Intergenerational Transmission of Psychological Distress: Role of Early Temperament & Maternal Psychological Distress

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The Pennsylvania State University, University Park

Consortium on Substance Use and Addiction 2025 Annual Conference

Introduction

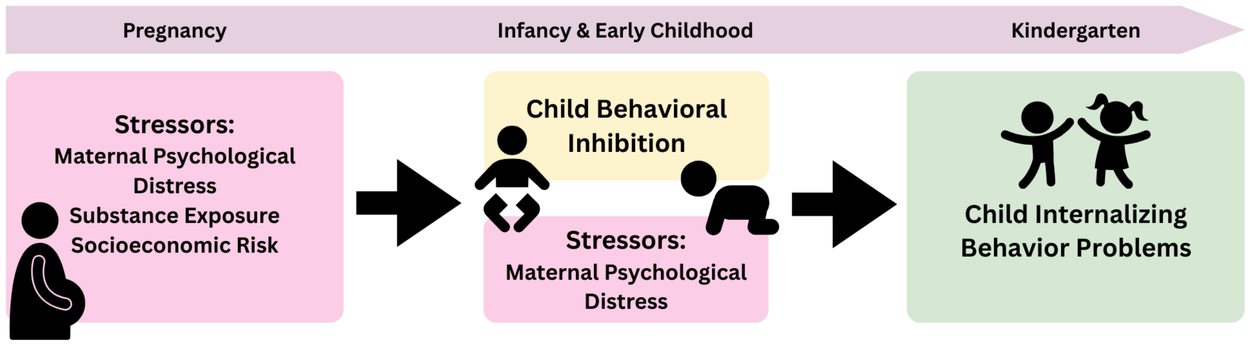
Behaviorally inhibited temperamental traits precede internalizing behaviors for some children[1, 2]

Two-Hit Model of Internalizing Behavior (Ostlund & Pérez-Edgar, 2023[3])
- Role of early pre-and-postnatal environment on child behavioral inhibition[4, 5, 6, 7, 8]
- Influence of maternal psychological distress[9] and stressors[10, 11, 12]

Biological Sensitivity to Context (Ellis & Boyce, 2008[13])
- Sensitive parenting may buffer from internalizing behaviors[14, 15, 16, 17]

Hypotheses:
- 1) Maternal psychological distress will directly/indirectly predict higher internalizing problems in school-aged children via continued postnatal distress and infant/toddler behavioral inhibition
- 2) Maternal sensitivity will buffer the effect of behavioral inhibition on later internalizing problems

Figure 1. Conceptual Model



Method

Figure 2. Descriptive Sample Statistics

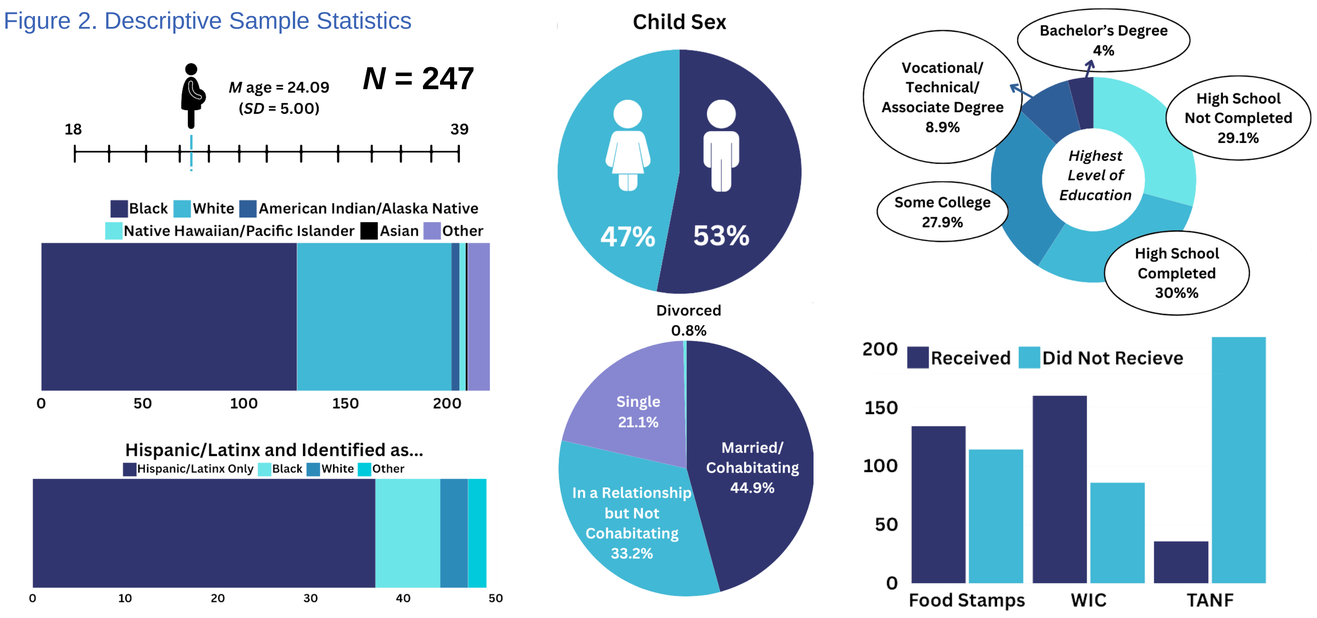


Table 1. *Note*. MR = maternal report.

Construct	Measure	T1	T2	T3	2M	9M	16M	24M	K
Prenatal Substance Exposure	Maternal Salivary Cotinine	X	X	X					
	Infant meconium			X					
	Timeline Follow Back (TLFB)[18] MR	X	X	X					
Maternal Psychological Distress	Beck Depression Inventory (BDI)[19] MR		X	X	X	X	X	X	
	Perceived Stress Scale (PSS)[20] MR		X	X	X	X	X	X	
Cumulative Socioeconomic Risk	Composite of MR education, relationship, & occupation statuses	X							
Child Temperament - Behavioral Inhibition	Infant Behavior Questionnaire (IBQ; negative affect subscale)[21] MR					X			
	Toddler Behavior Assessment Questionnaire (TBAQ; object fear, social fear, & sadness subscales)[22, 23] MR						X	X	
Observations, Parental Sensitivity	Parent Child Relational Assessment, Free Play[24]					X	X	X	
Child Internalizing Behaviors	Child Behavior Checklist, Internalizing Scale (CBCL)[25] MR								X
	CBCL Teacher Report Form Internalizing Scale (TRF)[26]								X

Results

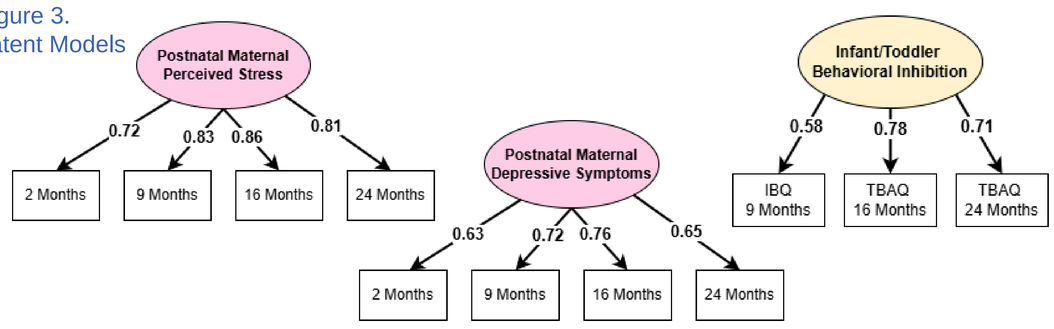
Table 2.

Correlations & Descriptive Statistics of Assessments

Measure	1	2	3	4	5	6	7	8	9	10	11	M (SD)
1. Average PRE cigarettes/day	-											3.59 (4.54)
2. Average PRE joints/day	**0.19****	-										0.22 (0.60)
3. M PRE Dep. Symptoms[a]	**0.17****	**0.17****	-									15.41 (7.73)
4. M PRE Perceived Stress[a]	**0.17****	**0.20****	**0.64*****	-								25.15 (7.42)
5. Socioeconomic Risk	**0.15***	0.10	0.07	0.08	-							0.53 (0.25)
6. M POST Dep. Symptoms[a]	**0.16****	0.09	**0.66*****	**0.48*****	-0.10	-						9.74 (6.61)
7. M POST Perceived Stress[a]	0.10	0.04	**0.52*****	**0.57*****	0.06	**0.63*****	-					22.45 (7.33)
8. C Temperament (IBQ)[a]	0.02	0.00	**0.29*****	**0.17***	0.06	**0.27*****	**0.31*****	-				3.71 (0.56)
9. C Temperament (TBAQ)[a]	-0.07	0.06	**0.34*****	**0.19****	0.03	**0.27*****	**0.27*****	**0.48*****	-			3.44 (0.64)
10. M Sensitivity	0.05	**-0.14***	-0.10	**-0.16***	**-0.22*****	0.03	**-0.15***	**-0.16***	-0.10	-		3.79 (0.61)
11. MR C INT Behaviors	0.06	-0.04	**0.16***	**0.20****	**0.16***	**0.27*****	**0.34*****	**0.18***	**0.21****	-0.07	-	8.94 (7.27)
12. TR C INT Behaviors	0.10	**-0.13^**	-0.06	-0.04	**0.16***	-0.07	0.01	-0.07	0.10	-0.08	**0.14***	8.46 (7.61)

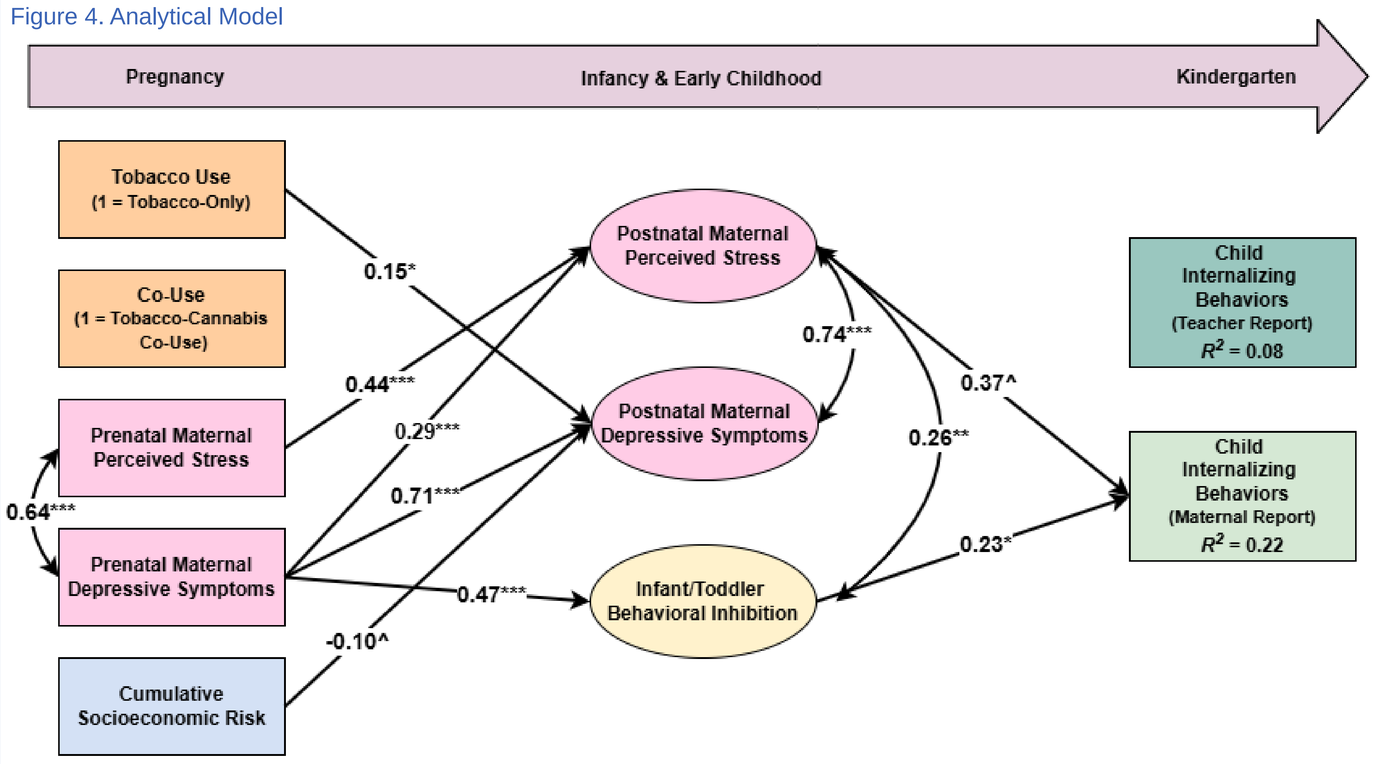
Note. C = child; M=maternal; PRE=prenatal; POST=postnatal; MR=maternal report; TR =teacher report; Dep=depressive; INT=internalizing; [a] = composite variable ^$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$

Figure 3. Latent Models



Note. Fit statistics are reported for each mode; Postnatal maternal perceived stress: $X^2(2) = 10.11$, $p < 0.01$, RMSEA = 0.13, 90% CI [0.06, 0.21], CFI = 0.98, SRMR = 0.02; Postnatal maternal depressive symptoms: $X^2(2) = 0.16$, $p = 0.92$, RMSEA = 0.00, 90% CI [0.00, 0.04], CFI = 1.00, SRMR = 0.004. Child negative affectivity: $X^2(2) = 0.00$, $p < 0.01$, RMSEA = 0.00, 90% CI [0.00, 0.00], CFI = 1.00, SRMR = 0.00.

Figure 4. Analytical Model

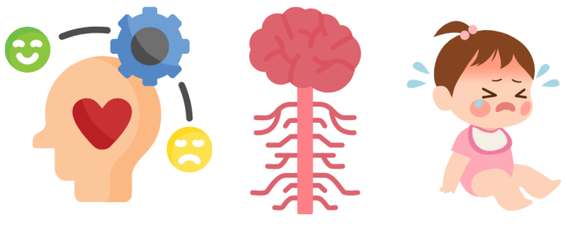


Note. $X^2(125) = 195.43$, $p < 0.001$, RMSEA = 0.04, 90% CI [0.3, 0.6], CFI = 0.94, SRMR = 0.05. Covariates included child sex. The indirect effect of prenatal depression → negative affect → child internalizing problems was significant, $\beta = .11$, 95% CI [.01, .25]. Sensitivity did not moderate the association between behavioral inhibition and child internalizing behaviors (MR).
^$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$

Discussion

Intergenerational transmission of psychological distress:

Developmental cascade via higher prenatal maternal depressive symptoms[27, 3]
- Potential prenatal programming of poor infant regulation[28, 29, 30]



Continued postnatal pathway to risk in environment marked by maternal distress[3]
- Additive risk for high behaviorally inhibited children[13]

Intrusive parenting quality, rather than sensitivity, may be more specifically related to subsequent development of internalizing behaviors[31, 32, 33, 34, 35]

Extended findings to school-entry past preschool years[36]

Future work will explore the potential mediating role of infant regulation in the developmental cascade[37] and sex effects

References, Lab, & Acknowledgements

Check out our lab!

References:

Happy to connect!

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The authors thank the parents and children who participated in this study and research staff who were responsible for conducting numerous assessments with these families. The research reported here was supported by the National Institute on Drug Abuse at the National Institutes of Health under award number R01DA019632, R21/R33 DA045640 and the Intramural Research Program. The content is solely the responsibility of the authors and does not necessarily represent the official views of the NIH or above agencies.