From Schema Reconstruction, to Posttraumatic Growth, to Psychological Adjustment over Time in Trauma Survivors: Perspectives from Longitudinal Research

Christine Valdez
Brownbag Series 3/29/13
Center for the Study of Family Violence and Sexual Assault
Northern Illinois University

Overview

- Thank you
  - Julie Crouch and Holly Orcutt
  - Michelle Lilly
  - Rachel Kendra, Sarah Ramsey, Andrew Sherrill, Phylice Lim, Melissa London
  - Chris Parker
- **Project 2**: Valdez, C. E., Lim, B., & Parker, C. (in progress). Growing from adversity and psychological adjustment over time in abused foster youth.

**Project 1 – IPV Survivors T1**

- **T1**: Community women who experienced physical IPV within previous 6 months
- Quantitative assessment (e.g., trauma history, cognitions, Sx)
- Qualitative assessment (i.e., 50 semi-structured interviews)
  - How many relationships have you been in that were physically violent?
  - Tell me a little about your childhood. What were your parents like? Were they involved in your life?
  - Do you feel your emotional needs were met?
  - How did you make sense of what happened and how did you move on?

**Victimization History**

- "I put the gallon of milk on the counter and it slipped off...the whole thing spilled. And so I'm down on my hands and knees cleaning this up, and she [mother] is just screaming...screaming, screaming, screaming...and she grabbed the dish towel and started choking me with the dish towel" (P7)
- "she [mother] beat the shit out of me with a fuckin' wooden spoon, but I got out easy from that one 'cause that spoon broke over my elbow, so she grabbed a metal spatula and she beat my sister and brother" (P10)
- "I think it [childhood abuse] like, kind of like introduced me into like, just like violence and stuff...I think it [IPV] just kind of like, it wasn't such a shocker...my dad would just hit me...my mom...she back-handed me and broke my nose" (P4)
Project 1 – IPV Survivors T1

- Making Sense out of Victimization (over-accommodation)
  - “I just choose to work it out with him than go through this all over again with someone new… I don’t trust nobody else” (P23)
  - “If we’re going back in the day to my childhood, or teen years, or with the relationship, you got to almost expect certain things to happen” (P17)
  - “I know now that I’ve accepted getting beat up by the men that I’ve been with because my uncles and brothers the way they beat me up, and I just care to get through life” (P16)

- Making Sense out of Victimization (assimilation)
  - “Um, the partner violence…I feel like maybe 40% responsible you know, sometimes I’ll, you know, get drunk and black out and just talk crazy…[if] I tighten up, you know, with my actions, that would help my relationship out” (P25)
  - “I’m just a very obedient person…a lot of our training to be nice and to be respectful of other people sometimes um, sometimes will allow you to be too nice to people that are putting in a lot of advances. Or, you know, you’re not aggressive enough in defending your own personal space and rights in those regards” (P9)

- Making Sense out of Victimization (not able to)
  - “We wake up and let it be like it never happened” (P14)
  - “You know, you wonder about when these violent events happen to people…who, why they keep happening. And I can’t figure out…I’m like, ‘what’s going on here? It’s like, ‘what the heck?’” (P7)
  - “Well, I seen it coming because of the arguments that we used to have, but I didn’t really think that he would hit me but he would always say it, and I never thought he would until he actually did” (P15)
  - How do different meaning-making cognitions promote or hinder one’s post-trauma adjustment?
Project 1 – IPV Survivors & PTG

• Growing literature documenting positive changes as a result of trauma (Helgeson, Reynolds, & Tomich, 2006)
  • Stress-related growth = benefit finding = posttraumatic growth (PTG)

• PTG occurs through making meaning out of stressful event(s) that fosters a sense of value in one’s life (Tedeschi & Calhoun, 1996)
  • Personal strength
  • New possibilities
  • Relating to others
  • Appreciation of life
  • Spiritual change

• Qualitative reports
  • Self-compassion, self-reliance and assertiveness, sense of self, purpose in life (Smith, 2003)
  • Ability to accept support, self-awareness/introspection, stronger faith/religious beliefs, stronger interpersonal relationships with supportive (Senter & Caldwell, 2002)

• Quantitative reports
  • PTGI average rating = 68 (“moderate degree of change”) (Cobb et al., 2006)
  • Women who left an abusive relationship evidenced more overall growth

How is PTG attained?
(Tedeschi & Calhoun, 2004)

Project 1 – IPV Survivors & PTG

• Schema reconstruction incorporates view that world is meaningless/random/uncontrollable
  • Less secure existence → life takes on new value
  • Shift focus from meaning of life to meaning in life

• Degree of disruption to assumptive world beliefs (Cann et al., 2010) and deliberate rumination (Cann et al., 2011) predict PTG

• Longitudinal assessment of world assumptions (WAS) and PTG in cancer survivors (Carboon et al., 2005)
  • No change in WAS from post-diagnosis to Tx completion
  • 6 months for schema reconstruction... Is this long enough?
  • T1 WAS associated with T2 PTG, but in unexpected directions
  • Interpersonal trauma more disruptive to assumptions (Lilly et al., 2011)
Project 1 – IPV Survivors & PTG

• Purpose
  - Examine link between schema change and PTG in IPV survivors identified for recent physical IPV victimization
  - Is revictimization within a year after initial assessment associated with world assumption change and PTG?
    - Cobb et al. (2006): greater PTG observed in women who left an abuser

Project 1 - Procedure

• T1
  - 114 community women who experienced physical IPV in preceding 6 months
  - ~3 hour qualitative and quantitative assessment
  - Compensation $50
  - Most consented to give their telephone # for future studies

• T2
  - One year follow-up assessment of revictimization and mental health
  - ~1 hour quantitative assessment
  - Women contacted with the telephone # they gave at T1
  - Compensated $20

Project 1 – Participants

• 91 IPV survivors contacted 1 year after their T1 assessment
  - 57 unreachable (i.e., disconnected telephone number)
  - 7 moved out of area
  - 3 not interested in participating
  - 3 no-showed to research appointments
  - Follow-up rate = 24.7% (N = 23)

• T2 Participants
  - Age = 30.91 (SD = 10.54), ranging from 18 to 50
  - 60.9% African American (n = 14)
  - 43.4% single (n = 10), 30.4% cohabitating (n = 7)
  - 65.2% unemployed (n = 15)
  - 65.2% some college or vocational school (n = 15)
  - No differences between those who did and did not participate

Project 1 - Measures

• Traumatic Life Events Questionnaire (TLEQ; Kubany 2004)
  - 7 out of 23 items
  - Revictimization dichotomous score created to classify women into two groups (revictimization + and revictimization -)

• World Assumptions Scale (WAS; Janoff-Bulman, 1989)
  - T1 α = .65
  - T2 α = .82

• Posttraumatic Growth Inventory (PTGI; Tedeschi & Calhoun, 1996)
  - T2 α = .96
Project 1 - Results

- 10/23 women reported interpersonal revictimization

### Rates of Revictimization in T1

<table>
<thead>
<tr>
<th>Event</th>
<th>Percentage</th>
<th>Participant Endorsement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical assault by a stranger</td>
<td>20%</td>
<td>P3, P9</td>
</tr>
<tr>
<td>Witnessing physical assault by a stranger</td>
<td>42%</td>
<td>P1, P4, P7, P10</td>
</tr>
<tr>
<td>Threatened with death or serious injury</td>
<td>40%</td>
<td>P5, P6, P7</td>
</tr>
<tr>
<td>Intimate partner violence victimization</td>
<td>30%</td>
<td>P1, P4, P6, P8, P9</td>
</tr>
<tr>
<td>Stalked by a friend of acquaintance</td>
<td>40%</td>
<td>P1, P4, P6, P7</td>
</tr>
</tbody>
</table>

Note: P = participant.

Project 1 – Results

- WAS: T1 to T2
  - Increased by average of 2.98 (SD = 14.63) points
  - Increased for majority of women (n=15), t(14) = 7.70, p < .001
  - Ranged from 4 to 22 total increased points

- PTG at T2
  - M = 62.74 (SD= 29.47) = “Moderate degree of change”
  - Cobb et al. (2006) IPV sample M=68.08, SD=24.95
  - 3 women (13%) reported no growth
    - M item ratings below 1 (experienced no change)

- T1 WAS: no difference b/w groups, t(21) = 1.08, p = .294
- T2 WAS: difference b/w groups, t(21) = 3.05, p = .006

- ΔWAS: for those not revictimized, t(12) = 2.38, p = .035
Project 1 – Results
- T1 WAS unrelated to T2 PTG ($r = .15, p = .494$)
- T2 WAS associated with T2 PTG ($r = .50, p = .015$)
- Controlling for T1 WAS, T2 WAS ($\beta = 1.25, t(20) = 2.71, p = .014$) uniquely accounted for 26.2% of variance in PTG

For those who experienced growth ($n = 20$):
- $\Delta$WAS predicted PTG ($\beta = 1.96, t(12) = 2.83, p = .016$)
  - $\Delta$ accounted for 36.8% of variance in PTG scores

Project 1 - Results
- PTG: No difference b/w groups, $t(21) = 0.45, p = .655$
- Controlling for revictimization and T1 WAS, T2 WAS associated with PTG ($\beta = 1.63, t(19) = 3.04, p = .007$)
  - T2 WAS uniquely accounted for 31.8% of the variance in PTG

Project 1 – Discussion
- WAS increased over a year for non-revictimized women
  - 87% reported PTG
    - 75%-90% report benefits post-trauma (Calhoun & Tedeschi, 2006)
  - Women revictimized reported a "small degree of change"
  - Women not revictimized reported a "moderate degree"
- $\Delta$WAS predicted PTG
  - Supports schema reconstruction pathway (Maroff-Bulman, 2006)
  - Through cognitive restructuring, assumptive world beliefs can become more complex (e.g., "misfortune is ever possible")
  - Minimizes likelihood of revictimization shattering assumptions
  - Reduces risk for adverse mental health outcomes

Project 2 – Foster Youth & Adjustment
- Purpose
  - Examine link between PTG and mental health outcomes in trauma survivors
- Mental Health Service Use of Youth Leaving Foster Care (Voyages) 2001-2003 (McMillen, 2010)
  - National Data Archive on Child Abuse and Neglect, Cornell University, Ithaca, NY
  - Funded (NIMH Award Number: 1R01 MH 61404) to explore changes in mental health service use as youth leave foster care
  - Examined many parameters of the lives of youth in foster system
Project 2 – Foster Youth & Adjustment

- T1 PTG assessed with Perceived Benefits Scale (PBS; McMillen & Fisher, 1998)
- PBS items were empirically generated from lists of statements from survivors of negative life events
- vs. PTGI (Tedeschi & Calhoun, 1996) items that were guided by theory
- PBS and PTGI tap increased personal strength
  - Enhanced Self-Efficacy
- PBS adds incremental validity by assessing empathy for the suffering of others
  - Increased Compassion for Others
    - Most highly endorsed subscale

- 90% of adults formerly in foster care experienced childhood maltreatment (Pecora et al., 2003)
- 40% of foster youth endorsed some type of maltreatment while in foster care (Salazar et al., 2011)
- Youth "aging out" of foster care have high rates of depression
  - Lifetime prevalence rate of depression increased by 5.4% from ages 17 to 19 (Courtney et al., 2004)
  - 41.1% alumni met criteria for lifetime MDD compared to 19.8% in matched general pop sample (White et al., 2009)

- Unique factors increase risk for depression in foster youth
  - Pre-care and during-care maltreatment associated with depressive symptoms (Salazar et al., 2011)
  - Physical + sexual abuse, or neglect was strongest predictor of symptoms in youth exiting foster care (McMillen et al., 2005)

- Purpose and Research Questions:
  - Do foster youth experience PTG?
  - How might PTG facilitate post-trauma adjustment?

- Inconsistent findings (+, -, null) with regard to link between PTG and psychiatric symptoms (Park & Helgeson, 2006)
  - Depressive symptoms (findings from meta-analyses)
      - Though 2 studies found an inverse relation between PTG and depression
    - 2. Negatively associated with PTG (Helgeson et al., 2006)
      - Represented by an effect size of -.09
    - Moderated by time since trauma → PTG may take time to attain
    - 3. Inconsistent relations with PTG among children/adolescents (Meyerson et al., 2011)
      - Over-reliance on cross-sectional studies may account for inconsistency
Project 2 – Foster Youth & Adjustment

- Longitudinal research:
  - PTG at T1 predicted less emotional distress 12 and 18 months later in adolescents (Ickovics et al., 2006)
  - PTG after sexual assault predicted less depression over a year in adults (Feaster et al., 2001)
- Longitudinal research necessary to analyze nature of PTG as it relates to psychological adjustment over time
- Project 2 Purpose
  - Examine PTG factors that predict depression over a year, from age 17 to 18, as foster youth exited foster care

Project 2 - Participants

- Full sample included 406 youth in foster care residing in 8 counties of Missouri
  - M age at T1 = 16.99, ranging from 16.9-17.5
  - 57% female
  - 50% African American, 44% White
- Subsample included 373 youth who endorsed abuse (physical, emotional, and/or sexual) on the Childhood Trauma Questionnaire (Bernstein & Fink, 1998)
  - Physical and/or emotional abuse was experienced between "sometimes" and "often" during childhood
  - 37.5% reported some form of childhood sexual abuse

Project 2 - Procedure

- Participants recruited through the Missouri Children’s Division, child welfare authority in Missouri
- Participants interviewed every 3 months from age 17 to age 19 (9 interviews total)
  - Paid $40 for initial interview and $20 thereafter
  - Only depression was assessed at each time point
- Attained retention was 80% (325 participants completed final interview)

Project 2 - Measures

- Childhood Trauma Questionnaire (CTQ: Bernstein & Fink, 1998)
  - T1 α ranges from .84 to .87
- Perceived Benefits Scales (PBS; McMillen & Fisher, 1998)
  - M = 11.56 (participants endorsed “much” positive change)
  - Enhanced Self Efficacy
    - “My difficult experiences taught me I can handle anything”
    - α = .75
  - Increased Compassion for Others
    - “As a result of my difficult experiences, I am more sensitive to the needs of others”
    - α = .81
- Depression-Arkansas Scale (D-ARK; Smith et al., 2002)
  - T1 α = .84
Project 2 – Data Analytic Strategy

- 2-step LMACS (longitudinal mean and covariance structures analysis)-MLGM (multiple indicator latent growth modeling) methodology (Chan, 1998)
  - Step 1: specify confirmatory measurement model and invariance across time to serve as a baseline model (LMACS)
    - Ensures that same construct of depression is being measured
    - Helps in preliminary assessment of basic form of intra-individual change
  - Step 2: simultaneously estimate measurement model and structural sub-models (MLGM)
    - Examines growth trajectories of youth depression from age 17 to 18
    - Models inter-individual differences (PTG components) of individual curves (depression trajectories)

Project 2 – Model

Project 2 – LMACS Results

- Confirmatory measurement model
  - Model $\chi^2$ at DFI
  - $p < .01$

<table>
<thead>
<tr>
<th>Model</th>
<th>$\chi^2$</th>
<th>DF</th>
<th>DFI</th>
<th>DFI</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial model</td>
<td>4369.88*</td>
<td>1669</td>
<td>2.91</td>
<td>.09</td>
<td>.80</td>
</tr>
<tr>
<td>Revised model</td>
<td>2337.72*</td>
<td>1204</td>
<td>1.95</td>
<td>.05</td>
<td>.87</td>
</tr>
</tbody>
</table>

- Measurement invariance across time
  - Model $\chi^2$ at DFI
  - $p < .01$

<table>
<thead>
<tr>
<th>Model</th>
<th>$\chi^2$</th>
<th>DF</th>
<th>DFI</th>
<th>DFI</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial model</td>
<td>2030.12*</td>
<td>967</td>
<td>1.08</td>
<td>.05</td>
<td>.85</td>
</tr>
<tr>
<td>Revised model</td>
<td>2349.05**</td>
<td>967</td>
<td>1.08</td>
<td>.05</td>
<td>.85</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model</th>
<th>$\chi^2$</th>
<th>DF</th>
<th>DFI</th>
<th>DFI</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial model</td>
<td>2337.72*</td>
<td>1204</td>
<td>1.95</td>
<td>.05</td>
<td>.87</td>
</tr>
<tr>
<td>Revised model</td>
<td>2337.72*</td>
<td>1204</td>
<td>1.95</td>
<td>.05</td>
<td>.87</td>
</tr>
</tbody>
</table>

* $p < .05$
** $p < .01$

Project 2 – MLGM Results

- Change in means of depression over time
  - Model D3
    - Factor mean $= -.22, t = -4.54, p < .001$
    - Pattern of fitted means (1.722, 1.551, 1.510, 1.489, 1.479)
    - Intercept factor variance $= 0.36, t = 7.96, p < .001$
    - Slope factor variance $= 0.01, t = 1.74, p > .05$
    - Quadratic factor variance $= 0.18, t = 2.32, p < .05$
Project 2 – MLGM Results

- **Individual predictors of depression over time**
  - Respecified model with 2 PTG predictors provided good fit:
    - $\chi^2 (1396) = 2739.44, p < .001$, RMSEA = .051 (90% CI = .048, .054),
      NFI = .854, TLI = .924, CFI = .923
    - SE ($\gamma = .33, p < .001$) and CO ($\gamma = .15, p < .05$) related to initial depression
    - SE predicted decreases in depression ($\gamma = .26, p < .05$)
    - CO was unrelated to depression over time ($\gamma = .07, p > .05$)
  - 2 PTG predictors reduced the unexplained variance by:
    - 12.66% in initial levels of depression severity
    - 13.56% in the quadratic rate of decrease in depression severity

Project 2 – Discussion

- Foster youth experienced “much” positive change
- Depression decreased as youth neared foster care exit
- SE and CO were associated with initial levels of depression, but only SE predicted decreased depression over time
  - Perceived enhanced SE from struggling with adversity may increase one’s confidence in ability to manage stressors
  - May buffer from the effects of helplessness and depressive reactions as youth near their exit from foster care
  - Increased CO may not be a maintaining factor in depression

Future Research

- Further examine change processes from victimization to PTG and psychological adjustment with several assessment points to model PTG and symptom trajectories
- Within-person, between-person, and interaction effects
- Better explicate variables that promote schema reconstruction, PTG, and psychological adjustment post-trauma
  - Revictimization, emotion regulation, perceived social support, coping strategies, etc.

Limitations

- **Study 1 – Schema Reconstruction and PTG in IPV Survivors**
  - Small sample size
  - Results robust given size, but interpret with caution as small sample sizes can limit the precision of point estimates within the data
  - T1 WAS had low internal consistency ($\alpha = .65$)
  - All participants at T1 reported physical IPV in past 6 months
  - Survivors may have been in process of rebuilding assumptions → responses to items were not internally consistent
- **Study 2 – PTG and Psychological Adjustment in Foster Youth**
  - Secondary data analysis limited the PTG factors and mental health outcomes to analyze
The End

- Questions?