Psychological Flexibility, Pain Characteristics and Risk of Opioid Misuse in Noncancerous Chronic Pain Patients

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Opioid Use – The dark side

- In 2008, the American Pain Society and the American Academy of Pain Medicine constructed of team of multidisciplinary experts to systematically review empirical evidence for chronic opioid therapy for chronic noncancerous pain.
- Limited research suggested that chronic opioid therapy **may be effective** for a subset of selected and monitored patients
- RCTS for opioids have yielded reductions in pain ranging from **18%** to **66%** (weighted mean is 33%)
  - Clark and colleagues (2002) found pain reduction also occurred with **inactive (10%)** and **active (20%)** placebos
- Common **opioid-related adverse effects** include
  - Constipation
  - Nausea
  - Vomiting
  - Sedation and clouded mentation
  - Hypogonadism
  - Fatigue and decreased levels of concentration
  - Itchy Skin
  - Twitching

Chou et al, 2009

Opioid Use – Misuse, Abuse & Addiction

- Increase in **misuse** of prescribed opioids
- Increase in opioid-related **mortality**
  - Prescribed opioids have directly or indirectly caused more than **100,000 deaths** in the United States
- Opioid sales have increased **400%** between 1999 and 2014

❖**Opioid misuse and abuse in the US population range from 1% to 40%**

CDC, 2011; Fishbain, Cole, Lewis, Rosomoff & Rosomoff, 2008; Frenk, Porter & Paulozzi, 2015; Ives et al, 2006; Martell et al, 2007; Office of Applied Studies, Substance Abuse and Mental Health Service Administration, 2005; Substance Abuse and Mental Health Services Administration, 2013a; Substance Abuse and Mental Health Services Administration, 2013b; Johns Hopkins, 2015; Jones, Mack & Paulozzi, 2013

Pain-Related Distress

SEVERITY

- Considered the primary form of pain-related distress

- Greater pain severity reported in one week was significantly associated with increased opioid use in the following week.

INTERFERENCE

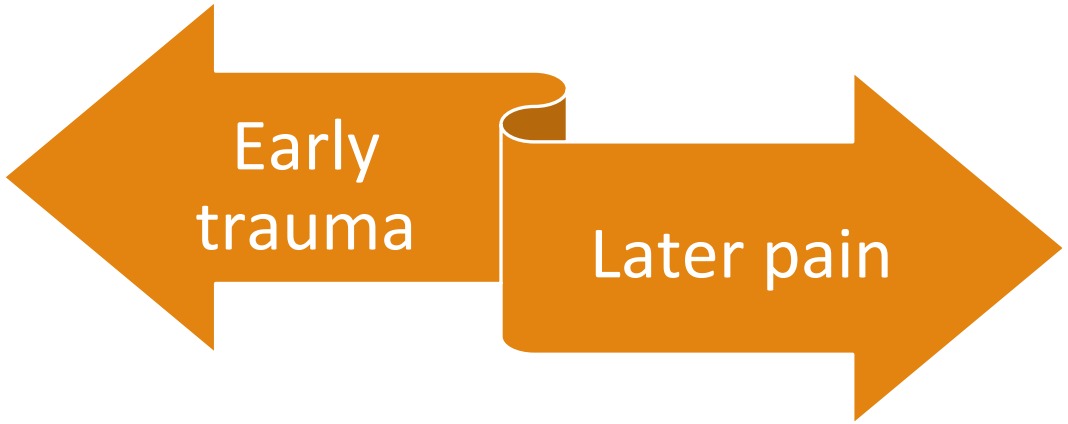
- The degree to which pain experience limits daily life functioning domains
  - (e.g., mood, walking and other physical activity, work, social activity, relations with others and sleep)

- Higher levels of pain interference have been associated with intermittent/lower-dose and regular/higher-dose opioid use compared to minimal use or nonuse

Cleeland & Ryan, 1994; Griffin et. al., 2016; Turner, Shortreed, Saunders, LeResche & Von Korff, 2016

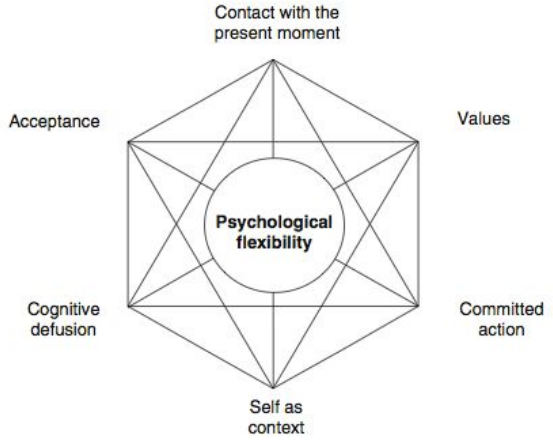
Trauma and Chronic Pain

- Many studies revealed a positive association between psychological trauma, physical abuse and sexual abuse
  - chronic abdominal pain
  - pelvic pain
  - musculoskeletal pain
  - low back pain
  - fibromyalgia
- Underlying mechanisms remains unclear



Davis, Luecken, & Zuata, 2005

Psychological Flexibility & Pain

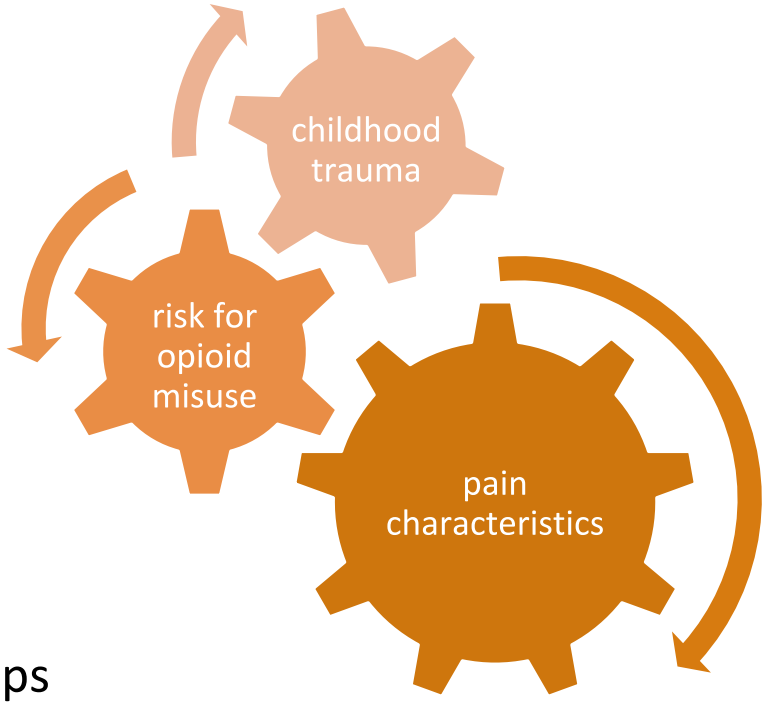


- A growing interest in **acceptance of pain**, in acceptance-based therapies, rather than controlling or fighting the pain.
- Acceptance-based therapies suggest that neither pain nor the content of pain-related thoughts causes problematic behaviors; instead, it is the **patient's relationship to these experiences and thoughts that are problematic**.
- Research suggests that acceptance is associated with **increased pain tolerance** and **decreased recovery time** compared to distraction and control tactics
- In addition, acceptance in patients with chronic pain has been associated with **better emotional, social and physical functioning**

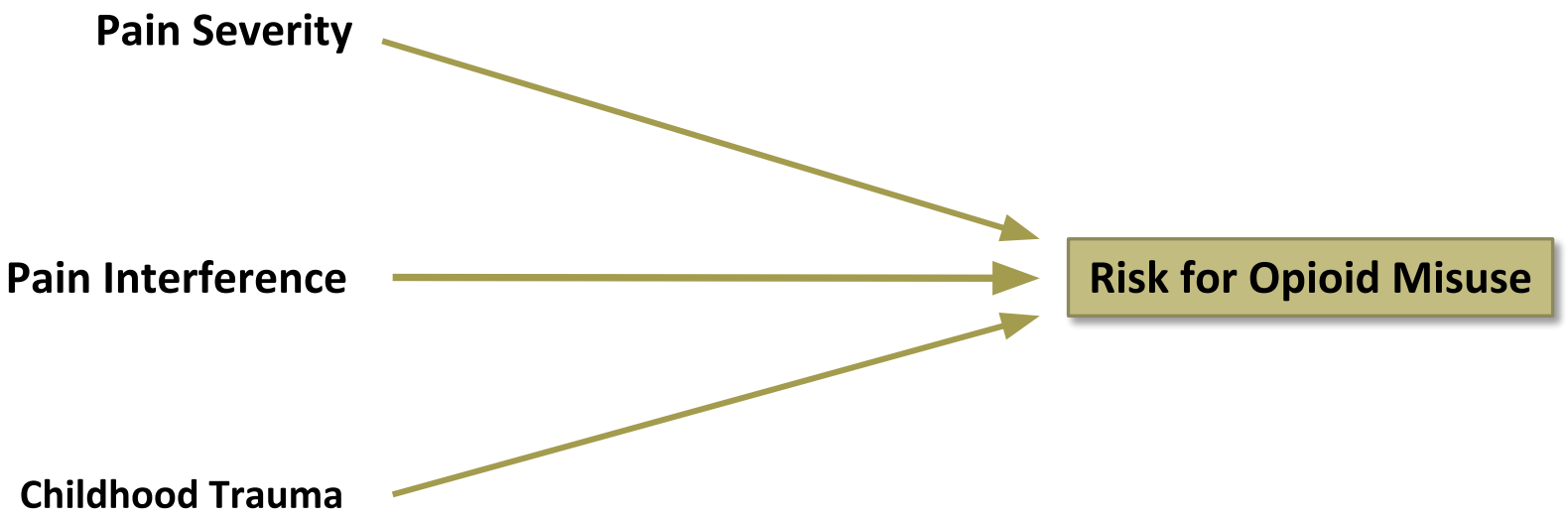
Elander, Robinson, Mitchell & Morris, 2009; Masedo & Esteve, 2007; Esteve, Ramírez-Maestre & López-Martínez, 2007; McMullen et al., 2008; Páez-Blarrina et al., 2008; Richardson et al., 2010; Veehof, Oskam, Schreurs, & Bohlmeijer, 2010; Vowles et al., 2007

Present Study

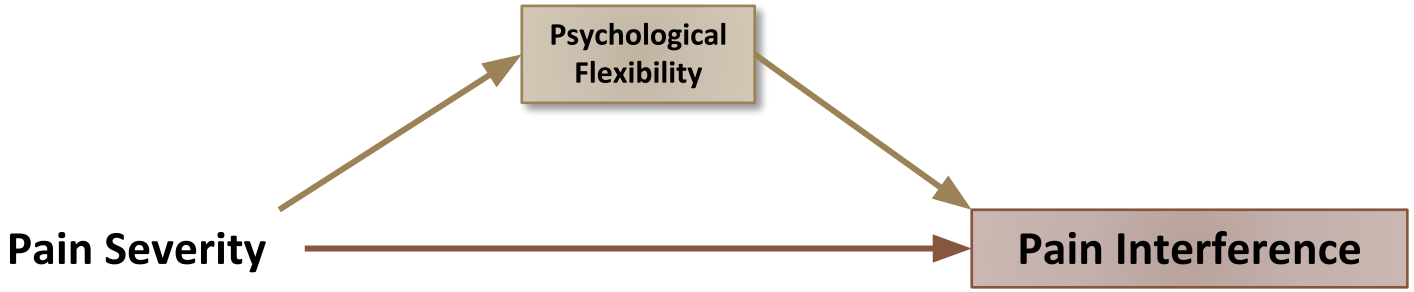
- Examines the relationships between
  - Early trauma
  - Pain severity
  - Pain interference
  - Risk of opioid misuse
- Evaluates if psychological flexibility plays a role in these relationships
- Medical and behavioral health professionals may better provide **appropriate treatment services**.
- **Opioid misuse** potential may be better understood and risk for developing opioid addiction may be **reduced**.
- **Clinical interventions** may be enhanced through use of information about the relationships between early aversive histories, psychological flexibility, and chronic pain characteristics.



Hypotheses – Predicting Risk for Opioid Misuse



Hypotheses – Mediating with Psychological Flexibility



Method

PARTICIPANTS

Recruited from outpatient pain clinics in the northeastern US

99 participants

- Over 18 years old
- Currently being treated for pain
- Noncancerous-related pain
- English fluency

PROCEDURE

- Recruited from the waiting areas of outpatient pain clinics
- Voluntary
- Raffle
- Consent Form
- Measures
- Administration of all materials were in person, via paper and pencil.

Measures

Demographic Questionnaire

- self-reported age, gender, ethnicity, weight, prescription information

The Brief Pain Inventory-Short Form (BPI-SF; Cleeland and Ryan, 1994)

- 11-item self-report measure, has been widely used to measure daily **pain severity** and **pain interference** in individuals with chronic and persistent pain

Acceptance and Action Questionnaire II (AAQ-II; Bond et al., 2011)

- 7-item self-report measure, assesses a person's experiential avoidance, immobility, as well as acceptance and action of **psychological flexibility**

Childhood Trauma Questionnaire (CTQ; Bernstein & Fink, 1998)

- 28-item self-report measure, is designed to assess diverse forms of **childhood maltreatment and early aversive experiences**, including sexual abuse, physical abuse, emotional abuse, physical neglect, and emotional neglect

Screener and Opioid Assessment for Patients with Pain - Revised (SOAPP-R; Butler, Fernandez, Benoit, Budman & Jamison, 2004)

- 24-item self-report measure, is designed to measure an individual's **relative risk for developing long-term opioid use related problems**

Table 1

Demographic Characteristics of Participants (N = 99)

Characteristic	*n*	%	*M*	*SD*
Gender				
Female	32	32.3		
Male	67	67.7		
Age (years)	96		57	12.9
Weight(pounds)	94		190.7	42.7
Race				
American Indian or Native American	1	1		
Asian	3	3		
Black or African American	20	20.2		
Hispanic	6	6.1		
White or Caucasian	63	63.6		
Other	3	3		
Opioid Prescription				
Yes	64	64.6		
No	33	33.3		
Type of Opioid Prescription				
Hydrocodone	2	3.1		
Hydrocodone/acetaminophen	4	6.3		
Hydromorphone	2	3.1		
Morphine	6	9.4		
Oxycodone	16	25		
Oxycodone/acetaminophen	15	23.4		
Did Not Know	4	6.3		
Multiple	15	23.4		

Note. Percentages of opioid prescriptions are based on the total number of patients who were prescribed opioids, not the total sample

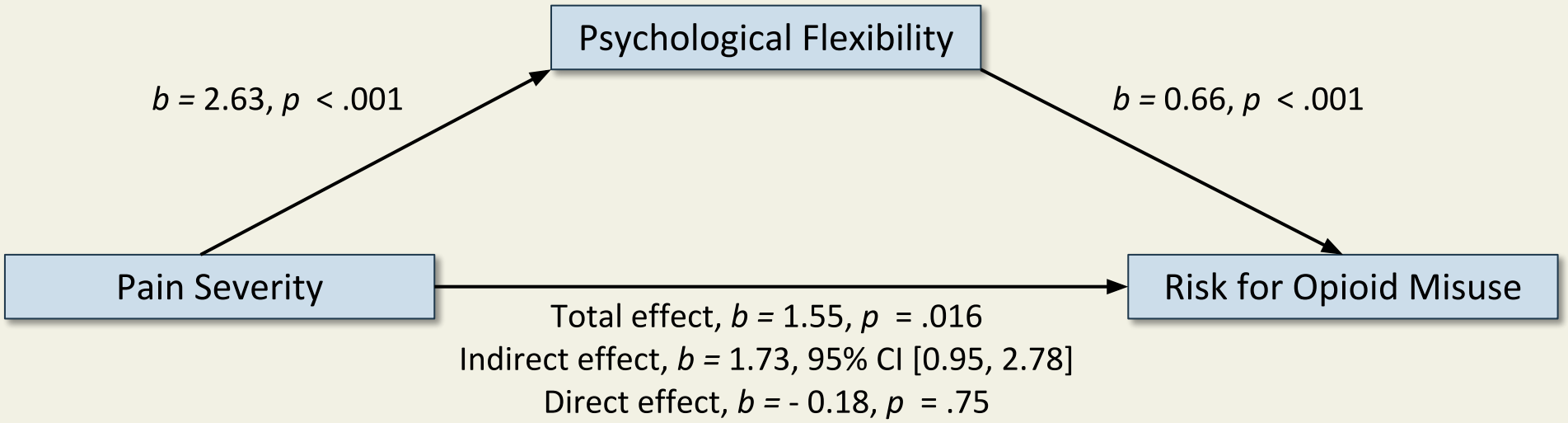
Table 3

Summary of Correlations for Scores on the SOAPP-R, BPI-SF subscales, CTQ and AAQ-II

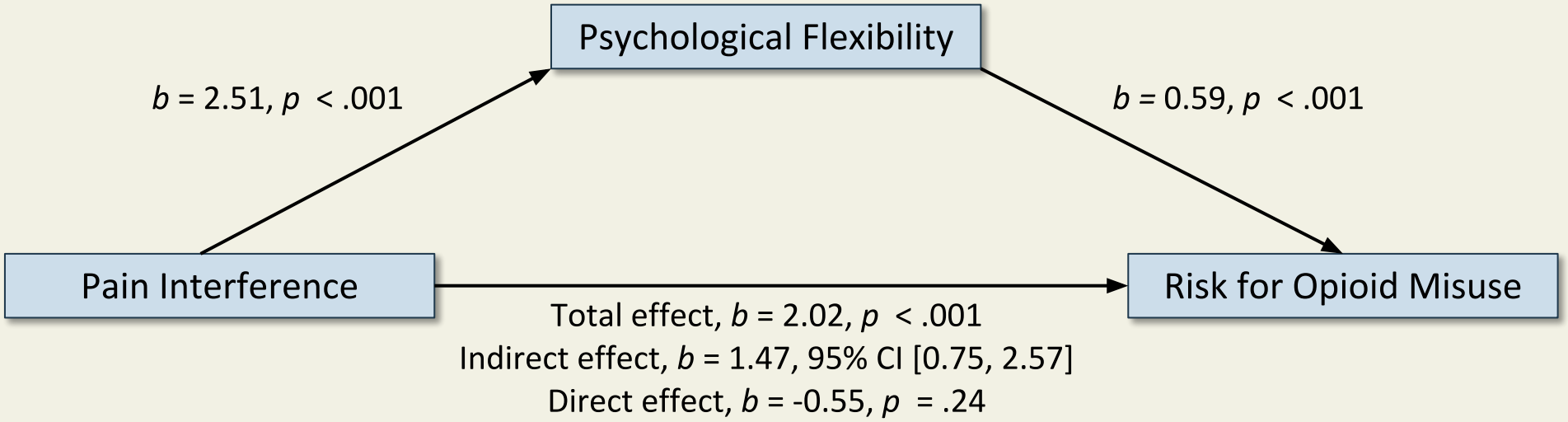
Measure	*1*	*2*	*3*	*4*	*5*
1. SOAPP-R	—	.20*	.40**	.23*	.63**
2. BPI-SF (Severity)	.20*	—	.55**	.10	.44**
3. BPI- SF (Interference)	.40**	.55**	—	.08	.58**
4. CTQ	.23*	.10	.08	—	.18
5. AAQ-II	.63**	.44**	.58**	.18	—

Note. Spearman two-tailed correlations are reported. * $p < .05$; ** denotes correlation is significant at $p < .001$.

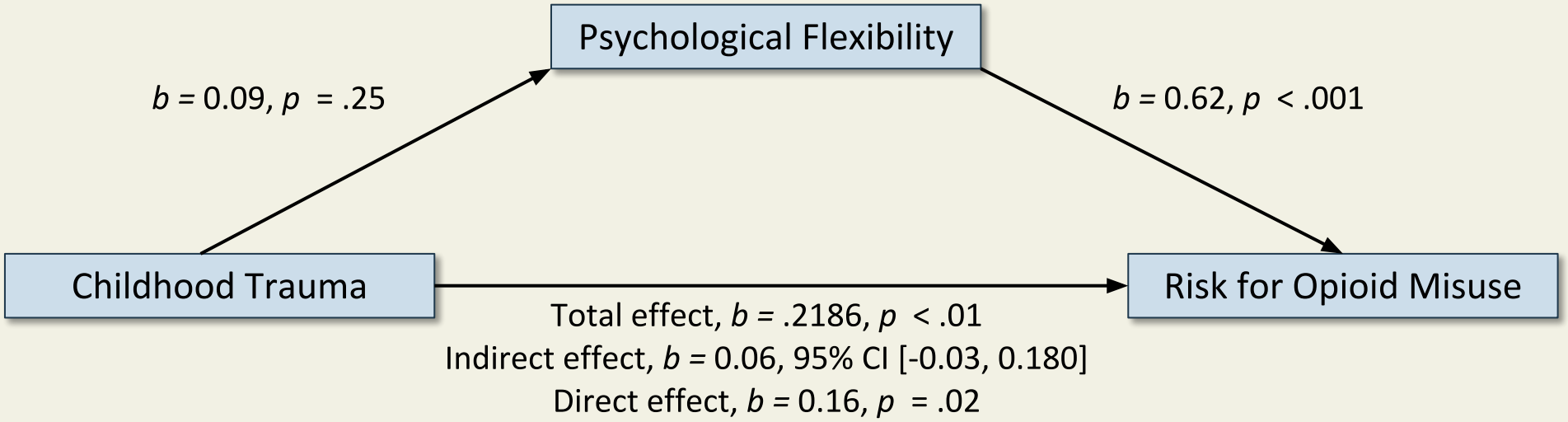
Model 1
Pain Severity - Psychological Flexibility - Risk for Opioid Misuse



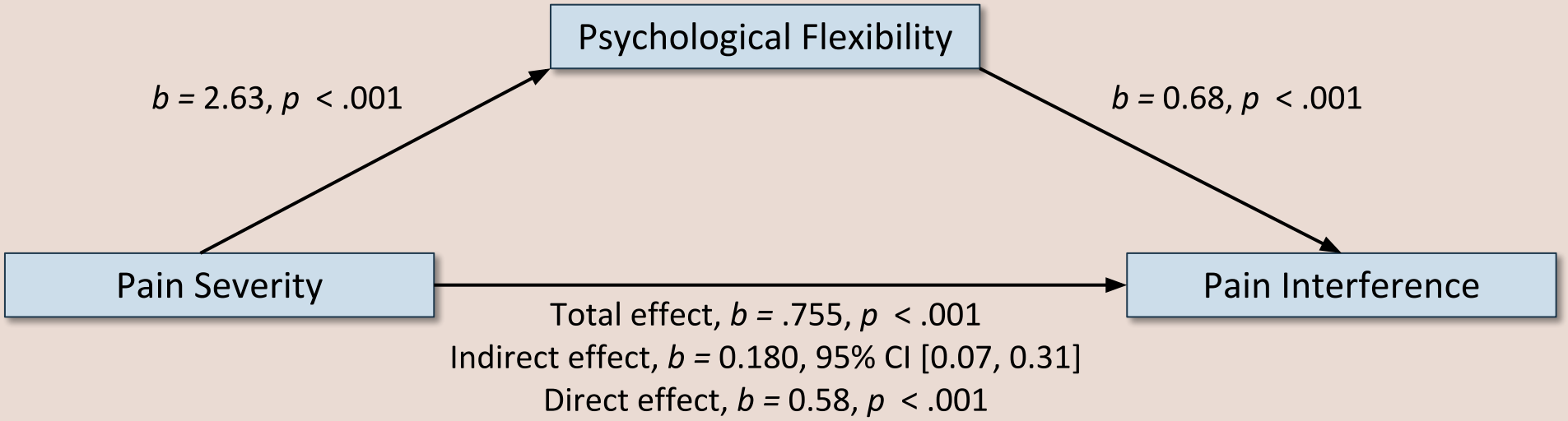
Model 2
Pain Interference- Psychological Flexibility - Risk for Opioid Misuse



Model 3
Childhood Trauma - Psychological Flexibility - Risk for Opioid Misuse

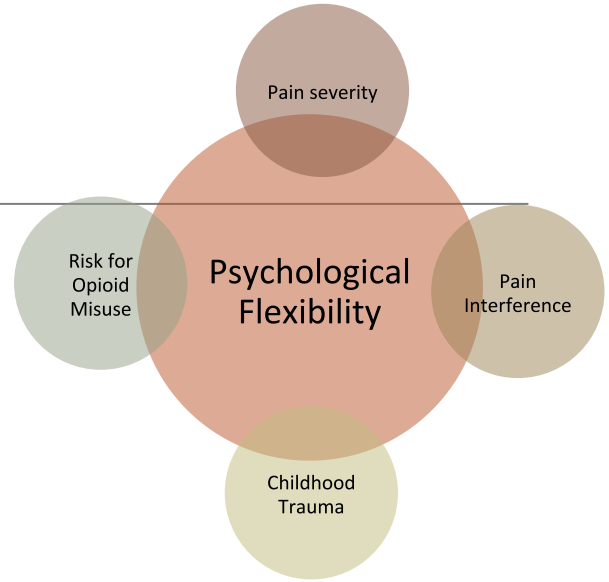


Model 4
Pain Severity – Psychological Flexibility – Pain Interference



What we know

- Pain severity predicted risk for opioid misuse (Model 1)
- Pain interference predicted risk for opioid misuse (Model 2)
- Early trauma predicted risk for opioid misuse (Model 3)
- Pain severity predicted pain interference (Model 4)
- Psychological flexibility mediated Models 1, 2, & 4



psychological flexibility appears to be a significant process in many of these pathways!

What we still have to learn

- Can interventions targeting psychological flexibility affect the outcome measures.
- What about psychological flexibility is significant
  - Look for other significant mediators
  - Look for moderated mediators
- Examine lifetime occurrences of trauma
- Examine these models in other patient populations
  - Veterans
  - Oncology
- Examine the influence of diversity factors
  - E.g. gender, race, length of opioid treatment, length of pain