

Episodic and Persistent Maternal Depressive Symptoms: Population-Based Estimates of Effects on School Readiness and Behavior

Marianne M. Hillemeier, Paul L. Morgan, George Farkas, Steven A. Maczuga

Negative effects of maternal depression on early childhood outcomes are widely documented, however few studies use population-based samples of children followed longitudinally. This study uses nationally-representative data from the Early Childhood Longitudinal Study, Birth Cohort (ECLS-B), to examine the effects of episodic and persistent maternal depressive symptoms on learning and externalizing behaviors among children at age 5. Logistic regressions showed that children whose mothers reported depressive symptoms at both 9 and 48 months (persistent symptoms) had markedly elevated odds of low learning behavior (OR=3.36; $p<0.001$) and high externalizing behavior (OR=2.95; $p<0.01$) compared to those whose mothers did not report depressive symptoms. Interestingly, the odds of these adverse outcomes were not significantly elevated among children whose mothers reported depressive symptoms at one but not both points (episodic symptoms). In multinomial regressions, maternal education, poverty, and marital status were associated with the presence of episodic but not persistent maternal depressive symptoms.

Table 1. Descriptive Statistics

	Sample Population (N=5,050 ^a)		Non-Depressed Mothers (N=4,500 ^a)		Depressed Mothers at 9 and 48 Months (N=100 ^a)		Depressed Mothers at 1 time point (N=550 ^a)	
	Mean	STD	Mean	STD	Mean	STD	Mean	STD
Mother's Education <HS	18.3 %	0.37	17.0 %	0.36	23.6 %	0.43	29.5 %	0.45
Mother's Education HS Graduate	29.2 %	0.44	28.4 %	0.43	51.2 %	0.49	36.0 %	0.47
Mother's Education, Some College	27.7 %	0.45	28.1 %	0.45	14.2 %	0.44	23.9 %	0.43
Mother's Education, College Degree	24.9 %	0.46	26.4 %	0.46	11.1 %	0.34	10.5 %	0.35
Poverty at 48 Month Wave	23.2 %	0.42	21.1 %	0.41	34.8 %	0.50	41.2 %	0.49
Child's Age at 48 Month Wave	52.4	4.14	52.3	4.14	51.5	4.38	52.9	4.09
Male	51.6 %	0.50	51.4 %	0.50	69.0 %	0.49	53.8 %	0.50
White	54.0 %	0.49	55.0 %	0.50	44.9 %	0.48	44.7 %	0.47
African-American	13.2 %	0.35	12.4 %	0.34	27.8 %	0.45	19.7 %	0.41
Hispanic	25.8 %	0.40	25.6 %	0.40	23.8 %	0.40	28.2 %	0.42
Mother's Age over 35 at Child's Birth	13.7 %	0.37	14.1 %	0.37	8.3 %	0.33	10.3 %	0.31
Mother Not Married at 48 Month Wave	33.7 %	0.47	31.3 %	0.46	61.7 %	0.48	54.9 %	0.50
Non-English Primary HH Language	18.6 %	0.40	18.7 %	0.41	7.0 %	0.33	18.0 %	0.38
Non-Singleton	3.6 %	0.43	3.6 %	0.43	3.0 %	0.43	3.5 %	0.46
Very Low Birth Weight	2.4 %	0.32	2.3 %	0.32	3.0 %	0.37	3.1 %	0.36
Moderately Low Birth Weight	6.2 %	0.35	6.2 %	0.35	9.1 %	0.38	6.2 %	0.35
Labor Complications	35.4 %	0.67	34.6 %	0.67	26.6 %	0.64	43.1 %	0.68
Medical Risks	17.8 %	0.52	17.6 %	0.52	10.1 %	0.36	19.0 %	0.52
Behavioral Risks	11.1 %	0.32	10.3 %	0.31	29.7 %	0.42	17.6 %	0.37
Congenital Anomalies	5.7 %	0.25	5.4 %	0.25	4.3 %	0.31	7.7 %	0.28
Obstetric Procedures	56.2 %	0.68	56.6 %	0.68	59.5 %	0.61	47.0 %	0.67
Mother Depressed, 9 and 48 Months	1.5 %	0.12						
Mother Depressed at 9 or 48 Months	10.3 %	0.31						

^a Population Rounded to Nearest 50.

*Significant difference between Depressed and Non-Depressed Means (weighted).

Table 2. Odds Ratios from Logistic Regression Analysis Modeling Outcomes at the 60 Month ECLS-B Assessment (N=5,050^a)

	Low Learning Behavior	High Externalizing Behavior
Mother's Education < HS	2.12 (1.20-3.74) ^c	1.81 (1.08-3.04) ^b
Mother's Education HS Grad	2.92 (1.86-4.60) ^d	1.56 (0.99-2.44)
Mother's Education Some College	2.14 (1.29-3.56) ^c	1.57 (1.01-2.43) ^b
Poverty at 48 Month Assessment	1.68 (1.18-2.39) ^c	0.91 (0.64-1.30)
Child Age at 48 month Assessment	1.03 (1.00-1.06) ^b	1.04 (1.00-1.08)
Male	2.29 (1.76-2.97) ^d	4.54 (3.29-6.25) ^d
African-American	1.04 (0.77-1.41)	1.54 (1.08-2.20) ^b
Hispanic	1.13 (0.85-1.50)	1.04 (0.67-1.61)
Mother's Age >35 at Child's Birth	0.94 (0.61-1.47)	0.81 (0.52-1.28)
Mother Not Married at 48 Month Assessment	1.02 (0.75-1.38)	1.74 (1.27-2.39) ^d
Non-English Primary Language	0.76 (0.49-1.16)	0.84 (0.50-1.42)
Non-Singleton	0.76 (0.55-1.04)	0.96 (0.69-1.33)
Very Low Birth Weight	1.80 (1.04-3.11) ^b	0.54 (0.35-0.82) ^c
Moderately Low Birth Weight	1.42 (0.99-2.03)	0.92 (0.62-1.37)
Labor Complications	0.96 (0.78-1.17)	0.94 (0.71-1.25)
Medical Risks	1.24 (0.92-1.65)	1.79 (1.36-2.35) ^d
Behavioral Risks	1.17 (0.82-1.68)	1.68 (1.11-2.56) ^b
Congenital Anomalies	1.54 (1.02-2.34) ^b	0.85 (0.49-1.47)
Obstetric Procedures	1.02 (0.86-1.20)	0.92 (0.73-1.16)
Mother Depressed at 1 time point	1.33 (0.85-2.09)	1.38 (0.92-2.06)
Mother Depressed at 9 AND 48 Months	3.36 (1.58-7.14) ^c	2.95 (1.19-7.31) ^b

^aSample size rounded to nearest 50 per ECLS-B confidentiality requirements

^b p<0.05

^c p<0.01

^d p<0.001

Table 3. Odds Ratios from Multinomial Logistic Regression Analysis, ECLS-B (N=5,050^a)

	Episodic Maternal Depression ^b	Persistent Maternal Depression ^b
Mother's Education < HS	1.87 (1.09-3.21) ^c	2.28 (0.63-8.29)
Mother's Education HS Grad	1.75 (1.10-2.79) ^c	2.82 (0.88-9.11)
Mother's Education Some College	1.48 (0.96-2.29)	0.94 (0.28-3.18)
Poverty at 9 or 48 Month Assessment	1.77 (1.19-2.63) ^d	0.71 (0.29-1.74)
Poverty at 9 and 48 Month Assessment	1.34 (0.85-2.10)	1.20 (0.48-3.03)
Child Age at 48 month Assessment	1.03 (1.00-1.07)	0.94 (0.86-1.03)
Male	1.10 (0.85-1.42)	1.98 (0.97-4.05)
African-American	1.01 (0.72-1.43)	2.07 (0.86-5.01)
Hispanic	1.03 (0.65-1.62)	1.68 (0.58-4.91)
Mother's Age >35 at Child's Birth	1.05 (0.73-1.53)	1.10 (0.40-3.01)
Mother Not Married at 48 Month Assessment	1.57 (1.13-2.18) ^d	2.22 (0.96-5.15)
Non-English Primary Language	0.65 (0.42-1.00)	0.29 (0.07-1.21)
Non-Singleton	1.00 (0.74-1.35)	0.82 (0.34-1.97)
Very Low Birth Weight	1.17 (0.65-2.13)	1.38 (0.47-4.02)
Moderately Low Birth Weight	0.85 (0.58-1.23)	1.22 (0.47-3.17)
Labor Complications	1.21 (1.00-1.47)	0.75 (0.36-1.58)
Medical Risks	1.01 (0.82-1.24)	0.51 (0.21-1.26)
Behavioral Risks	1.41 (0.92-2.17)	2.60 (1.24-5.48) ^c
Congenital Anomalies	1.29 (0.72-2.32)	0.78 (0.22-2.75)
Obstetric Procedures	0.96 (0.81-1.14)	1.26 (0.70-2.26)

^aSample size rounded to nearest 50 per ECLS-B confidentiality requirements

^b Reference Group is Non-Depressed Mothers

^c p<0.05

^d p<0.01

