# Considering Lifetime History of Trauma and Abuse in the Etiology of Opioid Use Disorder & Subsequent Impacts on Nursing Assessment & Care

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## Introduction

Encounters with people suffering from Opioid Use Disorder (OUD) have become a daily occurrence for many healthcare providers, particularly within the field of nursing. Emergency department nurses often report this demographic to be a challenging group that adds to the stressors of already-overwhelmed staff (Clarke et al., 2015). Many health care providers report that patients with Substance Use Disorders (SUDs) are undesirable to care for due to manipulative and sometimes violent behaviors. Some believe that their issues are due to character defects, lack of willpower, or simply "poor motivation" (Van Boekel et al., 2013).

Negative stereotypes about SUD/OUD and chronic pain (CP) prove countertherapeutic for patients in myriad ways. When adopted by healthcare staff, stereotypes contribute to sub-optimal care, avoidance behaviors, and premature discharges while reinforcing stigma among new nurses. Judgment and avoidance of patients with SUD/OUD ultimately lead to missed opportunities for therapeutic interventions (Van Boekel et al., 2013; Lewis & Jarvis, 2018). In the context of CP, opioid-tolerant patients with opioid dependence are frequently labeled as "drug-seeking" and are treated poorly as a result. Lack of knowledge about the etiology of CP disorders leads to increased stigma, reduced quality of life, and inadequate pain management for people in this group (Rupp & Delaney, 2004).

Over the last 20 years, research has shown associations between lifetime history of physical, sexual, and emotional abuse and SUD/OUD. Adverse Childhood Experiences (ACE) studies have provided some of the most helpful insights. A secondary review of data from Kaiser's landmark ACE study concluded that "ACEs seem to account for one-half to two-thirds of serious problems with drug use" (Dube et al., 2003). While the connections between

childhood trauma and SUD/OUD are established, little research has focused on the impact of abuse and trauma experienced throughout the lifespan, from childhood into adulthood.

## Associations Between Opioid Use Disorder, Chronic Pain, & Abuse/Trauma

### *Chronic Pain*

Unexplained non-nociceptive pain states, often referred to as chronic pain (CP), are those in which pain is experienced in the absence of an observable physical trigger. This type of persistent local, regional, or systemic pain is often triggered by stress or inflammation (Phillips & Clauw, 2011). Many non-nociceptive CP conditions are associated with psychological trauma in childhood or adulthood. Researchers believe that genetically determined pain oversensitivity combined with environmentally triggered neurological alterations (such as post-traumatic stress syndromes) results in the enhanced transmission of non-nociceptive pain impulses. (Spiegel et al., 2016). People with OUD are more likely to be receiving treatment for CP, depression, and anxiety (Cochran et al., 2014), which strengthens the significance of emotional distress in the etiology of CP. While literature demonstrates correlations between CP and OUD (Spiegel et al., 2016; Groenwald et al., 2018; Cochran et al., 2014), standard CP assessments do not include questionnaires about history of physical, emotional, or sexual abuse and trauma.

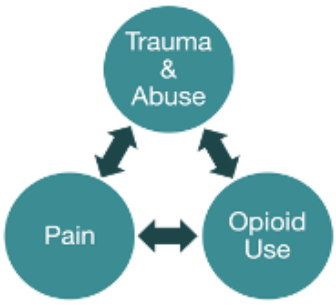



**Figure 1**. Depiction of the relationship between pain, trauma, and opioid use

***Abuse/Trauma: The Role of Sexual Abuse and Trauma.***

It is well-documented that sexual trauma is associated with increased risk of psychiatric disorders such as depression, suicide, and substance abuse (Leserman, 2005). A study by Spiegal et al. found that 33% of people who are dependent on prescription opioids have a lifetime history of sexual trauma (2016). Childhood sexual abuse is associated with clusters of chronic symptoms, including chronic pelvic pain, gynecological disorders, headache, low-back pain, fibromyalgia, anxiety, panic disorders, and PTSD (Leserman, 2005; Spiegel et al., 2016). All of these conditions (except anxiety, panic disorder, and PTSD) are routinely treated with opioid analgesics. Opioids induce euphoria along with analgesia, which is a driving factor in physical dependence. Self-medication with opioids may dually represent an attempt to cope with the overwhelming, painful emotions that result from sexual abuse and trauma (Severino et al., 2018; Chandler & Kalmakis, 2018). Despite the known associations, people are rarely asked about a history of sexual abuse or trauma in healthcare environments. Although the prevalence of childhood (37%) and adult (29%) sexual abuse was high, only 4% of women were asked about sexual abuse/trauma history by their physician in a study involving a primary care clinic (Leserman, 2005). Asking about the history of sexual abuse and trauma is essential. In one study, 50% of rape victims told no one about the experience (Finkel & Sapp, 2011).

***The Role of Adverse Childhood Experiences (ACEs).***

ACEs are stressful or traumatic events such as abuse, neglect, and household challenges experienced during the first 18 years of life (“About the CDC-Kaiser ACE Study,” 2020). Children living in chronically stressful environments have sequelae spanning multiple developmental realms, including cognition and emotional maturity. Delayed emotional development can lead to increased risk of psychiatric problems, engagement in high-risk

behaviors, relationship/interpersonal struggles, and inability to self-regulate during distressed states, leading to maladaptive coping mechanisms such as drug use (Bick & Nelson, 2015). History of childhood maltreatment and higher ACE scores are associated with an earlier age of both substance use onset (mid-adolescence) and initiation of injection drug use (Dube et al., 2003; Stein, 2017; Rasmussen et al., 2018). Although the significance of ACE scoring is known, ACE assessments are not standard elements of the nursing assessment for patients presenting with OUD and CP.

**Potential Issues with Assessing Abuse/Trauma History**

There are several challenges when attempting to accurately assess a person's lifetime history of physical, sexual, and emotional abuse/trauma. First, respondents may have difficulties recalling events or may not want to speak or write about the experiences. Second, in-person interviews may lead to response bias and underreporting of drug use and history of abuse or trauma. Third, patients may have experienced a traumatic brain injury or other health problems, resulting in memory lapses or cognitive deficits. Longitudinal follow-ups of adults with documented ACEs have demonstrated an *underestimation* of actual abuse occurrences during initial interviews (Dube et al., 2003). While flawed and generally underreported, any amount of self-reported memories of abuse or trauma may give clinicians new insight as to how to help patients recover from OUD.

**Study Rationale**

According to the World Health Organization (WHO), one in four adults (25% of the global population) were physically abused as children, and approximately one in five women and one in thirteen men have been sexually abused as children (Becker, 2016). Cumulative research shows that people with a history of abuse/trauma may be at higher risk for developing CP and

OUDs (Spiegel et al., 2016; Quinn et al., 2016). The current opioid epidemic requires an updated, trauma- and resilience-informed framework to reduce provider bias and discriminatory reactions, thereby improving the quality of care and outcomes. Nurses have the opportunity to screen for a lifetime history of abuse or trauma in those seeking treatment for CP and/or OUD. The results of these assessments may open new doors to understanding and compassion, thereby reducing stigma and stereotypes among care providers while paving the way for self-acceptance and recovery among those experiencing chemical dependency. To determine whether changes should be made to health care intake and assessment procedures, it is necessary to determine whether a significant portion of people seeking treatment for OUD may benefit. Thus, the research question is posed, "What percentage of participants in a medication-assisted treatment (MAT) program for OUD have a lifetime history of physical, emotional, or sexual abuse?" Thus, the aims of this study were to 1) Investigate the history of lifetime sexual, physical, and/or emotional abuse among participants in a medication-assisted treatment (MAT) program for opioid use disorder (OUD); and to 2) Investigate associations between abuse history and CP among participants with OUD.

## Methods

### Design

This was a secondary analysis of a non-experimental, cohort parent study designed to increase access to medication-assisted treatment (MAT) for people experiencing OUD. Individual interviews, self-guided participant questionnaires, and clinician-guided questionnaires were used to gather data. The secondary analysis of data was used to quantify the percentage of participants with a lifetime history of abuse in three separate categories: emotional, physical, and sexual, along with a history of CP, separately and in each category of abuse.

## Sample, Setting, and Participants

***Sample:*** Participants were 919 adults living with OUD who were enrolled in the Pilot Medication-Assisted Treatment (MAT) Program, a two-year project funded by the Colorado State Legislature and coordinated by the University of Colorado College of Nursing. Participants lived in two rural counties of Colorado (Routt and Pueblo). They were recruited through direct marketing (billboards, magazines, Internet ads, etc.), flyers distributed in community locations, referrals from local primary care providers, and partnerships with local jails, courts, and emergency departments. Some participants were voluntary enrollees, while others were under court-ordered enrollment. View Table 1 for specific demographic information about the sample.

***Setting:*** Surveys and questionnaires were completed during the participant's initial intake appointment for the 6-month MAT Program period. Intake appointments occurred in a quiet and confidential environment at one of three MAT outpatient treatment centers. One of the treatment sites was a methadone clinic, the second was a community mental health center, and the third was a standalone outpatient substance use treatment clinic. The location of each participant's treatment center was dependent on the participant's county of residence.

***Population:*** The inclusion criteria for this secondary analysis of data were the same as the parent study (adults with current OUD living in two rural counties of Colorado), filtered for lifetime history of abuse and/or CP.

## Procedure

At the beginning of the 6-month treatment course, participants completed a 54-page intake questionnaire, which included The Addiction Severity Index (ASI-6) instrument from which data were pulled for this secondary analysis. Data were collected in one of two ways:

clinicians asked questions and scored the real-time answers in the electronic research database, REDCap, or participants filled out paper questionnaires that were later manually entered into REDCap by a clinician. In addition to demographic data and an extensive health history, each participant was asked about their perceived physical and mental health struggles.

**Materials**

The ASI-6 is the validated instrument that was used for this secondary data analysis. The ASI-6 rates addiction severity in seven areas: medical status, employment/support status, drug/alcohol use, legal status, family history, family/social relationships, and psychiatric status. The ASI-6 provides an overview of problems related to substance abuse, rather than focusing on any single complication. The summary scales are relatively independent of one another ($r < .45$), with trauma-related items loading on the psychiatric scale. This scale has good internal consistency (alpha = .87), and its validity is supported by strong correlations ($r > .60$) with other mental health measures including the 12-item Short Form Health Survey (SF-12) and the Symptom Checklist Revised 10-item version (SCL-10R) (Cacciola et al., 2011).

Data for history of abuse was taken from the family history scale, which includes three yes/no questions, specific to emotional abuse (harsh words), physical abuse (physical harm), and sexual abuse (forced sexual advances or sexual acts). The existence of CP was also measured on the ASI-6 in the "Health Status" section. Participants were asked, "Have you ever been told by a doctor or health care provider that you had any of the following physical or medical conditions?" If the answer was yes, participants chose from a variety of common health conditions, including an option for "Other chronic physical or medical conditions." A yes score (1) for CP was made only when a clinician or participant wrote "chronic pain" or a specific type of CP in the text area following "Other chronic physical or medical conditions." To rate the severity of pain,

participants were asked, “In the past 30 days: How much have you experienced physical pain or discomfort?” Participants answered the question by rating their pain or discomfort with the following scores: 0 = not at all; 1 = slightly; 2 = moderately; 3 = considerably; 4 = extremely. If a participant provided a “yes” score for CP yet failed to rate their level of pain, the value changed to “system missing,” and the “yes” score for CP was erased from the totals.

**Data Analysis**

This secondary analysis focused on the following questions:

- What percentage of people with OUD report a history of abuse?
- What types of abuse did this population experience?
- What percentage of people with OUD have a history of CP?
- What percentage of people have a history of both abuse *and* CP?

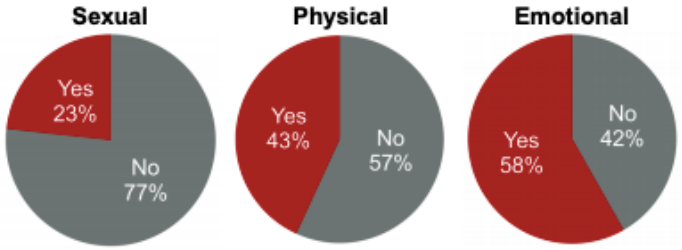
The percentage of participants with a reported history of lifetime abuse in three separate categories: emotional, physical, and sexual was determined. Descriptive statistics were used to determine the frequency of abuse, types of abuse, and CP in each group. Chi-square tests were used to analyze nonparametric data from cross-tabulation comparison tables to determine the significance of differences in categorical outcomes between groups that had experienced different types of abuse or no abuse. *T*-tests were used for between-group comparisons on continuous variables, such as pain severity ratings.

To consider associations between OUD and CP, we included the entire dataset of 919 participants. When filtering data, we treated CP as missing data when history of abuse and pain intensity data were missing. To consider associations between OUD, CP, and history of abuse, we excluded patients who were missing data on any other answers, such as abuse history. Data were missing at random, and missingness was related to which site collected the data.

## Results

**History of Abuse:** Among the responses to abuse questions (n = 463-469), 23% reported lifetime sexual abuse, 43% reported lifetime physical abuse, and 58% reported lifetime emotional abuse. Table 2 provides specific data findings for abuse history, separated by type of abuse and gender.

**Figure 2.** Types of abuse reported among participants (n = 463-469).




**Chronic Pain (CP):** Among 919 responses to questions about previous medical diagnoses, 11.4% (105 people) reported a CP diagnosis, confirmed by a doctor or health care professional. Results of chi-square showed that a history of physical abuse was significantly associated with having a history of CP, $\chi^2 = 4.49$, $p = .03$. Also, pain scores were higher for participants with a history of abuse than those without that history $t(460) = 2.71$, $p = .007$. Table 3 provides specific data findings for CP history along with CP history plus abuse history.

**Figure 3.** Severity of pain (over the last 30 days) among participants with CP, separated by history of physical abuse. Table 4 provides data findings for CP severity with and without history of physical abuse.

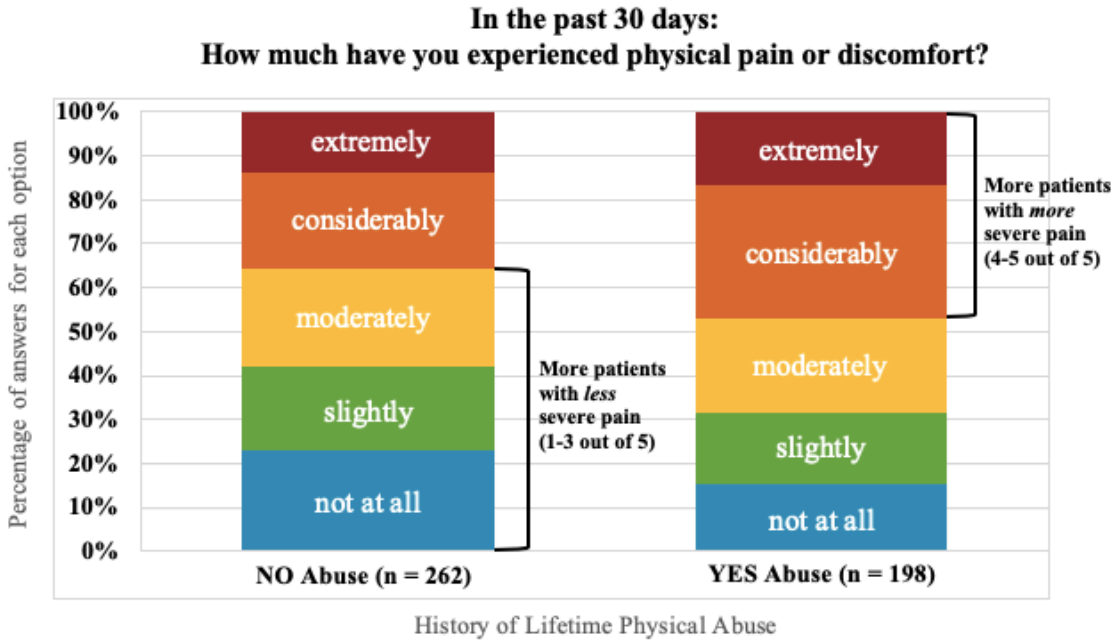



**Table 1.** Data findings for population demographics.

| Data Points | N (%) | Missing N (%) |
|---|---|---|
| DEMOGRAPHICS | n = 919 | |
| **Gender - Entire Population** | **919** | |
| Male | 465 (50.6%) | |
| Female | 423 (46.0%) | |
| Transgender | 2 (<1%) | |
| Missing (Declined to Answer) | | 29 (3.2%) |
| **Gender - (among those who answered abuse questions)** | | |
| Total responses (n - 919) | 468 (50.9%) | 456 (49.6%) |
| Male | 250 (53.4%) | |
| Female | 212 (45.3%) | |
| Transgender | 1 (<1%) | |
| Declined to Answer | 5 (1.1%) | |
| **Age** | | |
| Total responses (n = 919) | 471 (51.3%) | 448 (48.7%) |
| Under 24 years old | 65 (13.8%) | |
| 25-34 years old | 206 (43.7%) | |

| | | |
|---|---|---|
| 35-44 years old | 110 (23.4%) | |
| 45-54 years old | 57 (12.1%) | |
| 55-64 years old | 29 (6.2%) | |
| 65 years old or older | 4 (0.8%) | |
| | | |
| **Court Ordered Participation** | | |
| Total Responses (n = 919) | 475 (51.7) | 444 (48.3%) |
| Participation WAS ordered | 60 (12.6%) | |
| Participation WAS NOT ordered | 415 (87.4%) | |
| | | |
| **Parole Probation Participation** | | |
| Total Responses (n = 919) | 471 (51.3%) | 448 (48.7%) |
| Participation WAS part of probation | 106 (22.5%) | |
| Participation WAS NOT part of probation | 365 (77.5%) | |

**Table 2.** Data findings for abuse history, separated by type of abuse and gender.

| **Data Points** | **N (%)** | **Missing N (%)** |
|---|---|---|
| ABUSE HISTORY | n = 463-469 | |
| | | |
| **Sexual Abuse Lifetime History** | | |
| Total Responses (n = 919) | 463 (50.4%) | 456 (49.6%) |
| **Total YES** | **108 (23.3%)** | |
| Total NO | 355 (76.7%) | |
| **Male YES** | **27 (5.8%)** | |
| Male NO | 223 (48.2%) | |
| **Female YES** | **81 (17.5%)** | |
| Female NO | 131 (28%) | |
| **Transgender YES** | **0 (0%)** | |
| Transgender NO | 1 (<1%) | |
| | | |
| **Physical Abuse Lifetime History** | | |
| Total Responses (n = 919) | 463 (50.2%) | 458 (49.8%) |
| **Total YES** | **201 (43.2%)** | |
| Total NO | 262 (56.8%) | |
| **Male YES** | **85 (18.4%)** | |
| Male NO | 165 (35.6%) | |
| **Female YES** | **116 (25.1)** | |
| Female NO | 96 (20.7%) | |
| **Transgender YES** | **0 (0%)** | |
| Transgender NO | 1 (<1%) | |

| | | |
|---|---|---|
| **Emotional Abuse Lifetime History** | | |
| Total Responses (n = 919) | 469 (51.0%) | 450 (49.0%) |
| **Total YES** | **271 (57.8%)** | |
| Total NO | 198 (41.7%) | |
| **Male YES** | **120 (26.6%)** | |
| Male NO | 133 (28.4%) | |
| **Female YES** | **151 (32.2%)** | |
| Female NO | 64 (13.6%) | |
| **Transgender YES** | **0 (0%)** | |
| Transgender NO | 1 (<1%) | |

**Table 3.** Data findings for CP history and CP history plus abuse history.

| **Data Points** | **N (%)** | **Missing N (%)** |
|---|---|---|
| CHRONIC PAIN (CP) | n = 919 | |
| Total Responses (n = 919) | 495 (53.9%) | 424 (46.1%) |
| **Total YES CP** | **105 (21.2%)** | |
| Total NO CP | 390 (78.8%) | |
| CHRONIC PAIN (CP) + ABUSE | n = 464-474 | |
| **CP & Sexual Abuse (SA)** | | |
| Total Responses (n = 919) | 468 (50.9%) | 451 (49.1%) |
| **Yes CP & Yes SA** | **28 (6.0%)** | |
| Yes CP & No SA | 70 (15.0%) | |
| No CP & Yes SA | 81 (17.3%) | |
| No CP & No SA | 289 (61.7%) | |
| | | **Chi Square *p* = 0.164** |
| **CP & Physical Abuse (PA)** | | |
| Total Responses (n = 919) | 464 (50.5%) | 455 (49.5%) |
| **Yes CP & Yes PA** | **52 (11.2%)** | |
| Yes CP & No PA | 47 (10.1%) | |
| No CP & Yes PA | 148 (31.9%) | |
| No CP & No PA | 217 (45.2%) | |
| | | **Chi Square *p* = *0.033** |

| | | |
|---|---|---|
| **CP & Emotional Abuse (EA)** | | |
| Total Responses (n = 919) | 474 (51.6%) | 445 (48.4%) |
| **Yes CP & Yes EA** | **62 (13.1%)** | |
| Yes CP & No EA | 39 (8.2%) | |
| No CP & Yes EA | 214 (45.1%) | |
| No CP & No EA | 159 (33.5%) | |
| | | **Chi Square $p$ = 0.468** |

** $p < .05$*

**Table 4.** Data findings CP intensity with and without history of physical abuse.

| **Data Points** | **N (%)** | **Missing N (%)** |
|---|---|---|
| PAIN SEVERITY | | |
| Pain severity scores for patients with and without history of Physical Abuse (PA) | n = 460 | |
| Total Responses | 460 | |
| **Yes Hx of PA** | **198 (43%)** | |
| No Hx of Abuse | 262 (57%) | |
| **Question - In the past 30 days: How much have you experienced physical pain or discomfort?** | | |
| **"Not at All"** | | |
| **Yes history of PA** | **30 (6.5%)** | |
| No history of PA | 60 (13.0%) | |
| **"Slightly"** | | |
| **Yes history of PA** | **32 (7.0%)** | |
| No history of PA | 50 (10.9%) | |
| **"Moderately"** | | |
| **Yes history of PA** | **43 (9.3%)** | |
| No history of PA | 59 (12.8%) | |
| **"Considerably"** | | |
| **Yes history of PA** | **60 (13.0%)** | |
| No history of PA | 57 (12.4%) | |

| | |
|---|---|
| **"Extremely"** | |
| **Yes history of PA** | **33 (7.2%)** |
| No history of PA | 36 (7.8%) |

## Discussion and Limitations

The connections between childhood trauma/abuse among people with SUD/OUD are well-established, yet little research has focused on the prevalence of abuse/trauma sustained throughout the lifespan, from childhood into adulthood. The purpose of this secondary analysis of data was to determine the percentage of participants in a MAT program for OUD with a lifetime history of physical, emotional, and/or sexual abuse. Within the population of 919 adult participants, we found that a significant portion, ranging between 23% and 58%, reported sustaining at least one type of abuse/trauma during their lifetime.

A secondary aim of this study was to determine whether a history of abuse is associated with CP. The WHO estimates that 25% of the population experiences childhood physical abuse. Forty-three percent of the MAT Program's population reported a lifetime history of physical abuse, which is higher than WHO's global average. While the bulk of previous research related to physical abuse and CP focuses on childhood abuse, physical abuse sustained during adulthood is equally as damaging to mental and physical health (Howard et al., 2010). Among participants in this MAT Program, a lifetime history of physical abuse was also associated with worse CP severity.

There are theoretical limitations to evaluating lifetime history of abuse and trauma in all populations, ranging from cognitive recall difficulties to unwillingness to discuss emotionally disturbing events. As previously mentioned, research on ACE reporting indicates that abuse history is generally underreported, which is plausible to extend to this population. However, an

additional challenge arose when collecting data for this study. Many participants were presenting for treatment during active opioid withdrawal, which is known to be uncomfortable and cause feelings of distress in the person experiencing it (Kosten & Baxter, 2019). Uncomfortable withdrawal symptoms may lead to incomplete data collection due to unwillingness to complete questionnaires or the MAT clinician's desire to initiate medication treatment as quickly as possible to relieve the suffering of the participant.

Measurable limitations in the completeness of data collection existed, which varied between the three treatment sites. Among the total population of 919 participants, responses for history of abuse ranged between 463-469. There were 495 responses to the medical history question, where participants could talk about CP experiences. Questionnaire wording may have contributed to incomplete data. Participants were asked: "Have you ever been told *by a doctor or health care provider* that you had any of the following physical or medical conditions?" To answer "yes," participants required a formal diagnosis of CP from a licensed provider. The wording may have unintentionally omitted people without a formal CP diagnosis.

Despite the limitations in data collection with this vulnerable population, the total number of responses was sufficient to conclude that a history of lifetime abuse may have contributed to (or worsened) opioid use disorder in this population. In addition, a lifetime history of physical abuse may have worsened the severity of pain in participants' CP conditions, which may have impacted the progression of opioid use disorders.

## Conclusions and Future Study

History of abuse is associated with OUD and CP, yet standard CP assessments *do not include* questions about lifetime history of abuse or trauma. Nursing is the most trusted profession in the United States, and nurses often spend more time with patients than many other

types of providers. Bedside nurses rarely assess for history of abuse/trauma in populations presenting with OUD (with or without co-morbid conditions). In healthcare settings, the implementation of standardized trauma-informed screening tools, prompt recognition of abuse/trauma-associated OUD, and prover-facilitated access to adjunct psychological interventions (education, psychotherapy, EMDR, etc.), may reduce stigma among providers and patients, reduce opioid use escalation, and/or help patients overcome OUD.

Drawing on what was uncovered in this data analysis, further research related to childhood/lifetime abuse and resilience factors that help people recover from such experiences is warranted. Ongoing research should formally measure ACEs among people with OUD, while taking care to avoid re-traumatization and possible questionnaire refusal. A resilience-informed approach may help reduce patient re-traumatization, reduce clinician burnout, and provide patients with a jump-off point for resilience-informed psychological care to promote OUD recovery. Furthermore, questions about CP should be separated from other health conditions and include people without formal CP diagnoses.

The second phase of this study began in August 2019 (SB 19), expanding the MAT program (updated to be called the MAT Pilot Expansion Program) into 15 new Colorado counties, serving people in 17 counties total. Data will include a new 20-question, trauma- and resilience-informed screening tool called PACES, which includes the traditional Adverse Childhood Experiences (ACEs) questions interspersed with questions about resilience factors. Data will be used to improve treatment for trauma, OUD, and CP, with special consideration of gender differences, the impacts of abuse, and resiliency factors that may contribute to more efficient recovery from OUD.

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