Hostile Marital Interactions and Physical Health: the Biopsychosocial Model

Seonhwa Lee, PhD
Kandauda KAS Wickrama, PhD
Human Development and Family Science
The University of Georgia
Introduction

- **Marriage Health Benefits** / If a marriage is troubled, these benefits dissolve

**Family/Psychological Research**
- Personality
- Stressful Events

**Biopsychosocial Research**
- Marital Interaction

**Mental/Physical Health**

**Biopsychosocial Model**
Marital Hostility and Physical Health: through Physiological, Psychological, & Behavioral Mechanisms

- Increased alcohol use, sleep disturbance $\rightarrow$ dysregulation of immune system
- Hostile interaction between spouses $\rightarrow$ declining immune functions
- Degrade regulation process & metabolic system $\rightarrow$ increase susceptibility to illness
- Metabolism dysfunction $\rightarrow$ abdominal obesity/excess body fat & serious health consequences
- A differential impact of marital distress for women and men on developing health consequences
Existing Research Gap

- Less research exploring the **bio-psycho-social mechanisms** in a comprehensive way
- Less empirical research within a **long-term life time** context
- Less attention to **interdependency/dyadic process** in couples
Research Objectives
To investigate biopsychosocial processes.
To explore dyadic process.
To examine gender differences.
Method

- **Sample**
  - 368 couples from Iowa Midlife Transition Project in 2001

- **Measure**
  - Perceived spousal hostile behaviors (1990, 91, 92, & 94)
  - Health Risk Behaviors
  - Psychological Distress (Anxiety, Depression, Hostility)

- **Analysis**
  - Growth Curve Modeling & Structural Equation Modeling
  - *Mplus* 6.0

- **BMI**
- **Physical Illness**
### Univariate Growth Curves

*Perceived Spouse’s Hostile Marital Behaviors in 1990, 91, 92, and 94*

<table>
<thead>
<tr>
<th></th>
<th>Initial Level</th>
<th>Rate of Change</th>
<th>RMSEA/CFI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Variance</td>
<td>Mean</td>
</tr>
<tr>
<td><strong>Husbands</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Hostile Behaviors</td>
<td>1.941***</td>
<td>.413***</td>
<td>-.020†</td>
</tr>
<tr>
<td><strong>Wives</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Hostile Behaviors</td>
<td>1.852***</td>
<td>.524***</td>
<td>.011</td>
</tr>
</tbody>
</table>

*Note.* RMSEA = root mean square error of approximation; CFI= comparative fit index.

† *p* < .10. * *p* < .05. ** *p* < .01. *** *p* < .001.
1990, 91, 92, & 94 Hostile Marital Interactions

Wives Perceived Spouse’s Hostile Behaviors

1994 Behavioral/ Psychological /Physiological Processes

Husbands Perceived Spouse’s Hostile Behaviors

2001 Physical Illness

χ²(df) = 504.632 (163)
CFI /TLI = .917/.883
RMSEA = .075
Discussion

- Biological, psychological, and physiological linking mechanisms
- Psychological distress: strong predictor for physical illness
- BMI: strong predictor for physical illness
- Stress-related dyadic processes: psychological distress/health risk behaviors/BMI
Limitation & Implication

- Further investigate the model with diverse populations
- Further explore bidirectional association between marriage and health
- Interventions focusing on breaking reciprocal cycles of hostile behaviors
- Interventions incorporating strategies of improving healthy life styles involving in behavioral changes and reduce stress-related responses
Future Directions

Future Research

- Considering transitional life events in middle years
- Considering positive marital context
- **Preventive medicine:** incorporating couple-oriented interventions into patient care in medical setting
## Results – Univariate Growth Curves

Table 2.2. Estimate for Univariate Growth Curves’ of Family Economic Hardship and Hostile Marital Behaviors for Husbands and Wives in 1990, 91, 92, and 94. (N=370 married couples).

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<tr>
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<td><strong>Family Economic Pressure</strong></td>
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</tr>
<tr>
<td>Perceived Hostile Behaviors</td>
<td>1.893***</td>
<td>.505***</td>
<td>.032***</td>
</tr>
</tbody>
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**Note.** RMSEA = root mean square error of approximation; CFI= comparative fit index.

Factor loadings for intercepts $\lambda_{11} = \lambda_{21} = \lambda_{31} = \lambda_{41}$; for slopes $\lambda_{12} = 0$, $\lambda_{22} = 1$, $\lambda_{32} = 2$, $\lambda_{42} = 4$ for the models of husbands and wives.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$. 
## Comparison between Husbands & Wives

Table 3.3. Comparison for Associations between Husbands and Wives (N=370 married couples).

<table>
<thead>
<tr>
<th>Model</th>
<th>Δχ² (df)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Global Health Model</strong></td>
<td></td>
<td></td>
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<tr>
<td>The Changes in Perceived Spouse’ Hostile Behaviors – Health Risk Behaviors</td>
<td>11.523(1)</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>The Initial levels of Perceived Spouse’ Hostile Behaviors – BMI</td>
<td>3.873 (1)</td>
<td>&lt; .05</td>
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<td><strong>Physical Illness Model</strong></td>
<td></td>
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<tr>
<td>The Changes in Perceived Spouse’ Hostile Behaviors – Psych. Distress</td>
<td>3.984(1)</td>
<td>&lt; .05</td>
</tr>
<tr>
<td>The Initial Levels of Perceived Spouse’ Hostile Behaviors – BMI</td>
<td>4.988(1)</td>
<td>&lt; .05</td>
</tr>
<tr>
<td>BMI – Physical Illness</td>
<td>9.937(1)</td>
<td>&lt; .001</td>
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<td><strong>Physical Impairment Model</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Initial Levels of Perceived Spouse’ Hostile Behaviors – BMI</td>
<td>3.91(1)</td>
<td>&lt; .05</td>
</tr>
<tr>
<td>The Changes in Perceived Spouses ‘Hostile Behaviors – BMI</td>
<td>5.941(1)</td>
<td>&lt; .05</td>
</tr>
</tbody>
</table>

*Note. Only significant different associations between husbands and wives were reported.*

BMI = Body Mass Index. Psy. Distress = Psychological Distress