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HEALTH and HUMAN PERFORMANCE

Links among Individual, Family, & Neighborhood Risks & Maternal Weight

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Background

Obesity is influenced by multiple ecological systems (Huang, Drewnowski, Kumanyika, & Glass, 2009).

Within each ecological system there are multiple risk factors.

The cumulative risk theory (Sameroff, Seifer, Baldwin, & Baldwin, 1993; Wells, Evans, Beavis, & Ong, 2010) suggests that it is not one particular risk factor within a system that influences an outcome [i.e. body mass index (BMI)], but an accumulation of risk factors within a system.

Further, it has been recommended that to distinguish which system contributes to various BMI categories, aggregate scores can be advantageous.

Building on the ecological systems framework (Huang et al., 2009) and the cumulative risk theory (Sameroff et al., 1993; Wells et al., 2010), the following study focuses on the individual, family, and neighborhood risk indices as predictors of maternal weight status.

Methods & Results

Data were drawn from the year 3 and 5 Main Survey of the **Fragile Families and Child Wellbeing (FFCW) Study**, as well as the year 3 In-Home Longitudinal Study of Preschool Age Children Survey (N = 1,224)

Measures:

Maternal BMI. At the year 5 Main Survey mothers reported on their height (feet and inches) and weight (pounds) from which BMI reference categories based on the Centers for Disease Control and Prevention (2015) were created.

	Mean (SD) or %
Maternal BMI	27.91 (6.30)
Underweight	2%
Normal weight	37%
Overweight	29%
Obese	32%

Methods & Results (Continued)

Risk indices. Three types of risk indices were used to represent three ecological systems. All items used came from either the year 3 Main Survey or the year 3 In-Home Survey.

Maternal health risk index. Four measures were used. The 4 measures were summed to create the risk index. Items ranged from 0-4.

	Mean (SD) or %
Maternal Health Risk Index	0.42 (0.73)
Poor Health	11%
Drug Use	8%
Depression	19%
Anxiety	4%

Family risk index. Six measures were used. The 6 measures were summed to create a family risk index. Items ranged from 0-6.

	Mean (SD) or %
Family Risk Index	1.25 (1.16)
Domestic Violence	9%
Poor Relationships Quality	13%
Parenting Role Strain	42%
Poor Co-parenting Support	16%
Multiple Partner Fertility	35%
Father/Partner Ever in Jail	10%

Neighborhood risk index. Two measures were used. The 2 measures were summed to create a neighborhood risk index. Items ranged from 0-2.

	Mean (SD) or %
Neighborhood Risk Index	0.99 (0.78)
Disorganization	36%
Violence	63%

Descriptive Statistics of Maternal Characteristics (N = 1,224)	
	Mean (SD) or %
Age	28.06 (6.01)
Race/ethnicity	
White	22%
Black	50%
Hispanic	28%
Married/Cohabitating	59%
High School Diploma or more	73%
< 200% of Federal Poverty Line (FPL)	67%
Health Insurance	
No Insurance	7%
Public	60%
Private	33%

Logistic regression models were conducted where the dependent variable was regressed onto the 3 risk indices and maternal characteristics listed above.

This was done for the full sample and stratified by poverty thresholds.

Panel A: Full Sample

Overweight/Obese vs. Normal Weight (n = 1,203)

	OR	95% CI
Risk Index		
Maternal Health	1.05	(0.89—1.25)
Family	1.09	(0.98—1.22)
Neighborhood	**1.18***	**(1.01—1.38)**

Panel B: Less than 200% FPL

Overweight/Obese vs. Normal Weight (n = 802)

	OR	95% CI
Risk Index		
Maternal Health	1.04	(0.84—1.28)
Family	1.06	(0.93—1.21)
Neighborhood	**1.29****	**(1.06—1.56)**

Panel C: Greater than or equal to 200% FPL

Overweight/Obese vs. Normal Weight (n = 401)

	OR	95% CI
Risk Index		
Maternal Health	1.10	(0.81—1.49)
Family	1.14	(0.95—1.38)
Neighborhood	1.01	(0.77—1.32)

Conclusions

Findings indicate that **the association between neighborhood risks and higher weight status is stronger among low-income mothers**.

Changing disorganized and violent neighborhoods is time consuming.

Yet, concentrated efforts within the community to build social cohesion among neighbors (i.e. collective efficacy) may help to reduce adult obesity rates, especially among the poorest families.

References

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