Population Health Sciences

University of Wisconsin SCHOOL OF MEDICINE AND PUBLIC HEALTH

VERY LOW BIRTH WEIGHT AND CHILD BEHAVIOR PROBLEMS AS PREDICTORS OF PARENTAL STRESS AND HEALTH-RELATED QUALITY OF LIFE

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Presenter Disclosures

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"No relationships to disclose"

Background

- Caring for a very low birth weight (<1500 g) child can have a significant and lasting impact on parental stress, and psychological distress.
- Previous research suggests that child behavior problems are a possible mechanism by which caring for these children may negatively affect parents.

Study Aims

- Compare health-related quality of life (HRQoL) and symptoms of stress between parents of very low birth weight (VLBW, <1500 g) and parents normal birth weight children
- Determine to what extent children's externalizing and internalizing behavior problems influence these relationships

Study Design

- Ancillary study of the Newborn Lung Statewide Cohort Study
- Telephone interview was administered to 308 parents of VLBW children and 298 parents of NBW children

Main Independent Variables

- Child Behavior Problems
  - Child Behavior Checklist (CBCL)
    - externalizing behaviors (including attention problems and aggressive behavior)
    - Internalizing behaviors (including emotionally reactive, anxious/depressed, somatic complaints, and withdrawn)

Main Outcomes

- Parental Health-Related Quality of Life
  - Short Form-12 (SF-12)
- Parental Symptoms of Stress
  - Calgary Symptoms of Stress Inventory (C-SOSI)

Control Variables

- Child sex
- Parent age
- Parent sex
- Race (dichotomized)
- Parent education (four categories)
- Annual Income (six categories)

Analytic Approach

- X^2 analyses
- Multiple linear regression analyses

Results: Child Characteristics

	VLBW Children	NBW Children	P-value
Number of Participants (%)	309 (50.91)	298 (49.09)	
Age (mean/SD)	4.97 (0.53)	5.18 (0.43)	<0.0001
Gender (%)			0.81
Male	144 (46.60)	136 (45.64)	
Female	165 (53.40)	162 (54.36)	
Child Behavior Problems (mean/SD)	47.98 (9.95)	43.47 (9.53)	<0.0001
Externalizing Behavior Problems	48.64 (10.75)	44.72 (9.49)	<0.0001
Internalizing Behavior Problems	46.46 (9.61)	42.52 (9.55)	<0.0001

Results: Parent Characteristics 1

	Parents of VLBW Children	Parents of NBW Children	P-value
Age (mean/SD)	34.87 (5.59)	35.92 (5.05)	0.02
Gender (%)			0.02
Male	8 (2.59)	1 (0.34)	
Female	301 (97.41)	297 (99.66)	
Race (%)			0.0006
White	267 (86.41)	282 (94.63)	
Non-white	42 (13.59)	16 (5.37)	
Education Level (%)			<0.0001
High school degree or less	62 (20.06)	32 (10.74)	
Some college	114 (36.89)	84 (28.19)	
Bachelor degree or equivalent	95 (30.47)	116 (38.93)	
Post graduate	38 (12.30)	66 (22.15)	

Results: Parent Characteristics 2

	Parents of VLBW Children	Parents of NBW Children	P-value
Annual Income (%)			<0.0001
<$10,000	13 (4.21)	8 (2.68)	
$10,000-$30,000	46 (14.89)	16 (5.37)	
$30,000-$40,000	27 (8.74)	19 (6.38)	
$40,000-$60,000	89 (28.80)	71 (23.83)	
$60,000-$100,000	89 (29.90)	130 (43.62)	
>$100,000	45 (14.56)	54 (18.12)	
Mental Health (mean/SD)	48.80 (8.42)	50.48 (7.81)	0.01
Physical Health (mean/SD)	52.97 (7.93)	55.28 (6.11)	<0.0001
Symptoms of Stress (mean/SD)	33.10 (26.43)	25.52 (21.41)	<0.0001

Results: Physical HRQoL, Model 1

	Beta [Standard Error]	P-value
Child Birthweight Status		
Parent of VLBW child	-1.76 [0.57]	0.002
Parent of NBW child	Ref	

- Controlling for parental race, education level, annual income and parent age.

Results: Physical HRQoL, Model 2

	Beta [Standard Error]	P-value
Child Birthweight Status		
Parent of VLBW child	-1.73 [0.57]	0.003
Parent of NBW child	Ref	
Externalizing Behaviors	-0.01 [0.03]	0.69

- Controlling for parental race, education level, annual income and parent age.

Results: Physical HRQoL, Model 3

	Beta [Standard Error]	P-value
Child Birthweight Status		
Parent of VLBW child	-1.61 [0.57]	0.01
Parent of NBW child	Ref	
Internalizing Behaviors	-0.06 [0.03]	0.05

- Controlling for parental race, education level, annual income and parent age.

Results: Symptoms of Stress, Model 1

	Beta [Standard Error]	P-value
Child Birthweight Status		
Parent of VLBW child	3.98 [1.86]	0.03
Parent of NBW child	Ref	

- Controlling for parental race, education level, annual income and parent age.

Results: Symptoms of Stress, Model 2

	Beta [Standard Error]	P-value
Child Birthweight Status		
Parent of VLBW child	2.20 [1.79]	0.22
Parent of NBW child	Ref	
Externalizing Behaviors	0.70 [0.09]	<.0001

- Controlling for parental race, education level, annual income and parent age.

Results: Symptoms of Stress, Model 3

	Beta [Standard Error]	P-value
Child Birthweight Status		
Parent of VLBW child	2.31 [1.81]	0.20
Parent of NBW child	Ref	
Internalizing Behaviors	0.65 [0.10]	<.0001

- Controlling for parental race, education level, annual income and parent age.

Conclusions

- Caring for a VLBW child is significantly related to more symptoms of stress and lower physical HRQoL among parents
- Child behavior problems at ages 2-3 explain the relationship between parenting a VLBW child and subsequent parental symptoms of stress, but not physical HRQoL

Limitations

- Parent participation
- Child behavior problems based on parent reports
- Duration of child behavior problems
- Limited data on parental health problems

Implications

- Identification and follow-up of VLBW children long-term to better manage lasting effects of being born VLBW
- Timely and appropriate family psychosocial screening and interventions
  - Focus on child behavior problems during preschool

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