

# Maternal Exposure to an Oil Spill & Children's Mental Health: The Mediating Role of Mothers' Resource Loss

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# Background



- BP Oil Spill in Gulf of Mexico, 2010; spilled 200 million gallons of crude oil over 3 months
- Mental health impacts of oil spills have been well-documented
- Fewer studies focused specifically on children's mental health
- Children embedded in families that can influence their ability to cope with disasters; they are particularly vulnerable to stressors experienced by their parents.



# Objectives

Hypothesis: Mothers who are exposed to an oil spill experience subsequent resource loss, which negatively impacts their children's mental health.

- Objectives
  1. Assess the effect of mothers' exposure to the BP Oil Spill on their children's mental health
  2. Determine whether mothers' perceived loss of resources following the oil spill mediates this relationship.

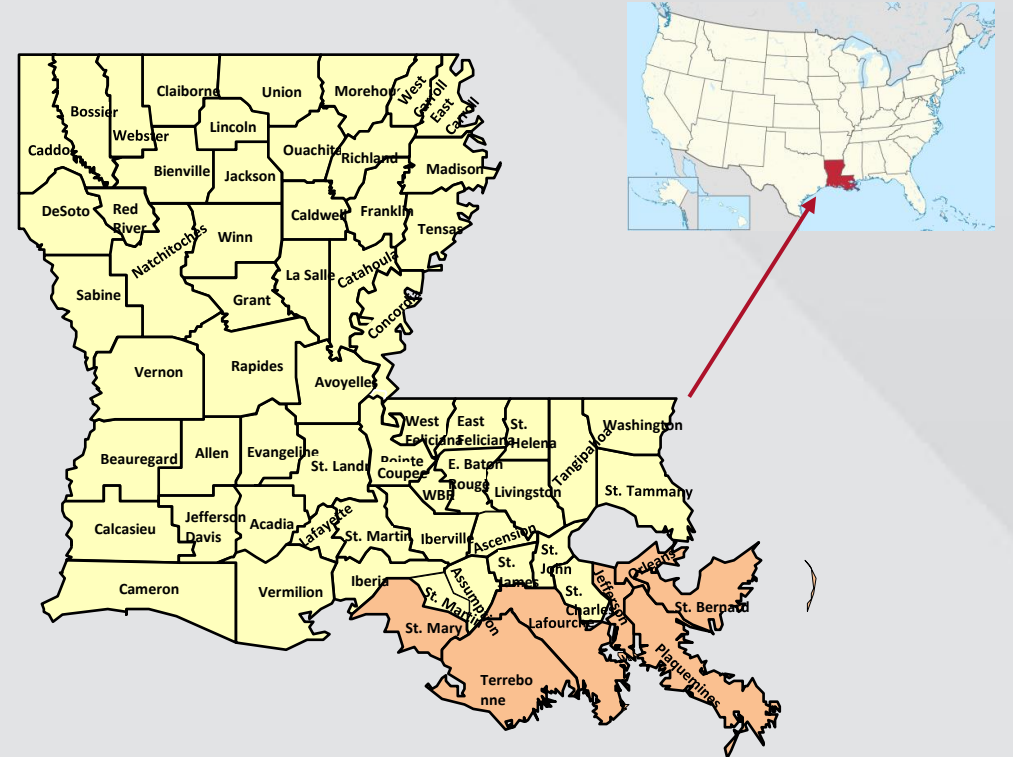


# Methods

- Longitudinal - 3 data collection waves
  - Wave 1: Jul 2012-Aug 2014
  - Wave 2: Sep 2014-Jun 2016
  - Wave 3: Feb 2023-present
- Eligibility
  - Women: 18-80 y
  - Children: 10-17 y
- Data
  - Surveys of 457 mother-child pairs reinterviewed at Wave 2

# WaTCH

Women and Their  
Children's Health Study







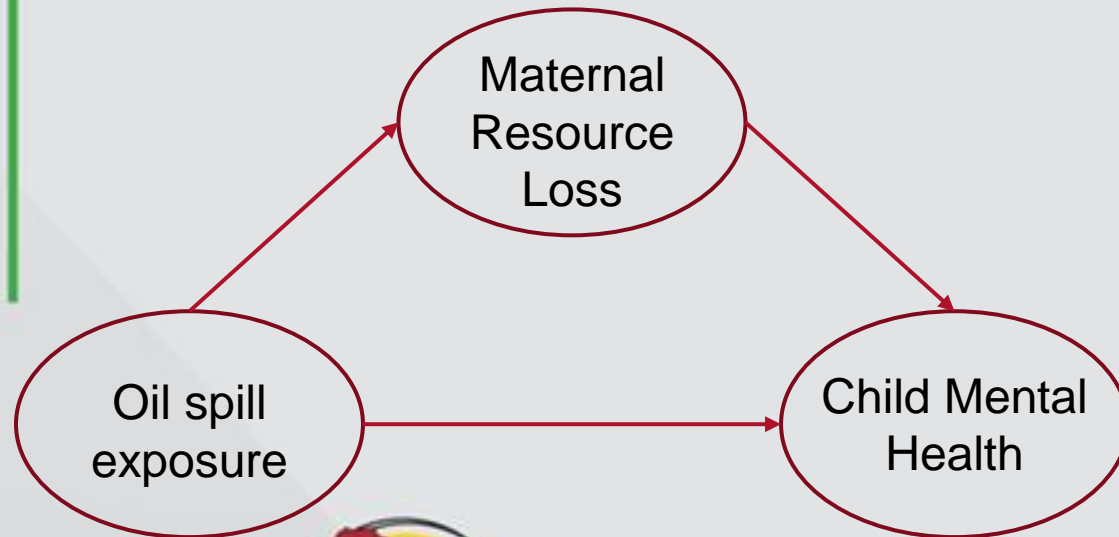
# Measures

- **Children's mental health**
  - Strengths & Difficulties Questionnaire
- **Collected at Wave 2**
  - Emotional symptoms (5 items)
  - Conduct problems (5 items)
  - Hyperactivity-inattention (5 items)
  - Peer problems (5 items)
- **Maternal oil spill exposure**
- **Collected at Wave 1**
  - Physical exposure (5 items)
  - Economic exposure (3 items)



# Measures

- Mothers' resource loss (COR-E)
  - Collected at Wave 2
  - Social/health losses (10 items)
  - Financial losses (11 items)



	Factor Loading	P-value
<b>Social/Health Resource Loss</b>		
Closeness w/ family members	0.729	0.000
Good relationship w/children	0.712	0.000
Time w/loved ones	0.764	0.000
Children's health	0.546	0.000
Closeness w/partner	0.737	0.000
Closeness w/friend	0.713	0.000
Partner's health	0.606	0.000
Companionship	0.859	0.000
Affection from others	0.884	0.000
Health of family/close friends	0.627	0.000
<b>Financial Resource Loss</b>		
Adequate clothing	0.653	0.000
Adequate food	0.818	0.000
Stable employment	0.594	0.000
Providing children's essentials	0.894	0.000
Extras for children	0.891	0.000
Money for extras	0.876	0.000
Understanding from boss	0.540	0.000
Savings/emergency money	0.826	0.000
Money for transportation	0.839	0.000
Medical insurance	0.566	0.000
Help w/childcare	0.599	0.000





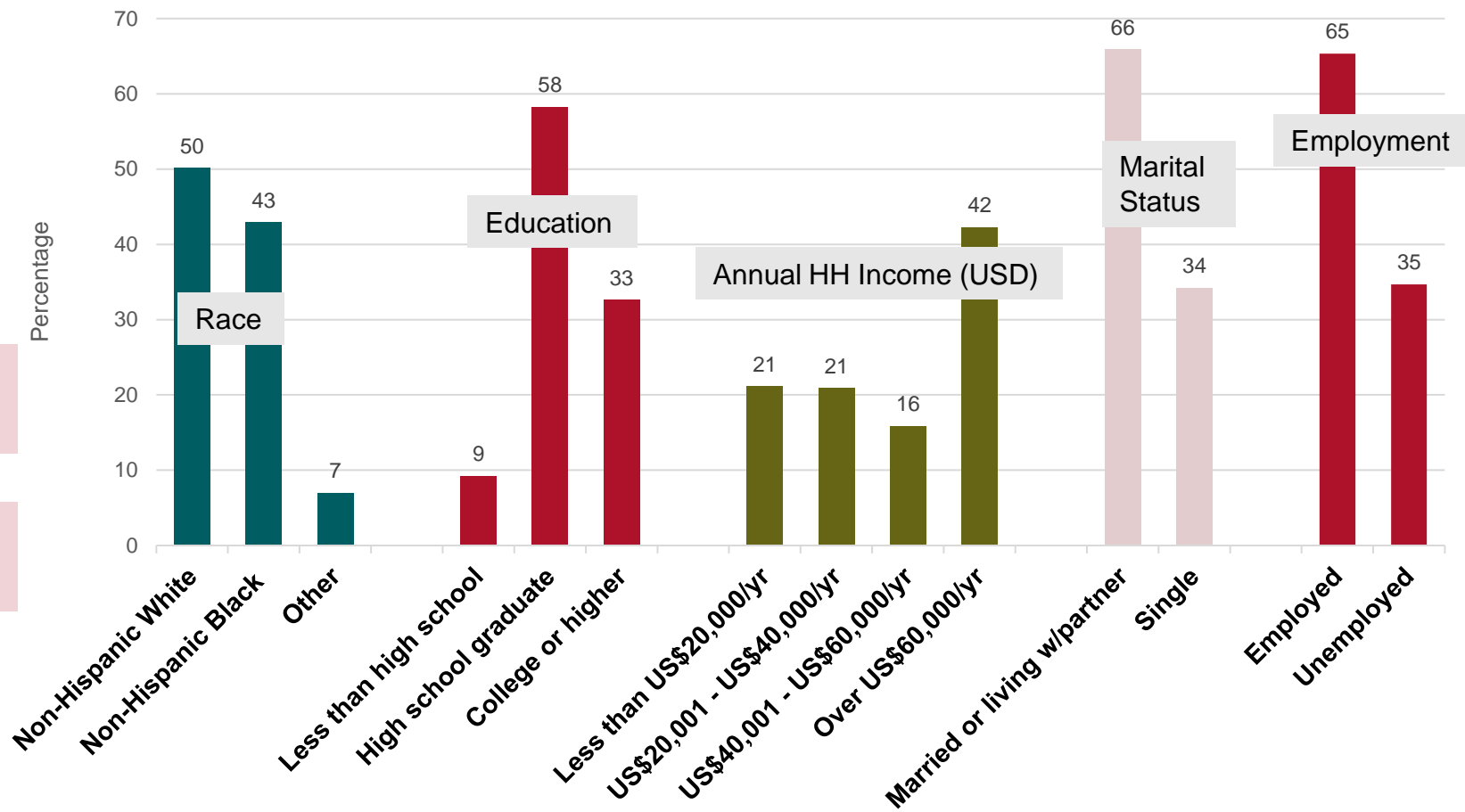
# Analysis

- Description of sample (SAS v9.4)
- Structural equation modeling (SEM) (Mplus v7.2)
  - Confirmatory factor analysis (CFA) measurement models for mothers' oil spill exposure, mothers' resource loss, children's mental health
  - Structural models examining whether mothers' resource loss mediates the effect of mothers' oil spill exposure on children's mental health
  - Model fit assessed through RMSEA ( $<.05$ ), CFI/TLI ( $>.95$ )



# Results

### Sample Characteristics, N=457 mothers and 457 children



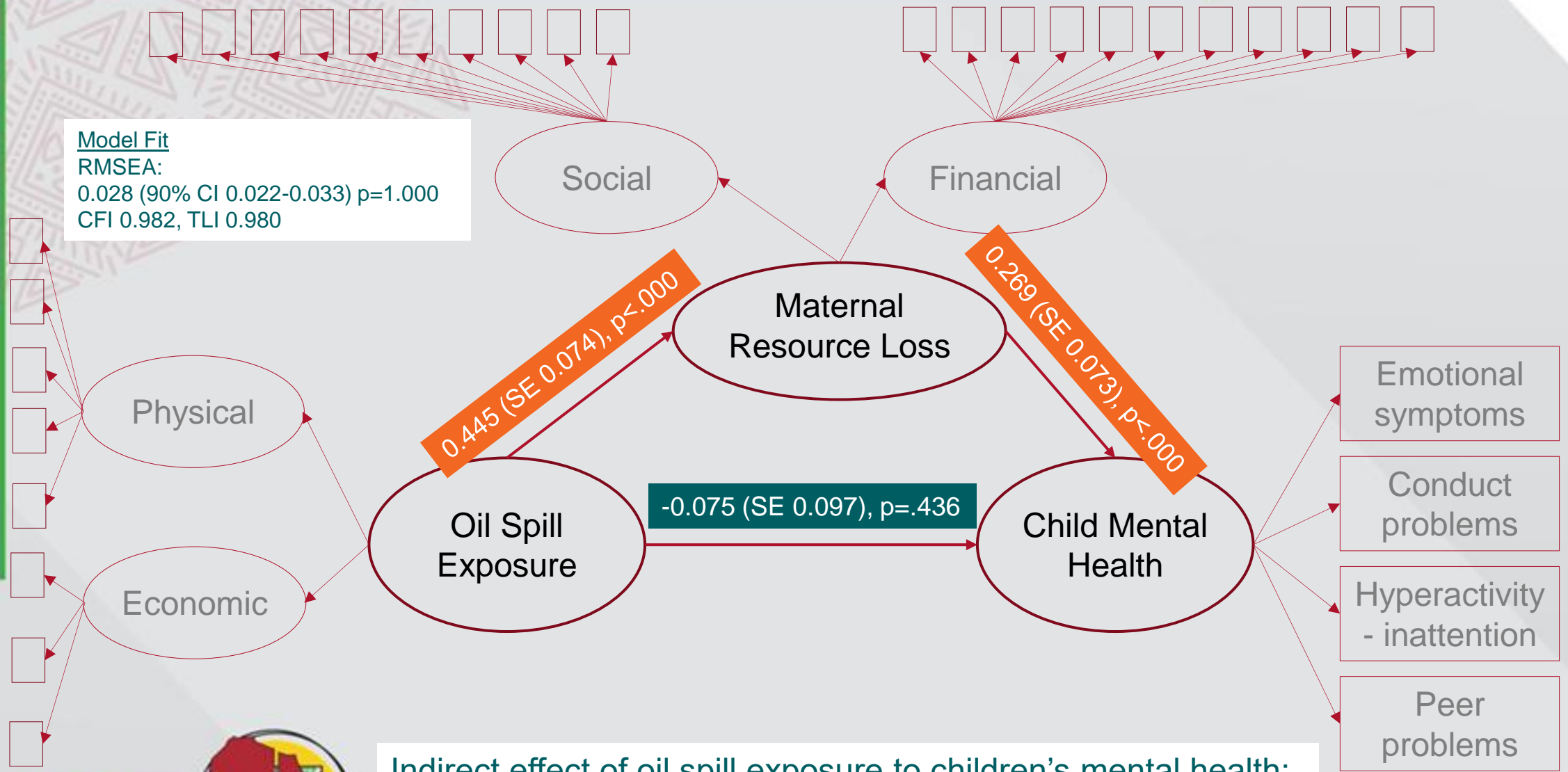
Mothers' mean age, Wave 1  
42 yrs (SD 7.7)

Children's mean age, Wave 1  
13 yrs (SD 2.2)





**Model Fit**  
RMSEA:  
0.028 (90% CI 0.022-0.033) p=1.000  
CFI 0.982, TLI 0.980



Indirect effect of oil spill exposure to children's mental health:  
0.12 (SE 0.43), p<.005



# Discussion

- Women's greater oil spill exposure associated with greater resource loss, which is associated with worse mental health for their children.
- Results consistent with literature showing children's post-disaster mental health affected by impact on parents and family environment.
- Future directions: exploring more specific pathways post maternal resource loss, such as parenting style, parent mental health, connectedness, and family environment.



Thank you!

