

EVALUATION OF A PEER-FACILITATED TRAUMA INTERVENTION FOR INCARCERATED MEN

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This pilot study examined a peer-facilitated trauma-focused intervention among 624 incarcerated men (Exploring Trauma). Pre- and postintervention data were collected on trauma-related mental health symptoms, aggression, and anger. The results demonstrated statistically significant improvement in trauma-related symptoms relative to pretreatment functioning and demonstrated support for the feasibility of peer-facilitation. Effect sizes were small to moderate, with the largest impact on current traumatic distress, depression, and anxiety (Cohen's $d = .54, .48, .46$, respectively). The mixed-effects regression results showed the impact of adverse childhood experiences (ACEs) on outcomes was strong and cumulative (i.e., greater exposure to ACEs increased the likelihood of participant program gain on mental health and aggression symptoms, ranging from .15 to .77). The findings showed that trauma can be safely addressed in corrections and provide promising support for peer-facilitation with training and oversight. Rigorous studies are needed on the impact of trauma-informed services and models of program delivery.

Keywords: trauma-focused treatment; adverse childhood experiences; corrections-based treatment; incarcerated men; peer facilitation; brief interventions

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INTRODUCTION

“By admitting these traumas, I can begin to trace the cause of my destructive behaviors, deal with them effectively, and begin the process to heal and move forward.”

~Exploring Trauma participant, 2018.

Historically, corrections-based treatment has primarily focused on treating substance use, sex offenses, and reducing recidivism to increase public safety. The associated research over time altered the recommended treatment procedures from confrontational therapeutic community groups (Burdon et al., 2004; Martin et al., 1999) to cognitive behavioral learning techniques (McHugh et al., 2010) and currently to the focus of intensive treatment for those at the highest risk of recidivism (i.e., the risk-need-responsivity model; Bonta & Andrews, 2016; Wooditch et al., 2014). Yet, many debilitating predictive factors, such as the impact of lifelong trauma, are missing from the analytical models of treatment outcomes studies, impeding the availability of specialized treatment programs designed to address such factors.

Debilitating factors such as histories of trauma and the associated complex mental health issues soar in corrections populations (California Department of Public Health, 2020), but they have not been adequately addressed in corrections-based programs. Thus, it is difficult to rely on conclusions about the effectiveness of corrections-based treatment if the programs are not attending to the complex needs of those under their care. It is widely recognized that justice-involved men and women have a high prevalence of childhood maltreatment, but there is great hesitancy to allow discussions of such trauma within the existing programs or to provide trauma-based programs in general (Horwitz et al., 2001; Messina et al., 2007; Najavits & Hien, 2013).

There is a long-held contention among corrections and treatment agencies that prison is an inappropriate environment to address histories of trauma for fear of triggering violence or causing distress or decompensation among participants (Kok et al., 2014; Messina & Schepps, 2021; Najavits & Hien, 2013). Additional concerns are the lack of formal mental health training among program staff to address participants with high levels of trauma. Without appropriate training and structure, it can be challenging for prison and program staff to use the appropriate language and to feel confident in the necessary skills to approach the topic of trauma (Kubiak, Covington & Hillier, 2017). The prevalence of residents with unrecognized and untreated trauma from the past, or those suffering from current traumatic distress, can further complicate and negatively affect the prison environment, placing even greater demands upon the staff and the organization (Bloom, 2010; Covington, 2019; Covington & Bloom, 2018; Kubiak, Covington, & Hillier, 2017).

DISCLOSURE OF TRAUMA HISTORIES

It has also been a long-held belief that men will not talk about or disclose their histories of adverse childhood experiences (ACEs), particularly sexual abuse. A review of the literature on the prevalence of childhood sexual abuse of men indicated that such abuse was common yet underreported, underrecognized, and undertreated (Holmes & Slap, 1998). More recent literature has revealed considerable willingness among justice-involved men to

self-report childhood abuse and household dysfunction in response to the ACE questionnaire. A recent study of 661 incarcerated men in California revealed a high prevalence of ACEs as 65% of the men reported emotional abuse, 62% reported physical abuse, 25% reported sexual abuse, 48% reported feeling unloved/neglect, 72% had divorced parents, 38% witnessed domestic violence, 63% had alcohol/drug use in their home, 30% had mental illness in their home, and 45% had an incarcerated family member (Messina & Burdon, 2021).

Moreover, a recent qualitative study analyzed focus group outcomes from 28 incarcerated men and written feedback from 616 incarcerated men who participated in a trauma-focused program (Gajewski-Nemes & Messina, 2021). One of the main underlying themes discovered was that the safety of the small groups created the ability for participants to “openly explore and discuss past trauma without judgement.” Participants felt that discussing their trauma in small groups, many for the first time, fostered peer connections, facilitated learning, and created healing. Final comments included requests for more availability and more intensive trauma-based programs. The findings underscore that a nonjudgmental safe space and trust built within the group is a critical element desired by participants in programs focused on trauma and abuse.

Many of the participants openly discussed the victimization and violence they experienced in childhood often continued throughout their lifetime and into their custodial life. Among the 616 incarcerated men, more than 50% of the men reported experiencing emotional neglect under the age of 18. Between 60% and 71% reported verbal and physical abuse growing up (Messina & Schepps, 2021). Among those who reported childhood abuse, 56% reported continued physical abuse as an adult and 60% reported continued severe abuse as an adult.

THE LIFELONG IMPACT OF TRAUMA

The literature has also outlined the relationship of ACEs to adolescent and adult behavioral problems among justice-involved populations (Bonta & Andrews, 2016; California Department of Public Health, 2020; Greenfield & Marks, 2010; Horwitz et al., 2001). Studies show that child abuse increases the likelihood of multiple mental health problems (Greenfield & Marks, 2010; Kendall-Tackett, 2000), the earlier use of substances and criminal activity (Grella et al., 2005; Messina & Grella, 2006), repressed anger (Newman & Peterson, 1996; Springer et al., 2007), and violence in adulthood (Horwitz et al., 2001; Kubiak, Fedock, et al., 2017; Saxena & Messina, 2021). In addition, the literature has shown that mental health problems and unresolved issues of trauma and abuse are highly correlated with recidivism (Messina et al., 2004).

ACEs among incarcerated populations are particularly concerning, given the strong correlation with violence against others. Although the pathways to substance use and crime differ for men and women, converging evidence suggests that ACEs are directly and indirectly related to anger, violence, aggression, and arrest for both men and women (Holmes & Slap, 1998; Horwitz et al., 2001; Kubiak, Fedock, et al., 2017). The significant relationship between ACEs and the perpetration of violence is particularly clear. Among the 657 incarcerated men who reported experiencing minor physical abuse under the age of 18, 66% perpetrated minor physical abuse against others as an adult. Of 581 men who experienced severe physical abuse under the age of 18, 69% perpetrated severe physical abuse against

others (Messina & Schepps, 2021). People can be further traumatized by their own use of violence, referred to as perpetrator-induced trauma (MacNair, 2015). They can feel great shame and guilt over their own offending behavior, further preventing motivation to access support. Although some studies have explored childhood adversity as a mediator of violence and aggression, additional research on treatment outcomes for trauma survivors is vital to determine if those with the most complex histories of trauma can be responsive to trauma-focused treatment.

Failing to appropriately address trauma in corrections-based programs is also a failure to address the underlying needs of participants to reduce recidivism and increase overall well-being. Moreover, circumventing discussions regarding trauma within treatment settings to avoid retraumatization of participants fails to recognize the fact that experiences in prison in general trigger memories of traumatic events or that incarceration *is* a traumatic event evoking distress (Kubiak & Rose, 2007; Messina et al., 2007; SAMHSA, 2014). Some literature has begun to show the positive impact of trauma-based programs implemented within a custody environment; however, additional research on program delivery models and population of focus (e.g., a high versus low prevalence of trauma) is still needed.

EFFECTIVENESS OF TRAUMA-SPECIFIC INTERVENTIONS

Recent research has shown that trauma-focused programs can be effectively implemented for justice-involved men (Messina & Burdon, 2021; Miller & Najavits, 2012). A recent trauma-focused brief intervention was implemented in two male security housing units (SHUs) to reduce the reoccurrence of violence and aggression: Exploring Trauma (ET)—A Brief Intervention for Men (Covington & Rodriguez, 2016). ET for Men is six-session brief, trauma-focused intervention designed for men who have experienced trauma and violence associated with ACEs and adult victimization. The materials are gender-responsive to reflect an understanding of how trauma impacts women and men differently. The programs were facilitated by Program Directors trained by the program authors at the facilities. Results from the pilot studies of the 186 SHU men who participated demonstrated positive preliminary support for the efficacy of the trauma-focused brief intervention in a maximum-security setting. Improvement was found for 100% of the measured outcomes for the SHU men (Messina & Burdon, 2021). Effect sizes were small to moderate in size, with the largest impact on depression, current trauma symptom severity, and anxiety (Cohen's *d* ranged from .54, .43, and .41, respectively).

Given the emerging research reporting the results of incarcerated men's willingness to discuss their histories of abuse and to volunteer for trauma-focused treatment, it is vital to determine the effective elements of trauma-focused treatment as well as feasible models of treatment delivery. Due to limitations of available program staff and program space, many programs in prison have been organized and facilitated by peer mentors. Previous studies have examined the effectiveness of peer-facilitated programs, which have shown a positive impact for both facilitators and participants (Bagnall et al., 2015; Petosa & Smith, 2014; South et al., 2014; Woodall et al., 2015). The current study builds upon the previous pilot work within the male SHUs and assesses the impact of the ET 6-session brief trauma-focused intervention using a peer-facilitated model of delivery among 624 participants from multiple levels of security classification across multiple prisons. In addition, the current

study explores the correlation between ACEs and the impact of the ET brief intervention on participant's mental health, aggression, and anger outcomes.

HYPOTHESIS

Based on the positive results of the previous pilot studies among men housed in the highest classification of security risk (i.e., the SHUs), it was hypothesized that the findings would be replicated with incarcerated men in other levels of security classification (Levels II, III, IV). Specifically, it was hypothesized that among participants in the general prison population,

1. The ET brief trauma-focused intervention would improve trauma-related mental health issues, including current traumatic distress, PTSD symptomatology, depression, and anxiety from pre- to postintervention.
2. The ET brief trauma-focused intervention would decrease trauma-related anger, hostility, and aggression outcomes measures from pre- to postintervention.
3. There will be a significant and graded relationship between exposure to childhood trauma and household dysfunction (i.e., ACEs) and measured outcomes.
4. The ET manualized curricula could be effectively facilitated by trained peer facilitators, as opposed to the Program Director-facilitated model of program delivery.

METHOD

PROCEDURE

Human Subjects approvals were obtained from the DHHS Office for Human Research Protections, the California Department of Corrections and Rehabilitation's (CDCR) Research Oversight Committee, and the University of California, Los Angeles Institutional Review Board. All procedures were reviewed and approved prior to any contact with participants. The study began in July 2017, and data collection ended in June 2019.

Program Description and Delivery

ET is a six-session trauma-focused program designed for men who have experienced trauma associated with ACEs and adult victimization (Covington & Rodriguez, 2016). The ET brief intervention is a present-focused psychoeducational group program and emphasizes skill-building and grounding techniques. The curriculum specifically addresses trauma that occurred as a result of men experiencing toxic stress, abuse, violence, and other adverse experiences. The session topics include The Subject of Trauma; Exploring Trauma; Thinking, Feeling, and Acting; Beyond Guilt, Shame, and Anger; Healthy Relationships; Love and Endings. The program materials consist of a Facilitator's Guide, a Participant's Workbook for group work, journaling, homework, and Graduation Certificates. A peer-facilitated program model was delivered at each prison concurrently. There were six, 2.5-hr group sessions delivered once weekly on average (with some interruptions due to prison lockdowns or other institutional restrictions). Based on the content focus on past and current trauma and violence, the program was restricted to small, closed groups of eight to 10 participants (i.e., participants who began the program together, ended the program together, without the disruption of new participants entering during the 6-week cycle).

Peer Facilitators and Program Coordinators

Typically, 20 to 25 peers at each prison/yard were trained by the ET program authors to facilitate multiple simultaneous groups with the goal of graduating 240 men per year (Covington & Rodriguez, 2016). Groups were co-facilitated by the same team of two peers during the 6-week cycle. At each facility, Program Coordinators were hired and trained by the program authors and provided oversight and coordination for all aspects of programming, graduations, documentation of attendance, and access to research staff for data collection. The Program Coordinators were also available to peers and participants who needed any additional support. Peer facilitators were interviewed and chosen by a panel consisting of the Associate Warden, the facility Captain, and the Program Coordinator at each facility. Those chosen were paired with the ET Program Coordinators. Criteria for the ET peer facilitator position included having the ability to connect with other residents, having social influence, previously holding positions as mentors, and being available during programming hours.

All peer facilitators were required to graduate from ET as participants, led by the Program Coordinators before facilitating the program to others. It should also be noted that only the peer facilitators and participants were in the group rooms. The Program Coordinators, custody officers, and other prison staff did not interrupt the groups unless of an emergency. Privacy and confidentiality of the groups were fully supported by the institutions. The peer facilitators were men serving life without parole or serving more than 10 years. Thirty-one percent were serving sentences for homicide and 69% had served time in the SHUs. On average, the peer facilitators were 45.9 ($SD = 7.83$) and had been incarcerated for an average of 20.9 years ($SD = 10.28$). Thirty-one percent of facilitators were White, 23% were Black, 23% were Hispanic, 7% were multiracial, and 15% listed as Native American, Alaskan Native, Asian, or other. Fifty-four percent had never been married. Although none of the facilitators had graduated high school, 38% had obtained a general educational development while in prison.

Recruitment and Eligibility

Participation in the program and evaluation was voluntary. Flyers about the program were posted in the housing units by the Program Coordinators and any man could sign up to participate in the program. With the assistance of facility staff, the Program Coordinators arranged access for those who signed up prior to the first session of ET to research staff. The research staff member explained the study, answered questions, and read the institutional review board–approved consent form to the participants describing the study, the measures used to protect the confidentiality of the responses, and the voluntary nature of the study. The research staff provided the informed consent form to volunteers. There were no ineligibility criteria; however, participants were required by the facility to complete five of the six sessions to graduate. They could participate in the program and decline to participate in the evaluation with no penalty.

Survey Administration

A total of 644 men volunteered for the program and the research project. Of those, 624 completed both the pre- and postsurvey, resulting in a 97% follow-up rate. Research staff

were not able to schedule 20 of the ET participants for the postsurvey due to prison housing movement, prisoner release prior to program completion, or refusal to participate. Research staff provided the self-administered surveys at each facility prior to the ET program entry. Groups of 10 to 20 participants were gathered, surveys were explained, sixth-grade reading instructions were provided, and survey administration was proctored by a research staff member who also answered questions as needed. On average, the presurvey was completed within 45 min. The postsurvey took place approximately 1 month after completion of the six sessions of ET, was self-administered using the same procedures, and also took approximately 45 min to complete. Participants were not compensated for their participation in the ET program or survey. Participants were also informed that participation would not impact their eligibility for parole or changes in security classification.

MEASURES

Standardized instruments included detailed questions about demographics, childhood and adult trauma, mental health, substance use, and criminal justice involvement. The feasibility of these measures and procedures were previously found to be effective and valid among multiple samples of incarcerated women (Kubiak et al., 2014; Messina & Zwart, 2021; Messina et al., 2020). Measurements and associated psychometrics are reported subsequently.

Patient Health Questionnaire (PHQ)—Depression and Anxiety Subscales

The PHQ Depression Subscale is a nine-item subscale that measures current depressive symptomology (Kroenke & Spitzer, 2002; Spitzer et al., 1999). Participants report the symptoms they have experienced in the preceding 2-week period. Responses are based on a 4-point Likert-type scale ranging from 0 (*not at all*) to 3 (*nearly every day*) and are summed into an overall symptom severity scale score that falls between 0 and 27. In a validation study of more than 3,000 participants (with a cut off score of 10 or greater), the sensitivity for major depression was 88%, with a specificity of 88%, and a positive likelihood ratio of 7:1 (Kroenke & Spitzer, 2002). The 7.1 ratio indicated patients with major depression were 7 times more likely to have a PHQ depression score of 10 or greater than patients without major depression.

The PHQ Anxiety Subscale is a six-item subscale that measures anxiety symptoms felt over the past 4 weeks (Spitzer et al., 1999). Responses are based on a 4-point Likert-type scale ranging from 0 (*not at all*) to 3 (*nearly every day*) and are summed into an overall symptom severity scale score that falls between 0 and 18. In a validation study of more than 3,000 participants, the PHQ Anxiety Subscale had an overall accuracy of .91 (specificity .97, sensitivity .63) in detecting any anxiety disorder when compared with mental health professionals using the Primary Care Evaluation of Mental Disorders (Spitzer et al., 1999); Spitzer et al., 2006.

Kessler Psychological Distress Scale

The Kessler Psychological Distress Scale (K6) is a six-item brief mental health scale validated nationally and internationally (Kessler et al., 2002, 2003). The K6 was used to screen for current (previous 4 weeks) symptoms indicative of serious mental illness. As a

brief screening tool, the K6 is designed to detect any past-year diagnosis of an Axis I disorder and a Global Assessment of Functioning (GAF) score of 60 or below. It has been found to have relatively high stability over time (e.g., $r = .52$ across 12 years; Drapeau et al., 2010). Responses, based on a Likert-type scale, ranging from 0 (*none of the time*) to 4 (*all of the time*), were summed into an overall scale with scores ranging from 0 to 24, with higher scores indicating a less healthy state of mental health. Kessler and associates (2003) used a sample of 1,000 respondents to assess scale validity. Cronbach's alpha for the scale was .89. The K6 scale had good discrimination, with an area under the receiver operating characteristic curve (AUC) of .86. An overall cut score of 13 was used to distinguish those with serious mental illness, at this cut-off score, the sensitivity was .36, specificity was .96, and total classification accuracy was .92.

Short Screening Scale for DSM-IV PTSD

The modified version of the Short Screening Scale for *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; *DSM-IV*; American Psychiatric Association, 1994) Posttraumatic Stress Disorder (PTSD; Breslau et al., 1999) is used to assess current symptoms of PTSD. Respondents who responded affirmatively to the question "In your life, have you ever had any experience that you considered frightening, horrible, or upsetting?" were then asked to complete a seven-item Short Screening Scale, concerning symptom frequency in the prior 4-week period. Item responses were based on a Likert-type scale, ranging from 0 (*not at all*) to 3 (*nearly every day*), and scale scores ranged from 0 to 21. A validation study of over 2,000 participants found that a score of four or higher defined cases of PTSD with a sensitivity of 80% and a specificity of 97%. The positive predictive value was 71% and the negative predictive value was 98% (Breslau et al., 1999).

Trauma Symptom Checklist-40 (TSC-40)

The TSC-40 is a 40-item self-report measure of symptomatic distress in adults arising from childhood or adult traumatic experiences (Elliot & Briere, 1992). It measures aspects of PTSD as well as other symptoms found in some traumatized individuals. Respondents are asked to rate how often they have experienced each symptom in the last 2 months using a 4-point frequency rating scale ranging from 0 (*never*) to 3 (*often*). In addition to yielding a total score (ranging from 0 to 120), the TSC-40 has six subscales: Anxiety, Depression, Dissociation, Sexual Abuse Trauma Index, Sexual Problems, and Sleep Disturbances. Using data collected from a large sample ($N = 2,963$) of professional women, Elliott and Briere (1992) determined that the TSC-40 has high internal consistency ($\alpha = .90$). Elliott and Briere also showed that the scale discriminates between those who have and have not been abused as children. This difference held strongly for all subscales as well as for the total scale.

Buss-Warren Aggression Questionnaire (AQ)

AQ, formally the Buss-Perry Aggression Questionnaire, is a 34-item instrument used to assess anger and aggression (Buss & Warren, 2000). The respondent rates the description on a Likert-type scale, ranging from 1 (*not at all like me*) to 5 (*completely like me*). The Buss-Warren includes five subscales: Physical Aggression (eight questions, 8-40 range),

Verbal Aggression (five questions, 5–25 range), Anger (seven questions, 7–35 range), Hostility (eight questions, 8–40 range), and Indirect Aggression (six questions, 6–30 range). Buss and Warren ran a standardization sample for the AQ with a sample size of 2,038. The internal consistency estimate total score is .94 with the individual subscales internal consistencies ranging from .71 for the Indirect Aggression scale to .88 for the Physical Aggression scale.

State-Trait Anger Expression Inventory–2 (STAXI-2)

The STAXI-2 is a 57-item instrument used to measure the experience and intensity of anger as an emotional state (State Anger) and as an emotional trait (Trait Anger). The State Anger Composite Scale assesses the intensity of angry feelings as a temporary emotional state and the Trait Anger Composite Scale measures the intensity of anger as a constant component of personality (Spielberger, 1999). For the 15 State Anger items, participants rate the intensity of their emotions “right now” on a 4-point Likert-type scale ranging from 1 (*not at all*) to 4 (*very much so*). For the 10 Trait Anger items, participants rate how they “generally” feel on a 4-point Likert-type scale ranging from 1 (*almost never*) to 4 (*almost always*). For the 32 Anger Expression and Anger Control items, participants rated how they generally react in certain situations also on a 4-point Likert-type scale ranging from 1 (*almost never*) to 4 (*almost always*). In the American sample of 1,900 subjects, the subscales showed decent internal consistency, varying from .82 to .75 (Spielberger, 1999). The test–retest reliability of this instrument has shown to be stable over time (Bishop & Quah, 1998; Jacobs et al., 1988).

Revised Instrumental and Expressive Anger Representation Scales

The Revised Instrumental and Expressive Anger Representation Scales have 16 items with two subscales (instrumental and expressive) assessing anger expression (Campbell et al., 1999). Instrumental anger is a more outward expression of anger that is often used to control others. In contrast, expressive anger is characterized by holding in or suppressing anger until there is an “explosion” of emotion. In the first subscale respondents answered the degree of agreement about eight items measuring instrumental anger, including “I believe that physical force is needed to get through to some people” and “If I hit someone and hurt them, they were asking for it.” The second subscales assessed expressive anger using eight items such as “During a physical fight I feel out of control” and “After a physical fight I feel drained and guilty.” Participants responded on a scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Some items were reverse-scored so that higher scores indicate stronger anger expression. The validation study with more than 405 men and women on the eight instrumental and eight expressive items (with a range of 8–40 for each subscale) revealed a Cronbach’s alpha for the revised eight-item instrumental item scale was .80 and the revised eight-item expressive scale was .62. The correlation between the revised instrument and expressive scale was $-.02$, indicating near perfect independence.

STATISTICAL ANALYSIS

Initial analysis included descriptive and inferential statistics based on the reported background characteristics of participants. Descriptive statistics included percentages, means,

and measures of variance. Frequency tables were used to examine cell sizes for categorical variables and non-normality for continuous variables. Where categorical variables had small cell sizes, categories were collapsed to create cells of sufficient size. The second stage of data analyses were designed to quantify the efficacy of the ET brief intervention. Paired-sample *t* tests were conducted to assess changes in the outcomes across time (posttest scores minus pretest scores), allowing for the examination of mean change over time per individual as well as the findings for the group as a whole. Thus, there is no need to control for other variables (e.g., age or race/ethnicity, etc.) because each person is their own control case and demographic variables will not vary over time. Cohen's *d* was computed to determine the effect size of significant treatment effects (Sullivan & Feinn, 2012).

The third stage of data analyses were designed to determine the impact of ACEs on treatment outcomes. To quantify the raw change impact of the intervention, gain scores were computed on all outcomes. To determine if the intervention induced a significant effect *t* tests with H_0 : Gain score = 0 vs. H_A : Gain Score \neq 0 were run. A mixed-effects linear regression was used to assess the number of ACEs as they related to the dependent variables of interest individually. The random effects term modeled the nature of the prison population sampled or the level of security. The mixed-effects regression is equivalent to a linear regression with a slightly modified intercept term:

Linear Regression:

$$Y = \beta_0 + (\beta_1 \times \text{Number of ACEs}) + \text{Error}.$$

Mixed-effects model with random effect for Prison:

$$Y = (\beta_0 + \text{Prison Effect}) + (\beta_1 \times \text{Number of ACEs}) + \text{Error}.$$

The random intercepts were also analyzed for between prison differences and overall variation explained. The decision to use a mixed-effects model rather than a generalized estimating equation (GEE) was to model the prison effect rather than average the prisons together (Hubbard et al., 2010). Fixed-effects models were tested for significance using the Satterthwaite approximation (Kuznetsova et al., 2017). The Satterthwaite procedure was used due to its increased precision of the estimate compared to the likelihood ratio test which is fallible to sample size errors (Luke, 2016). The variation attributed to the random effect is also reported. All gain score analyses were run in R using the lme4 and lmer Test packages (Bates et al., 2015; Kuznetsova et al., 2017; R Core Team, 2020).

RESULTS

This study combines data collected from 624 participants in the ET program from two California prisons at varying levels of security classification (i.e., Level II, III, and IV). Prior to receiving the ET program, each participant self-reported characteristics such as their race/ethnicity, marital status, age, education level, arrest history, substance use history, and childhood and adulthood experiences with trauma (see Tables 1–3). Of the 624 men who participated in the ET program, nearly 100% are people of color, exposing the disproportionate number of minorities incarcerated in the United States. Almost half of the participants had never been married, the average age was 40, and over a third did not graduate from high

TABLE 1: Sociodemographic Characteristics of Participants at Baseline

Baseline characteristics	Full sample (<i>N</i> = 624)	
	<i>n</i>	%
Ethnicity		
Latino/Hispanic	284	45.7
White	125	20.1
Black	135	21.7
Multiracial	47	7.6
Native American/Pacific Islander	18	2.9
Unknown to participant	5	0.8
Marital status		
Never married	286	46.4
Legally married	142	23.1
Living together	97	15.7
Separated/divorced	86	14.0
Widowed	5	0.8
Education		
No high school	53	8.6
Some high school	155	25.1
High school diploma	75	12.1
GED	151	24.4
Vocational certificate	18	2.9
Some college	132	21.4
College degree	34	5.5
During incarceration		
Obtained GED in prison ^a	589	40.1
Any college in prison ^a	568	17.3
Mental health		
Ever received a mental health diagnosis ^a	617	62.6

Note. *N* = 598. Participants were on average 40.0 years old (*SD* = 11.3). *Ns* vary slightly due to missing data. GED = general educational development.

^aReflects the number and percentage of participants answering "yes" to this question.

school. The average age of the first arrest was 17, the average number of arrests was 12, and the average number of years of incarceration was 17. Participants were incarcerated for a variety of offenses with homicide/murder/manslaughter/attempted murder (45%), theft/robbery/assault (36%), or sex offense or other (19%) being the most common.

Eighty-two percent of the sample reported using substances in the 12 months prior to incarceration. Of the 548 men who reported using alcohol or drugs during that time, more than 65% met the criteria for substance use disorder and 55% met the criteria for alcohol use disorder. Of substances used, alcohol (81%), amphetamines (63%), and marijuana (42%) were the most common. Prior to incarceration, many men reported extensive histories of ACEs prior to the age of 18. The men surveyed had experienced verbal abuse (67%), physical abuse (64%), sexual abuse (29%), emotional neglect (50%), and physical neglect (33%). They also reported high rates of parental separation/divorce (71%), alcohol or drug abuse in the household (61%), domestic violence in the home (38%), substance use in the home (64%), mental illness in the home (32%), and 44% reported incarceration of a household member.

TABLE 2: Criminal Justice and Substance Use Histories at Baseline

Criminal justice and substance use histories	Full sample (<i>N</i> = 624)	
	<i>N</i>	%
Offense leading to current incarceration		
Homicide/murder/manslaughter/attempted murder	276	44.5
Theft/robbery/assault	223	36.4
Sex offense/other	118	19.1
Used alcohol or drugs during the 12 months prior to current incarceration ^a	506	82.1
Frequency of alcohol use 12 months prior to arrest (<i>n</i> = 548)		
Once a week	69	17.9
2–3 times per week/nearly every day	147	38.1
Every day	34	8.8
Frequency of drug use 12 months prior to arrest (<i>n</i> = 548)		
Once a week	40	10.3
2–3 times per week/nearly every day	117	30.2
Every day	92	23.7

Note. *N* = 598. Participants were on average 17.1 years old at time of first arrest (*SD* = 8.4). *N* = 595. Participants had on average 12.3 lifetime arrests (*SD* = 21.0). *N* = 596. Participants were incarcerated on average for 16.9 years (*SD* = 9.9). *N*s vary slightly due to missing data.

^aReflects the number and percentage of participants answering “yes” to this question.

Table 4 summarizes the results of the paired-sample *t* tests. The treatment outcome hypotheses were supported as participants showed statistically significant improvement in 100% of the trauma-related mental health symptoms, current traumatic distress, anger, aggression, and hostility. The effect sizes were small to medium, with the largest for current traumatic distress (.54), depression (.48), and anxiety (.46). Change in current PTSD symptoms had an effect size of .36 and the change in brief mental health status had a similar effect size of .33. The effect size for the five subscales measuring current traumatic distress (past 2 weeks) ranged from .40 for symptoms of anxiety, .40 for distress from sexual abuse, .43 for sleep disturbance, .44 for depression, and the TSC-40 composite score resulted in a Cohen’s *d* of .54. The state anger composite score resulted in the lowest effect size of .10 and the trait anger composite score was .35. Finally, Cohen’s *d* for instrumental anger was .35 and expressive anger was .27.

The mixed-effects models showed that the number of ACEs reported by the men was significantly correlated with the impact of the ET intervention for 12 of the 14 outcomes measured (see Table 5). The coefficient corresponding to the mean number of ACEs (ranging from 0 to 10), *M* (*SD*) = 4.88 (1.10), signified that for each additional ACE, there was a significantly greater impact of the ET intervention for anxiety, depression, PTSD symptoms, overall mental health, current trauma symptoms, physical, verbal, and indirect aggression, angry feelings, hostility, instrumental anger, and expressive anger. The ACE coefficient was not related to participants’ mean change from pre- to postintervention on state or trait anger (indicating that the intervention impacted participants similarly on these measures regardless of number of ACEs reported). Variation attributed to the prison was low; however, participants in the highest level of security (Level IV) had greater reductions in outcome scores for anxiety, depression, PTSD symptomology, and anger compared with those in the lower security classification (Levels II and III). The intercept and the main effect for the ACE coefficient were significant for current trauma symptoms and instrumental anger,

TABLE 3: Adverse Childhood Experiences at Baseline

Adverse childhood experiences ^a		Full sample (<i>N</i> = 624)	
		<i>n</i>	%
Verbal abuse	Did a parent/adult in the household often/very often swear, insult, humiliate, put you down, or make you fear you might be physically hurt?	413	67.2
Physical abuse	Did a parent/adult in the household often/very often push, grab, slap, or throw something at you? Or ever hit you so hard that you had marks or were injured?	391	63.5
Sexual abuse	Did an adult or person at least 5 years older than you ever touch or fondle you or have you touch their body in a sexual way? Or attempt to or have oral, anal, or vaginal intercourse with you?	178	29.0
Emotional neglect	Did you often/very often feel that no one in your family loved you or thought you were important/special? Or your family didn't look out for each other, feel close to each other, or support each other?	305	49.8
Physical neglect	Did you often/very often feel that you didn't have enough to eat, had to wear dirty clothes, and had no one to protect you? Or your parents were too drunk or high to take care of you or take you to the doctor?	204	33.3
Parental separation	Were your parents ever separated or divorced?	436	71.0
Domestic violence	Was your mother/stepmother: Often/very often pushed, grabbed, slapped, or had something thrown at her? Or kicked, bitten, hit with a fist, or hit with something hard?	232	37.7
Substance use	Did you live with anyone who was a problem drinker or alcoholic or who used street drugs?	397	64.2
Mental illness	Was a household member depressed or mentally ill, or did a household member attempt suicide?	193	31.5
Incarceration	Did a household member go to prison?	270	43.8

Note. *Ns* vary slightly due to missing data.

^aReflects the number and percentage of participants answering "yes" to this question.

indicating that there is a significant treatment impact while holding the ACE score constant.

DISCUSSION

The findings from the pilot study among the general population of justice-involved men mirror the findings from the SHU participants in the previous studies showing improvement in trauma-related mental health issues, current traumatic distress, anger, hostility, and aggression from preintervention. The replication of the outcomes from incarcerated men from all levels of security risk classification provides additional support for the feasibility of the ET brief trauma-focused intervention. The findings demonstrated short-term positive change among the participants, particularly for those who reported the highest levels of trauma, who otherwise might have been ineligible for program participation. They further show that incarcerated men are willing and able to discuss their experiences of trauma and abuse, without emotional decompensation or retraumatization (i.e., the first stage in recovery from trauma).

Although statistically significant changes were found between pre- and postintervention outcome measures, the effect sizes were not large. The greatest impact was on current

TABLE 4: Paired-Sample *t* Tests Results for Exploring Trauma Participants

Outcome measures	Sample		Preintervention		Postintervention		Diff	(SD)	T	df	p	Cohen's <i>d</i>
	N	M	M	(SD)	M	(SD)						
PHQ—Anxiety subscale	614	4.79	4.79	(4.16)	3.08	(3.34)	1.70	(3.68)	11.472	613	.001	.463
PHQ—Depression subscale	615	7.04	7.04	(5.92)	4.57	(4.77)	2.47	(5.10)	11.991	614	.001	.484
Short Screen Scale: PTSD	596	5.30	5.30	(5.12)	3.70	(4.32)	1.60	(4.40)	8.866	595	.001	.363
TSC dissociation	621	5.05	5.05	(4.00)	3.77	(3.49)	1.28	(3.16)	10.055	620	.001	.403
TSC anxiety	621	6.04	6.04	(4.74)	4.44	(4.23)	1.61	(3.65)	10.967	620	.001	.440
TSC depression	621	7.08	7.08	(4.88)	5.23	(4.19)	1.86	(3.81)	12.142	620	.001	.487
TSC sexual abuse trauma	621	4.11	4.11	(3.37)	3.04	(3.01)	1.07	(2.66)	10.013	620	.001	.402
TSC sleep disturbance	621	6.78	6.78	(4.98)	4.97	(4.54)	1.81	(4.22)	10.721	620	.001	.430
TSC-40 total score	621	27.01	27.01	(17.74)	19.98	(15.99)	7.03	(13.11)	13.360	620	.001	.536
K6 brief mental health screen	615	5.66	5.66	(5.44)	4.23	(4.76)	1.42	(4.26)	8.288	614	.001	.334
BW Aggression Questionnaire												
Physical aggression	619	17.28	17.28	(7.45)	15.25	(6.85)	2.03	(6.36)	7.955	618	.001	.320
Verbal aggression	619	11.44	11.44	(4.18)	10.71	(3.95)	.73	(4.02)	4.543	618	.001	.183
Anger	619	14.04	14.04	(5.87)	12.59	(5.16)	1.44	(5.02)	7.136	618	.001	.287
Hostility	620	17.34	17.34	(7.00)	15.70	(6.62)	1.64	(6.26)	6.534	619	.001	.262
Indirect aggression	619	11.75	11.75	(4.74)	10.92	(4.25)	.83	(4.50)	4.599	618	.001	.185
State Anger Composite Score	617	2.89	2.89	(6.60)	2.19	(5.70)	.70	(7.13)	2.439	616	.015	.098
Trait Anger Composite Score	617	5.77	5.77	(5.81)	4.01	(4.61)	1.76	(4.96)	8.803	616	.001	.354
Instrumental Anger Score	618	19.20	19.20	(8.12)	16.96	(7.49)	2.23	(6.46)	8.587	617	.001	.345
Expressive Anger Score	617	23.79	23.79	(6.72)	22.14	(6.75)	1.66	(6.15)	6.693	616	.001	.269

Note. Mean difference = pretest scores subtracted by posttest scores. *Ms* vary slightly due to missing data. *SD* = standard deviation; PHQ = Patient Health Questionnaire; PTSD = posttraumatic stress disorder; TSC = Trauma Symptom Checklist; BW = Buss–Warren.

TABLE 5: Results of Mixed-Effects Linear Regressions: Impact of ACEs on Treatment Outcomes

Outcomes	Fixed effects		Random effects by prison classification		
	Intercept	ACE_Sum coefficients	Level IV	Level III	Level II
Anxiety	-0.69	-.18**	-.26	-.12	.38
Depression	-1.24	-.21**	-.56	-.39	.94
PTSD	-0.45	-.21**	-.27	-.06	.32
Mental health	-0.14	-.25*	-.12	-.23	.35
Current trauma symptoms total score	-3.13**	-.77**	0	0	0
Physical aggression	-0.67	-.28**	0	0	0
Verbal aggression	-0.04	-.15*	0	0	0
Indirect aggression	0.05	-.18**	-.07	0	.07
Anger	-0.13	-.26**	-.17	.08	.09
Hostility	-0.26	-.29**	0	0	0
Instrumental Anger Total Score	-1.28*	-.20*	0	0	0
Expressive Anger Total Score	0.01	-.34**	0	0	0
State Anger Composite Score	0.03	-.17	0	0	0
Trait Anger Composite Score	-0.55	-.23	-.07	.04	.02

Note. *N*s vary slightly due to missing data ($N = 624$). PTSD = posttraumatic stress disorder.

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

traumatic distress and trauma-related symptoms. This is an important result in that incarceration is a traumatic experience, potentially more so for those with co-occurring disorders. The degree to which these trauma-related symptoms can be managed or potentially lessened could suggest the ability to enhance coping skills during the course of the intervention. Outcomes with low effect sizes, such as the state anger composite score, might have shown statistically significant mean score change due to the power associated with the large sample size. The implication could also be that longer and more intensive trauma-focused interventions are needed to further address trauma-related anger.

This pilot study also indicated preliminary support for a peer-facilitated model of program delivery. Fiscal barriers requiring contracts with professionally trained program staff can restrict program availability resulting in long waitlists and large group formats. Thus, peer-facilitated programs could provide a cost-effective and sustainable addition to program delivery. However, it is highly likely that the extensive program oversight, the manualized Facilitator's Guides, peer training, and institutional support in the current study enhanced the feasibility of the successful peer-facilitated model of the ET program delivery. Institutions interested in implementing similar peer-facilitated models of delivery should also ensure appropriate oversight and coordination.

STRENGTHS

The ET program curricula are a manualized intervention providing both a detailed Facilitator Guide and a Participant Workbook. The use of a manualized curricula creates the ability to monitor fidelity of peer facilitation and to create standardized delivery of a trauma-focused intervention. Peer facilitators had been trained by the program authors, enhancing the fidelity of the program facilitation. In addition, delivery of the program and peer-facilitators had oversight from a Program Coordinator and correspondence with the program

authors (as needed). The ET program also incorporates a variety of therapeutic approaches to address the impact of trauma: expressive arts, mindfulness, and guided imagery. As the program is a psychoeducational brief intervention, it can be delivered as a stand-alone program, a preliminary program, or be easily integrated into existing programs. The study benefited from a large sample size with a 97% follow-up rate, providing ample power to find significant change over time and substantiating the prevalence of reported ACEs among the target population of men. All analyses explored the amount and patterns of missing data, and the amount of missing data was minimal.

In addition, the research team collected all the data, reducing the likelihood of social desirability bias. The study also incorporated data from men at various levels of security classification, adding to the potential to broaden delivery of trauma treatment models. The ET program continues to operate, peer- and program staff-facilitated, in multiple prisons within California and has gained interest in other institutions across the nation. Based on the positive results of the pilot evaluations, the ET program has been expanded to meet the needs of justice-involved transgender and gender-diverse populations. A randomized controlled trial has been completed with a manuscript currently under review.

LIMITATIONS

The study is limited by a single-group pretest–posttest design which did not include a comparison group of men who did not participate in ET. Therefore, it is difficult to judge whether improvements in the postintervention measures were indeed solely a product of participation in the ET curriculum. The current study also relied on self-administered survey data. We did not have access to objective measures to determine previous mental health diagnoses or to substantiate self-reported histories of crime and addiction. The questions on the ACE survey were also limited, as the results regarding histories of sexual and physical abuse were dichotomous (yes or no) questions, which did not inquire about the perpetrator(s) of the abuse, the age at which it occurred, or the duration of the abuse. Thus, the highest mean number of ACEs reported does not fully capture the extent of the history of childhood trauma or maltreatment.

Another important limitation is that the mixed-effects findings are correlational, and thus greater reductions in mental health outcome scores and other trauma-related symptoms among those who had the highest number of ACEs may be a function of statistical regression to the mean. That is, those with the highest ACE scores had the greatest opportunity for gain. However, significant changes were revealed in many instances regardless of the number of ACEs reported. Another central question to explore is whether the participants felt more comfortable discussing their trauma because of the peer-facilitated model of program delivery and the nature of the bonding in the small group. A previous qualitative study with this population of men revealed endorsement of the peer-facilitated model and the safety of small groups (Gajewski-Nemes & Messina, 2021). Yet, the SHU pilot study showed participants were willing to reveal their histories when ET was delivered by the Program Coordinator (Messina & Burdon, 2021).

PRELIMINARY IMPLICATIONS

Prison is a trauma-saturated environment; thus, it is vital to identify appropriate programs that can safely address histories of trauma. The ET intervention is psychoeducational

and provides information about the experiences of trauma in childhood and over a lifetime, focusing on tools to heal and cope with negative impacts. Perhaps it is time to address the elephant in the room. The feasibility of a trained peer-facilitated model of delivery using a manualized program maybe something for corrections to explore. In fact, the effectiveness of peer-facilitated programs has been reported to have a positive impact on both facilitators and participants (Bagnall et al., 2015; South et al., 2014; Woodall et al., 2015). In addition, policymakers and clinicians have increasingly focused on brief interventions as a cost-effective strategy in the field of substance use (Joe et al., 2012). Brief trauma-focused therapies can be used as a method of providing more immediate attention to those on waiting lists for programs as means to introduce them to the process of programming, as well as for those in short-stay housing.

CONCLUSION

As corrections focus on rehabilitation and on reducing recidivism and substance use and dependence, trauma-informed mental and physical health care should also be considered as a primary treatment focus. Ultimately this requires commitment on the part of leadership to discuss the process of trauma and to begin to recognize the necessary structure needed for a trauma-informed organization. Future studies need to incorporate more rigorous designs, measure the sustainability of the benefits of trauma-focused programs, incorporate more qualitative measures to unravel the positive dynamics of peer-facilitation and the safety of small groups, and include postrelease outcome measures.

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