

Prevalence and risk factors for postpartum anxiety among insured patients in the United States

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Background, Hypothesis and Aims

- Postpartum anxiety disorders are associated with significant maternal morbidity^{1,2}
- Prevalence and risk factors for postpartum anxiety disorders are underexplored with most focusing on postpartum depression
- Hypothesis: prevalence of postpartum anxiety will be lower than depression given inconsistent screening practices
- Primary aim – determine the prevalence of new diagnoses of postpartum anxiety in the United States among commercially insured patients
- Secondary outcomes - determine the prevalence of co-morbid anxiety with depression & PTSD, determine temporal changes in prevalence, and identify risk factors for postpartum anxiety

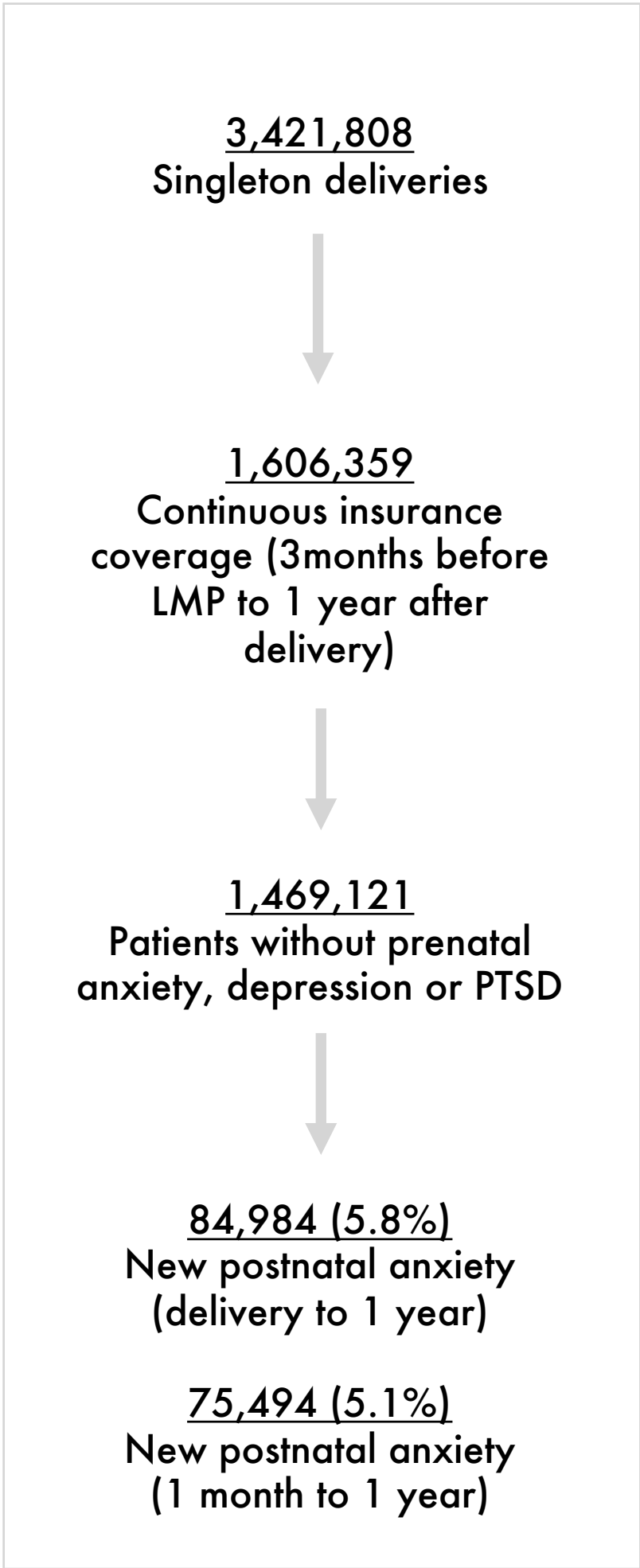


1. ACOG Committee Opinion No 757: Screening for perinatal depression. *Obstet Gynecol* 2018; 132(5):e208-e212.
2. de Avila Quevedo et al. *Psychiatr Q*. 2021;92(2): 513-522.

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Study Design & Methods

- Retrospective cohort study from Merative™ Marketscan® database
- Adult women who experienced childbirth between 2008 and 2021
- Patients with anxiety or depression prior to pregnancy or antenatally were excluded (i.e. new diagnoses included)
- Univariate and multivariate regression models were constructed to identify demographic, obstetric, medical, and neonatal factors for postpartum anxiety



Patient demographic, obstetric, medical and neonatal variables

	Anxiety N = 84,984	No anxiety N = 1,384,137	Total N = 1,469,121
Demographic variables			
Age	31.47±4.47	31.57±4.51	31.56±4.47
Region			
South	35,624 (41.92%)	551,327 (39.83%)	586,951 (30.95%)
North-central	19,964 (23.49%)	313,460 (22.65%)	333,424 (22.70%)
Northeast	14,507 (17.07%)	244,461 (17.66%)	258,968 (17.63%)
West	14,033 (16.51%)	259,428 (18.74%)	273,461 (18.61%)
Unknown	856 (1.01%)	15,461 (1.12%)	16,317 (1.11%)
Obstetric variables			
Gestational age	38.45±1.79	38.60±1.56	38.60±1.57
Delivery method			
Vaginal	56,013 (65.91%)	972,499 (70.26%)	1,028,512 (70.01%)
Cesarean delivery	28,971 (34.09%)	411,638 (29.74%)	440,609 (29.99%)
Surgical and medical morbidity			
Antenatal / postpartum sleep disorder	1,164 (1.4%)	6,212 (0.5%)	7,376 (0.5%)
SMM combined (excluding sepsis and transfusion)	1,273 (1.50%)	12,075 (0.87%)	13,348 (0.91%)
NMC combined	406,376 (29.36%)	30,312 (35.67%)	436,688 (29.72%)
Cesarean delivery related NMM combined (Wound complication, placenta abruption, uterine rupture, surgical site infection, surgical injury)	8,402 (9.89%)	81,574 (5.89%)	89,976 (6.12%)
Neonatal variables			
Infant comorbidity (combined)	3,072 (3.61%)	38,122 (2.75%)	41,194 (2.80%)
NICU admission	3,289 (3.87%)	38,795 (2.80%)	42,084 (2.86%)



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Results

- 5.8% of postpartum patients had a new anxiety diagnosis within 1 year of delivery
- 5.1% of these new diagnoses occurred between 1 month and 1 year postpartum
- Co-morbid depression and PTSD occurred in 1.8% and 0.1%, respectively
- Prevalence of postpartum anxiety quadrupled between 2008 and 2021 (3.1% to 12.3%)
- Independent risk factors for postpartum anxiety included: younger age, lower gestational age, cesarean delivery, antenatal / early postpartum sleep disorders, severe maternal morbidity, neglected medical conditions, and neonatal risk factors

Univariate & multivariate model for the outcome of postpartum anxiety diagnosed from 1 month to 1 year postpartum

	Crude model		Adjusted model	
	OR (95% CI)	p	OR (95% CI)	p
Demographic variables				
Age				
<20	Ref		Ref	
20-35	1.01 (0.89, 1.15)	0.907	0.78 (0.69, 0.89)	<0.001
>=35	0.95 (0.83, 1.08)	0.409	0.68 (0.60, 0.77)	<0.001
Region				
South	Ref		Ref	
North-central	0.99 (0.97, 1.01)	0.167	1.07 (1.05, 1.09)	<0.001
Northeast	0.92 (0.90, 0.94)	<0.001	0.99 (0.97, 1.01)	0.276
West	0.84 (0.82, 0.85)	<0.001	0.89 (0.88, 0.91)	<0.001
Obstetric variables				
Gestational age (weeks)				
37-41	Ref		Ref	
32-36	1.23 (1.20, 1.26)	<0.001	1.14 (1.11, 1.17)	<0.001
<32	1.57 (1.45, 1.70)	<0.001	1.17 (1.07, 1.28)	<0.001
Delivery mode				
Vaginal	Ref		Ref	
C-section	1.20 (1.18, 1.22)	<0.001	1.08 (1.06, 1.10)	<0.001
Delivery year	1.11 (1.11, 1.11)	<0.001	1.11 (1.11, 1.11)	<0.001
Surgical and medical morbidity				
Antenatal / postpartum sleep disorder	2.90 (2.71, 3.10)	<0.001	2.69 (2.51, 2.88)	<0.001
SMM (excluding transfusion)	1.67 (1.57, 1.77)	<0.001	1.44 (1.35, 1.53)	<0.001
Transfusion	1.51 (1.38, 1.65)	<0.001	1.17 (1.06, 1.28)	<0.001
NMC combined	1.33 (1.31, 1.35)	<0.001	1.24 (1.23, 1.26)	<0.001
Neonatal variables				
Infant comorbidity (combined)	1.32 (1.27, 1.37)	<0.001	1.09 (1.03, 1.15)	0.001
NICU admission	1.38 (1.33, 1.43)	<0.001	1.03 (0.98, 1.08)	0.253



CDC Maternal and Infant Health: Identifying severe maternal morbidity (SMM)
Vogel et al., *Lancet Global Health*. 2024 Feb; 12(2); e3170e330



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Conclusions & Discussion

- Postpartum anxiety impacts 6% of commercially insured US patients
- Postpartum anxiety has increased four-fold since 2008
- Risk factors for postpartum anxiety are younger age, lower gestational age, cesarean delivery, antenatal / early postpartum sleep disorders, severe maternal morbidity, neglected medical conditions, and neonatal risk factors
- Future studies are needed to evaluate the impact of targeting the modifiable risk factors identified in this study to prevent postpartum anxiety



These results support the need for universal screening for anxiety disorders throughout the first postpartum year, with particular attention paid to high-risk groups such as younger patients, those with preterm births, and those undergoing cesarean delivery or experiencing pregnancy complications

