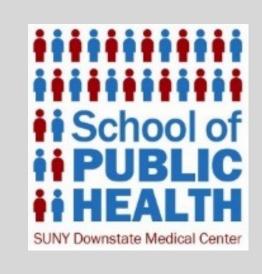# Is maternal unemployment status associated with adverse pregnancy outcome in Central Brooklyn, New York City?

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Background

Maternal unemployment status has been used as an indicator for socioeconomic status, poor physical/mental health, and a marker of emotional stress.

Findings on the relationship between maternal unemployment status and pregnancy outcomes are mixed.

Some found that maternal unemployment status is associated with higher rates of SGA, preterm delivery, substance use in early pregnancy, and placental abruption.

One study found that maternal unemployment may be an effect modifier for the association between obstetric risk factors and low birthweight, but no direct association was observed.

Objectives

❑ To examine the relationship between unemployment and obstetric outcomes in the patient population of SUNY Downstate, which serves Central Brooklyn in NYC.

❑ To analyze EMR data and determine which are the common maternal morbidity diagnoses in our target population.

Methods

Study Population: Women who delivered at SUNY Downstate in 2019

Predictor: Maternal unemployment status

Outcomes: 1) non-severe maternal morbidity 2) maternal co-morbidity that are at strong predictors for severe maternal morbidity 3) NICU admission 4) low birthweight (LBW) 5) Preterm birth (PTB)

Statistical Analysis: 1) descriptive analysis for exposure and outcomes 2) logistic regression with and without covariates adjustment

Maternal Outcomes

The relatively common non-severe maternal morbidity or comorbidity conditions in our study population:
(* = national avg)

Anemia during pregnancy (48%) vs. 17-31%*
Advanced maternal age (25%) vs.15%*
Previous Cesarean section (25%)
Preeclampsia without severe features or GHTN (17%) vs. 10%*
3rd/4th degree perineal tear (14%) vs. 4-11%*
Gestational diabetes (12%) vs. 7.6%*
Postpartum hemorrhage (10%)

Infant Outcomes

Infant Outcome	Downstate (2019)	NYC (2019)	National (2019)
Preterm birth	13 (13.0%)	9.0%	10.2%
Low birthweight	11 (11.0%)	8.4%	8.3%
NICU admission	32 (32.0%)	Not comparable due to different NICU admission protocols among hospitals	

The association between maternal unemployment and pregnancy outcomes

	Unemployed (n=33)	Employed (n=67)	Crude OR	Adjusted OR	95%CI		p value
Anemia during pregnancy	54.5%	44.4%	1.50	**5.85**	1.13	40.04	0.05 *
GHTN or PEC without severe features	9.1%	20.3%	0.39	**0.21**	0.02	1.54	0.15
GDM	6.1%	14.1%	0.39	**0.16**	0.01	1.60	0.17
3rd/4th degree perineal tear	21.2%	7.8%	3.18	**5.12**	1.00	30.88	0.06 `
LBW	9.1%	11.3%	0.79	**0.45**	0.07	2.25	0.36
Preterm birth	5.8%	3.4%	0.22	**0.67**	0.06	6.04	0.72
NICU admission	33.3%	33.3%	1.00	**0.89**	0.20	4.07	0.88

`p≤0.10   *p≤0.05

Maternal unemployment was not associated with overall non-severe maternal morbidity/ comorbidity (data not shown) or infant outcomes.

However, maternal unemployment was found to be associated with 6 times the odds of anemia during pregnancy (d=0.97, AOR=5.85, 95% CI 1.13-40.04; p=0.05) and 5 times the odds of third-/fourth-degree perineal laceration (d=0.90, AOR=5.12, 95% CI 1.00-30.88; p=0.06).

Discussion/Conclusion

Our results suggest that women who delivered at UHB may have worse selected maternal and infant outcomes compared to the national average.

The findings of this project adds to the current knowledge on the relationship between maternal unemployment and pregnancy outcomes.
• Higher odds of anemia during pregnancy (consistent with a previous study) and third-/fourth-degree perineal tear.
• Lower odds of gestational HTN and DM

Limitations: 1) small sample size (n=100), 2) measurement for maternal unemployment does not differentiate between those who were unemployed by choice or were actively searching for jobs, 3) not able to collect income data

Strengths: 1) we extract our data from the EMR, which often includes more information than vital statistics records.

Policy implication: Pregnant women should receive stronger legal protection for pregnancy accommodation and against job discrimination in the process of firing and hiring.

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