Are Delinquent and Aggressive Adolescents More Emotionally Reactive to Daily Hassles?

An experience sampling study with economically disadvantaged adolescents

Bep Uink
b.uink@murdoch.edu.au

Dr. Kathryn Modecki1,2
Prof. Bonnie Barber 1,2

1 Griffith University, QLD, Aus.
2 Murdoch University, WA, Aus.
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The Developing Adolescent

Adolescence

Surge in development of appetitive, approach systems

Protracted development of cognitive, control systems

More intense negative affect, less intense positive affect

Competing inputs (social, emotional, cognitive)

Greater emotional lability

Luciana, 2013
Larson et al., 2002
Larson & Richards, 1994
Adolescent Anti-Social Behaviour

- Also a time of increased anti-social behaviour, including aggression, delinquency and substance use

- Normative, although can have serious consequences i.e. involvement in the juvenile justice system, harm to self, others and community

Steinberg, 2008
Daily Hassles

- Minor, day-to-day stressors (e.g. late for bus, violence exposure)
- Increase during adolescence
- Associated with increased negative affect and decreased positive affect
- Individual variability in emotional reactivity to hassles

Kanner et al., 1981
Ham & Larson, (1990)
Schneiders et al., (2006)
Dual-Systems Theories of Anti-Social Behaviour

Accelerated development of approach systems

Protracted development of control systems

Emotional “over-ride” of decision making

Externalizing Behaviour

Steinberg, 2008
Research Question

Do adolescents with higher externalizing symptoms demonstrate greater emotional reactivity to daily hassles, compared to adolescents with lower externalizing symptoms?

**H1:** Externalizing symptoms will moderate the relation between hassles and emotion such that higher externalizing will be associated with greater negative emotion and lower positive emotion, on days with hassles, compared to lower externalizing.
LOW SES CONTEXTS

Adolescents from low SES communities

- Higher rates of externalizing
- Report more frequent hassles
- Less external supports for positive coping

Thompson & Calkins (1996)
Tolan & Henry (1996)
Evans et al., (2009)
EXPERIENCE SAMPLING METHOD

1. Experience Sampling Method (ESM)

1. Repeated observations of events & emotion over time (e.g. a day, a week)

   **Within-person relations** (e.g. *hassles → higher sadness?*)

2. Traditional survey

2. Scales to measure person-level factors (e.g. gender, externalizing symptoms)

   **Between-person relationships** (e.g. *higher externalizing → higher sadness?*)

3. Multi-level analysis

3. Nested data → Multi-level modelling
Analysis Design

Externalizing

between

within

Daily Hassle (Yes/No)

Daily Emotion

S

y

Emotion
PARTICIPANTS

• N = 108 (Mean age = 14.7 years, Range = 13-16 years, F = 66.9%)

• Low SES school in Western Australia

• Maternal education:
  – 26% had not finished high school
  – 32.3% had finished high school
  – 13.5% finished university
  – 25% did not know maternal education level.

• Primarily Caucasian (69.6%)
PROCEDURE

- Adolescents provided with smartphone and internet data.

- Texted a web-link to ESM surveys 5 x day, 7 days, = 35 sampling moments per participant.

- Surveys sent 7:30 am - 10:00pm (Monday lunch-following Monday morning).

- Surveys took 1.5-3 minutes to complete
ESM QUESTIONS

How are you feeling right now?

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<thead>
<tr>
<th></th>
<th>Not at All</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Very Much</th>
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<tbody>
<tr>
<td>Happy</td>
<td>1</td>
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<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>Bored</td>
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<td>Sad</td>
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<td>Jealous</td>
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<td>2</td>
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<tr>
<td>Lonely</td>
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<td>3</td>
<td>4</td>
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NEXT STEPS: ESM DATA ON DECISION MAKING, EMOTIONAL, PEER, AND TIME USE CONTEXTS, AND ANTISOCIAL BEHAVIOR

What young people want us to know

28/07/2015

* Names have been changed for anonymity

“Are there any questions you think we really should ask?” – Facilitator

“How we’re feeling” – *Anna

5. How are you feeling right now?

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Screen shot of a phone with a list of emotions and a rating scale.
ESM QUESTIONS

Daily hassles

- Asked at each sampling moment
- Participants recalled events that happened in the last 2-5 hours
- Similar question format for *positive events*

Since you were last messaged, has anything BAD happened to you? How bad was it? (1 = Sort of Bad; 5 = Very Bad) What was the bad event?
MEASURES

Externalizing Symptomatology

- 15 self-report items on how often participant had engaged in antisocial or aggressive behavior and substance use in the last 6 months (0 = none, 7 = 31 or more times)

- “About how often in the last 6 months have you .... used drugs? .... Gotten in a physical fight with someone?”

- Time 1 $\alpha = .85$; Time 2 $\alpha = .90$, test-retest, $r = .88$

- Associated with Depression ($r = .22$, $p < .05$)

Fredricks & Eccles, 2006
MEASURES

- Reynolds’ Adolescent Depression Scale 2nd Edition (Reynolds, 2004)
  - N = 16 at risk of depression
  - T1 $\alpha = .82$, T2 $\alpha = .87$, test-retest $r = .81$

- Social Anxiety Scale for Children & Adolescents (LaGrecca, 1998)
  - 18 items used
  - T1 $\alpha = .96$, T2 $\alpha = .96$, test-retest $r = .78$
Data Preparation

- Monday data excluded from analyses, 6 days total
- Each participant’s emotion scores across the day averaged for day-level analyses
- **IV**: Daily hassles (0 = no hassle(s) that day, 1 = ≥ 1 hassle(s) that day)
- Hassles rated ≥3 on severity scale included
- **DV**: Daily emotion (excitement, sadness, loneliness, anger)
- **Moderator**: Externalizing symptoms
# Types of Hassles

Mean hassles = 1.13 (1.6). Range 0-7

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<thead>
<tr>
<th>Event Type</th>
<th>% of Total Hassles</th>
<th>High vs. Low EXT</th>
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<tbody>
<tr>
<td><strong>Family Related</strong> (‘Arguing with family’; ‘Dad skitzing out’)</td>
<td>11.5%</td>
<td>$t(71) = .535 \ (ns)$</td>
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<td><strong>Peer Related</strong> (e.g. ‘Bestie problems’; ‘Friends fighting’)</td>
<td>10.7%</td>
<td>$t(106) = .252 \ (ns)$</td>
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<td><strong>Health Related</strong> (e.g. ‘Knocked out’; ‘Punched in the head’)</td>
<td>23.0%</td>
<td>$t(106) = .508 \ (ns)$</td>
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<td><strong>School Related</strong> (e.g. ‘Had to get up for school’; ‘Late for class’)</td>
<td>9.8%</td>
<td>$t(108) = -.865 \ (ns)$</td>
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<td><strong>Romantic</strong> (e.g. ‘Someone I like is dating someone else’; ‘Have to leave the girlfriend’s house’)</td>
<td>5.7%</td>
<td>$t(37) = -1.08 \ (ns)$</td>
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<td><strong>‘Other’</strong> (e.g. ‘Someone was racist; ‘Had anger management’, ‘Was late for the bus’)</td>
<td>35.2%</td>
<td>$t(106) = .226, \ (ns)$</td>
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Does Externalizing Moderate the Relation between Anger and Hassles?

**Externalizing**

\[ \beta = 0.557(0.24)^* \]

**Daily Hassle (Yes/No)**

\[ \beta = 0.259(0.11)^* \]

**Anger**

\[ \beta = 0.173(0.13)ns \]

\( ^* p < 0.05 \)

\( ^{**} p < 0.01 \)
Hassles X Externalizing: Anger

Daily Anger

- Youths higher in EXT had surges in anger on days with hassles vs. days without hassles ($b = .614$, $p < .001$)

- Youths lower in EXT had no change in anger on days with hassles vs. days without hassles ($b = -.176$, $p > .05$).
Does Externalizing Moderate the Relation between Loneliness and Hassles?

**Externalizing**

**Loneliness**

\[
\beta = .378(\text{.11})^{**}
\]

\[
\beta = -.001(\text{.17}) \text{ ns}
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**Daily Hassle (Yes/No)**

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\beta = .157(\text{.07})^{*}
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\beta = -.378(\text{.11})^{**}
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Hassles X Externalizing: Loneliness

Daily Loneliness

- Youths higher in EXT had **surges** in loneliness on days with hassles vs. days without hassles ($b = .425$, $p < .05$)

- Youths lower in EXT had **decreases** in loneliness on days with hassles vs. days without hassles ($b = -.110$, $p < .001$)
Does Externalizing Moderate the Relation between Excitement and Hassles?

\[ \beta = -0.397(0.16) \]

\[ \beta = 0.111(0.15) \text{ ns} \]

\[ \beta = -0.247(0.10)^{**} \]

\[ *p < 0.05 \]

\[ **p < 0.01 \]
Hassles X Externalizing: Excitement

- Youths higher in EXT had **dips** in excitement on days with hassles vs. days without hassles ($b = -0.501, p < .05$)
- Youths lower in EXT had **no change** in excitement on days with hassles vs. days without hassles ($b = 0.061, p > .05$)
Summary

**H1:** Higher externalizing will be associated with peaks in negative emotion and dips in positive emotion, on days with hassles, compared to lower externalizing.

- Supported: Externalizing sx. positively associated with peaks in anger and loneliness and dips in excitement, on days with hassles.

- BUT…not supported for happiness or sadness: Possibly due to weaker associations between these emotions and externalizing behaviour.

*Suggests that disadvantaged adolescents who are higher in externalizing experience exacerbated emotional responses to daily stressors.*

**Link to Dual-Systems Theories**

- Intense emotion experienced in the face of stress → emotional ‘over-ride’ of → further externalizing behaviour ….vicious cycle
STUDY LIMITATIONS

- Data does not allow for causal inferences
  - May be that higher levels of negative emotion and lower levels of positive emotion proceed daily hassles.
  - Future studies to examine temporal relations

- Did not examine the influence of social context on emotional response to stressors
  - E.g. peer influence?

- Did not examine relations between externalizing and emotional reactivity to stressors for particular types of stress (e.g. family, peer).
  - But, no significant differences found in rates of stressor types between high and low externalizes.
Implications for Youth Violence Prevention

Key conference questions

“Who are the children most at risk of engaging in violence?”

- Those youths who engage most frequently in violent and anti-social behaviour are also those who show exacerbated emotional responses to daily stress.

“What can we do to prevent youth violence?”

- 3 key areas for intervention
  - Reducing stressors and strains of daily life
  - Increase external coping supports
  - Help externalizing youths apply emotion regulation skills to ‘in-the-moment’ stressors
Thank you

Dr. Kathryn Modecki  
School of Applied Psychology & Menzies Health Institute, Griffith University, QLD  
School of Psychology & Exercise Science, Murdoch University, WA

Prof. Bonnie Barber  
School of Applied Psychology & Menzies Health Institute, Griffith University, QLD  
School of Education, Murdoch University, WA

Young and Well CRC

AIC

Parents, schools and young people.
Questions?


REFERENCES


Technical information

Compliance

- 98% of participants had ESM data for each day of the study.
- N = 9 had less than 3 days’ worth of data
- Median number of completed ESM reports = 17.
- Technical errors resulted in three of the ESM surveys not being sent to 12 participants.
- Rates of missing data ranged from 6.1%-7.2% in full models
- Missing data estimated using full information maximum likelihood procedure
Technical Information

- Hassles most often reported at night time point. Mean hassles =
- All level 1 predictors group-mean centred
- All level 2 predictors grand mean centred

Level 1 Random Intercept Model (Day level)

\[ \text{Daily EMOTION}_j = \beta_0j + \beta_1j \text{ (daily hassle)} + \beta_2j \text{ (daily positive event)} + \beta_3j \text{ (day of study)} + e_{ij}. \]

Level 2 Random Intercept and Random slope model (Day level)

\[ \beta_0j = \gamma_{00} + \gamma_{01} \text{ (EXT)} + \gamma_{02} \text{ (Soc. Anx)} + \gamma_{03} \text{ (gender)} + \gamma_{04} \text{ (DEP)} + \mu_{0j} \]
\[ \beta_1j = \gamma_{10} + \gamma_{20} + \gamma_{30} + \gamma_{40} + \gamma_{03} 11 \text{ (EXT x hassles)} + \mu_{1j} \]