

The Association Between Mindfulness and Perinatal Outcomes

Audra Fain, BS¹; Phinnara Has, MS¹; Erika Werner, MD, MS^{1, 2}; Nina Ayala, MD^{1, 2}

¹Warren Alpert Medical School of Brown University, ² Women & Infants Hospital of Rhode Island

BACKGROUND

- Maternal depression and anxiety are associated with adverse perinatal outcomes including preterm birth, low birth weight, and small for gestational age^{1, 2}.
- Prior studies have shown that mindfulness training can reduce perinatal depression and anxiety^{3, 4}.
- Previous data assessing mindfulness and perinatal outcomes are limited to small studies with a homogenous patient population that does not reflect the diversity of the United States.
- This study sought to evaluate the association between baseline mindfulness and perinatal outcomes.

METHODS

- Prospective cohort study of nulliparous women, at < 20 weeks with a non-anomalous, singleton pregnancy
- Limited to those English/Spanish speaking.
- Participants filled out demographic questions as well as 4 validated surveys: the Mindfulness Attention Awareness Scale (MAAS), Proactive Coping Index (PCI), Revised Life Orientation Test (LOT-R) and State/Trait Anxiety Scale.
- Planned cohort will include approximately 500 women.
- Primary outcome: Mode of delivery
- Participants were dichotomized into high (3rd and 4th quartile) and low mindfulness (1st and 2nd quartile)
- Bivariable analyses were performed to compare demographic characteristics as well as maternal and neonatal outcomes between those with low and high mindfulness.

RESULTS

- 125 participants were included, 63 in the low mindfulness and 62 in the high mindfulness group.
- Non-Hispanic White women were more likely to have low mindfulness while Non-Hispanic Black women were more likely to have high mindfulness.
- There were no significant differences between the high and low mindfulness groups in maternal or neonatal outcomes.

RESULTS

Table 1: Demographic characteristics among women with low compared to high mindfulness

N=125	Low Mindfulness (n=63)	High Mindfulness (n=62)	p-value
Age at delivery, Mean (SD)	25.3 (5.4)	25.4 (4.9)	0.73 ¹
Race*			
Non-Hispanic White	44 (69.8)	22 (35.5)	<0.001 ²
Non-Hispanic Black	8 (12.7)	17 (27.4)	
Hispanic	10 (15.9)	17 (27.4)	
Other	6 (9.5)	11 (17.7)	
Education			
Grades 9-11	4 (6.4)	4 (6.6)	0.79 ²
Grade 12 or GED	18 (28.6)	22 (36.1)	
Some college	23 (36.5)	18 (29.5)	
College graduate	18 (28.6)	17 (27.9)	
Marital status			
Married	18 (29.0)	17 (27.9)	0.41 ²
Never married	18 (29.0)	12 (19.7)	
Living with partner	20 (32.3)	28 (45.9)	
Employment status			
Working for pay	44 (69.8)	39 (63.9)	0.82 ²
Looking for work	14 (22.2)	14 (22.9)	
Working, not for pay	0 (-)	1 (1.6)	
Not working, not looking	5 (7.9)	6 (9.8)	
Depressive disorder	18 (28.6)	14 (22.9)	0.82 ²
Anxiety disorder	23 (37.1)	14 (22.9)	0.17 ²

Table 2: Perinatal outcomes among women with low compared to high mindfulness

N=125	Low Mindfulness (n=63)	High Mindfulness (n=62)	p-value
Gestational age at delivery, mean (SD)	38.7 (2.8)	38.5 (3.1)	0.63 ¹
Preterm birth (<37wks)	4 (7.8)	9 (16.9)	0.24 ²
Birthweight, Mean (SD)	3284 (515)	3110 (697)	0.54 ²
Labor onset	(n=52)	(n=53)	
Spontaneous	19 (36.5)	25 (47.2)	0.45 ²
Induction of labor	29 (55.8)	26 (49.1)	
Scheduled Cesarean	4 (7.7)	2 (3.8)	
Mode of delivery	(n=52)	(n=53)	
SVD	37 (71.2)	34 (64.2)	0.41 ²
VAVD	4 (7.7)	6 (11.3)	
FAVD	2 (2.9)	0 (-)	
Cesarean section	9 (17.3)	13 (24.5)	
Estimated blood loss (cc), Median (IQR)	(n=50) 350 (300-500)	(n=53) 350 (300-600)	0.47 ¹
Maternal Complications			
Hypertension (gHTN + cHTN)	6 (9.5)	8 (12.9)	0.58 ²
Chorioamnionitis/endometritis	3 (4.8)	4 (6.5)	0.72 ²
Shoulder dystocia	4 (7.7)	2 (3.8)	0.44 ²

STRENGTHS/LIMITATIONS

- Strengths: racially and socio-economically diverse group of participants, increasing generalizability.
- Limitations: mindfulness was only assessed at a single point in pregnancy.
- This preliminary analysis includes one quarter of the expected final enrollment.

CONCLUSIONS

- Baseline mindfulness differed by race/ethnicity.
- There was no difference in maternal or neonatal outcomes between participants with high or low mindfulness.

REFERENCES

- Jarde A, et al. Neonatal Outcomes in Women With Untreated Antenatal Depression Compared With Women Without Depression: A Systematic Review and Meta-analysis. *JAMA Psychiatry*. 2016 Aug 1;73(8):826-37. doi: 10.1001/jamapsychiatry.2016.0934.
- Grigoriadis S, et al. Maternal Anxiety During Pregnancy and the Association With Adverse Perinatal Outcomes: Systematic Review and Meta-Analysis. *J Clin Psychiatry*. 2018 Sep 4;79(5):17r12011. doi: 10.4088/JCP.17r12011.
- Dimidjian S, et al. Staying well during pregnancy and the postpartum: A pilot randomized trial of mindfulness-based cognitive therapy for the prevention of depressive relapse/recurrence. *J Consult Clin Psychol*. 2016 Feb;84(2):134-45. doi: 10.1037/ccp0000068. Epub 2015 Dec 14.
- Shi Z, MacBeth A. The Effectiveness of Mindfulness-Based Interventions on Maternal Perinatal Mental Health Outcomes: a Systematic Review. *Mindfulness (N Y)*. 2017;8(4):823-847. doi: 10.1007/s12671-016-0673-y. Epub 2017 Jan 19.

ACKNOWLEDGEMENTS

This project was made possible by the mentorship of Dr. Ayala and funding from the Women's Reproductive Health Scholarly Concentration.