of three (62.7%) women with PND asked a HCW for help with depression during a PNC visit.

In the postpartum period, HCWs more frequently asked about depression, with 92.9% of women reporting being asked by a HCW about feelings of depression, but only one out of two (49.6%) women with PND asked a HCW for help with depression. And barely one-third of women with PND (36.4%) received follow-up care for depression after the birth.

Recommendations

Screening for depression during pregnancy and postpartum visits should be universal, to increase the likelihood of diagnosis and treatment. Women often will not spontaneously ask for help, and the impacts of PND on women's and infants' health and families' well-being can be mitigated with timely interventions.

Not all practices have the same resources to treat PND, but they should seek outside resources if necessary, especially in the local community. They should ensure access to treatment and follow-up care for their patients diagnosed with PND.

Women should be supported and reminded that there is no known prevention for perinatal depression; it is not caused by something they did or failed to do; it is a medical condition that requires medical care.

Limitations

This report is subject to limitations. PRAMS data are self-reported and may be subject to social desirability bias (some may be ashamed to report feelings of depression during a time when social norms suggest they should be happy) or inaccuracies, leading to reporting bias. The survey is typically administered two to four months after the birth occurs, and early responders

may not yet have experienced postpartum depression. The survey is available only in English, so mothers with limited English proficiency may not participate. Lastly, this report presents unadjusted associations between various factors and perinatal depression, and thus causal relationships cannot be determined.

References

¹ Centers for Disease Control and Prevention (CDC); “Depression Among Women;” <https://www.cdc.gov/reproductivehealth/depression/activities.htm>

² Ibid.

³ Ibid.

⁴ Ibid.

⁵ American College of Obstetricians and Gynecologists (ACOG); “Screening for Perinatal Depression – Committee Opinion; Number 630, May 2015; <https://www.acog.org/Clinical-Guidance-and-Publications/Committee-Opinions/Committee-on-Obstetric-Practice/Screening-for-Perinatal-Depression>

⁶ Earls MF, American Academy of Pediatrics’ Committee on Psychosocial Aspects of Child and Family Health; “Incorporating Recognition and Management of Perinatal and Postpartum Depression into Pediatric Practice;” in *Pediatrics*, November 2010, Volume 126, Issue 5; <http://pediatrics.aappublications.org/content/126/5/1032>

⁷ <https://www.womenshealth.gov/files/documents/fact-sheet-postpartum-depression.pdf>

⁸ Centers for Disease Control and Prevention (CDC); Depression Among Women; <https://www.cdc.gov/reproductivehealth/depression/>

⁹ National Center for Children in Poverty; “Reducing Maternal Depression and its Impact on Young Children;” by Jane Knitzer, Suzanne Theberge, Kay Johnson; January 2008; http://www.nccp.org/publications/pub_791.html

¹⁰ Ibid.

¹¹ ACOG, Op. cit.

¹² Ibid.

¹³ Breiding MJ, Smith SG, Basile KC, Walters ML, Chen J, & Merrick MT. Prevalence and characteristics of sexual violence, stalking, and intimate partner violence victimization in the United States – National Intimate Partner and Sexual Violence Survey, United States, 2011. *MMWR* 2014;63 (No. SS-8): 1-18.

Indicators cited in this report

PND = Perinatal Depression	Percent Yes	95% CI		Total Responses	Annual Population Estimate
		Lower	Upper		
Maternal characteristics and PND					
All women	15.1	13.4	16.9	400	1,820
White non-Hispanic	14.6	12.9	16.5	337	1,544
Black non-Hispanic	37.0	19.7	58.3	11	65
Asian non-Hispanic	11.5	6.3	20.1	21	51
Hispanic	20.7	12.1	33.1	18	95
Under 20 years old	33.7	22.7	46.8	29	158
20s	16.2	13.7	19.1	192	917
30s	12.5	10.4	14.9	164	695
40+	13.6	7.2	24.2	15	51
<12 years education	38.7	29.2	49.2	59	295
12 years education	19.1	15.1	23.9	99	495
>12 years education	11.8	10.2	13.6	238	1,022
Married	11.4	9.8	13.3	210	908
Not married	22.3	18.8	26.2	190	913
Urban	15.7	13.7	18.0	260	1,215
Rural	13.9	11.4	16.9	140	2,606
US-born	15.0	13.3	16.9	354	1,640
Non-US born	15.8	10.9	22.2	45	180
Low SES	21.3	18.4	24.5	247	1,152
High SES	10.0	8.4	12.0	153	669
Proxy measures for poverty					
Have PND; <185% FPL	63.7	55.5	71.1	140	808
No PND; <185% FPL and no PND	38.4	35.5	41.3	593	3,931
Have PND; WIC during pregnancy	42.6	36.4	49.0	158	775
No PND; WIC during pregnancy	22.8	20.7	25.1	471	2,328
Have PND; WIC after delivery	40.9	31.3	51.2	54	1,249
No PND; WIC after delivery	17.6	13.4	22.8	69	1,562
Have PND; Medicaid during or after pregnancy	51.4	45.1	57.6	196	935
No PND; Medicaid during or after pregnancy	29.7	27.3	32.1	608	3,042
Pregnancy characteristics and PND					
Previous LBW baby	19.3	11.8	30.2	27	120
No previous LBW baby	10.7	8.5	13.3	102	626
Current LBW baby	20.9	18.4	23.7	192	156
Current baby not LBW	14.7	13.0	16.6	208	1,664
Previous preterm baby	24.3	16.7	34.0	37	201
No previous preterm baby	9.6	7.5	12.2	92	552
Small for gestational age	21.7	16.4	28.3	102	270
Baby not small for gestational age	14.3	12.6	16.2	268	1,510
Intended pregnancy	12.6	10.7	14.7	214	953
Unintended pregnancy	19.7	16.7	23.2	183	853

PND = Perinatal Depression	Percent Yes	95% CI		Total Responses	Annual Population Estimate
		Lower	Upper		
Infant care practices					
PND; initiated breastfeeding	87.5	82.5	91.2	317	1,536
No PND; initiated breastfeeding	90.1	88.4	91.5	1,828	9,196
PND; breastfeeding >8 weeks	46.8	40.5	53.2	175	816
No PND; breastfeeding >8 weeks	68.4	65.9	70.7	1,360	6,951
PND; sleep in same room with baby	84.3	75.8	90.2	105	2,316
No PND; sleep in same room with baby	70.8	65.0	75.9	272	5,633
Oral health during pregnancy					
PND; had teeth cleaned	39.3	33.3	45.6	143	708
No PND; had teeth cleaned	57.6	55.0	60.1	1,139	5,847
PND; had unmet dental needs	12.5	8.7	17.6	52	225
No PND; had unmet dental needs	6.4	5.2	7.9	132	646
Substance use/misuse and PND					
Smoked cigarettes in last trimester	32.6	25.8	40.2	100	1,711
Did not smoke cigarettes in last trimester	13.0	11.4	14.8	298	5,537
Used marijuana/hash during pregnancy	60.4	37.4	79.6	18	394
Did not use marijuana/hash during pregnancy	24.0	20.0	28.7	130	2,712
Reasons for use of marijuana/hash					
PND; used due to nausea	47.9	29.3	67.1	19	409
No PND; used due to nausea	23.7	12.3	40.8	13	292
PND; used due to vomiting	33.6	17.6	54.6	13	287
No PND; used due to vomiting	(*)	(*)	(*)	(*)	(*)
PND; used due to stress	76.2	57.1	88.5	29	650
No PND; used due to stress	40.8	25.8	57.7	26	502
PND; used for fun/relaxation	37.4	21.0	57.2	15	319
No PND; used for fun/relaxation	57.8	41.1	72.9	30	711
Stressful life events and PND (non-significant association)					
Illness in family	12.4	9.4	16.3	75	413
No illness in family	11.1	9.2	13.4	171	965
Divorce or separation	18.1	10.2	30.0	22	110
No divorce or separation	11.0	9.4	12.9	223	1,252
Moved to new address	12.7	10.0	16.1	107	559
Did not move	10.8	8.8	13.2	141	821
Homelessness	(*)	(*)	(*)	(*)	(*)
No homelessness	11.1	9.5	13.0	230	1,302
Partner lost job	16.8	11.5	23.9	39	244
Partner did not lose job	10.6	8.9	12.5	204	1,114
Cut in work hours/pay	15.5	11.3	21.0	53	354
No cut in work hours/pay	10.3	8.6	12.3	189	995
Away from partner	(*)	(*)	(*)	(*)	(*)
Not away from partner	11.2	9.5	13.1	227	1,277
Death of someone close	12.0	8.4	16.8	51	267
No death of someone close	11.0	9.2	13.1	192	1,073

PND = Perinatal Depression	Percent Yes	95% CI		Total Responses	Annual Population Estimate
		Lower	Upper		
Stressful life events and PND (significant association)					
Herself lost job	20.5	13.4	29.9	35	192
Herself did not lose job	10.7	9.1	12.7	212	1,287
Argued more than usual	24.6	19.7	30.4	105	607
Did not argue more than usual	7.7	6.3	9.5	139	733
Partner did not want pregnancy	27.4	18.7	38.2	36	240
Partner did want pregnancy	10.1	8.5	11.9	209	1,113
Problems paying bills	21.4	16.9	26.7	98	592
No problems paying bills	8.4	6.8	10.2	147	769
Partner/self jailed	26.3	13.3	45.2	11	73
Partner/self not jailed	11.0	9.4	12.9	234	1,288
Drinking/drugs by someone close	19.0	13.9	25.4	65	356
No drinking/drugs by someone close	9.9	8.2	11.8	179	928
Stressful life events (grouped) and PND					
Zero stressors	4.8	3.4	7.5	35	158
One-two stressors	11.6	9.1	14.7	91	556
Three-five stressors	15.0	11.5	19.3	91	482
Six or more stressors	25.3	16.5	36.7	32	185
Intimate partner violence and PND					
Violence by current/former partner	43.4	24.8	64.1	16	69
No violence by partner	14.7	13.1	16.5	384	1,751
Depression assessment					
Women who were asked about depression during PNC visits	81.7	79.8	83.5	1,952	9,672
Women who were asked about depression postpartum	92.9	91.5	94.0	1,181	10,886
Requests for help for depression					
Had PND and asked for help during PNC visits	62.7	50.4	73.6	52	1,242
Had PND and asked for help postpartum	49.6	39.9	59.3	76	1,555
Follow-up care for depression					
Had PND and received follow-up care postpartum	36.4	51.6	72.1	80	1,666

Some indicators were assessed in 2013-2016, some in 2013-2015, and others in 2016 only, which accounts for some variation in the number of responses over one, three, or four years; the population estimates have been adjusted to represent the annual frequency for each indicator.

This report presents unadjusted associations between various factors and perinatal depression, and thus causal relationships cannot be determined.