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Adverse Childhood Experiences Are Associated With History of Overdose Among Patients Presenting for Outpatient Addiction Care

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Objectives: Adverse childhood experiences (ACEs) are associated with mental health issues and substance use. Having a substance use disorder increases the risk of overdose (OD). Research on ACEs and risk of OD is limited. This study examined the relationship between ACE scores and a self-reported history of OD among patients in an addiction and mental health outpatient setting.

Methods: This single-center, cross-sectional design included adults in a dual-diagnosis addiction and mental health outpatient recovery and treatment program from November 2017 to August 2020. Patients (N = 115) were assessed with self-report questionnaires, which included ACEs and history of OD. Bivariate and multivariable logistic regression was used to determine factors associated with self-reported OD history. We assessed the reliability and validity of the ACEs scale.

Results: Of the 115 participants, 26 (22.6%) reported a past OD at intake. The mean ACE score for participants with an OD history, as compared with those with no history of OD, was 4.0 (standard deviation, 2.7) vs 2.3 (standard deviation, 2.2). In the multivariable regression, a higher ACE score was associated with history of OD (adjusted odds ratio, 1.23; 95% confidence interval, 1.00–1.50; $P = 0.0456$).

Conclusions: Given the observed association between OD and higher ACE scores, patients presenting for treatment in outpatient dual-diagnosis clinics should be screened for ACEs and OD history, providing the opportunity for treatment with trauma-informed care and/or referral to appropriate services.

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Substance use is a public health concern because it contributes to disease and mortality. In 2020, it is estimated that 100,306 drug overdose (OD) deaths occurred in the United States, an increase of 28.5% from the 78,056 deaths during the same period the year before.[1] Those with a substance use disorder (SUD) are at an increased risk for OD, especially those with an opioid use disorder.[2] Those with a history of adverse childhood experiences (ACEs) are at risk for mental health disorders and substance use, and this risk increases with an increased number of ACEs.[3–7]

Adverse childhood experience is a 10-question self-reported measure used in the assessment of stressful or traumatic experiences that occur during childhood in the form of neglect, abuse, and/or household dysfunction.[5] The ACE survey includes questions on physical neglect, emotional neglect, emotional abuse, physical abuse, domestic violence, sexual abuse, family history of mental illness, use of drugs or alcohol in the household, and imprisoned family members before the age of 18 years.[5]

Chronic exposure to these stressful events can lead to disrupted neurodevelopment and impaired ability to cope with negative emotions.[8–11] These adverse outcomes can lead to maladaptive coping mechanisms, such as substance use and misuse.[5,12] With increasing number of ACEs experienced, there is a greater risk of developing an SUD.[3,5,12] In addition, there is a greater prevalence of medical and psychiatric illness in those who have experienced ACEs.[5–7] Evidence shows that traumatic stress in childhood can lead to mood and anxiety disorders through the damage caused to the amygdala, hippocampus, limbic, and prefrontal cortex structures.[9–11]

It has been established that there is a relationship between substance use or SUDs and OD. However, there has been little investigation regarding ACEs and their connection to OD.[2] Experiencing a higher level of ACEs could lead to OD through unhealthy coping mechanisms, such as substance use.[5] This relationship has been explored in a medical inpatient population, which reported that a one-point increase in the ACE score was associated with a one-point increase in lifetime OD risk.[13] Previous research has also explored the psychometric properties of the ACEs scale on multiple SUD inpatient populations.[14] However, it seems that the relationship between ACEs and OD in an outpatient addiction treatment setting has not been examined.

The purpose of this study is to examine the relationship between ACE scores and a self-reported history of OD among patients engaging in an addiction and mental health outpatient recovery and treatment program. We hypothesized that higher ACE scores would be significantly associated with a history of OD.

METHODS AND DESIGN

Study Setting

Existing, prospective, and past patients (18 years and older) participating in a dual-diagnosis (addiction and mental health diagnoses) outpatient recovery and treatment program at a tertiary healthcare system in Southern California at an academic institution. Patients were invited to have their baseline clinical assessments and medical record data reviewed for research purposes. Of the 215 patients who agreed to participate from November 1, 2017, to August 2020, 115 completed all 10 questions on the ACE questionnaire at their baseline visit (Fig. 1). All patients signed an informed consent to use their past, present, and future information from data collected during routine clinical care, including questionnaires and their electronic health record. This study was approved by the Human Research Protection Program and the institutional review board.

Survey Methods

Before their first visit, patients (N = 115) were assessed for clinical care with a series of self-report questionnaires, structured evaluation questionnaires, and semistructured clinical interviews, which included the ACE questionnaire. Information obtained included sociodemographic information, current and past medical, psychiatric, and social history, medication history, family history, substance use history, system review, functioning, and information on specific psychiatric symptoms (see measures hereinafter). The sociodemographic and healthcare information was accessed from paper surveys and from data extracted from the electronic health record. To protect patient confidentiality, analytic databases created from the primary databases did not include personal identifiers (eg, name, birthday), and subjects were assigned a unique study identification number.

Measures

The primary outcome was a history of OD (eg, alcohol, opioids, stimulants; yes/no). Patients were asked about OD history with the questions "Have you ever had an overdose?" and "If you have had an overdose (at last overdose), what were the drugs you were using?" (eg, cannabinoids, alcohol, stimulants, sedatives, opioids). For the purposes of this study, the definition of OD included "convulsions/seizures, difficulty breathing, loss of consciousness/collapse, unable to be roused, heart attack, or blue skin color while using drugs."

Response options for the 10 ACE questions (yes/no) were summed to create an overall score ranging from 0 to 10. Higher scores indicate more adverse experiences during childhood. Sample covariates included sex (male/female), age (18–74 years), White race (yes/no), Latinx ethnicity (yes/no), married/significant other ("yes" = married, living as married, significant other, in a relationship; "no" = single, separated, divorced, widowed) completed college (yes/no), employed full/part time (yes/no), religious (yes/no), and self-reported problem by substance type (ie, alcohol, opioids, stimulants, cannabinoids, sedatives). Of note, age was trichotomized from a continuous range of 18 to 74 years to the following 3 ordinal levels: 18–35, 36–59, and 60+.

Statistical Analysis

Bivariate and multivariable logistic regression was used to determine factors associated with a reported OD. Continuous and categorical variables were summarized with means and standard deviation (SD); unadjusted and adjusted analyses of the covariate variables were conducted in the cohort using analysis of variance for continuous data and chi-square tests of significance for categorical data. To determine the effect/magnitude of the associations, unadjusted odds ratios (ORs) were calculated and reported. We used 95% confidence intervals (CIs) that contain 1—indicating that there was no significant difference between groups—and P values ≤ 0.05 to determine whether a covariate would be included in the final adjusted regression model. Multivariable logistic regression models were conducted to determine whether the ACE score was associated with drug or alcohol OD. Standardized βs, standard errors (SE [β]), adjusted ORs (AORs), and the respective CIs and P values were reported. Cronbach α was used

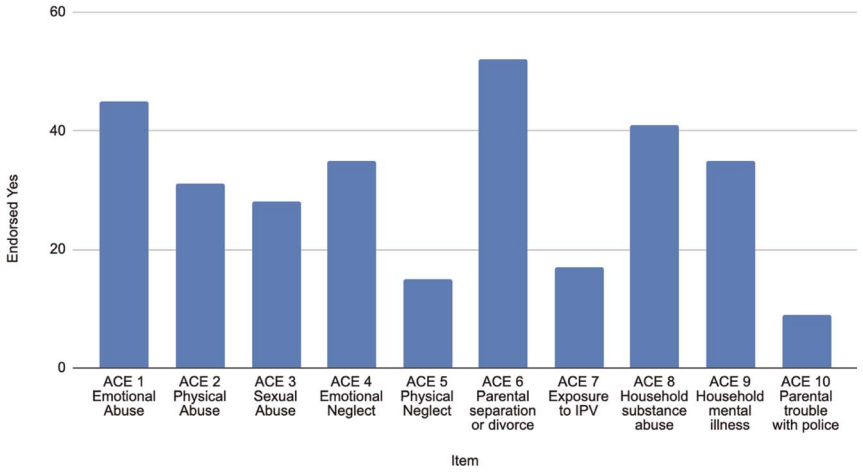

FIGURE 1. Adverse childhood experience item distribution.

to measure the reliability of the ACEs scale and a principal component analysis (PCA) was conducted to identify key components that explain and organize the total variance. All data analysis was conducted with SAS 9.4 (SAS Institute, Cary, NC).

RESULTS

Sample Characteristics and OD

Sample characteristics and bivariate analysis of factors associated with having a reported OD are shown in Table 1. Of the total 115 participants who consented to participate in this study, 26 (22.6%) reported a past OD at their baseline intake appointment. There were more males (61 [53%]) than females (54 [47%]), with no significant difference between sex and OD (50% female and 50% male; OR, 1.17; 95% CI, 0.49–2.81; $P = 0.72$). The total mean age was 40.6 ± 14.4 years, with the mean age of 44.5 ± 16.6 years for those reporting OD. Most were White (74.8%) and 17.7% identified as being Latinx. White race and Latinx ethnicity were not associated with OD in this sample (OR, 0.70; 95% CI, 0.26–1.83; $P = 0.46$, and OR, 2.10; 95% CI, 0.74–5.98; $P = 0.17$, respectively). Of the total sample, a little over half completed college (52.2%) and reported being employed (53.6%). Most of the sample were not religious (66.1%), and religious belief was not associated with OD (OR, 1.30; 95% CI, 0.52–3.23; $P = 0.58$). The mean ACE score for those who reported an OD was 4.0

TABLE 1. Variables Assessed for Associations With Having a Reported Overdose Among Patients in a Dual-Diagnosis Clinic From November 1, 2017, to August, 2020 (N = 115)

Parameter	Total, n (%)/Mean (SD)	History of Overdose, n (%)/Mean (SD)	No History of Overdose, n (%)/Mean (SD)	OR 95% (CI)	χ^2	*P*
All	115 (100.0)	26 (22.6)	89 (77.4)			
Sex						
Male	61 (53.0)	13 (50.0)	48 (53.9)	1.17 (0.49–2.81)	0.12	0.723
Female (ref)	54 (47.0)	13 (50.0)	41 (46.1)	—		
Age at intake						
18–35 (ref)	46 (40.0)	8 (30.8)	38 (42.7)	—		
35–59	53 (46.1)	11 (42.3)	42 (47.2)	1.24 (0.45–3.42)	0.87	0.349
60+	16 (13.9)	7 (26.9)	9 (10.1)	3.69 (1.06–12.87)	4.48	0.034
White race						
Yes	86 (74.8)	18 (69.2)	68 (76.4)	0.70 (0.26–1.83)	0.54	0.460
No (ref)	29 (25.2)	8 (30.8)	21 (23.6)	—		
Latinx						
Yes	20 (17.7)	7 (26.9)	13 (14.9)	2.10 (0.74–5.98)	1.92	0.166
No (ref)	93 (82.3)	19 (73.1)	74 (85.1)	—		
Married/significant other*						
Yes	57 (49.6)	10 (38.5)	47 (52.8)	0.56 (0.23–1.36)	1.63	0.201
No (ref)	58 (50.4)	16 (61.5)	42 (47.2)	—		
Completed college						
Yes	60 (52.2)	12 (46.1)	48 (53.9)	0.73 (0.31–1.76)	0.49	0.485
No (ref)	55 (47.8)	14 (53.9)	41 (46.1)	—		
Employed full/part time						
Yes	60 (53.6)	10 (38.5)	50 (58.1)	2.22 (0.91–5.46)	3.03	0.081
No (ref)	52 (46.4)	16 (61.5)	36 (41.9)	—		
Religious						
Yes	37 (33.9)	10 (38.5)	27 (32.5)	1.30 (0.52–3.23)	0.31	0.577
No (ref)	72 (66.1)	16 (61.5)	56 (67.5)	—		
ACE score†	2.7 ± 2.4	4.0 ± 2.7	2.3 ± 2.2	1.32 (1.10–1.59)	8.48	0.003
Cannabis substance problem						
Yes	24 (20.9)	3 (11.5)	21 (23.6)	0.42 (0.12–1.55)	1.69	0.193
No (ref)	91 (79.1)	23 (88.5)	68 (76.4)	—		
Alcohol substance problem						
Yes	84 (73.7)	21 (84.0)	63 (70.8)	2.17 (0.68–6.93)	1.70	0.192
No (ref)	31 (26.3)	5 (16.0)	26 (29.2)	—		
Stimulant substance problem						
Yes	34 (29.6)	12 (46.2)	22 (24.7)	2.61 (1.05–6.48)	4.28	0.038
No (ref)	81 (70.4)	14 (53.8)	67 (75.3)	—		
Opioid substance problem						
Yes	39 (33.9)	14 (53.9)	25 (28.1)	3.00 (1.22–7.34)	5.69	0.017
No (ref)	76 (66.1)	12 (46.1)	64 (71.9)	—		
Sedative substance problem						
Yes	22 (19.1)	9 (34.6)	13 (14.6)	3.10 (1.14–8.41)	4.91	0.026
No (ref)	93 (80.9)	17 (65.4)	76 (85.4)	—		

Age range for overdose (18–74 years), age range for no overdose (19–73 years).

P values based on chi-square tests of significance for categorical data and analysis of variance for continuous data. Variable totals might not sum to column totals because of missing data.

*Married/significant other "yes" = married, living as married, significant other, in a relationship. Married/significant other "no" = single, separated, divorced, widowed.

†Adverse childhood experiences score refers to the number of negative experiences in childhood with an increased score referring to more adverse experiences.

ACE indicates adverse childhood experience; CI, confidence interval; OR, odds ratio; SD, standard deviation.

(SD, 2.7) compared with 2.3 (SD, 2.2) in those who did not report OD (OR, 1.32; 95% CI, 1.10–1.59; $P = 0.003$). Self-reported problems by substance type were highest for alcohol (73.7%), followed by opioids (33.9%), stimulants (29.6%), cannabinoids (20.9%), and sedatives (19.1%). Those who reported opioid use (OR, 3.00; 95% CI, 1.22–7.34; $P = 0.017$), stimulant use (OR, 2.61; 95% CI, 1.05–6.48; $P = 0.038$), and sedative use (OR, 3.10; 95% CI, 1.14–8.41; $P = 0.026$) were more likely to report experiencing an OD. Cannabis/cannabinoids and alcohol use was not significantly associated with OD in the bivariate analysis.

Multivariable logistic regression analysis of factors associated with having a reported OD are shown in Table 2. In the multivariable regression, only a higher ACE score (AOR, 1.23; 95% CI, 1.00–1.50; $P = 0.045$) and the age of older than 60 years (AOR, 4.10; 95% CI, 1.00–17.02; $P = 0.051$) remained significantly associated with OD. Self-reported problems with stimulants (AOR, 2.07; 95% CI, 0.70–6.14; $P = 0.19$), opioids (AOR, 1.93; 95% CI, 0.65–5.76; $P = 0.24$), and sedatives (AOR, 1.27; 95% CI, 0.34–4.77; $P = 0.72$) were not significantly associated with OD report.

Internal Consistency

Because reliability is a characteristic of the test scores and not the test itself,[15] we conducted an internal consistency test of the test scores using Cronbach α as a way to measure the reliability of the ACEs scale on a population of patients in an outpatient dual-diagnosis treatment center. α coefficients can range from 0 to 1 with higher values indicating greater reliability, and acceptable values are those considered greater than 0.70.[15] For our sample, the Cronbach α was 0.76 (95% CI, 0.70–0.80); our score falls within the range of reliability scores of the ACEs scale reported in other populations.[14,16]

Principal Component Analysis

Results from the PCA suggested a 2-component solution that explains 63% of the proportion of variance with 40% being explained by the first component and 23% explained by the second component. Loadings indicate how strongly a variable influences the component. Results indicated that all of our 10 ACEs variables had at least moderate (greater than 0.4) loadings to 1 of the 2 components, which is a good indicator of construct validity. The ACE items loaded onto 2 general components that closely followed theoretical domains (1) childhood mistreatment and (2) household dysfunction. The first 5 items of the original ACEs scale generally describe physical, emotional, and sexual abuse, and all five of these items loaded onto the first component (childhood mistreatment). Items 6 to 10 of the original ACEs scale generally describe household dysfunction, and 4 of these 5 items loaded onto a second component (household dysfunction). The item that fell outside the theoretical domain (item 7) was the question "Was your mother or stepmother: Often pushed, grabbed, slapped, or had something thrown at her? Or sometimes or often kicked, bitten, hit with a fist, or hit with something hard? or Ever repeatedly hit over at least a few minutes or threatened with a gun or knife?" Notwithstanding this one item discrepancy, the items loaded on 2 general components that are consistent with previous studies. Similarly, item #5 loaded onto both components at more than modest rates. However, ultimately, item #5 loaded onto the "child mistreatment" component, which is consistent with theoretical domains. The specific item loadings are represented in Table 3. Figure 1 demonstrates the ACEs item distribution based on ACEs question and percentage that endorse experiencing the specific ACE.

TABLE 2. Multivariable Logistic Regression Analysis of Factors Associated With Having a Reported Overdose Among Patients in a Dual-Diagnosis Clinic From November 1, 2017 to August, 2020 (N = 115)

Parameter	*B*	SE (β)	AOR (95% CI)	*P*
Age (18–74), yr				
18–35 (ref)	—			
35–59	0.40	0.57	1.41 (0.46–4.28)	0.545
60+	1.38	0.70	4.10 (1.00–17.02)	0.051
ACE score	0.20	0.10	1.23 (1.00–1.50)	0.045
Self-reported substance problem				
Stimulants	0.73	0.56	2.07 (0.70–6.14)	0.191
Opioids	0.67	0.56	1.93 (0.65–5.76)	0.238
Sedatives	0.21	0.66	1.27 (0.34–4.77)	0.720

Adverse childhood experiences score refers to the number of negative experiences in childhood with an increased score referring to more adverse experiences.

β indicates standardized β; ACE, adverse childhood experience; AOR, adjusted odds ratio; *B*, unstandardized β; CI, confidence interval; SE, standard error.

DISCUSSION

Adverse Childhood Experience Scores and OD

This study found that higher ACE scores were significantly associated with a self-reported history of OD at initial assessment. The findings from this study are consistent with a larger cross-sectional study published in 2017, which showed that ACE scores were associated with previous OD in a medical inpatient setting.[13] That study by Stein et al[13] had a sample size of (N = 457) that was predominantly male (71.3%) with a White ethnicity (86.9%), and approximately half of their respondents experienced 4 or more ACEs. Their study showed that a one-point increase in ACE score was associated with a 1.10 (95% CI, 1.02–1.20) increase in the expected odds of reporting a lifetime OD.

The study by Stein et al[13] coupled with our findings suggests that these traumatic childhood experiences could also increase the likelihood of OD in this population. These results indicate that patients presenting with SUD and a history of OD could also benefit from trauma-informed care. Similarly, screenings for ACEs can serve as an opportunity for referrals to mental health treatment if needed.

Our results further indicate that social and structural conditions may be just as significant in the relationship to self-reported OD as the type of substance used. Research has shown that certain populations are more susceptible to a negative impact from ACEs because of their socioeconomic and educational backgrounds.[14] In a cross-sectional study examining the Behavioral Risk Factor Surveillance System data (N = 27,834), those with a history of ACEs (59.3% of sample) were more likely to report a lower socioeconomic status, higher rate of unemployment, and lack of high school completion.[17] Prevention programs targeting at-risk youth can also use the ACE score to screen for highly vulnerable populations who might be at risk for early initiation of substances and potential OD. A systematic review of interventions in 2019 showed that

TABLE 3. Component Loadings for 2 Principal Component Derived Domains of ACEs

Items	Child Mistreatment	Household Dysfunction
1. Did a parent or other adult in the household often. Swear at you, insult you, put you down, or humiliate you? Or Act in a way that made you afraid that you might be physically hurt?	**1.06**	−0.25
2. Did a parent or other adult in the household often… Push, grab, slap, or throw something at you? Or ever hit you so hard that you had marks or were injured?	**0.85**	0.00
3. 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 Try to or actually have oral, anal, or vaginal sex with you?	**0.42**	−0.05
4. Did you often feel that…No one in your family loved you or thought you were important or special? or Your family didn't look out for each other, feel close to each other, or support each other?	**0.83**	−0.04
5. Did you 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 if you needed it?	**0.58**	0.40
6. Were your parents ever separated or divorced?	0.35	**0.48**
7. Was your mother or stepmother: Often pushed, grabbed, slapped, or had something thrown at her? Or sometimes or often kicked, bitten, hit with a fist, or hit with something hard? or Ever repeatedly hit over at least a few minutes or threatened with a gun or knife?	**0.87**	−0.02
8. Do you live with anyone who was a problem drinker or alcoholic or who used street drugs?	−0.01	**0.84**
9. Was a household member depressed or mentally ill or did a household member attempt suicide?	0.15	**0.58**
10. Did a household member go to prison?	−0.39	**0.99**

Loadings greater than 0.40 appear in bold. Loadings indicate how strongly a variable influences the component. Loadings can range from −1 to 1 with 0 indicating that the variable has a weak influence on the component.

parenting education, social service referrals, and social support for families can reduce the impact of ACEs on young children.[18] Results from our study lend support for the critical need to continue addressing the impact of ACEs on substance use and ODs.

As expected, we found that those with older age (60+ years) were more likely to report having experienced a nonfatal OD. This is consistent with the US drug OD death data, as adults aged 35 to 44 years have the highest rate of drug OD deaths from 1999 to 2019.[1] The public health implications of these data are vast considering that OD survivors experience health challenges and higher death rates compared with the general public.[19] It is important to note that older patients had a longer duration of substance use history, thereby increasing the opportunity for an OD, so these analyses should be interpreted with caution.

Overdose death rates during 2018–2019 increased among persons 65 years or older in the United States.[20] In particular, rates increased among persons 65 years or older, non-Latinx Blacks, and Latinx, and in the Northeast and the West regions. In one study, individuals born between 1947 and 1964 had a notably increased risk for OD death.[21] Several theories have been proposed for the increase of OD history in older age. The generation of the "baby boomers" born between the years of 1946 to 1964 has been reported as having a generational mindset that was more accepting of substance use.[21,22] Our finding that older age was a risk factor for OD has clinical implications for patient screening in this setting. A study with a larger sample size is needed to confirm this intriguing association.

Adverse Childhood Experience Scale Reliability and Variance

Although the ACEs scale has been validated in previous populations, there has been limited research on the validity of the ACEs scale in people in treatment for SUD. As such, we conducted a principal component analysis to increase the validity of our analysis and findings. Results from the PCA results suggest that the original ACE scale is an appropriate tool to assess (1) child mistreatment and (2) household dysfunction in a population of individuals seeking treatment for substance use and mental health disorders. Almost all of the 10 items fell within 2 theoretical domains, which provides evidence that all original ACEs are relevant in this population and should all be retained for clinical use.

Notably, "physical violence toward the mother" loaded onto the "child mistreatment" component rather than the "household dysfunction" component. A recent study by Afifi and colleagues[16] also found evidence for a 2-factor structure, but consistent with previous studies, exposure to physical intimate-partner violence loaded onto the "household dysfunction" component. The high loading (0.87) of this item in our study with "child mistreatment" suggests that perhaps witnessing physical violence toward a mother figure in childhood may have different implications for this population. Future studies should attempt to replicate and better understand these findings in different samples.

There are several strengths for this study. To our knowledge, this is the first study that has examined the relationship between ACE scores and a self-reported history of OD among patients engaging in an addiction and mental health outpatient recovery and treatment program. This is important because our population was actively seeking and receiving care in an outpatient setting, which makes them distinct from many previous studies that were conducted on the general population. The advantage to having a more narrow study population is the ability to apply these findings to other outpatient dual-diagnosis treatment facilities for the improved screening of past and potential ODs. Similarly, no study, to our knowledge, has tested the reliability and validity of the ACEs scale in a population of individuals being treated for substance use and mental health disorders in an outpatient setting.

There are some limitations in this study. Primarily, the interpretation of OD risk in older adults is limited by a wide CI, which is in part due to a small number of older adults (n = 16). In addition, the assessment of ACEs was completed retrospectively, and there is evidence from previous meta-analyses showing that retrospective assessment of ACEs overemphasizes actual adverse experiences during childhood.[23,24] The concise 10 question scale used for scoring ACEs may have missed exposure to

adverse experiences during childhood, which are not captured by the questionnaire. Generalizability is limited because of the convenience sample of patients selected and the brevity of the questionnaires. The sample was obtained from a single outpatient dual-diagnosis clinic, so almost all patients had a current or history of substance use, which limits generalizability. No information was collected regarding ages of exposure to ACEs or OD. The circumstances surrounding ODs were not ascertained (eg, potential suicide or accidental). Information on sex failed to distinguish gender identities outside of male/female, which could limit the understanding of the prevalence of ACEs and self-reported OD in other populations. The questionnaire did not assess the participants' prenatal history that could have been helpful in determining whether the prenatal developmental period could have influenced adult health and behavioral outcomes (Barker hypothesis).[25,26] Finally, these data were collected from baseline questionnaires, which are all self-report. The information contained within these questionnaires about mental health symptoms was not validated diagnoses, which precluded them from being used for analyses.

CONCLUSIONS

It is widely supported that the trauma of ACEs is associated with long-term negative mental health consequences and substance use.[27] This study provides evidence for the continued use of the ACEs scale in a clinical setting, how ACEs group together, and how ACEs are related to substance-related ODs. These findings may also suggest that patients in an outpatient dual-diagnosis clinic with higher ACE scores can benefit from trauma-informed care, because this has been shown to contribute to healthy coping and resilience in patients with a history of trauma.[28]

Specifically, higher ACE scores were associated with a self-reported history of OD. Race/ethnicity, education, employment, and reported problems by substance type were not significantly associated with history of OD in this sample. Prevention programs targeting at-risk youth can also use the ACE score to screen for highly vulnerable populations who might be at risk for early initiation of substances and potential OD. Notably, the state of California has recently made screening for ACEs a priority through their ACEs aware initiative.[29,30] Realizing the importance of ACEs, Medi-Cal providers can now bill for administration of screening children and adults for ACEs, which should lead to an increase in routine screening.[29]

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