All Stressed Out:
The Effects of Life Stress, Depression, and Impulsivity on Adolescent Delinquency

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University of New Hampshire
Adolescent Delinquency

- Prevalent issue in US
- Adolescents engage in more illegal behavior than all other age groups combined\(^1\)
  - Males commit more than females\(^1\)
- Numerous factors could lead to delinquency
  - External factors, such as stressful life events\(^2\)
  - Internal factors, such as depression and impulsivity\(^2\)

\(^1\) OJJDP, 1999  \(^2\) Zahn-Waxler, et al., 2000
Life Stress in Adolescents

- Numerous negative consequences as a result of high stress
  - May have greater impact during adolescence
- High stress predicts higher likelihood of delinquent behavior
  - May depend on negative emotions, which differ by sex
- High stress early in life associated with later development of depression

1 Agnew, 1992  2 Zahn-Waxler, et al., 2000
Depression in Adolescents

- Most common mental health disorder in the US
- 20% of adolescents
  - Can be particularly vulnerable to depressive feelings
- Predictor of future delinquent behavior\(^1\)
  - Especially for females\(^2\)
- Two times more likely to engage in delinquent behavior\(^3\)

\(^1\) Kofler, et al., 2011  \(^2\) Vaske & Gehring, 2009  \(^3\) Pulay, et al., 2008
Impulsivity in Adolescents

- One’s ability to inhibit behavior and think about consequences of actions

- Predicted higher levels of delinquent behavior$^1,2$
  - Effect stronger for males than females$^1$

- Associated with higher levels of depression$^2$

$^1$Colder & Stice, 1998  $^2$Vaske & Gehring, 2009
The Current Study

- Life Stress, Depression and Impulsivity have never been assessed together in one study as competing predictors of adolescent delinquent behavior.

- This study predicted that Depression would serve as a mediating factor between Life stress and Impulsivity on adolescent Rule-Violating Behavior.
Method: Participants

- Participants were 341 middle and high school students (117 male and 224 female) taken from the New Hampshire Youth Study (NHYS)
  - NHYS is an ongoing longitudinal study investigating the potential factors that influence adolescent rule-violating behavior (RVB)
  - Data collected via surveys

Data for this study was taken from:

- Wave 2 (Life-Stress) collected Spring 2007
- Wave 3 (Depression and Impulsivity) collected Fall 2007
- Wave 5 (RVB) collected Fall 2008
Method: Measures

- **Rule-Violating Behavior (RVB):** 26-item scale
  - Measures three types: Substance use, Assault, and Stealing
  - Numerical responses composited into overall score
  - “In the past 6 months how many times have you taken something from a store without paying for it?”

- **Life Stress:** 28-item measure
  - Yes/No response
  - Responses weighted based on severity of event; Composite of weighted scores were calculated
  - “In the past 12 months did your parents divorce or separate?”

Wolpin, K., 1983
Method: Measures

- **Depression**: 7-items rated on Likert Scale\(^1\)
  - 0-3 scale: Not at all - almost all the time
  - “How often in the past 6 months did you feel lonely?”

- **Impulsivity**: 4-items rated on Likert Scale\(^2\)
  - 0-3 scale: Strongly Disagree - Strongly Agree
  - “I often act fast, without thinking”

\(^1\) Beck, A., 1978 \(^2\) Grasmick, et al., 1993
## Results: Correlations

Male Correlations shown **above** bolded line in table
Female Correlations shown **below** bolded line in table

<table>
<thead>
<tr>
<th>Sex</th>
<th>Life Stress</th>
<th>Depression</th>
<th>Impulsivity</th>
<th>Total RVB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life Stress</td>
<td>--</td>
<td>0.157</td>
<td>0.248**</td>
<td>0.611***</td>
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<tr>
<td>Depression</td>
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<td>--</td>
<td>0.322***</td>
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<tr>
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* = <.05    ** = <.01    *** = <.001
Results: Correlations

For males, all three variables are significantly positively related to RVB, however Life Stress is most highly related.

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For females, all three variables were significantly positively related to RVB.
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Life Stress is much more positively related to RVB for males than females
Results: Mediation Model

The initial prediction of Depression as a mediator between the effect of Life Stress and Impulsivity on RVB was not supported for either males and females.

<table>
<thead>
<tr>
<th></th>
<th>MALE</th>
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<th></th>
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<td></td>
<td>Impulsivity</td>
<td></td>
<td></td>
<td>Depression</td>
</tr>
<tr>
<td></td>
<td>0.09</td>
<td></td>
<td></td>
<td>0.56*** (0.57***)</td>
<td>0.13</td>
</tr>
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Results: Mediation Model

The initial prediction of Depression as a mediator between the effect of Life Stress and Impulsivity on RVB was not supported for either males and females.

FEMALE

- Life Stress → Depression: 0.24***
- Impulsivity → Depression: 0.19**
- Depression → RVB: 0.22***
- Life Stress → RVB: 0.17** (0.22***)

Legend:
* = <.05  ** = <.01  *** = <.001  
= Significant  = Not significant
# Results: Main Effects

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Male Main Effect</th>
<th>Female Main Effect</th>
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<tr>
<td>Life Stress</td>
<td>.56***</td>
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| Regression Statistics | $F(3, 113) = 27.96$, $p<.001$, $R^2 = .43$ | $F(3, 220) = 28.17$, $p<.001$, $R^2 = .28$ |

~ < .10  * = < .05  ** = < .01  *** = < .001
Results: Interaction Model

- Proposed interaction between Life Stress and Depression on RVB
## Results: Main Effects

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<th>Female Interaction Effect</th>
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<td>Life Stress</td>
<td>.59***</td>
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</tr>
<tr>
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<td>.09</td>
<td>.36***</td>
</tr>
<tr>
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<td>.10</td>
<td>.18**</td>
</tr>
<tr>
<td>Life Stress X Depression</td>
<td>.21**</td>
<td>.11~</td>
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### Regression Statistics

- Male: $F(4, 112) = 24.24, p < .001, R^2 = .46$
- Female: $F(4, 219) = 22.17, p < .001, R^2 = .29$

*p < .10, ** = < .01, *** = < .001*
Results: Male Interaction

- When males are high in life stress, there is a significant difference in the effect of depression on RVB.
- There is no significant difference when life stress is low.
- The effect of life stress on RVB for males is significant when depression is either high or low.
- This effect of stress is much stronger when depression is high.

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Results: Female Interaction

- When females are high in depression, there is a significant difference in the effect of life stress on RVB.
- There is no significant difference when depression is low.
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\[ F(4,219) = 22.17, p < .001, R^2 = .29 \]
Discussion

- Life Stress
- Impulsivity
- Depression
- RVB
Discussion

Life Stress

Impulsivity

Depression

RVB
Discussion

Life Stress

Depression

Impulsivity

RVB
Discussion

**Males:** There is a significant effect of life stress on RVB, that does not depend on their level of depression

- Changes in depression have an effect, however it is contingent upon also being high in life stress
- 46% of variation in RVB scores

**Females:** There a significant effect of depression on RVB, that does not depend on their level of life stress

- Changes in life stress have an effect, however it is contingent upon also being high in depression
- 29% of variation in RVB scores
Discussion

- Life Stress is a stronger predictor of RVB for males
- Depression is a stronger predictor of RVB for females
  - Females report more depression than males\(^1\)
- RVB is most highly predicted by being both high in life stress and depression
  - Impact of stress on RVB may depend on depressive feelings\(^2\)
- Impulsivity was tested in an interaction, however was not significant
  - Life stress and depression will change over time, whereas impulsivity is a stable trait

\(^1\) Vaske & Gehring, 2009 \(^2\) Agnew, 1992
Limitations and Future Directions

Limitations:

- Self-report data
- Not clinical measure of depression

Future Directions:

- Incorporate other types of data reporting
- Measure depression clinically
Acknowledgments

Thank you to all those who contributed to this study: Ellen Cohn, PhD, Advisor and Lindsey Cole, MA

- Additional assistance provided by: Stacy Jeleniewski, MA, Allison Pendergast, Amy Oldenquist, Casey Benner, Shannon Zimmerman, and Nadine Maliakkal

Thank you to National Science Foundation for allowing this research

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Questions?