The Impact of Maternal Stressors & Adverse Childhood Experiences, on Mental Health Outcomes During Pregnancy

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Introduction

- Maternal mental health is shaped by a combination of psychosocial stressors during pregnancy and early life experiences. **1 in 5** women experience a mental health disorder during pregnancy and are associated with childbirth complications
- **Adverse Childhood Experiences (ACEs),** such as abuse, neglect, or household dysfunction, have been linked to poor mental and physical health outcomes later in life.
- Pregnant women with higher ACE scores may have an increased development of depression, anxiety, and other related symptoms during and after pregnancy.
- Mothers in poverty are **twice as likely** to develop postpartum depression and major depressive disorder
- Current life stressors (financial strain, relationship instability, economic and housing instability) may further worsen mental health difficulties during pregnancy.
- Understanding these associations can inform early screening, prevention, and intervention strategies to improve perinatal mental health outcomes and physical health outcomes.

Methods

- A retrospective study was done for patients (N = 150) receiving obstetrics services at UMC Women's Health Clinic between 2017 and 2019.
- Patient questionnaires were given in clinic, including, anxiety (GAD-2), depression (PHQ-9), trauma symptoms (PCL6), adverse childhood experiences (ACE), and current stressors survey.
- Statistical analysis was performed using SPSS.

Demographics Tables

	Maternal Age	GAD 2 total	PHQ 9 total	PCL6 total	ACES total
N	150	150	150	150	150
Missing	131	131	131	131	131
Mean	27.8	2.09	6.99	5.93	2.65
Median	27.4	2	5	5	2
Standard deviation	6.47	1.88	6.07	6.02	2.54
Minimum score	18.1	0	0	0	0
Maximum score	46.2	6	25	24	10

Race	Counts	% of Total
Other	3	0.021
Multiracial	2	0.014
Other Pacific Islander	1	0.007
Asian American	1	0.007
Black American	114	0.792
White American	23	0.16

Ethnicity	Counts	% of Total
Non-Hispanic	143	0.993
Hispanic	1	0.007

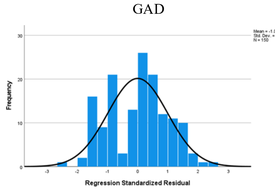
Figures

Correlations

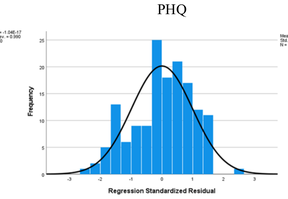
	GAD	PHQ	PCL	ACES	Stressors	Maternal Age	Mean	SD	N
GAD	1						0.924	0.668	150
PHQ	0.695**	1					1.743	0.887	150
PCL	0.728**	0.712**	1				1.477	1.046	150
ACES	0.342**	0.347**	0.541**	1			2.65	2.538	150
Stressors	0.511**	0.438**	0.576**	0.552**	1		1.46	1.455	150
Maternal Age	0.064	0.052	-0.006	0.094.	0.166*	1	27.784	6.474	150

** $p < 0.01$, * $p < 0.05$

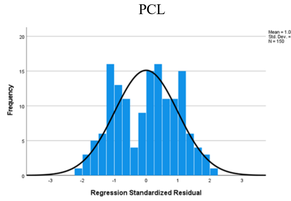
Histogram GAD



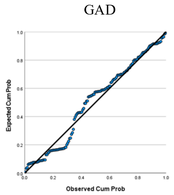
Histogram PHQ



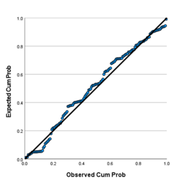
Histogram PCL



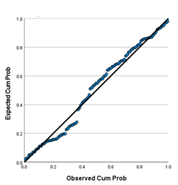
Normal PP Plot of Standardized Residual GAD



Normal PP Plot of Standardized Residual PHQ



Normal PP Plot of Standardized Residual PHQ



Results

- GAD: $F(3, 146) = 17.78$, $p < .001$, $r2 = .252$,
- PHQ: $F(3, 146) = 17.78$, $p < .001$, $r2 = .208$
- PCL: $F(3, 146) = 17.78$, $p < .001$, $r2 = 402$.
- Anxiety, Depression, and Posttraumatic symptoms were significantly associated with Stressors ($p < 0.001$)
- ACES were significantly associated with trauma symptoms ($p < .001$)

Conclusions and Discussion

Both ACEs and current life stressors were associated with poorer mental health outcomes during pregnancy. Higher life stressors were strongly associated with increased symptoms of anxiety, depression, and trauma. ACES scores as well as current life stressors were shown to be linked to symptoms of trauma.

Examination of the output and graphs reveals several points of note. The tight clustering of individual data points around the predicted regression line indicate a strong association in this model. The skewed histograms and the "S" shape in the regression curve, particularly in the first part of the regression model for GAD indicates a possible nonlinear relationship. This could be due to the complex nature of psychological experiences during pregnancy, especially in high-risk populations such as this sample, leading to unaccounted for interactions with other variables.

Future research can examine how these factors may be related to physical health outcomes such as preterm delivery rates and pre-eclampsia during the perinatal period.

References

1. Gavin, N. I., Gaynes, B. N., Lohr, K. N., Meltzer-Brody, S., Gartlehner, G., & Swinson, T. (2005). Perinatal depression: A systematic review of prevalence and incidence. Obstetrics and Gynecology, 106(5 Pt 1), 1071–1083.
2. Chaudron, L. H., Szilagyi, P. G., Tang, W., Anson, E., Talbot, N. L., Wadkins, H. I. M., Tu, X., & Wisner, K. L. (2010). Accuracy of depression screening tools for identifying postpartum depression among urban mothers. Pediatrics, 125(3), e609-617.