MULTIPLE LAYERS OF INFLUENCE ON CHILDREN’S HEALTH AND WELLBEING

BARBARA H. FIESE
FAMILY RESILIENCY CENTER
UNIVERSITY OF ILLINOIS AT URBANA CHAMPAIGN
Basic Assumption

- Children’s health is rarely, if ever, the result of a single factor
Embedded in Socio-Cultural Context
Cultural Risk and Asthma Morbidity


**Risk Index**
- Poverty
- Neighborhood Disadvantage
- Perceived Discrimination
- Cultural Stress
Multiple Risk and Allostatic Load

Cumulative Risk and Caregiver QOL

Risk Index
- Family Burden
- Family Stress
- Child QOL
- Asthma Severity
- Household SES

Limitations of Cumulative Risk Approach

- To date, provides little insight into family process variables that contribute to children’s health
- Captures less of the dynamic transactions across time
- Typically focus on one disease state at a time
Household production of health

Daily activities aimed at supporting healthy child development, preventing disease, recovering from illness, and communicating with healthcare providers

Routines created to support daily eating, sleeping, and activity of family members
Theoretical Framework

- Family health is sustained through
  - planning
  - open and direct communication
  - a sense of order and routines
  - belief that challenges in everyday life are manageable

- Family health is compromised when
  - planning is absent or thwarted
  - routines are disrupted
  - communication is strained
  - everyday life challenges consume available personal energy

Measurement

- Self Report of Daily Routines
- Daily Diary Reports of Routines
- Narratives of Family Life
- Direct Observation of Routines
Four studies conducted across two sites—Upstate N.Y and Denver, CO

~400 families with a child with persistent asthma

Children between 5 and 12 years of age

53% Non-Hispanic White, 47% Non-White Non-Latino (31% African American, 13% Other-typically mixed ethnicity), .5% Asian-American, 3% Hispanic

58% two or more adults in household

30% mothers have High School education or less
Three Questions

- Are routines associated with children’s health and wellbeing?
- Are different aspects of routines associated with different health outcomes?
- How can the production of household health inform the study health co-morbidities?
Primary Health Outcomes

- **Asthma Symptoms**
  - Lung Functioning-Spirometry
  - Functional Severity-Parent and Child Report
  - Nighttime Waking- Daily Diary

- **Quality of Life**
  - Daily Activities
  - Emotional

- **Co-Morbidities**
  - Anxiety Disorders- DISC (Child)
  - Obesity-BMI
What Asthma Feels Like
Why Asthma?

- Most common chronic childhood illness
- Over 5 million school-aged youth

- In a classroom of 30 children, about 3 are likely to have asthma.
- Asthma is one of the leading causes of school absenteeism. Over 12.8 million school days missed each year due to asthma.

- The estimated cost of treating asthma in those under 18 is $3.2 billion per year

- Co-morbidities include anxiety, sleep disturbance and overweight conditions
Household Health Routines

- Take your medicine twice a day
- Avoid environmental allergens
- Engage in daily physical activity
- Get a good’s night sleep
More same than different?

- Juggle home and work
- Move
- Experience job loss
- Have babies
- Get divorced
- Care for elders

- Experience domestic violence
- Have psychiatric illnesses
- Have suicidal ideation
- Involved in gang killings
- Their children die
Did you Take Your Medicine?

Routine Burden in Relation to Quality of Life

** p < .05; *** p < .001

* p < .05; ** p < .01; *** p < .001
### How Did You Sleep?

<table>
<thead>
<tr>
<th>Category</th>
<th>Odds Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caregiver Negative Mood</td>
<td>1.05</td>
</tr>
<tr>
<td>Parent Hassle - Kids Not Listening</td>
<td>1.33</td>
</tr>
<tr>
<td>Parent Hassle - Change Plans</td>
<td>1.25</td>
</tr>
<tr>
<td>Family Routines - Bedtime</td>
<td>1.56</td>
</tr>
</tbody>
</table>

Odds Ratios predicting nighttime waking

Biologic and Family Climate Odds Ratios Predicting Nighttime Waking

- Response to cats
- Response to Cockroaches
- Ragweed Response
- Lung Function
- Bedtime Routines
- Kids not listen
- Change Plans
- Negative Mood

- Biologic
- Family Climate
What Does It Mean?

**Asthma Impact Interview**
- Tell me the story about when your child was diagnosed and how asthma has affected you and your family. We don’t want to hear the story you tell your pediatrician but the one you would tell a friend or neighbor over a cup of coffee.

**Three Styles Identified**
- **Reactive**
  - Anxiety leads family to action. Family has not established clear and consistent strategies.
- **Coordinated Care**
  - There is one right way to handle all situations. Typically one or two people are responsible for carrying out doctor’s orders.
- **Family Partnerships**
  - Plans are based on multiple sources of information. Shared philosophy in working together. Multiple family members involved in planning.
Emergency Room Use One Year Following Interview

Well we more or less suspected that she had asthma for a while. And I guess you know I noticed more that she complained about feeling tight in her chest or whatever, and she was doing some wheezing. But I come from a family where my mother was a hypochondriac. I know from my own experience that kids make up stuff when they don’t want to go to school. I just chose to ignore it. One night she was upset about something. I think we had an argument or something and she was crying. It was late at night. It was 10:00 at night and I was very angry with her and she was complaining about this tightness in her chest and she needed to get to the doctor and of course I thought it was a way to get my attention and I was ignoring her but she kept insisting so as angry as I was I loaded her into the car in the middle of the night we went to the emergency room.
Thus Far

- More organized households and less burden
  - Better Medical Adherence
  - Better Sleep (fewer symptoms)
  - Less Emergent Care
  - Better Quality of Life for Children and Caregivers

- Does Not Address Co-Morbid or Physiological Features
Separation Anxiety

- Most commonly diagnosed anxiety disorder in preadolescent children
- Potential link between physiological sensation of anxiety and asthma symptoms (e.g., shallow breathing, glottic closure)
- Children with asthma show greater rates of separation anxiety than children without asthma (32% vs. 13%)
Separation Anxiety and Family Interaction

Family Interaction

Symptom Severity → Separation Anxiety
Asthma Symptoms and Separation Anxiety

Family Interaction and Separation Anxiety

![Bar chart showing comparison of separation anxiety and non-impaired interactions.](chart.png)
Separation Anxiety and Family Interaction

Mealtime Involvement

Compromised Lung Functioning

Separation Anxiety

- .34**

- .34** [.20]

- .32*

z = 1.75, p < .05
Mealtime Interactions and Children at Risk for Overweight Conditions

A Child’s View

*Family Process, 49, 74-91.*
Time Spent At Meal

Report of Mealtime Quality

- Scheduling: $p < .05$
- Importance: $p < .02$
- Special Meaning: $p < .05$

Legend:
- Healthy Weight
- Unhealthy Weight >85th %
Cumulative Risk Indicators

% Neighborhood Poverty
% Childhood Poverty
Less than 12 minutes @ meal
Lower quartile positive communication
Lower quartile scheduling
Lower quartile mealtime importance
Lower quartile mealtime meaning
Families had 0-6 risk factors
<table>
<thead>
<tr>
<th>Practice</th>
<th>Meaning &amp; Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>ó Medication Adherence</td>
<td>ó Quality of Life</td>
</tr>
<tr>
<td>ó Sleep Routines</td>
<td>ó Lung Functioning</td>
</tr>
<tr>
<td>ó Time spent in meals</td>
<td>ó Weight Status</td>
</tr>
<tr>
<td></td>
<td>ó Behavior Problems</td>
</tr>
<tr>
<td></td>
<td>ó Health Care Utilization</td>
</tr>
</tbody>
</table>
Healthy Family Routines

Practice
- Preserve Time
- Assign Roles
- Plan Ahead

Connections
- Positive Communication
- Genuine Involvement
- Family Time Is Important
Translation

- **Intervention**
  - BackPack Program-Primary Care Based Tailored Intervention To Promote Medical Adherence Through Family Routines
  - Abriendo Caminos-Cooking, Family Mealtime and Folk Dancing Program for Spanish speaking families

- **Public Service Announcements**
  - “Mealtime Minutes”
Some Method Challenges

- **Time**
  - Resources to Transcribe, Code, and Analyze Observations and Narratives
  - Means something different to families across cultures, SES, and life stage

- **Age**
  - Extremely difficult to capture “ages” in the family unit as a whole

- **Family size**
  - Not static—there are multiple players in a family including neighbors, cousins, uncles, aunts, grandparents, babysitters

- **Disease status**
  - Exclusionary and inclusionary criteria may mask the real world
  - Need to account for co-morbidities
Conclusions

- Focus on the household production of health and daily routines holds promise in explaining health symptoms.
- Mechanism may be through physiological pathways and mediating role of family interaction.
- Greater attention needs to be paid to co-morbidities of children’s health conditions.
- The emotional commitment to routines may be as important as the stated practice.
- Preserving time, planning, and positive communication appear to be key elements to healthy routines.
Thank You

Supported in part by: Administration for Children Youth and Families Head Start Scholar Award (Spagnola), NIH HL 53391 (Wamboldt) and NIH MH51771, NIH HD057447, and the William T. Grant Foundation (Fiese).

Collaborators: Ran Anbar, MD.; Joanna Botti, MA; Robin S. Everhart, PhD; Diana Grigsby-Toussaint, MPH PhD; Amber Hammons, PhD; Matt Jacobs, MS; Marty Sliwinski, PhD; Joshua Smyth, PhD; Mary Spagnola, PhD; Marcia Winter, PhD; Frederick Wamboldt, MD; Marianne Wamboldt, MD