

## Daily Diary Studies of ACEs and Mental Health: Implications for Interventions

Patricia Frazier  
Department of Psychology

ACES Conference 12/2/16

1



## Graduate Student Collaborators

Former	Current
Margaret Gavian	Addie Merians
Samantha Anders	Majel Baker
Sulani Perera	Viann Nguyen-Feng
Nora Keenan	Jacob Paulsen
Samuel Hintz	AnnaMarie Vu
Sandra Shallcross	
Christiaan Greer	

2

## Overview

1. How *common* is trauma exposure in students (Its not just about ACES!)

2. How are *different kinds of adversities* related to student mental health?

3. *Why* are different kinds of adversities related to poorer mental health? What are the mechanisms?

4. How can we *intervene* to promote better mental health among students in general and those who have experienced different adversities?

3

1. How common is trauma exposure in students?

4

## Prevalence of Trauma Exposure in College Students

- ▶ Multisite longitudinal study of 1,528 students at four US Universities
  - ▶ Measure = Traumatic Life Events Questionnaire
    - ▶ 21 “Criterion A” events
  - ▶ 85% reported at least one lifetime event
    - ▶ Average number = 2.79
  - ▶ 21% reported a Criterion A event during the 2-month study period

▶ 5

Frazier et al., 2009; *Journal of Counseling Psychology*

## Most common events

- ▶ Lifetime
  - ▶ Sudden death of a close friend/family (47%)
    - ▶ My mother committed suicide with my father's work pistol. I heard the gun shot and saw her body on the ground. I was 15 years old.
  - ▶ Life threatening event (close friend/family) (30%)
  - ▶ Witnessing family violence (23%)
  - ▶ Unwanted sexual attention (21%)
- ▶ Past 2 months (all 5%)
  - ▶ Sudden death of a close friend/family
  - ▶ Life threatening event (close friend/family)
  - ▶ Unwanted sexual attention

▶ 6

## Trauma Exposure: Replication

- ▶ Replicated in a study of 1,084 students at the UM and Normandale Community College
  - ▶ 89% had experienced at least one lifetime Criterion A trauma (mean = 3.08)
    - ▶ Same top three events
      - Sudden death, others' life threatening event, witnessing family violence
  - ▶ 21% reported a Criterion A event during the 2-month study period
    - ▶ Same top three events
      - Sudden death, others' life threatening event, unwanted sexual attention

▶ 7

Anders, Frazier, & Shallcross, 2012; *Journal of Counseling Psychology*

## Also assessed Non-Criterion A events

- ▶ 99% reported at least one Non-Criterion A event
- ▶ Most common
 

▶ Someone said hurtful things	82%
▶ Someone broke an important promise	68%
▶ Close other unsupportive	68%
▶ Physically/verbally bullied	63%
▶ Nonconsensual end of a relationship	62%

▶ 8

Anders et al., 2012

## Examples of Non-criterion A worst events

### ▶ Broken promise

- ▶ My mother had full custody of me as a child and my father would have me every other weekend. Often times he would not show up at the times he said that he would. Sometimes changing saying he would come the next day or the next. Usually he would just not show up.

### ▶ Cheated on by romantic partner

- ▶ My boyfriend had sexual intercourse with my best friend. I was really hurt by both of them. I eventually forgave both of them but it took a lot of time.

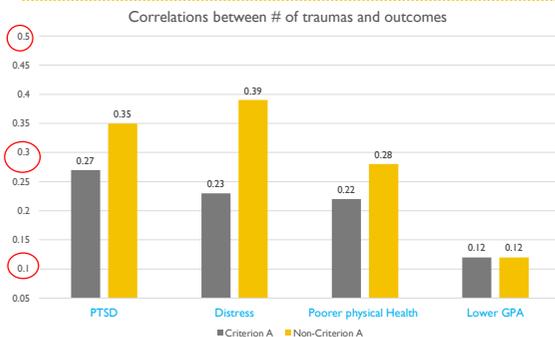
▶ 9

Anders et al., 2012

## 2. How are different kinds of adversities related to student mental health?

▶ 10

## Trauma Exposure, Mental and Physical Health, and Grades



▶ 11

Anders et al., 2012

## Replication

- ▶ # of non-Criterion A events more related to negative outcomes than # of Criterion A events
  - ▶ College students
    - ▶ Most common Non-criterion A worst events were relationship dissolution and infidelity
- ▶ Same rates of PTSD following self-nominated Criterion A and non-Criterion A worst events
  - ▶ Community sample of women
    - ▶ Relationship dissolution and relationship conflict were common non-Criterion A worst events

▶ 12 Anders, Shallicross, & Frazier, 2012, *Journal of Trauma and Dissociation*; Anders, Frazier, & Frankfurt, 2011, *Journal of Anxiety Disorders*

### Are some **specific** events worse than others?

- ▶ In multisite study at four Universities, examined current distress levels as a function of exposure to most common events
  - ▶ Sudden death close friend/family
  - ▶ Life-threatening accident (e.g., motor vehicle accident)
  - ▶ Life-threatening event that happened to close other
  - ▶ **Witnessing family violence**
  - ▶ **Unwanted sexual attention**
  - ▶ **Sexual victimization as child, adolescent or adult**

▶ 13

Frazier et al., 2009

### 3. Why are some events more related to poorer mental health than others?

Are there specific mechanisms linking exposure to specific events to worse outcomes?

▶ 14

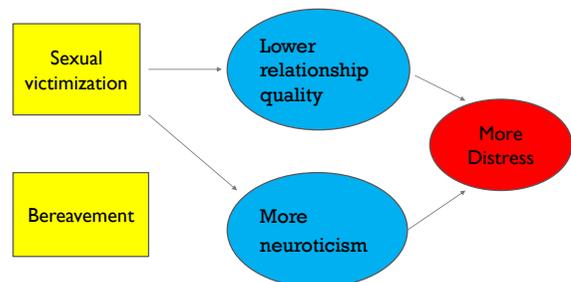
### Why is sexual victimization worse than other events?

- ▶ Analyzed data from two longitudinal studies
  - ▶ N = 1,528 (Study 1) and N = 1,084 (Study 2)
- ▶ Potential mechanisms underlying relation between sexual victimization and distress
  - ▶ Poorer quality relationships
  - ▶ Higher neuroticism
- ▶ Compared to bereavement
  - ▶ Most often nominated as worst event but less associated with current distress
    - ▶ Should not be related to poorer quality relationships or neuroticism

▶ 15

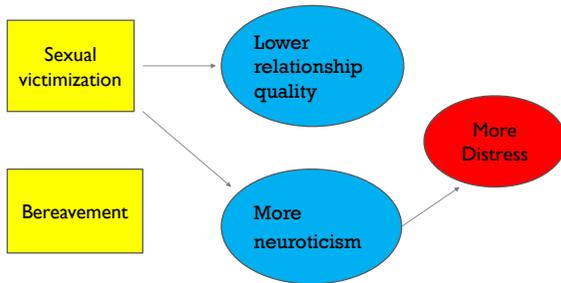
Frazier et al., 2016; *Psychological Trauma*

### Study 1: Relationship quality and neuroticism mediate the relation between sexual victimization and later distress



▶ 16

Study 2: Only neuroticism mediated the relation between sexual victimization and later distress



▶ 17

Neuroticism was more consistent mediator of relation between sexual victimization and current distress

▶ How might neuroticism play out in daily life?

▶ 18

### Daily Diary Stress and Coping Study

- ▶ **Sample:**
  - ▶ 268 undergraduates in psychology courses
- ▶ **Design**
  - ▶ Completed long surveys at T1 and T2
  - ▶ 14 daily diaries (brief surveys) between T1 and T2
    - ▶ Prompted via cell phone/email at 9 pm

▶ 19

### Measures: Trauma Exposure

- ▶ **Traumatic Life Events Questionnaire (TLEQ)**
  - ▶ 21 lifetime events
- ▶ **Childhood Trauma Questionnaire**
  - ▶ Five 5-item subscales
    - ▶ Emotional abuse
    - ▶ Emotional neglect
    - ▶ Physical abuse
    - ▶ Physical neglect
    - ▶ Sexual abuse

▶ 20

## Selected Measures: Distress (T1 and T2)

- ▶ **Counseling Center Assessment of Psychological Symptoms**
  - ▶ Depression
  - ▶ Academic distress
  - ▶ General anxiety
  - ▶ Social anxiety
  - ▶ Hostility
- ▶ Eating concerns
- ▶ Substance abuse

▶ 21

## Selected Daily Measures (14 days)

- ▶ **Did you experience any of the following stressors?**
  - ▶ Too much school work
  - ▶ Issues at/with your current job
  - ▶ Received lower grade than you wanted
  - ▶ Financial problems
  - ▶ Interpersonal problems
- ▶ **If yes, how stressful was it?**
- ▶ **If at least one stressor, what did you do when you experienced it?**
  - ▶ Avoidant coping (e.g., avoided people)
  - ▶ Rumination (e.g., thought about it constantly)
  - ▶ Present control (e.g., control over reactions)
- ▶ **Daily measures of anxiety, depression, and hostility**

▶ 22

## Prevalence of ACES

- ▶ **Childhood Trauma Questionnaire**
  - ▶ Emotional neglect 32%
    - ▶ Felt loved – reverse coded
  - ▶ Physical neglect 27%
    - ▶ Parents drunk/high
  - ▶ Emotional abuse 26%
    - ▶ Felt hated by family
  - ▶ Sexual abuse 20%
    - ▶ Was touched sexually
  - ▶ Physical abuse 14%
    - ▶ Hit hard enough to leave bruises

▶ 23

## ACES and current distress

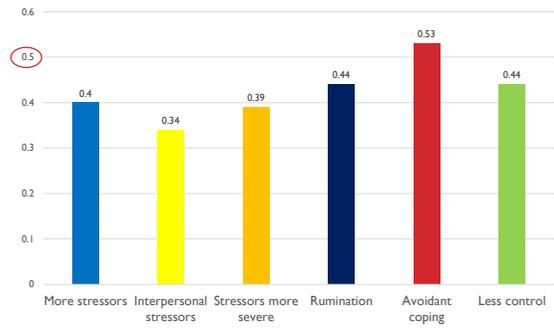
CTQ subscale	Correlation with Distress
Emotional abuse/neglect	.43***
Physical neglect	.29***
Physical abuse	.22***
Sexual abuse	.15*

### How might neuroticism play out in daily life?

- ▶ Reporting more daily stressors
- ▶ Reporting more interpersonal stressors
- ▶ Perceiving events as more stressful
- ▶ Using less effective coping with stressors
  - ▶ Rumination
  - ▶ Avoidant coping
- ▶ Perceiving less control over stressors

▶ 25

### Correlations between daily stress processes and distress



▶ 26

### How are ACEs related to these daily stress processes?

	More stressors	More interpersonal stressors	More severe stressors	Rumination	Avoidance	Control
Emotional abuse/neglect	✓	✓		✓	✓	
Physical neglect	✓			✓	✓	
Physical abuse						
Sexual abuse		✓				

### Stressors in students' lives

**A mountain of schoolwork** and having a **ton of things to do every day** of the week ... Also **balancing different relationships** in my friend group here and at home. And **finding a summer job** and **figuring out my major plan** have all been causing me stress recently.

I am **not doing as well as I would like to be** in school and it seems like I have **so much to do** and so much to study. In addition, I got into a **bad fight with my boyfriend** and I still **do not know for sure what I want to do with my life**.

▶ 28

## How stress affects our students



▶ 29

4. How can we *intervene* to promote better mental health among students in general and among those who have experienced different kinds of adversities?

▶ 30

## How can we help students manage stress?



▶ 31

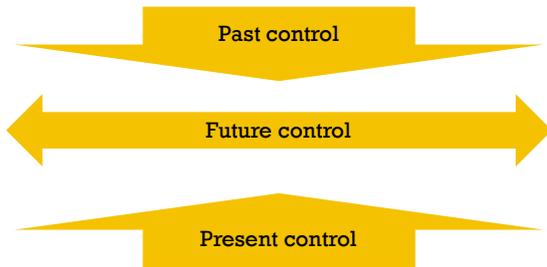
## Different Aspects of Control



▶ 32

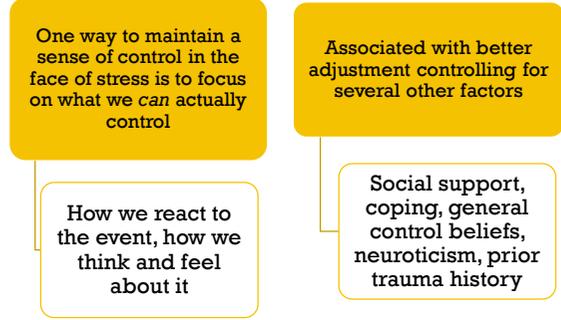
Frazier et al., 2001, *Applied & Preventive Psychology*

## Different forms of control are differentially related to distress



▶ 33 Frazier et al., 2011, *Journal of Personality and Social Psychology*; Frazier et al., 2012, *Journal of Counseling Psychology*

## Present control



▶ 34

Frazier et al., 2011, 2012

We identified one factor – focusing on present control – that seems to be quite helpful

How can we teach people that skill?

▶ 35

## Rationale for online intervention



▶ 36

## And they work!

- ▶ **Reviews of Research on Online Interventions for College Students**
  - ▶ **Farrer et al. (2013)**
    - ▶ 27 studies
      - Depression and anxiety symptoms:  $d = .54$
      - Anxiety symptoms/disorders:  $d = .84$
    - ▶ **Davies et al. (2014)**
      - ▶ 14 studies (comparison = inactive control)
        - Anxiety:  $d = .56$
        - Depression:  $d = .43$
        - Stress:  $d = .73$
      - ▶ **Conley et al. (2016)**
        - ▶ 48 published and unpublished studies
          - 22 universal prevention studies:  $d = .19$
          - 26 indicated prevention studies:  $d = .37$

▶ 37

## First randomized controlled trial (RCT): Spring 2012

- ▶ **Sample**
  - ▶ 233 Psychology students at U of MN
  - ▶ Pretest; select those <3 on present control scale
- ▶ **Randomized to 1 of 3 conditions**
  - ▶ Present control ( $n = 77$ )
  - ▶ Present control with feedback ( $n = 79$ )
  - ▶ Stress module (1) only ( $n = 77$ )

▶ 38

Hintz, Frazier, & Meredith, 2016, *Journal of Counseling Psychology*

## Measures

- ▶ **Pre-intervention, post-intervention, and 3 week follow-up assessments**
  - ▶ **Present control**
    - ▶ I have control over my day-to-day reactions to this event
  - ▶ **Perceived stress (PSS)**
    - ▶ How often have you found that you could not cope with all the things that you had to do?
  - ▶ **Depression, anxiety, stress symptoms (DASS-21)**
    - ▶ I found it hard to wind down

▶ 39



▶ 40

## Module Topics

Module 1: Stress and its effects

Module 2: Different aspects of control and benefits of present control

Module 3: Problem solving around implementing present control

- Stress/control logs (n = 3)

Module 4: Moving forward

▶ 41

## Module element 1

### Social persuasion



▶ 42

## Module element 2

### Vicarious experiences



▶ 43

## Module element 3: Mastery Experiences (Stress logs)

**What has been causing you stress recently?**  
Please describe the situation below.

I am very stressed out with Psychology because it has always been a hard subject for me and as of right now, I have failed both tests because they are so difficult for me.

I am also stressed out because my boyfriend is going to Las Vegas soon and I don't really feel comfortable with it so it stresses me out not knowing what is going to happen when he is there because I don't like his friends.

**Thinking about what you've learned about past and present control, what aspects of these stressors are really beyond your control?**

I cannot control what questions are on the test for psychology or how hard the questions are.

I cannot control what my boyfriend does or where he goes.

**What aspects of these stressors are controllable?**  
Remember that in every situation there are things that you can control even if it is just your reaction.

I can study more and make more of an effort to memorize terms.

I can tell my boyfriend how I feel and tell him what I am concerned about.

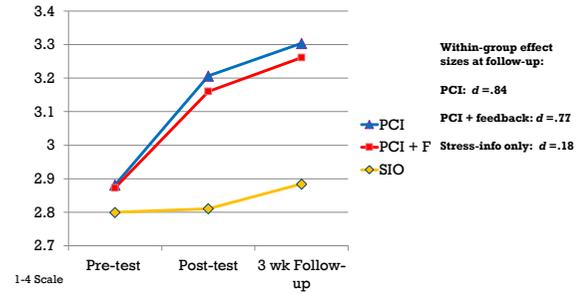
▶ 44

### Three more stress/control logs

- ▶ What has been causing you stress?
- ▶ What aspects of these stressors are out of your control?
- ▶ What aspects of these stressors are controllable?
  
- ▶ Looking at ... what is controllable, what actions can you take to feel better?
  
- ▶ Thinking about what actions you listed last time, which have you been able to do?
- ▶ What has changed about the stressor as a result of the action you've taken?

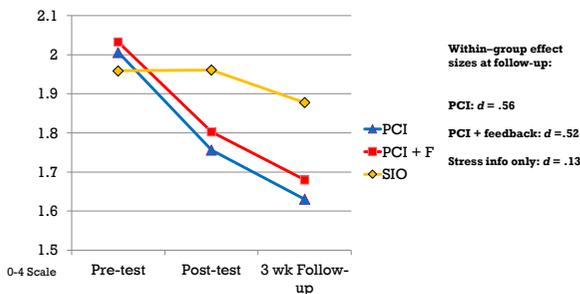
▶ 45

### Intervention groups report more Present Control



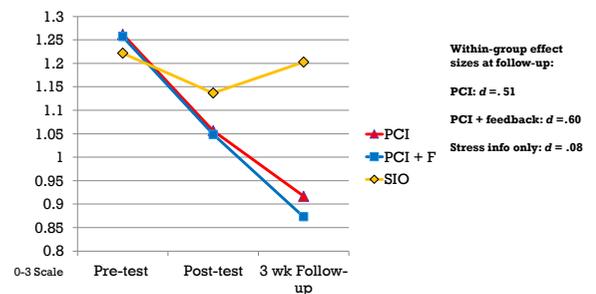
▶ 46

### Intervention groups report less Perceived Stress



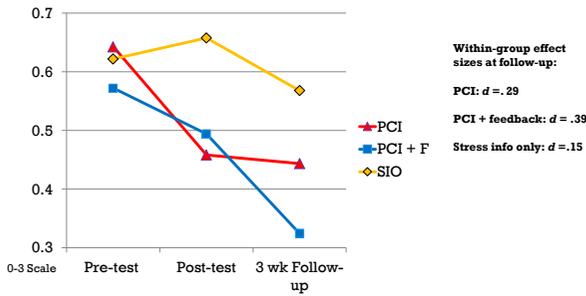
▶ 47

### ... Fewer Stress Symptoms



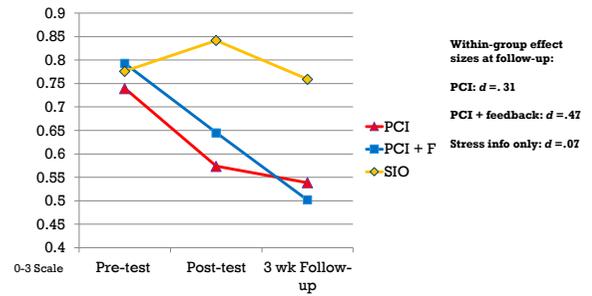
▶ 48

### ... Fewer Anxiety Symptoms



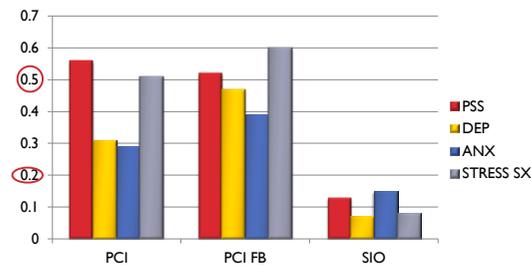
▶ 49

### ... And fewer Depressive Symptoms



▶ 50

### Summary of Pretest to 3 week Follow-up Within-Group Effect sizes



▶ 51

### Mediation Analyses



▶ 52

### What has changed about the stressor as a result of the action you've taken?

Since I have **studied more and used my schedule** that I made, I have been **less worried** about classes and grades

I have spent **less time worrying** about how much I have to do and instead have **actually worked harder** to get it all done

I have less work to do now because I was **proactive and started going at it** instead of freaking out about how much there was

▶ 53

### What has changed about the stressor as a result of the action you've taken?

I have **let go** of the other person's behavior

Since I've realized that I cannot always control my boyfriend's feelings, **I've started to take things less personally and realized that I can only do so much to make him happy.** The rest is up to him.

Since I talked to my boyfriend, I've spent less energy worrying about our relationship and I am able to **expend my energy elsewhere.**

▶ 54

## Unsolicited Feedback

- ▶ “I participated in a stress study last semester, and I **greatly benefited from it.** I even bought a notepad where I would write my thoughts in the format that was given at the study web page. I really want to **thank you for providing this wonderful resource.**”

▶ 55

## Six More RCTs

- ▶ Have since done six more RCTs on various versions of the intervention with students at U of MN and Normandale Community College
  - ▶ **2,250 students have participated**
- ▶ Generally positive results especially for improved versions of intervention
  - ▶ Sometimes not more effective than providing more extensive psychoeducation about stress
  - ▶ Less effective when embedded in courses and essentially required

▶ 56

Frazier et al., 2015; *Anxiety, Stress & Coping*

### Efficacy of intervention in students with history of interpersonal violence (IPV)

- ▶ In a multisite study of college students, **IPV exposure** (e.g., family violence, sexual victimization) was the only category of lifetime trauma associated with more current distress (Frazier et al., 2009)
- ▶ Would our intervention be effective for this at-risk group?
  - ▶ Used a universal, preventive approach to reach these students
  - ▶ Focused on general stress and distress, not trauma symptoms
  - ▶ Did not require them to seek help for IPV

▶ 57

### RCT: Efficacy for students with and without IPV history

- ▶ Sample
  - ▶ 512 undergraduate psychology students
  - ▶ Not preselected to be low in present control
- ▶ Randomized to 1 of 2 conditions at beginning of semester
  - ▶ Present control intervention ( $n = 335$ )
    - ▶ 6 stress logs (vs. 3)
  - ▶ Waitlist ( $n = 172$ )

▶ 58

Nguyen-Feng et al., 2015; *Psychology of Violence*

### Measures

- ▶ Pre-intervention measures
  - ▶ Traumatic Life Events Questionnaire
    - ▶ Interpersonal violence exposure
- ▶ Pre- and post-intervention assessments
  - ▶ Present Control Over Stressful Events Scale (PCOSES)
  - ▶ Perceived Stress Scale (PSS)
  - ▶ Depression, Anxiety, and Stress Scale (DASS-21)
- ▶ Ruminative Thought Style Questionnaire

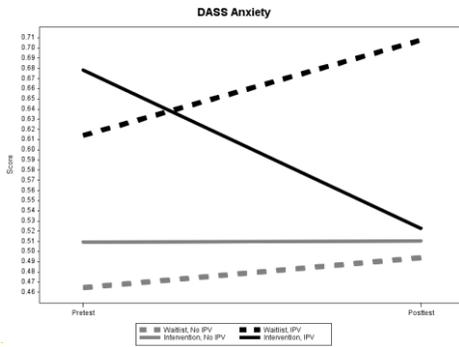
▶ 59

### Prevalence of IPV

- ▶ 39% of the sample ( $n = 197$ ) had a history of IPV
  - ▶ Witnessing family violence
  - ▶ Sexual assault
  - ▶ Unwanted sexual attention
- ▶ At baseline, students with a history of IPV reported more:
  - ▶ Depression, anxiety, stress symptoms, perceived stress and rumination
  - ▶ Not less present control

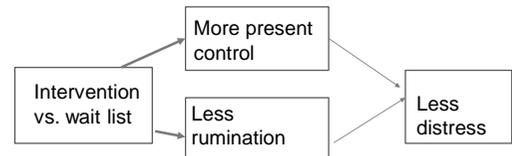
▶ 60

Intervention was *more* effective for IPV group



▶ 61

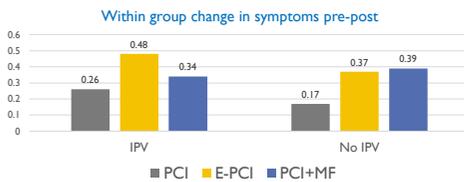
Present control and rumination mediated intervention effects in IPV group



▶ 62

IPV as Moderator w/ improved interventions

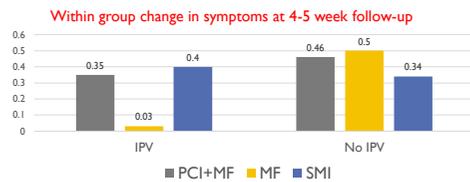
- ▶ Three versions of intervention
  - ▶ Original PCI (PCI)
  - ▶ Enhanced PCI (E-PCI) No wait list group
  - ▶ PCI + Mindfulness exercises (PCI+MF)



▶ 63 Nguyen-Feng et al., in press, *Translational Issues in Psychological Science*

Another Replication: IPV as Moderator

- ▶ PCI + Mindfulness exercises (PCI+MF)
- ▶ Mindfulness only
- ▶ Sent stress management information from Student Mental Health Web site



▶ 64 Nguyen-Feng et al., in press, *Translational Issues in Psychological Science*

## Next steps

- ▶ **Viann Nguyen-Feng's dissertation**
  - ▶ Efficacy of intervention for students with a history of emotional abuse/neglect
  - ▶ Develop new intervention material targeting mechanisms related to emotional abuse/neglect
    - ▶ Avoidant coping
  - ▶ Deliver as an Ecological Momentary Intervention (EMI) via smart phones
  - ▶ Tailor content to individuals' responses
  - ▶ Assess daily stress processes as outcomes using Ecological Momentary Assessment
  - ▶ Assess academic performance as outcome

▶ 65

## Take home messages

### #1: Trauma exposure is common

- 80-89% have experienced at least one potentially traumatic event in lifetime
- 21% during one semester

### #2: Some events are more distressing than others

- Relationship-oriented events
- Childhood emotional abuse

▶ 66

## Take home messages

### #3: Mechanisms include daily stress-related processes

- More daily stressors, interpersonal stressors, rumination, avoidant coping

### #4: Online interventions that teach specific skills are effective

- Present control and mindfulness interventions reduce rumination, stress, and symptoms (e.g., depression, anxiety)
- Interventions don't have to target mechanisms that link trauma to distress to be effective
- Focusing on what you can control is a general skill
- Can reach students with trauma histories using universal prevention approach

▶ 67