


**Research Article**

## Assessment of Emotion Regulation and Psychological Symptomology in Commercially Sexually Exploited Minors

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### Abstract

**Objective:** While likely an underestimate, research approximates 5% of children and adolescents in the US experience commercial sexual exploitation [1, 2]. There is no unified approach to assessing the needs of these youth and providing care. Few programs that have published results used objective measures of psychological functioning, and those that did often failed to account for the validity, reliability, and cultural appropriateness of measures used [3,4]. Anchored in research around ACEs and emotion regulation (ER), the current study examined correlations between these concepts and other markers of distress (e.g, system involvement, self-harm, substance abuse, and self-reported symptoms). Results would inform the development of appropriate batteries of assessments, guide treatment, and enhance program development for trafficked youth.

**Method:** 72 youth referred for treatment secondary to CSE provided demographic information and completed the Adverse Childhood Experiences-Questionnaire (ACE-Q) Teen Self-Report, the Beck Depression Inventory (BDI-II), the Beck Anxiety Inventory (BAI) and the Difficulties in Emotion Regulation Scale (DERS).

**Results:** This population evidenced high rates of ACE exposure, symptomology, and emotional dysregulation evidenced by self-report and documented behavioral indicators of distress.

**Conclusion:** Results support the utility of these measures in assessing clinical presentations of and progress in treatment for youth who have experienced CSE and suggest emotion regulation may be a more desirable treatment target than symptom reduction. Implementing such batteries would improve the delivery of services both on the individual and programmatic levels.

**Keywords:** Trafficked youth, Commercial sexual exploitation of minors, DERS, Emotion regulation, Dysregulation

### Introduction

Over more than two decades, there has been increased attention and dedicated funding directed toward enhancing prevention, detection, and intervention for commercial sexual exploitation (CSE) and trafficking. This commitment is reflected through the expanded literature dedicated to sex trafficking and exploitation, initiatives such as the U.S. Trafficking Victims Protection Act (2000, later reauthorized), the establishment of the National Human Trafficking Resource Center, and additional resources and

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**Citation:** Kirsten Byrnes, Meghan Axman, Ann Thiessen. Assessment of Emotion Regulation and Psychological Symptomology in Commercially Sexually Exploited Minors. *Fortune Journal of Health Sciences*. 8 (2025): 1-13.

**Received:** December 16, 2024

**Accepted:** December 21, 2024

**Published:** January 07, 2025

funding provided through the Victims of Crime Act (2022) [5]. Despite this increased focus, obtaining prevalence rates is notoriously difficult, partly due to ambiguity or a lack of consistency in definition [2,6,1]. Similarly, while there have been some studies addressing risk factors contributing to youth vulnerability and the impact of CSE on youth, researchers have highlighted limitations about methodologies and other issues around assessing and understanding the full impact of trafficking and exploitation, which is essential due to how this information drives detection, intervention, and program development [7,4 3,8,9].

Per the National Institute of Medicine (2014), CSE of minors includes engaging children and adolescents in a wide range of activities, including the following [10]:

- Recruiting, enticing, harboring, transporting, providing, obtaining, and maintaining (acts that constitute trafficking) a minor for the purpose of sexual exploitation;
- exploiting a minor through prostitution;
- exploiting a minor through survival sex (exchanging sex/sexual acts for money or something of value, such as shelter, food, or drugs);
- using a minor in pornography;
- exploiting a minor through sex tourism, mail-order bride trade, early marriage, and
- exploiting a minor by having them perform in sexual venues (e.g, peep shows or strip clubs).

Rough estimates of CSE among US youth between 7th grade and 12th grade suggest that over 808,500 youth have been engaged in the act of trading sex for money and/or drugs. Globally, estimates conclude that 5% of children and adolescents experience CSE or sex trafficking [11,1]. There is a general understanding that those who have experienced CSE evidence high rates of problematic alcohol and substance use and endorse traumatic, depressive, and anxious symptomology [12,13,3,14,15,16,17,7]. Gibbs et al. (2015) found that 57-91% of trafficked and exploited youth required crisis or mental health services. However, in a review of US-based mental health service provision for those who have experienced CSE, Powell, Asbill, Louis, and Stoklosa (2018) found that survivors' trauma history, coping, and general mental health needs were often not considered in initial assessments [18]. Instead, much of the published literature focuses on the importance of coordinating care in light of significant global needs (e.g. housing, medical attention, legal assistance), or reliance upon more mentorship or psychoeducational interventions than the provision of mental health services [15,19,21,2,6]. Additionally, while assessing mental health functioning, Doherty, Oram, Siriwardhana, and Abas (2016) found that few studies accounted for the measures'

validity, reliability, and cultural appropriateness. While many studies focused on trauma-specific symptom checklists, to advocated assessments that can provide a more precise understanding of the clinical picture and are essential in treatment and program development [4,22].

### **Risk Factors and the Role of Adverse Childhood Experiences and Childhood Maltreatment**

Adverse childhood experiences (ACEs), which have a substantial overlap with child maltreatment, includes but is not limited to physical, emotional, and sexual abuse, exposure to domestic violence, and physical and emotional neglect [23,24,25]. A large (n=25,252 participants), recent, longitudinal twin study, which included corroboration through national medical records, highlighted the significant impact of ACE exposure as well as intensified emotional challenges linked to behavioral difficulties externally and internally on the later development of mental illness (e.g, anxiety, depression, alcohol and substance abuse, stress-related disorders), even after genetic inheritance and family environment were statistically controlled for [26,27]. Previous studies have suggested there is a dose-dependent relationship between ACEs and adverse outcomes such as substance abuse, interpersonal and self-directed violence and suicide attempts, sexual risk-taking, and poor physical health [28,29,30,31]. Research has determined that risk factors for those who have experienced CSE include childhood maltreatment or ACEs, such as sexual, physical, and emotional abuse and parental drug or substance abuse issues [7,32]. Often, these experiences result in involvement in the child welfare or juvenile justice system, which are also ACEs. Additionally, the impact of mental illness and associated deficits in coping, especially in the context of a history of trauma and victimization and limited utilization of mental health services, contribute to a cycle that is hard to escape [33]. As such, an explicit recognition and assessment of the role of Adverse Childhood Experiences would help understand vulnerability, the impact of CSE, and program development [33,24].

### **Emotion Regulation [ER], ACEs, and CSE**

Emotion regulation (ER) refers to various processes individuals use to recognize, monitor, evaluate, and direct or modify their emotions related to their needs, goals, and contextual demands [34]. It is important to note that attempts to control or avoid emotion do not necessarily equate to adaptive emotion regulation and may correlate with significant clinical difficulties [35]. As such, deficits in the ability to experience the full range of emotions may be just as clinically relevant as deficits in managing or attenuating intense emotional responses. Gratz & Roemer (2004) focused on the following aspects in their conceptualization of ER: "(a) awareness and understanding of emotions; (b)

acceptance of emotions; (c) the ability to engage in goal-directed behavior, and refrain from impulsive behavior, when experiencing negative emotions; and (d) access to emotion regulation strategies perceived as effective [35].” Disruptions in ER, especially within adolescence or early adulthood, appear to be a transdiagnostic correlate to the development of depression, anxiety, and substance abuse disorders, and more over time [36, 27].

In particular, although experiencing exposure to traumatic experiences or ACEs, the clinical presentation of youth does not fit neatly into a diagnostic category as they may present with disruptions in several domains (e.g, managing affect, physiology, attention, behavior, attachment) [37]. There is an understanding that exposure to maltreatment, or ACEs, has been associated with the development of various forms of psychopathology, substance use or abuse, and increased risk of engaging in suicidal and self-harming behaviors [38,39,40], Early studies suggest that functional impairment continues after symptom-specific (mood and anxiety) interventions [41, 42, 43]. Experiences of functional impairment are especially authentic for individuals with a history of childhood abuse, which appears to impair the development of emotion regulation and interpersonal skills [44-46]. Moreover, women with a history of childhood abuse correlated to functional impairment predictive of emotion regulation and interpersonal problems once there was a control in place for their PTSD symptoms [44]. More recently, there has been a recognition that disruptions in emotion regulation are associated with various mental disorders and thus should be a treatment target in contrast to previous symptom reduction approaches [47-51]. Research suggests that general affect regulation training has successfully treated mental illness [48, 49]. Further support of the effectiveness of regulation strategies upon functioning is evident in studies examining the efficacy of dialectical behavior therapy [53-57]. With these considerations in mind, a focus on difficulties in emotion regulation may serve as a transdiagnostic mechanism linking ACEs and maltreatment with mental health difficulties [40].

### **Assessment of Psychological Functioning in Trafficked and Exploited Youth**

Some authors have reviewed our knowledge and practice to crystalize the evolving field’s understanding of the presenting issues of victimized youth and improve program development and intervention. Doherty et al. (2016) examined studies that utilized measures of functioning in assessing those experiencing trafficking and exploitation and their general suitability [4]. Although researchers screened over 24,000 articles, they only found seven articles that satisfied

initial inclusionary criteria related to measures’ reliability, validity, and cultural appropriateness [4]. While this alone is concerning, they further emphasized that even within these studies, there was still an evident need to ensure reliability, validity, and culturally appropriate assessment. A more recent systematic review by Graham et al. (2019) examined 53 studies utilizing 34 published measures to collect data on a wide array of functioning, noting that researchers did not examine many of the measures before use with youth who have experienced trafficking and exploitation [15]. In both reviews, many authors utilized structured clinical interviews to diagnose DSM disorders or symptom checklists that assessed trauma or a wider array of symptoms (e.g, Brief Symptom Inventory; Derogatis, 1975) explicitly [58]. Arguably, broader inventories are helpful when examining a population to assess preliminary hypotheses about clinical presentations or experiences. However, there have been recommendations regarding using disorder-specific assessments to understand better the clinical picture, which is vital in treatment and program development [22]. The above review demonstrates that youth who have experienced CSE have likely experienced many ACEs [12, 17]. The Center for Youth Wellness [24] expanded Felitti et al.’s [25] original list of ACEs, including bullying, persecution or marginalization, resource placement, parental incarceration or separation, death of a caretaker, serious (personal) medical issues, neighborhood violence, and personal experiences if intimate partner violence. This measure is well suited to document ACE experiences in youth experiencing CSE.

The Beck Depression Inventory-II (BDI-II; [59]) and the Beck Anxiety Inventory are two well-researched and heavily implemented measures of depression and anxiety. A comprehensive review of 118 studies conducted by Wang and Gorenstein [60] found the BDI-II to be a cost-effective measure that evidenced good sensitivity and specificity for detecting depression in respondents, as well as good, if not strong internal consistency and test-retest reliability. These results echoed a more recent Biracyaza et al. [61] study. Moreover, this measure appears suitable for measuring depressive symptomology in various cultures [62, 63, 64]. Similarly, a large meta-analysis of the Beck Anxiety Inventory found that the BAI demonstrated strong internal consistency, good test-retest reliability, and convergent validity (compared to 33 other measures of anxiety) [65, 66]. Despite noted issues regarding the specific factor structure of the BAI in various populations (e.g, particular populations may endorse physical symptoms more readily than cognitive), the BAI is still deemed appropriate as a screener for anxiety [67, 68]. In light of these factors, both measures appear suitable for use in assessing the well-documented experiences of depressive and anxious symptomology in youth experiencing CSE.

In light of the shifting focus from symptom reduction to emotion regulation, Gratz and Roemer (2004) developed the Difficulties in Emotion Regulation Scale (DERS) to provide a more comprehensive assessment of ER deficits [35]. While researchers theorized ER comprised of four basic ideas, initial factor analysis suggested six separate factors that are related to ER: a tendency toward having an adverse reaction to one's own negative emotions or distress (NONACCEPTANCE); difficulty concentrating and accomplishing tasks while distressed (GOALS); difficulties controlling behavior in the presence of negative affect (IMPULSE); the ability to attend to and reflect upon emotions (AWARENESS); the belief that emotion can be regulated effectively and the ability to mobilize coping once upset (STRATEGIES); and the degree to which individuals know what emotions they are experiencing in the moment (CLARITY). The initial validation study suggested high internal consistency, good test-retest reliability (though admittedly a small n), good validity, and adequate predictive validity related to self-harm and IPV. Since its development, the DERS has proved extremely popular in empirical studies (see 69, 70). While there is some caution recommended around the utility or interpretation of the AWARENESS subscale, the DERS has demonstrated excellent internal consistency and good construct, clinical, and predictive validity [69, 70,71]. A recent study by Mekawi et al. (2020) indicated that African American women with major depressive disorder and/or PTSD evidenced more significant dysregulation, suggesting additional support for the use of the DERS [72]. By extension, Tejada et al. (2012) found that Spanish language adaptation has good internal consistency and concurrent validity (specifically with the BAI) when used with adolescents in Mexico [73]. Neumann et al. (2010) further demonstrated the utility of the DERS when assessing adolescents [71].

### The Current Study

The current study sought to explore several hypotheses. First, one prediction in our sample of commercially sexually exploited females is that there would be high rates of substance use, self-harming and/or suicidal behaviors, psychiatric hospitalization, and self-reported histories of significant ACE exposure. On clinical measures, a hypothesis is that the current sample would evidence clinically significant rates of depressive and anxious symptomatology, as measured by the BDI and BAI, respectively. Similarly, there is a presumption that the current sample will demonstrate substantial difficulties in emotion regulation as measured by the DERS. Although there appears to be a clear link, both between ACE exposure and histories of commercial sexual exploitation and trafficking, to our knowledge, this is the first study that utilizes the DERS to assess the needs of these youth. The current study was also interested in exploring the utility of

implementing a cutoff of 21.5 on the Strategies subscale of the DERS, as Perez et al. (2012) recommended [74]. Predictions include the theory that not only will the current population evidence elevated scores on this subscale, but endorsement patterns on this subscale will be positively correlated with other measures of clinical symptomatology (e.g, depression and anxiety as measured by BDI and BAI). Moreover, since substance use, self-harming, and/or suicidal behaviors and psychiatric hospitalization are indicators of deficits in emotion regulation, this research team anticipates that the presence of these markers will correlate with elevated Strategies scores. Additionally, this study explored the utility of using specific measures to understand better the experiences and clinical presentations of those youth who have experienced CSE and aid in program development.

## Methods

### Sample

Participants in the current sample derived from a sample of seventy-two youth, ages 13-21, referred between late 2017 and 2023 to a nonprofit organization in an urban county in the southwestern US. The organization seeks to break the cycle of revictimization and system involvement for youth, helping them reclaim their narratives and persisting forward through comprehensive support (e.g, on-site school, trauma therapy center, art therapy, and paid internships). Those referred have experienced commercial sexual exploitation or sexual abuse, and most referrals come from the juvenile justice system. Upon acceptance into the program, youth complete various assessments and participate in a clinical interview. Among general demographic and other information, mental health professionals gather information such as Self-reported histories (often corroborated through the record) of psychiatric hospitalization, suicidal behaviors or self-harm, and substance use. Furthermore, additional assessments and questionnaires processed include the ACE-Q Teen Self-Report, the Beck Depression Inventory, the Beck Anxiety Inventory, and the Difficulties in Emotion Regulation Scale upon intake [24, 75, 66, 35].

### ACE-Q Teen Self-Report (Adverse Childhood Experiences Questionnaire)

The Center for Youth Wellness ACE-Q Teen Self-Report is an expanded version of the original ACE Questionnaire [24, 25]. It is a self-report measure containing various experiences considered detrimental to development. In addition to the original ten items (including typically recognized categories of child maltreatment, as well as experiences such as divorce or exposure to untreated mental illness, etc.), this measure expanded to include nine additional items (e.g, placement in foster care, the impact of parent incarceration, community violence, and more).

## Beck Depression Inventory-II (BDI-II)

The Beck Depression Inventory is a self-report measure comprised of twenty-one items that measure the severity of depression in individuals aged 13-80 [59]. It is the most used diagnostic tool in clinical and research settings for assessing depression, speaking to its reliability and validity. The revised version of the Beck Depression Inventory assesses characteristics, attitudes, and symptoms corresponding to criteria for diagnosing depressive disorders listed in the Diagnostic and Statistical Manual of Mental Disorders (4th ed.; American Psychiatric Association, 1994) [76]. This measure includes symptoms such as sadness, hopelessness, anhedonia, and thoughts of suicide. The BDI-II has demonstrated good internal consistency, validity, and cultural equivalence [61, 62, 63, 64]. A four-point rating scale ranged from 0-3 for each item. Researchers amended each time from 1 week to 2 weeks to correlate with the DSM-5 for diagnostic conceptualization to screen for major depressive disorder. While the total score provides a general indication of the severity of the experience of depressive symptoms, clinical cutoffs have presented with category descriptors for a qualitative understanding of distress (Minimal [0-13], Mild [14-19], Moderate [20-28], Severe [29-63]).

## Beck Anxiety Inventory (BAI)

The Beck Anxiety Inventory (Beck et al, 1988a; Beck et al, 1988b) is a 21-item self-report instrument developed to assess the severity of anxiety [66,67]. The measure includes both somatic aspects of anxiety, such as feeling hot, hands trembling, shaky, and sweating, and subjective and panic-related elements of anxiety, such as inability to relax, fear of the worst happening, terror, and fear of losing control. While initially developed for those 17 or older, it has demonstrated acceptable psychometric properties in youth as young as 14 [77]. The BAI determined evidence of strong internal consistency and robust convergent validity in a meta-analysis conducted by Bardhoski, Duncan, and Erford [65]. As noted above, examinations of the use of the BAI with Latinx and African American/Black respondents suggest it is an appropriate screener for anxiety [68,69]. Similar to the BDI-II, the BAI's scores can be described based on clinical severity (Minimal [0-7], Mild [8-15], Moderate [16-25], Severe [26-63]).

## Difficulties in Emotion Regulation Scale (DERS)

Considering studies strongly suggesting that ER may be a critical transdiagnostic factor in assessing and treating distress, researchers developed the Difficulties in Emotion Regulation Scale to measure various aspects of ER [35]. The DERS is a 36-item self-report measure assessing ER in six subscale areas: nonacceptance of emotional responses, difficulty engaging in goal-directed behaviors, impulsivity,

lack of emotional awareness, limited access to strategies for emotional regulation, and a lack of emotional clarity and understanding. Respondents rate each prompt on a Likert scale ranging from 1 (meaning rarely, 0-10%) to 5 (almost always, 91-100%). Total scores provide a global understanding of ER, while subscale scores provide more specific information about ER deficits. No universal cutoff scores for the total DERS or the various subscales exist, especially in adolescence [79,75].

## Analyses

Researchers gathered basic demographics and cross-tabulated them to examine associations between variables. As the current study utilized various symptom ratings scales, often with outliers and skewed distributions, researchers used Kendall's tau to investigate correlations between the measures, as some researchers have recommended [80, 81]. Researchers calculated Chi-square statistics for categorical variables in addition to SPSS (IBM® SPSS® Statistics Premium 28, Armonk, NY, USA) used for analyses.

## Results

### Demographics

The current sample consisted of seventy-two youth, ages 13-21, referred between late 2017 and 2023 to a nonprofit organization that serves youth who have experienced CSE in an urban county in the southwestern US. The average age at the time of referral was 16.01 (SD=1.597), ranging from 13 to 21 years old. Participants self-reported by race as non-Hispanic Black (hereafter, Black), Hispanic or Latino, and non-Hispanic White (hereafter, White). The sample included 8.3% White, 31.9% Black, 54.2% Latino, with 5.6% identifying as mixed. Referrals by the juvenile justice system (e.g, diversionary or aftercare, 88.9%) and 86.6% (n=67) experienced previous involvement with child protection services, encompassing a large majority of youth within the study. The sample endorsed high rates of substance use or abuse (n=71, 90.1%), histories of self-harming or suicidal behaviors (n=71, 69%), and previous psychiatric hospitalization (n=72, 62.5%). On average, participating youth experienced over 9 ACEs (n=72, M=9.4, SD=3.793), with 84.7% (n=61) experiencing six or more ACEs and less than 10% (n=7) reporting exposure to three ACEs or less.

With regards to depressive symptomology, youth responses averaged over 17 on the BDI (n=70, M=17.43, SD=11.48). Youth scores on the BAI averaged 19.65 (n=49, SD=13.585). Finally, the results of the DERS also suggested a significant degree of dysregulation (see Table 2).

In exploring the clinical severity of depressive symptomology, just under 23% of youth reported a minimal number of symptoms, 38.6% mild symptoms, 24.6% moderate

**Table 1:** Demographics

	N	Average	Std. Dev	Range
Age at Referral	72	16.01	1.597	13-21
	<b>N</b>	<b>Percentage</b>		
Ethnicity				
Caucasian/White	6	8.3		
African American/ Black	23	31.9		
Hispanic	39	54.2		
Mixed	4	5.6		
Referrals				
Post-Custody	37	51.4		
Diversinary	8	11.1		
CPS	5	6.9		
Other	22	30.6		
CPS Involvement				
None	9	13.4		
Investigation	49	73.1		
Resource Placement	9	12.5		
Not Reported	5	6.9		
Hx S/H or Suicidal Behavior	49	69		
Hx Psychiatric Hospitalization	45	62.3		
Hx Substance Use/ Misuse	64	90.1		
ACE Exposure				
Three or Less	7	9.7		
4+	65	90.3		
6+	61	84.7		

symptoms, and 14.3% severe symptoms (see Table 3). As such, 38.6% of the sample endorsed clinically significant symptoms of depression. Similarly, 61.2% of youth reported moderate to severe anxiety symptoms.

### Relationship Between Variables

General relationships between the clinical measures and endorsement of exposure to ACEs were examined using Kendall's tau (see Table 4) due to the nonparametric nature of the sample. Moreover, although other researchers have sometimes used a Pearson or Spearman correlation with similar populations, we have followed Arndt et al.'s (1999) recommendations [80]. From their perspective, there tends to be more significant variability in responses to symptom

scales, especially when including more symptomatic respondents. As such, the conservative nature of Kendall's tau helps compensate for these concerns. ACE exposure as a continuous variable did not correlate with difficulties in emotion regulation nor with symptoms of depression or anxiety ( $r_T=.018$ ,  $p<.834$ ,  $r_T=.034$ ,  $p<.687$  and  $r_T=.146$ ,  $p<.153$  respectively). However, as hypothesized based on findings in the literature, the DERS Total score correlated with both depression and anxiety ( $r_T=.205$ ,  $p<.014$ ;  $r_T=.289$ ,  $p<.004$ ).

In light of Perez et al.'s [75] observations on the sensitivity and specificity of using a Strategies subscale, various relationships were explored using a cutoff of 21.5 on this scale. We selected this cut score versus the cut score 22.5 found in Hatkevich, Penner & Sharp [81], as both studies focused on inpatient samples while the current sample is outpatient. Utilizing Kendall's tau, performance on the Strategies subscale strongly correlated with depressive ( $n=70$ ,  $r_T=.253$ ,  $p=.003$ ) and anxious ( $n=72$ ,  $r_T=.290$ ,  $p<.004$ ) symptomatology. Researchers determined no significant findings related to total ACE exposure ( $n=72$ ,  $r_T=-.026$ ,  $p<.762$ ). Researchers explored additional relationships using the Chi-square statistic related to those scoring 21 and under and those scoring above 22 on the Strategies subscale. The relationships between substance use [ $X^2(1, N = 72) = 45.761$ ,  $p <.001$ ], self-harm or suicidal behaviors [ $X^2(1, N = 71) =$

**Table 2:** Self-Reported Psychological Functioning

	N	Average	Std. Dev
ACE Exposure	72	9.4	3.793
BDI-II	70	17.43	11.457
BAI	49	19.65	13.585
DERS			
DERS Overall	72	94.99	25.443
NONACCEPTANCE	72	13.35	6.619
GOALS	72	15.74	5.384
IMPULSE	72	16.03	6.316
AWARENESS	72	17.26	6.091
STRATEGIES	72	20.26	7.666
CLARITY	72	12.28	4.526

**Table 3:** Anxiety and Depression

	BDI-II	(n=70)	BAI	(n=49)
	n	%	n	%
Minimal	16	22.9	10	20.4
Mild	27	38.6	9	18.4
Moderate	17	24.3	12	24.5
Severe	10	14.3	18	36.7

**Table 4:** Correlations between clinical measures

		ACE-Q Total	BDI	BAI	DERS
ACE-Q	Kendall's tau	1	0.034	0.146	0.018
	Sig. (2-tailed)	.	0.687	0.153	0.834
	N	72	70	49	72
BDI	Kendall's tau	0.034	1	.239*	.205*
	Sig. (2-tailed)	0.687	.	0.02	0.014
	N	70	70	48	70
BAI	Kendall's tau	0.146	.239*	1	.289**
	Sig. (2-tailed)	0.153	0.02	.	0.004
	N	49	48	49	49
DERS	Kendall's tau	0.018	.205*	.289**	1
	Sig. (2-tailed)	0.834	0.014	0.004	.
	N	72	70	49	72

\*Significant at the .05 level

\*\* Significant at the .01 level

10.268,  $p < .001$ ] and a history of psychiatric hospitalization [ $X^2(1, N = 72) = 4.500, p = .034$ ] were significant. Similarly, there were strong statistically significant relationships between individuals having demonstrated marked deficits on the Strategies subscale and those who experienced four or more ACEs [ $X^2(1, N = 72) = 46.722, p < .001$ ] and those who experienced six or more ACEs [ $X^2(1, N = 72) = 34.722, p < .001$ ]. Experience of depressive and anxious symptomatology was converted into categorical variables by subgrouping moderate to severe symptomatology in one group, suggestive of a clinically significant group, with mild and minimal in the other. There were no significant relationships between elevated scores on the Strategies scale and significant depressive [ $X^2(1, N = 70) = 3.657, p = .056$ ] or anxious [ $X^2(1, N = 49) = 2.469, p = .116$ ] symptomatology.

## Discussion

Consistent with the extant literature, as sparse as it is, youth who experienced commercial sexual exploitation surveyed in the current study report far more system involvement, ACE exposure, significant psychological symptomatology, dysregulation, and behavioral correlates of distress (e.g, substance use, self-harm, or suicidal behaviors) than the general population. This data was captured both by self-report and through a review of records provided, lending some degree of corroboration. Compared to Gibbs et al. [8], wherein 25% of their sample experienced juvenile justice involvement and 38% had CPS involvement, our sample evidenced significantly more system involvement (at least 62.5% and 85.6%, respectively). Of course, it is essential to note that the organization's mission is to serve youth with juvenile justice involvement to reduce future victimization and recidivism and provide therapeutic, clinical case

management, and educational/occupational services (e.g, advocacy and internships). Only about 20% of the sample *did not have* CPS involvement, with some of this subset simply not disclosing. These statistics align with previous findings (reviewed by Kim et al, 2023), emphasizing the importance of directing efforts toward detection, identification, and related intervention, if not prevention, for youth with system involvement [11]. Also consistent with Kim et al. 's review, most of the sample comprised youth of color.

In examining ACE exposure and self-reported markers of distress (e.g, self-harm or suicidal behaviors, psychiatric hospitalization, and substance use), as would be expected, the current sample of trafficked and exploited youth endorsed much more significant levels than the general population. Recent CDC statistics suggest that approximately 17% of the US population have experienced four or more ACEs [83], while almost 85% of participants in the current study endorsed six or more ACEs. In light of research suggesting that those who experienced six or more ACEs die an average of 20 years earlier than those with less exposure, these numbers are concerning [84]. Relatedly, substance use, self-harm, and suicidal behavior are associated with significant ACE exposure, which was evident in this sample as well [28,39]. Moreover, these psychological manifestations of distress, including psychiatric hospitalization, were far higher than expected based on prevalence in the general population [85, 86, 87, 39]. Surprisingly, ACE exposure as a continuous variable did not correlate with emotional dysregulation or anxious or depressive symptomatology. In light of the markedly high endorsement of ACE exposure in conjunction with high symptom endorsement (e.g, a lack of variability), however, it is surmised that the nature of the sample did not reveal correlations that may have emerged

in comparison to a control group. As noted above, to our knowledge, this is the first study that examined the utility of the DERS in understanding the experiences of commercially sexually exploited and trafficked youth. While no firmly set cutoff scores indicate clinically significant dysregulation, comparing mean scores from the current population with the original norming sample demonstrates higher overall scores [Table 5].

**Table 5:** DERS Means and standard deviations comparison

Scale	Validation Sample (n=260 females)		Current Sample (n= 72 females)	
	Mean	SD	Mean	SD
DERS Overall	77.99	20.72	94.99	25.443
NONACCEPT	11.65	4.72	13.35	6.619
GOALS	14.41	4.95	15.74	5.384
IMPULSE	10.82	4.41	16.03	6.316
AWARENESS	14.34	4.6	17.26	6.091
STRATEGIES	16.16	6.19	20.26	7.666
CLARITY	10.61	3.8	12.28	4.526

Results served to support a link between emotion regulation deficits as measured by the DERS and behavioral dysregulation in various areas (e.g, high rates of justice involvement, self-harming and suicidal behaviors, substance use, and psychiatric hospitalization). Though the current study is correlational and cannot confirm that deficits in ER lead to disruptions in these areas of functioning or that deficits in ER did not exist before trafficking or exploitation, results suggest that emotion regulation may be an integral component of understanding and treating the clinical presentations of these youth. As was expected, deficits in ER correlated with a more significant number of self-reported depressive and anxious symptoms measured by the BDI and BAI, respectively. In addition to examining general correlations, our sample revealed additional vital correlations in line with Perez et al.'s [75] observations related to the Strategies subscale. Scores above 21 correlated with exposure to 4 or more and six or more ACEs, substance use, psychiatric hospitalization, and histories of self-harm and suicidal behaviors. Ruan, Chen, and Yan [88] found that difficulties captured by the Strategies subscale were associated with experiences of anxiety and depression in adolescents and suggested these symptoms are the result of deficits in ER. Results appear to corroborate observations by Safdar and Khan [89], who noted impaired coping and disengagement strategies such as emotional numbing, cognitive interference, and escape to be prominent in this population, complicating engagement in treatment. Based on these results, this research suggests that not only is the DERS helpful in assessing and understanding

the experiences of exploited and trafficked youth at intake, but that elevated scores on the Strategies subscale provide additional information about specific deficits that can be targeted by intervention and reassessed periodically to measure progress.

Consistent with our results, Levine [90] noted the significant mental health impact of commercial sexual exploitation and trafficking, including anxiety, depression, traumatic symptomatology, and substance use. He suggested that in light of the effect. At the same time, trauma-based cognitive behavioral therapies are often the default intervention of choice, and they are likely insufficient to address the impact and clinical need. While symptom reduction has been a primary therapeutic focus, early studies have suggested that functional impairment continues after receiving symptom-specific (e.g, mood and anxiety) interventions [41, 42, 43]. Given a clear demonstration of significant global and specific deficits in ER in the current study, there is a strong belief that interventions designed to address issues of ER would greatly benefit youth who have experienced CSE. More specifically, the program serving current participants provides interventions derived primarily from Dialectical Behavior Therapy and complemented through Attachment, Regulation, and Competency (ARC) and other therapies [53, 54, 91]. Such interventions can empower previously abused and exploited youth while providing them with the regulatory strategies to enable them to not only find symptom relief but persist, reclaim their narratives, and build a life worth living. Of course, future research is necessary to determine whether the current results are generalizable to the larger population of trafficked and exploited youth. Theoretically, deficits in ER appear to be a beneficial transdiagnostic treatment focus, but additional longitudinal studies are necessary to determine if theory translates into practice.

### Limitations

There are some limitations in the current study. Notably, the first limitation is the small sample size. By extension, the sample originated from a convenience sample of youth referred primarily from the juvenile justice system in a specific catchment in the southwestern US. While the referral source may naturally overrepresent statistics related to juvenile justice involvement, it must also be acknowledged that many youth with histories of exploitation and trafficking are justice-involved and that prevention, detection, and intervention initiatives should be utilized within the justice and child protection systems [15, 11]. Though some historical data was either corroborated or reported through official documentation, much of the data gathered relied upon self-report. By extension, the measures administered did not include validity scales or measures of social desirability. However, researchers have suspected that



youth experience motivations that lead them to under-report their experiences in this context [13, 33]. Additionally, the current study did not include a comparison or control group.

## Future Recommendations

Future studies would benefit from a larger, more diverse sample. While the current study explored the prevalence of ACE exposure in a sample of commercially sexually exploited youth, it did not control for race and the impact of ACEs experienced before trafficking experiences on later measures of mental health functioning. As noted by Kim et al. [11], referencing the work of Crenshaw [92], the impact of the intersection of multiple forms of marginalization and abuse must be considered and understood by researchers and mental health professionals. Similarly, these factors impact psychological functioning (both behavioral manifestations of distress and endorsed symptomology). Arguably, however, although controlling for such influences may impart a more nuanced understanding of the impact of commercial sexual exploitation, the reality of the situation is that for a majority of our trafficked youth, this intersectionality of marginalization is part and parcel of their experience. Also, the current study focused on adverse childhood experiences rather than a combination of ACEs and protective and compensatory childhood experiences [93]. The current study is cross-sectional, assessing the utility of specific self-report measures at intake and attempting to ascertain an overarching clinical understanding of youth who have experienced CSE. Future research would help clarify if these measures are sensitive and specific enough to assess meaningful change related to intervention, thereby enhancing treatment and program development. Additionally, a more fine-grained understanding of how specific early experiences (ACEs and PACEs) may cluster together to impact clinical presentation in youth experiencing CSE would be helpful [94]. Such studies allow greater exploration of the role of protective or resiliency factors and may help tailor intervention more specifically to the individual and inform the prevention.

## Conclusion

Based on the current study, we believe there is a robust preliminary rationale for utilizing the ACE-Q Teen Self-Report, the BDI, the BAI, and the DERS to assess the experiences of youth experiencing CSE. While this is the first study exploring the use of DERS in this population, there is a strong indication, based on the theoretical literature and our results, that ER is a meaningful aspect that needs further assessment by researchers within psychology. Utilizing well-established measures with appropriate reliability, validity, and cultural sensitivity, as well as use across age groups, improves treatment for the individual and enhances program development, for which there is a significant need

in this group. Moreover, results suggest that a shift toward improving emotion regulation may be more appropriate than more traditional symptom reduction approaches.

## Acknowledgements

POETIC extends its sincere gratitude to the extraordinary female youth who have engaged with the program, the copious donors, and the team at POETIC who have made this research possible.

## Conflicts of Interest

Dr. Kirsten Byrnes, Dr. Meghan Axman, and Ann Thiessen declare no conflicts of interest in this study.

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