Childhood Trauma, Poverty, and Adult Victimization

An Application of Multilevel Modeling

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Thanks to Jennifer Freyd, PhD, and Lew Goldberg, PhD, for access to their data

Overview

- Two aims for this talk
  - Present original data relating trauma, poverty, and revictimization
  - Present an example of the utility of multilevel modeling (a statistical technique) in trauma research

Background

- Sociological research on victimization focuses on community or societal level of analysis
- Psychological research on victimization focused at the level of the individual

Individuals within communities

- Victimization depends on both individual and contextual factors
  - Relationships between individual characteristics & victimization may differ with social context
  - Adverse social context may affect victimization in some people more than others
- Multilevel modeling
  - Statistical technique
  - Allows researchers to incorporate multiple levels of analysis

Current study

- Q1: Is there neighborhood-level variability in victimization?
- Q2: When accounting for neighborhood-level effects, do childhood trauma and dissociation predict revictimization?
- Q3: Does neighborhood-level poverty impact victimization?
- Q4: Does community poverty impact relationships between childhood trauma, dissociation, and later revictimization in individuals?
Participants

- 421 members of the Eugene-Springfield Community Sample (ESCS, Goldberg et al.)
- A longitudinally-studied sample of homeowners in metro area of ~330,000
- 96% Caucasian, age range 18 to 85 at first data collection (in 1993)
- Survey data collected in 1997 and 2003

Participants

- Eight target zip codes, within Eugene and Springfield city limits

Measures

- Curious Experiences Survey (CES, Goldberg 1999)
  - 31-item scale measuring dissociation, a revision of the Dissociative Experiences Scale
- The Brief Betrayal Trauma Survey (BBTS, Goldberg & Freyd, 2006)
  - Measures 14 types of traumatic events both before and after age 18
  - Includes traumas with low or no interpersonal betrayal (e.g., natural disasters) and higher levels of betrayal (e.g., sexual abuse by someone close)
  - Only high-betrayal, interpersonal victimization included in analyses

Measures

- Poverty rates for each neighborhood (by 5-digit zip code)
- Obtained from 2000 U.S. census data
- Percent of individuals with incomes below the federal poverty level in 2000

Descriptives

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child Betrayal Trauma</td>
<td>0.61</td>
<td>1.00</td>
<td>0.00</td>
<td>5.00</td>
</tr>
<tr>
<td>Adult Betrayal Trauma</td>
<td>0.60</td>
<td>0.99</td>
<td>0.00</td>
<td>5.00</td>
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<tr>
<td>CES Total</td>
<td>45.65</td>
<td>10.04</td>
<td>31.00</td>
<td>109.00</td>
</tr>
</tbody>
</table>

Descriptives

<table>
<thead>
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<th>SD</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child Betrayal Trauma</td>
<td>0.66</td>
<td>0.21</td>
<td>0.28</td>
<td>0.98</td>
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<tr>
<td>Adult Betrayal Trauma</td>
<td>0.73</td>
<td>0.34</td>
<td>0.33</td>
<td>1.32</td>
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<tr>
<td>CES Total</td>
<td>46.38</td>
<td>3.19</td>
<td>42.44</td>
<td>52.26</td>
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<tr>
<td>Poverty Rate</td>
<td>0.15</td>
<td>0.07</td>
<td>0.04</td>
<td>0.27</td>
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</tbody>
</table>

Models 1 and 2

**Q1:** Is there neighborhood-level variability in victimization?

**Q2:** When accounting for neighborhood-level effects, do childhood trauma and dissociation predictrevictimization?

**Equations for Model 1**

Level 1: $Y = \beta_0 + \epsilon_i$

Level 2: $\beta_0 \sim \gamma_0 + u_0$

**Equations for Model 2**

Level 1: $Y = \beta_0 + \beta_1(X_1) + \beta_2(X_2) + \epsilon_i$

Level 2: $\beta_0 \sim \gamma_0 + u_0$

$\beta_1 \sim \gamma_1 + u_1$

$\beta_2 \sim \gamma_2 + u_2$
Results for Models 1 and 2

Two-Level Model Predicting Traumatic Victimization in Adulthood

<table>
<thead>
<tr>
<th>Predictive Relationships</th>
<th>Coefficient</th>
<th>SE</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Adult Trauma (\gamma_{00})</td>
<td>-0.759</td>
<td>0.318</td>
<td>-2.385*</td>
</tr>
<tr>
<td>Childhood Trauma (\gamma_{10})</td>
<td>0.442</td>
<td>0.082</td>
<td>5.361**</td>
</tr>
<tr>
<td>Dissociation (\gamma_{20})</td>
<td>0.025</td>
<td>0.008</td>
<td>3.183*</td>
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</table>

Tests of Unexplained Neighborhood Variability

<table>
<thead>
<tr>
<th>Component</th>
<th>Variance</th>
<th>df</th>
<th>(\chi^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult Trauma (u_0)</td>
<td>0.469</td>
<td>7</td>
<td>16.048*</td>
</tr>
<tr>
<td>Childhood Trauma (u_1)</td>
<td>0.033</td>
<td>7</td>
<td>22.038**</td>
</tr>
<tr>
<td>Dissociation (u_2)</td>
<td>0.001</td>
<td>7</td>
<td>23.783**</td>
</tr>
</tbody>
</table>

Level-1 Error, r | 0.620

Note: Results based on data from 421 individuals from 8 communities. *p < .05, **p < .01

Results for Model 3

Two-Level Model Predicting Traumatic Victimization in Adulthood (with level-2 predictor)

<table>
<thead>
<tr>
<th>Predictive Relationships</th>
<th>Coefficient</th>
<th>SE</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Adult Trauma (\gamma_{00})</td>
<td>-0.737</td>
<td>0.315</td>
<td>-2.341*</td>
</tr>
<tr>
<td>Percent Below Poverty (\gamma_{01})</td>
<td>0.064</td>
<td>4.932</td>
<td>0.013</td>
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<tr>
<td>Childhood Trauma (\gamma_{10})</td>
<td>0.406</td>
<td>0.049</td>
<td>8.314**</td>
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<tr>
<td>Percent Below Poverty (\gamma_{11})</td>
<td>2.782</td>
<td>0.879</td>
<td>3.164*</td>
</tr>
<tr>
<td>Dissociation (\gamma_{20})</td>
<td>0.025</td>
<td>0.008</td>
<td>3.315*</td>
</tr>
<tr>
<td>Percent Below Poverty (\gamma_{21})</td>
<td>-0.038</td>
<td>0.119</td>
<td>-0.317</td>
</tr>
</tbody>
</table>

Tests of Unexplained Neighborhood Variability

<table>
<thead>
<tr>
<th>Component</th>
<th>Variance</th>
<th>df</th>
<th>(\chi^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult Trauma (u_0)</td>
<td>0.437</td>
<td>6</td>
<td>15.825*</td>
</tr>
<tr>
<td>Childhood Trauma (u_1)</td>
<td>0.004</td>
<td>6</td>
<td>2.108</td>
</tr>
<tr>
<td>Dissociation (u_2)</td>
<td>0.001</td>
<td>6</td>
<td>23.817**</td>
</tr>
</tbody>
</table>

Level-1 Error, r | 0.619

Note: Results based on data from 421 individuals from 8 communities. *p < .05, **p < .01

Q3: Does neighborhood-level poverty impact victimization?

Q4: Does community poverty impact relationships between childhood trauma, dissociation, and later revictimization in individuals?

Results

- **Q1**: Is there neighborhood-level variability in victimization?
  - Yes

- **Q2**: When accounting for neighborhood-level effects, do childhood trauma and dissociation predict revictimization?
  - Yes, each uniquely predicts variance in victimization in adulthood

- **Q3**: Does neighborhood-level poverty impact victimization?
  - Yes, but only in association with childhood trauma

- **Q4**: Does community poverty impact relationships between childhood trauma, dissociation, and later revictimization in individuals?
  - Yes, the relationship between childhood trauma and victimization in adulthood tends to be stronger among individuals in communities with higher poverty rates.
Discussion

- This example illustrates the utility of using multilevel modeling to better understand complex social processes like victimization

- Has implications for future research—ignoring social context may produce misleading or incomplete results

Questions?

- More information and reprints available at http://dynamic.uoregon.edu/

Discussion

- Relationship between childhood trauma and revictimization is stronger in higher poverty communities

- Implications for prevention, intervention