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Childhood Sexual Abuse in Incarcerated Females: Complex Trauma Symptomatology and the Personality Assessment Inventory

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Abstract
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CHILDHOOD SEXUAL ABUSE IN INCARCERATED FEMALES:
COMPLEX TRAUMA SYMPTOMATOLOGY AND THE PERSONALITY ASSESSMENT INVENTORY

A DISSERTATION
SUBMITTED TO THE FACULTY
OF
SCHOOL OF PROFESSIONAL PSYCHOLOGY
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BY
AMY JENKS

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF
DOCTOR OF PSYCHOLOGY

JULY 23, 2010

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ABSTRACT

There is a dearth of literature examining how childhood sexual abuse (CSA) influences the Personality Assessment Inventory (PAI; Morey, 1991) profiles of incarcerated women. This study examines the relationship between CSA, substance abuse, and Complex Posttraumatic Stress Disorder (CPTSD) symptomatology on the PAI in an incarcerated female sample. It was hypothesized that women with CSA would have higher overall levels of psychopathology as well as higher levels of symptoms consistent with CPTSD and substance dependence compared to women without histories of CSA. A sample of 78 incarcerated women who had been administered the PAI upon intake were recruited from a northwestern multi-custody state prison. Women with CSA (n = 42) were compared to women without histories of CSA (n= 36) on the PAI and various mental health and substance abuse characteristics. Women in the CSA group were found to have higher levels of overall psychopathology, higher levels of symptoms associated with CPTSD, and increased prevalence of PTSD symptoms. Women with CSA also reported greater severity of drug use and more frequent use of cannabis, stimulants, and heroin. A medium, positive correlation was found between PTSD symptom severity and drug use severity. Women with CSA were also found to have significantly higher rates of mental health care utilization prior to prison in addition to higher rates of mental health care utilization in prison. Further, women in the CSA group were also found to have had initiated substance use at a younger age and to have had higher rates of maternal substance abuse during their childhood. Implications of these findings and future directions for research are discussed.

Keywords/subject terms: incarcerated females, childhood sexual abuse, Complex Posttraumatic Stress Disorder, Disorders of Extreme Stress, Not Otherwise Specified (DESNOS), Posttraumatic Stress Disorder, Personality Assessment Inventory, substance abuse
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INTRODUCTION

According to Bureau of Justice Statistics (Sabol & Couture, 2008) there are approximately 115,000 women currently incarcerated in the United States (jail, state prison and federal prison). Over the last 25 years the rate of female incarceration has climbed dramatically (Frost, Greene, & Pranis, 2006). In fact, female incarceration rates have increased by a remarkable 757% between 1977 and 2004. These trends appear to be closely related to the increase in females convicted of drug-related offenses. Due to the increase in drug-related convictions, approximately 60% of incarcerated women have substance use disorders (SUDS; Teplin, Abram, & McClelland, 1996). Likewise, experiences of childhood abuse and neglect are extraordinarily common among incarcerated women (Cook, Smith, Tusher, & Raiford, 2005; Lake, 1993; Zlotnick, 1997). In particular, a large percentage of incarcerated women have experienced abuse that begins at an early age, is unremitting, and occurs within an interpersonal relationship (Zlotnick, 1997, 2003).

Research has demonstrated that early, chronic, interpersonal victimization, particularly in the context of childhood sexual abuse (CSA), puts adults at a high risk of developing more severe and complex symptoms that go beyond Post Traumatic Stress Disorder (PTSD): affect dysregulation, impulsivity, dissociation, somatization, impaired identity, alterations in perception of the perpetrator, negative relationships, and alterations in systems of meaning (van der Kolk, Roth, Pelcovitz, Sunday, & Spinazzola, 2005). These sequelae of symptoms, known as Disorders of Extreme Stress, Not
Otherwise Specified (DESNOS), or Complex Posttraumatic Stress Disorder (CPTSD)\(^1\), are thought to be the developmental outcomes of insecure attachment between children and their caregivers due to abuse (Briere & Rickards, 2007; Herman, 1992; Pearlman, 1997).

Research findings show that childhood trauma, particularly CSA, increases the likelihood of co-morbid substance use disorders (Najavits, Weiss, & Shaw, 1997). Although less research has examined the relationship between CPTSD and SUDS, several studies have found that women with CPTSD are at a high risk of SUDS (Cohen & Hien, 2006; Zlotnick, 1997). This relationship remains true for incarcerated female samples (Zlotnick, 1997). Given that incarcerated females have high rates of CSA, substance abuse, PTSD, and CPTSD symptoms, the mental health burden on female inmates is high. In response to high levels of mental health problems among female inmates, prisons are increasingly under pressure to provide appropriate mental health treatment.

The Personality Assessment Inventory (PAI; Morey, 1991) is increasingly being used in correctional settings to identify inmates who may benefit from mental health services (Edens & Ruiz, 2008). However, no research exists to show how symptoms associated with early, severe CSA influence the PAI profiles of incarcerated women. As a result, we must rely on research that has examined PAI profiles of non-incarcerated individuals with Posttraumatic Stress Disorder (PTSD), Borderline Personality Disorder (BPD) and childhood abuse to inform our hypotheses about the characteristic profiles of

\(^1\) The terms Disorders of Extreme Stress, Not Otherwise Specified (DESNOS) and Complex Posttraumatic Stress Disorder (CPTSD) have been used interchangeably in the literature.
incarcerated females with CSA histories. Many of these studies have limitations that preclude their generalizability to an incarcerated female sample; therefore, more research is needed to clarify how experiences of CSA in female inmate populations influence PAI profiles. This study seeks to address this gap in research by investigating how early, severe childhood sexual abuse influences the PAI profiles of incarcerated females. More specifically, this study will compare between-group differences on complex trauma symptomatology, substance abuse severity, and overall levels of psychopathology on the PAI. Furthermore, in order to provide a broader picture of this population, this study will provide descriptive information about female inmate’s substance abuse and mental health histories.
Trends in Female Incarceration

In 1977, the United States incarcerated 11,212 women; by 2004, the number of women incarcerated swelled to 96,125 (Frost et al., 2006). While women make up only 7% of the total prison population, their rates of incarceration have increased faster than men’s. A recent report showed that the total number of women under state or federal jurisdiction rose by 2.5% percent between 2006 and 2007; whereas, the total number of men increased by 1.5% (Sabol & Couture, 2008). The dramatic increase in female incarceration rates appears to be linked to the rise in drug-related convictions (Frost et al., 2006).

Incarcerated Women and Substance Abuse

Over the last three decades the number of women incarcerated for drug-related crimes has risen substantially (Greenfeld & Snell, 1999). In 1986, 1 out of every 8 convicted females was serving time for a drug offense; by 1999, the rate had increased to 1 woman out of every 3. Due to the increase in drug-related convictions, a sizeable number of incarcerated women have problems related to substance abuse. Teplin et al. (1996) conducted a study on the prevalence of psychiatric disorders among pre-trial detainees. Using the National Institute of Mental Health Diagnostic Interview Schedule Version III-R (DIS-III-R), they found that 60% of the sample had any substance abuse or dependence, 23.9% had alcohol abuse or dependence, and 52.4% had drug abuse or dependence within the last six months. In a more recent study, Farkas and Hrouda (2007) found that 79% of female jail detainees met DSM-IV criteria for a current substance dependence disorder. Compared to the general population of women,
incarcerated women are at least seven times more likely to have drug dependence and six times more likely to have alcohol dependence (Teplin et al., 1996). Given this research, it can be concluded that the majority of incarcerated women have experienced some type of substance dependence or abuse. While high levels of substance abuse/dependence are alarming, what is equally alarming is the frequency with which women in prison report histories of childhood abuse and neglect.

*Prevalence of Childhood Abuse Among Incarcerated Females*

Childhood abuse and neglect are exceedingly common among incarcerated women (Greenfeld & Snell, 1999). While rates vary due to the lack of uniformity in the definition of “abuse,” research has shown that the majority of incarcerated women have experienced some type of abuse during childhood (Greenfeld & Snell, 1999; Zlotnick, 1997). Typically, incarcerated women experience abuse that occurs early in life, is chronic, and occurs within the context of an interpersonal relationship with a caregiver or trusted other (Briere, 1994; Zlotnick 1997). To illustrate, Zlotnick found that 65.9% of female inmates reported sexual or physical abuse before age thirteen (N= 85). Of these women, 40% reported childhood sexual abuse and 55% reported childhood physical abuse. National statistics show that the majority of abused children are abused by their parents; in fact, 82.4% of children involved with Child Protective Services (CPS) have been abused by a parent (US Department of Health and Human Services, 2006). Based on research findings, childhood sexual abuse by a trusted person such as a close relative or acquaintance predicts more severe psychopathology (Molnar, Butka, & Kessler, 2001; Kendall-Tackett, Williams, & Finkelhor, 1993). Indeed, research by Molnar et al. has shown that women who were raped as children by a close relative were 2.1 to 6.5 times
more likely to develop PTSD as an adult compared to women who were raped by strangers. Over the last eighteen years a growing body of literature has documented the long-term developmental sequelae of CSA that includes PTSD, as well as CPTSD and substance abuse.

Posttraumatic Stress Disorder

The most widely recognized long-term outcome of CSA is PTSD (Briere & Elliot, 1994). The DSM-IV-TR (American Psychiatric Association, 2000) diagnosis of PTSD requires the occurrence of a traumatic event in which the person experienced, witnessed, or was confronted with actual or threatened death or serious injury to the self or others. The symptoms of PTSD include persistently re-experiencing the traumatic event (e.g. flashbacks, dreams), persistent avoidance of things related to the trauma or a numbing of responsiveness (e.g. avoidance of thoughts related to trauma, restricted range of affect), and persistent symptoms of increased arousal (e.g. hypervigilance, anger).

As noted by Briere (1994), symptoms of PTSD related to CSA commonly persist into adulthood. In a noteworthy study, Molnar et al. (2001) examined the data from the National Comorbidity Study (1990-1992), which included a large nationally representative sample of 8,098 men and women. Molner et al. found high rates of PTSD in individuals who reported CSA with 39.1% of females and 29.1% of males developing PTSD secondary to CSA. Recent research has confirmed these findings; however, investigators are starting to recognize that PTSD rarely occurs alone in survivors of childhood abuse and neglect (e.g. van der Kolk et al., 2005). In addition to PTSD, many individuals with histories of CSA develop symptoms often associated with Borderline Personality Disorder (BPD) such as dissociation, problems in self-regulation,
unmodulated anger, interpersonal difficulties, impulse control problems (e.g. substance abuse, sex), identity problems, and self-harm behaviors (e.g. cutting, burning; Briere & Spinazzola, 2005; Murray, 1993; van der Kolk, et al., 2005).

**Borderline Personality Disorder**

The diagnosis of BPD is frequently used to describe the long-standing symptoms and characterological problems associated with CSA (Herman, 1992). The DSM-IV-TR describes BPD as a personality disorder characterized by a pervasive pattern of instability of self-image, affect, and interpersonal relationships. The diagnosis of BPD is marked by fears of abandonment, chaotic relationships, identity disturbance, impulsivity, suicidal behavior, affective instability, feelings of emptiness, uncontrolled anger and stress-related paranoia or dissociation (American Psychiatric Association, 2000). A large number of studies have found that individuals diagnosed with BPD have high rates of CSA (Murray, 1993; Herman, 1989, Zanarini et al., 1997). For example, Zanarini et al. (1997) found that inpatients with BPD were significantly more likely to have histories of CSA (CSA= 61.5%) than patients with other types of personality disorders (CSA= 32.1%). Compared to patients without BPD, patients with BPD were significantly more likely to have been sexually abused.

Due to the significant relationship between childhood trauma and BPD, investigators have questioned whether symptoms associated with BPD are in fact trauma-related disturbances associated with early developmental trauma. Questions have also been raised as to the adequacy of the PTSD diagnosis to describe and capture the complex constellation of symptoms associated with early trauma.
Complex Posttraumatic Stress Disorder/DESNOS

In 1990 several investigators collaborated with the DSM-IV Posttraumatic Stress Disorder Field Trial to develop a new diagnostic category that more fully captured the long-term sequelae of childhood trauma. This new category was based on existing research on childhood trauma, female victims of domestic violence, and concentration camp survivors (see Table 1; Roth, Newman, Pelcovitz, van der Kolk, & Mandel, 1997). Between 1990 and 1991 the workgroup conducted a field trial with 400 treatment-seeking individuals with histories of trauma. One goal of the trial was to determine if individuals with histories of interpersonal childhood trauma tended to meet criteria for PTSD, or, if this group’s symptoms were better captured by the new symptom constellation called Disorders of Extreme Stress Not Otherwise Specified (DESNOS), also known as Complex Posttraumatic Stress Disorder (CPTSD; van der Kolk et al., 2005). The proposed criteria for DESNOS are listed in Table 1.

The findings from this study provided evidence that early interpersonal traumatization is related to the development of DESNOS symptoms, which extend beyond PTSD symptomatology (van der Kolk et al., 2005). Early onset trauma, compared to late onset trauma (age 14 and up), was related to a higher lifetime prevalence of PTSD and DESNOS. For those who had experienced early onset trauma, the rates of co-morbid PTSD and DESNOS were significantly higher (61%) than PTSD alone (16%). In fact, the earlier the trauma, the more likely participants were to experience DESNOS symptoms in addition to PTSD. Furthermore, results from the study showed that the longer the duration of childhood trauma, the more likely an individual was to suffer from
both PTSD and DESNOS. These findings are especially pertinent to incarcerated women—a group with exceedingly high rates of early, chronic childhood abuse.

Table 1

*Proposed Symptom Category and Diagnostic Criteria for DESNOS*

| I. Alterations in Regulation of Affect and Impulses (A and one of B-F required) |
|---------------------------------|---------------------------------|
| A. Affect Regulation             | D. Suicidal Preoccupation       |
| B. Modulation of Anger          | E. Modulation of Sexual Involvement |
| C. Self-Destructive             | F. Excessive Risk Taking        |

<table>
<thead>
<tr>
<th>II. Alterations in Attention or Consciousness (A or B required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Amnesia</td>
</tr>
<tr>
<td>B. Transient Dissociative Episodes and Depersonalization</td>
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<tr>
<th>III. Alterations in Self-Perception</th>
</tr>
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<tbody>
<tr>
<td>A. Ineffectiveness</td>
</tr>
<tr>
<td>B. Permanent Damage</td>
</tr>
<tr>
<td>C. Guilt and Responsibility</td>
</tr>
<tr>
<td>D. Shame</td>
</tr>
<tr>
<td>E. Nobody Can Understand</td>
</tr>
<tr>
<td>F. Minimizing</td>
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<tr>
<th>IV. Alterations in Perception of the Perpetrator (Not required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Adopting Distorted Beliefs</td>
</tr>
<tr>
<td>B. Idealization of the Perpetrator</td>
</tr>
<tr>
<td>C. Preoccupation with Hurting Perpetrator</td>
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<tr>
<th>V. Alterations in Relationship to Others (One of A-C required)</th>
</tr>
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<tbody>
<tr>
<td>A. Inability to Trust</td>
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<tr>
<td>B. Revictimization</td>
</tr>
<tr>
<td>C. Victimizing Others</td>
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<tr>
<th>VI. Somatization (Two of A-E required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Digestive System</td>
</tr>
<tr>
<td>B. Chronic Pain</td>
</tr>
<tr>
<td>C. Cardiopulmonary Symptoms</td>
</tr>
<tr>
<td>D. Conversion Symptoms</td>
</tr>
<tr>
<td>E. Sexual Symptoms</td>
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<tr>
<th>VII. Alterations In Systems of Meaning (One of A-B required)</th>
</tr>
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<tbody>
<tr>
<td>A. Despair and Helplessness</td>
</tr>
<tr>
<td>B. Loss of Previously Sustaining Beliefs</td>
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Roth, Newman, Pelcovitz, van der Kolk & Mandel, 1997
Childhood Sexual Abuse and Complex PTSD

Since the initial field trial, additional research has examined the associations between types of abuse, age when the abuse first occurred, and the duration of the abuse for both men and women in the original sample. Roth et al. (1997) concluded that, compared to physical abuse alone, women who had been sexually abused were at greater risk for CPTSD; however, those with the greatest risk of CPTSD were women who had been both sexually and physically abused. Fifty three percent of women with CSA were diagnosed with both CPTSD and PTSD, whereas, 74% of women with both CSA and physical abuse had both of these diagnoses. In fact, women who had experienced both types of abuse were 14.5 more likely to have a diagnosis of CPTSD. However, the authors of this study suggested that sexual abuse has the best specificity for CPTSD. In other words, CSA alone is the strongest predictor of CPTSD. The authors provided several likely reasons for this: increased shame and secrecy with sexual abuse compared to other types of abuse, greater intrusiveness and boundary violations, the potential use of dissociation to cope with sexual abuse, and the ways that sexual abuse changes how women view their own sexuality (Lebowitz & Roth, 1994). Due to the high rates of CSA in incarcerated women it is likely that they are at higher risk of developing both PTSD and CPTSD.

Despite the evidence that CPTSD is a distinct constellation of symptoms related to early childhood abuse, it remains unclear whether CPTSD is a subtype of PTSD or whether it is a marker of severity. Kilpatrick (2005) and others have argued that more rigorous research is needed to determine if CPTSD has specificity and incremental validity. Kilpatrick (2005) has argued that the PTSD Field Trial should have included
other Axis I disorders besides PTSD in order to determine if the symptoms attributed to CPTSD are specific to this diagnosis and are not related to other diagnoses such as depression. Until more rigorous research has been conducted, the DSM-IV committee has relegated the symptoms of CPTSD under the “associated features of trauma” of PTSD (Roth et. al, 1997).

The Etiology of Complex PTSD

Since the initial development of the CPTSD diagnosis, our understanding of its etiology has considerably grown. Today, there are multiple theories of CPTSD that all have a different emphasis and perspective (e.g., Pearlman’s Constructivist Self Development Theory [Pearlman 1997], Briere’s Self-Trauma Theory [Briere, 2002], Siegel’s Interpersonal Neurobiology [Siegel, 2001]). Despite these differences, all theorists attribute CPTSD symptomatology to disruptions in caregiver-child attachment that occurs through abuse. A large body of literature supports Bowlby’s (1988) initial findings that disruptions in attachment can lead to the long-term problems, many of which are symptoms of CPTSD: affect dysregulation, identity disturbances, relational problems, dissociation, somatization, alternations in systems of meaning, and changes in the perception of the perpetrator.

Affect Regulation

Cicchetti (1991) defined affect regulation as the ability of an individual to control, modulate, and modify their emotions in arousing situations. Children learn affect regulation in the context of a secure attachment. Research has shown that well-attuned and sensitive caregivers guide infants in the development of affect regulation through activities such as labeling and interpreting emotions, soothing, and role modeling mood
regulation (Malatesta & Haviland, 1982). Children who are securely attached can depend on caregivers to provide them with safety when they encounter minor obstacles; for example, a secure child can depend on his or her mother to provide comfort and reassurance when the child is scared. Due to this dependability and security, the child can progressively internalize coping skills through trial and error learning. Over time, the child is able to rely less on caregivers for assistance and rely more on their own burgeoning ability to self-regulate. However, children who are abused can fail to develop internal coping skills due to their caregiver’s lack of emotional attunement and failure to provide a safe and secure environment. When children with insecure attachment are confronted with emotional distress they do not possess the ability to modulate these emotions, and as a consequence, often resort to avoidance strategies such as dissociation (Briere, 2002).

Unfortunately, difficulties with affect regulation often persist into adulthood. As adults, these individuals tend to have problems with emotional instability, uncontrolled anger, self-destructiveness, suicidal behavior and sexual recklessness (van der Kolk et al., 1996). Like children with poor affect regulation, adults with these impairments may try to reduce their distress through behaviors that numb, distract or soothe; these behaviors may include dissociation, self-injurious behaviors, compulsive sexual behavior, binging and purging, substance use, and suicidality (Briere, 2002).

Research has shown that problems related to affect dysregulation are common in incarcerated samples. For example, in a study by Black et al. (2007) approximately 30% of inmates were diagnosed with Borderline Personality Disorder- a disorder characterized by affect dysregulation. The authors found that the most common symptoms reported by
inmates were inappropriate anger, unstable mood, and suicidal thoughts/behaviors. In particular, affect dysregulation tends to be a significant problem for incarcerated women with histories of childhood abuse. Zlonick (1997) found that women with histories of childhood abuse tended to score significantly higher on measures of affect dysregulation than women without reported histories of abuse. In addition to affect dysregulation, child abuse can impair the development of a child’s sense of self.

Identity Disturbance and Self-Perception

Self Psychologists purport that sensitive care-giving allows the child’s sense of self to emerge, differentiate and develop (Pearlman, 1997). When caregivers are abusive and insensitive, identity development may be disrupted and children may have multiple impairments related to their self-perception (Briere & Rickards, 2007). Identity disturbances may cause individuals to have impairments in self-awareness and self-monitoring (Pearlman, 1997). Individuals may not be aware of their own feelings, thoughts, needs, goals and behaviors. This lack of awareness may also cause feelings of “emptiness”, confusion over their identity, suggestibility, opposing thoughts and feelings, and problems with setting goals for their future (Linehan, 1993). In addition to problems related to self-identity, individuals with histories of CSA may develop distorted self-perceptions (Herman, 1992).

Herman (1992) stated that survivors of childhood sexual abuse often have a “malignant sense of self” and view themselves as “contaminated” and “evil”. Briere (2002) noted that individuals with abuse histories tend to have cognitive distortions of themselves that include thoughts that they somehow caused or contributed to the abuse. This type of self-blame is common among women with histories of CSA. Gold (1986)
conducted a study comparing the attributional styles of women with CSA to women without CSA. She found that women with CSA histories were significantly more likely than non-victims to attribute bad events to internal stable factors such as their character and behavior. Women with CSA histories were also less likely to blame others for events and have lower self-esteem. In addition to self-blame, individuals with CSA histories may feel a sense of shame, despair or self-loathing (Pearlman, 1997, Pearlman & Courtois, 2005).

Relational Problems

Child sexual abuse generally occurs within the context of a relationship to a known perpetrator (Briere, 2002). In a study conducted by Elliot (1994), 89% of women with CSA histories were abused by a perpetrator they knew. Of those who were abused, 11% were abused by a stranger and 48% were abused by a family member (13% parent, 13% sibling, and 22% by extended family). These boundary violations can negatively impact the child’s developing relational schema. The person may develop a distrust of others and feelings of being unworthy of good relationships, particularly if the abuse is early and chronic and occurs within the family (Briere, 1994). Some individuals may attempt to gain “mastery” over their experience of abuse by repeatedly becoming involved in relationships that are abusive or unhealthy. In addition, adults abused as children tend to have conflictual and chaotic relationships, difficulty forming adult attachments, fears of abandonment, and engagement in behaviors that may damage relationships (Pearlman, 1997; Pearlman & Courtois, 2005).

The long-term impact of CSA on adult interpersonal functioning has been well documented (e.g. Briere, 1992; Finkelhor, Hotaling, Lewis, & Smith, 1989). Elliot
(1994) conducted a study on impaired object relations in a sample of 2,963 professional women who had histories of CSA. Elliot defined ‘object relations’ as an adult’s ability to relate to another, which according to psychodynamic theory, is derived from the developmental task of separation and individuation from a parental figure. Elliot found that women with CSA histories were significantly more likely to have more interpersonal difficulties than the control group. These interpersonal difficulties included interpersonal discomfort, interpersonal hypersensitivity, and maladaptive interpersonal patterns. Elliot found that impaired object relations were significantly related to several factors including CSA within the nuclear family, chronic abuse, and abuse that occurred at a young age.

Dissociation

Briere (1994) defined dissociation as a “disruption in the normally occurring linkages between subjective experience, feelings, thoughts, behavior, and memories, consciously or unconsciously invoked to reduce psychological distress” (p. 59). Types of dissociation include depersonalization, derealization, Dissociative Identity Disorder and fugue states (American Psychiatric Association, 2000). The use of dissociation among children who are sexually abused is widely recognized (e.g., Herman, 1992). Children are thought to use dissociation in order to reduce the emotional pain associated with sexual abuse (Briere & Spinazzola, 2005).

Adult’s reports of partial memories or amnesia for abuse are believed to be related to childhood dissociation (Briere, 1994). Many studies have found that adult women with documented histories of CSA have little to no memories of the abuse. For example, Williams (1994) followed 153 women from the time they were first seen in the emergency room for treatment related to CSA to their adulthood (average follow-up time,
18-20 years). She found that a large proportion (38%) of these women did not recall the CSA that was documented during their childhood. This study demonstrates that it is common for women to have no reported memory of the sexual abuse that occurred during their childhood.

Researchers have documented that dissociation is more common among individuals who have experienced early trauma (age ≤ 13). Van der Kolk et al. (1996) conducted a study that investigated the relationship between PTSD and the symptoms typically associated with CPTSD (affect dysregulation, dissociation, somatization). Van der Kolk found that individuals with early and late traumas differed significantly in their symptoms of dissociation. He found that 82% of 148 individuals (female= 66.9%) who were exposed to abuse before the age of 14 reported dissociation. In comparison, 67% of individuals who experienced abuse after age 14 reported dissociation. According to van der Kolk, early interpersonal trauma contributes to more complex PTSD psychopathology than later trauma.

Research has documented a relationship between CSA and dissociation in incarcerated samples (Dietrich, 2003). Dietrich (2003) conducted a study on dissociation among Canadian inmates (62 males, 31 females). She found several factors that were significantly correlated to symptoms of dissociation. Inmates who had felt unloved by their mother, whose parent’s used drugs and alcohol, who were psychologically abused, and sexually abused reported higher levels of dissociation as measured by the Multiscale Dissociation Inventory (MDI). When compared to normative data of the MDI inmates scored significantly higher.
**Somatization**

Somatization refers to the presence of medically unexplainable physical symptoms that may be related to underlying psychological problems (American Psychiatric Association, 2000). Somatoform complaints are common among adults abused as children, particularly those who were sexually abused (Herman, 1992). Herman (1992) noted that trauma is commonly associated with tension headaches, problems with the digestive system, chronic pain, choking sensations, and nausea.

Women with severe sexual abuse histories have been found to be at greatest risk of somatization. Walker et al. (1992) re-analyzed data from a previous study of 100 women who had been seen for diagnostic laparoscopy. She found that the risk for Somatization Disorder and Pain Disorder were significantly higher for women who had been severely sexually abused. She also found that the number of somatization symptoms was predictive of a history of severe CSA. In particular, women with severe CSA were significantly more likely to have chronic pelvic pain.

Recently, insecure adult attachment has been implicated in somatization in women with childhood trauma histories. Based on research that has shown a link between interpersonal childhood trauma (CSA, physical abuse, emotional abuse, neglect) and the development of adult insecure attachment styles, Waldinger, Schulz, Barsky, and Ahern (2006) sought to test whether insecure attachment would fully mediate somatization in men and women with histories of childhood abuse. Based on their findings the authors concluded that for women, childhood trauma strongly influences women’s styles of relating to others in times of need (attachment style) and that this relational style includes somatization (communicating needs through bodily complaints). The authors theorize
that women who have been abused come to expect that others will not meet their emotional needs (insecure attachment). This expectation leads women to rely on the reporting of somatic symptoms as a way to seek help from individuals who are expected not to respond to emotional needs.

*Systems of Meaning*

As discussed above, children who have been abused will often incorporate their negative experiences into their internal working model of themselves and the world. This incorporation of experiences will often lead the child, and later the adult, to have assumptions and expectations about themselves and the world in which they live (Briere, 1994). Studies have found that abused children can develop lasting changes in their systems of meaning. For example, when children are repeatedly abused and unable to control or resist the abuse they may develop a sense of learned helplessness; this perception of helplessness may then generalize to other situations besides abuse and contribute to feelings of global hopelessness and helplessness (Briere, 1994).

*Alterations in Perception of the Perpetrator*

Herman (1992) discussed the ways in which abuse may alter survivor’s perceptions of their perpetrator. Herman stated that individuals who are abused may develop “traumatic bonding” with their perpetrator due to their dependency on their abuser for their basic needs. This type of relationship may cause the survivor to both idealize and fear their perpetrator.

**Childhood Sexual Abuse, Substance Abuse, and Complex PTSD**

In addition to the symptoms discussed above, many women with histories of childhood abuse develop substance abuse problems (Widom, Marmorstein, & Raskin,
For example, Briere (1988) found that women with a history of CSA were nine times more likely to develop alcohol dependence than women without a history of CSA. Women with CSA histories are also at a significantly higher risk of developing drug dependence than women without CSA histories (Wilsnack, Vogeltanz, Klassen, & Harris, 1997). Research has supported the self-medication hypothesis (also known as the tension-reduction hypothesis) as an explanation for the association between CSA, trauma symptoms, and substance use. In a study on the causal pathways between CSA, PTSD, and alcohol use in women, Wilsnack et al. found significant pathways connecting CSA to PTSD symptoms, and PTSD symptoms to alcohol use. While research suggests that women with CSA histories use substances in order to reduce PTSD symptoms, less is known about the relationship between CPTSD symptoms and SUDS.

Although less research has been conducted on complex trauma and SUDS, initial evidence suggests that complex trauma symptoms are common among women with co-occurring SUDS and PTSD. Cohen and Hien (2006) conducted a community-based treatment study that included a sample of 107 women with co-occurring substance abuse and PTSD. While the focus of the study was on treatment outcomes, the descriptive data of the participants provides valuable information on this population. This sample was found to have high rates of sexual abuse (87% = any sex abuse, 49% = CSA before age 16) and high rates of physical abuse (94% = any physical abuse, 57% = physical abuse before age 16). In addition, this sample was found to have high levels of complex trauma symptoms including dissociation, impulsivity, somatic complaints, and problems with social functioning. In particular, this sample had high levels of chronic medical problems, the most common being gastrointestinal, respiratory and gynecologic.
Furthermore, this sample of women tended to have a fearful adult attachment style and be avoidant of relationships. This study demonstrates the high prevalence rate of complex trauma symptoms among individuals with co-occurring SUDS and PTSD.

Very few studies have investigated the relationship between PTSD, SUDS and CPTSD in incarcerated samples. So far, researchers have found a strong relationship between early abuse, PTSD, SUDS and CPTSD symptoms in incarcerated female samples. Zlotnick (1997) conducted a study that examined the frequency of PTSD, complex trauma symptoms, co-morbidity, substance abuse and traumatic experiences among 85 female inmates. In a random sample of inmates, 48.2% of the women met criteria for current PTSD and 20% met criteria for lifetime PTSD using the Structured Clinical Interview for DSM-IV, Axis I and Axis II Disorders, Nonpatient Version. Most women reported at least one lifetime traumatic event ($n = 87.1\%$), 40% reported childhood sexual abuse, and 55% reported childhood physical abuse. Compared to inmates without PTSD, inmates with current or past PTSD were significantly more likely to have current major depression, past substance abuse, and BPD. In regards to complex trauma symptoms, inmates with current or past PTSD were significantly more likely to score higher on the Structured Interview for Measurement of Disorders of Extreme Stress (SIDES) measures of dissociation and somatization than those without PTSD. Inmates who reported childhood sexual or physical abuse before age 13 scored significantly higher on the affect dysregulation, dissociation, and somatization subscale on the SIDES. Thus, initial findings suggest a strong relationship between early abuse, SUDS, and complex trauma symptoms in incarcerated females.
The Personality Assessment Inventory (PAI; Morey, 1991) is increasingly being used in correctional settings as a tool to screen incoming inmates for substance abuse disorders and/or mental health disorders (Edens & Ruiz, 2008). The PAI contains 344 items, which are separated into 22 non-overlapping full scales, 4 validity scales, 11 clinical scales, 5 treatment consideration scales, and 2 interpersonal scales. Ten of the full scales contain subscales that tap the underlying components of the clinical construct and are conceptually derived. Scores on the PAI are represented as linear T scores, where 50T is the mean, and 10T is one standard deviation. Scores above 70T are two standard deviations above the mean and are considered to be clinically significant.

Research has shown that the PAI has satisfactory reliability and validity (Morey, 1991; Schinka, 1995). Recent research supports the utility of the PAI to identify mental health disorders among prison inmates. Edens and Ruiz (2008) sought to examine the utility of the Depression (DEP), Schizophrenia (SCZ), and Drug Problems (DRG) scales in categorizing inmates into broad diagnostic categories (mood disorders, psychotic-spectrum disorders, and substance use disorders). In addition to these scales, the authors examined the utility of the Anxiety-Related Disorders (ARD) and Traumatic Stress (ARD-T) scales in identifying inmates with PTSD. The results of their study supported the use of the DEP, ARD, ARD-T, and DRG scales in the identification of inmates with these corresponding disorders. However, the utility of the SCZ scale in identifying psychotic-spectrum disorders was not supported.

Despite the apparent soundness of the PAI, there is very little research to guide our use of the PAI with incarcerated women. In particular, we do not have information
about the typical profile patterns of incarcerated women with histories of CSA-an experience shown to be highly predictive of CPTSD. Because there is no research on the use of the PAI to identify complex trauma, we must rely on studies that have examined the profiles of individuals with similar clinical profiles: PTSD, BPD, and childhood abuse.

The PAI and PTSD

As discussed earlier, individuals with histories of CSA have a high probability of developing PTSD (Kessler, 1995); therefore, research on the ARD-T subscale of the PAI may shed light on possible scale elevations associated with CSA. Morey (1991) designed the ARD-T subscale to measure symptoms related to traumatic stressors such as nightmares, sudden anxiety symptoms, and feeling permanently damaged by the trauma. Morey suggested that individuals who score over 80T are highly likely to have a PTSD diagnosis. Research has suggested that the PAI trauma scale has good diagnostic utility, discriminate validity and sensitivity; however, it has limited construct validity due to the absence of items that measure hyperarousal or hypervigilance, which are key symptoms of the PTSD diagnosis (McDevitt-Murphy, Weathers, Adkins, & Daniels, 2005; Mozley, Miller, Weathers, Beckham, & Feldman, 2005).

Several studies have used the PAI to assess PTSD in combat veterans and in individuals involved in motor vehicle accidents; however, only one study to date has included a female sample that had experienced interpersonal trauma such as sexual and physical assault (Holmes, 2001; McDevitt-Murphy et al., 2005; McDevitt-Murphy, Weathers, Flood, Eakin, & Benson, 2007; Mozley, Miller, Weathers, Beckham, & Feldman, 2005). This study, by McDevitt-Murphy et al., examined the utility of the PAI
for the assessment of PTSD in a community sample of women. In this study, the PAI was sensitive to between-group differences. The PTSD group scored significantly higher than the non-PTSD group on seven clinical scales, one treatment scales, and one validity scale: Anxiety (ANX), Depression (DEP), Anxiety-Related Disorders (ARD), Somatic Complaints (SOM), Paranoia (PAR), Borderline Features (BOR), Schizophrenia (SCZ), Nonsupport (NON), and the Negative Impression (NIM) validity scale. The PTSD group scored significantly lower on the treatment rejection scale (RXR). The largest differences between the two groups were found on the physiological subscale of the DEP (DEP-P) scale and the ARD-T scale. No significant differences were found on either the Drug Problems (DRG) scale or the Alcohol Problems (ALC) scale. The authors suggested that these scale elevations reflect the core aspects of PTSD as well as its “associated clinical features” (pp. 64). This study illustrates the ability of the PAI to detect symptoms of complex trauma in a population with a high degree of interpersonal trauma.

While the findings from this study provide some indication of possible scale elevations for incarcerated women with CSA, the results must be interpreted cautiously due to the considerable differences between this sample and typical samples of incarcerated women. This sample consisted primarily of well-educated Caucasian women without substance abuse, Axis II disorders, and criminal histories; whereas incarcerated samples tend to have greater ethnic diversity, low educational attainment, as well as a high prevalence of SUDS and Axis II disorders (Battle et al., 2003). More research is needed to determine the typical PAI profiles of incarcerated women with CSA histories given these limitations.
The PAI and Borderline Personality Disorder

An emerging group of authors have suggested that BPD and complex trauma may not be two distinct syndromes, but rather, overlapping descriptions of the same sequelae: chronic, severe childhood abuse, particularly CSA (Briere, 2002; Hodges, 2003; Herman, 1992). Given the evidence that BPD and complex trauma have similar etiologies (e.g., childhood abuse, parental misattunement, disorganized attachment) and similar behavioral and symptomological manifestations (e.g., impaired affect regulation, anger, self-destructiveness, interpersonal problems, dissociation; Briere, 2002) research on the PAI profiles of those diagnosed with BPD may provide clues as to potential scale elevations for individuals with complex trauma histories.

Several studies provide support that the PAI BOR scale is a valid and reliable scale that taps the core features of the DSM-IV based conceptualization of BPD (Bell-Pringle, 1997; Jacobo, Blais, Baity, & Harley 2007; Morey, 1991). The scale consists of 24-items that divide into four subscales: Affective Instability (BOR-A), Identity Problems (BOR-I), Negative Relationships (BOR-N), and Self-Harm (BOR-S). The BOR-A scale was designed to measure the propensity to be overwhelmed by strong and poorly controlled emotions, particularly anger. BOR-I was designed to measure uncertainties about self-identity and impaired concept of the self and others. The BOR-N subscale is thought to measure conflicting feelings about relationships that include dependency on others combined with fears of abandonment and exploitation. The BOR-S subscale was designed to measure one’s propensity to act impulsive and engage in behaviors that are self-destructive.
In a study of the utility of the PAI BOR scale and subscales in the screening of individuals for Dialectical Behavior Therapy (an empirically supported treatment for individuals with BPD), Jacobo et al. (2007) found a significant relationship between the DSM-IV-TR diagnosis of BPD and scores on BOR and SCZ scales. Diagnostic efficiency statistics showed that a cut-off score of 65T best differentiated clients with BPD from those without BPD. The BOR group also scored above 70T (cutoff) on the DEP scale, ANX scale, ARD scale, and Suicidal Ideation (SUI) scale.

Due to the hypothesized overlap between BPD and complex trauma, there may be similarities between the profile patterns of BPD samples and samples of incarcerated women with CSA histories. However, additional research is needed to determine how the profiles from these two groups compare.

*The PAI and Child Abuse*

To date, only one published study and one unpublished dissertation have examined the PAI profiles of women with histories of childhood abuse. Cherepon and Prinzhorn (1994) conducted a study that examined the differences between PAI profiles of women with and without a history of childhood abuse. The sample consisted of ninety-one adult female Caucasian patients who were receiving either inpatient psychiatric treatment in community hospital or outpatient psychotherapy. Inpatients were asked about their childhood history of abuse by nursing staff during the admissions interview; outpatients were asked about their history of abuse by the senior author of the study. Because the original purpose of the child abuse screening was purely for clinical information, no rigorous research protocols were used to determine abuse history. As a result, “childhood abuse” was broadly defined as involving any abuse that was sexual,
physical, verbal, emotional, or psychological in nature. The abuse sample consisted primarily of inpatients because only 2 outpatients endorsed a history of abuse; therefore 95% of the abused sample was selected from an inpatient setting.

Compared to the non-abused group, the abused group scored significantly higher on scales of NIM, ARD, PAR, and BOR (Cherepon & Prinzhorn, 1994). On the ARD scale, the abused group had elevations on all three subscales: Traumatic Stress (ARD-T), Phobias (ARD-P), and Obsessive-Compulsive (ARD-O). On the PAR scale the abused group had an elevation on the Persecution (PAR-P) and Hypervigilance (PAR-H) subscales. On the BOR scale, the abused group had elevations on all four subscales. This study did not find any differences between the two group on SCZ, ALC, DRG, or SUI.

This study had many limitations that included a biased sample, the exclusion of individuals with elevations on DRG or ALC, the use of archival data, a small sample size, and a broad definition of childhood abuse. Due to the small number of outpatients who endorsed histories of childhood abuse ($n = 2$), the abused group consisted mainly of inpatients. Therefore, it is possible that the abused sample had significantly higher levels of pathology than the outpatient comparison group. In addition, the authors of the study excluded individuals from the study if they were diagnosed with drug or alcohol problems. As a result, it is unclear if the results of this study would generalize to incarcerated samples where SUDS are the norm. Unfortunately, the authors of the study relied on archival intake information to classify participants as either “Abused” or “Not Abused.” As a result, no rigorous methods were used to define abuse. Due to the use of a non-specific definition of abuse it is likely that the abuse group was highly heterogeneous.
regarding abuse type, chronicity, and duration. Lastly, the study had a small sample size that precluded the use of multivariate analysis.

Schmidt (2002) extended Cherepon and Prinzhorn’s (1994) study by examining profile differences between college women with and without histories of CSA. The sample consisted of two hundred and fourteen therapy-seeking female college students at a university counseling center. Compared to the non-CSA group, women who reported CSA had significantly higher PAI scores across all scales. Women who reported CSA had significant elevations on four scales: NIM, ARD, PAR, and BOR. The CSA group also had higher elevations on the following subscales: ARD-T, PAR-H, PAR-P, BOR-A, and BOR-N. The author conducted a two-stage discriminant analysis to determine if CSA group membership could be predicted by PAI scale scores. Using the four scales where significant group differences were found (NIM, ARD, PAR, BOR) as predictors, CSA group membership was accurately predicted 67% of the time.

This research provides additional information regarding possible clinical profile elevations of incarcerated women with histories of CSA. However, large differences exist between this sample and typical incarcerated samples. For example, incarcerated samples are likely to have higher levels of psychopathology, more severe substance abuse, and lower socio-economic backgrounds. Due to these differences additional research is needed to clarify the clinical profiles of incarcerated women with CSA histories.

The Present Study

The vast majority of incarcerated women have experienced childhood physical or sexual abuse (Zlotnick, 1997). Research has demonstrated that early, severe child abuse,
particularly in the form of sexual abuse, is associated with an increased risk of developing both PTSD and complex trauma symptoms (Roth et al., 1997). Individuals sexually abused as children are also at an increased risk of developing substance use disorders (Wilsnack et al., 1997). The PAI is being increasingly used to identify inmates who may benefit from mental health services, however, no research has been conducted on the use of the PAI with incarcerated females with histories of childhood sexual abuse—abuse thought to be highly predictive of complex trauma and substance abuse.

The overall goal of this study is to investigate how experiences of early, severe childhood sexual abuse manifest on the PAI. Specifically, this study intends to investigate between-group differences on complex trauma symptomatology and substance abuse on the PAI. In addition, this study aims to provide descriptive information about this population in regards to substance abuse and mental health history. Lastly, this study will attempt to address limitations from previous studies by using consistent definitions and descriptive data regarding childhood sexual abuse history, and including individuals with primary substance use disorders in the sample.

Hypotheses of the Current Study

1. First, I hypothesized that female inmates with self-reported histories of severe CSA (age ≤ 13; CTQ CSA scale ≥ 13) will have significantly higher levels of overall psychopathology than female inmates without early histories of CSA. Furthermore, I hypothesized that the CSA group will have significantly higher levels of symptoms indicative of complex PTSD compared to the non-CSA group. Specifically, I predicted that the CSA group will have significantly higher levels of borderline features (BOR), negative self-perception (NIM), somatization (SOM), depression (DEP), and anxiety-
related disorders (ARD) as measured by these scales. I also predicted that the CSA group will have significantly higher levels of affect dysregulation (BOR-A), identity disturbance (BOR-I), negative relationships (BOR-N), self-destructiveness (BOR-S), and traumatic stress (ARD-T) compared to the non-CSA group as measured by these PAI subscales.

2) Second, I hypothesized that the severity of traumatic stress (ARD-T) and childhood sexual abuse (as measured by the CTQ) will be associated with higher levels of drug use (DRG).
METHODS

Selection Criteria and Description of the Sample

Participants for this study were female inmates randomly selected from Coffee Creek Correctional Institution in Wilsonville, Oregon. Participants were included in the study if they (a) lived in the general population, (b) read at or above a fourth grade level, (c) had a valid PAI profile, and (d) spoke and understood English. Ninety-nine participants were initially included in the study sample. Of these 99 participants, 36 individuals reported no childhood sexual abuse history (age \( \leq 13 \), CTQ CSA scale = 5) and were assigned to the non-CSA Group. From the initial sample, 42 participants reported severe childhood abuse (age \( \leq 13 \), CTQ CSA \( \geq 13 \)) and were assigned to the CSA Group. The remaining 21 participants (low to moderate abuse) were excluded from the present analyses. These individuals were removed in order to do an extreme group comparison and insure that only individuals with severe CSA were included in the comparison group.

Participants in the sample (N=78) ranged in age from 20 to 62 years of age (M=36.5; SD=11.04). Participant ethnicity was reported as follows: 73% Caucasian, 5% African American, 4% Hispanic, 5% Native American, 10% Multi-Racial/Bi-Racial, 1% Asian American, and 1% Other. Forty-two percent of participants reported that their highest degree earned was a high school diploma or GED; 22% had some college; 18% earned an Associates Degree; 14% had less than an 8th grade education; and 2% had a Bachelors Degree. Marital status was reported as follows: 39% single, 24% married, 22% divorced, 10% separated, and 5% widowed. Twenty-six percent of participants reported that they had been placed in foster care as a child; 74% reported that they were never
placed in foster care. Demographic profiles for the comparison groups are presented in

Table 2.

Table 2

Demographic Profile of Sample by History of Severe Early Childhood Sexual Abuse

<table>
<thead>
<tr>
<th>Variable</th>
<th>Childhood Sexual Abuse (CSA)</th>
<th>No Childhood Sexual Abuse (non-CSA)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n = 42)</td>
<td>(n = 36)</td>
</tr>
<tr>
<td></td>
<td>n %</td>
<td>n %</td>
</tr>
<tr>
<td>Ethnic Background</td>
<td></td>
<td></td>
</tr>
<tr>
<td>African-American</td>
<td>2 5</td>
<td>2 6</td>
</tr>
<tr>
<td>Caucasian</td>
<td>29 69</td>
<td>28 78</td>
</tr>
<tr>
<td>Asian American</td>
<td>0 0</td>
<td>1 3</td>
</tr>
<tr>
<td>Hispanic</td>
<td>1 2</td>
<td>2 6</td>
</tr>
<tr>
<td>Native America</td>
<td>4 10</td>
<td>0 0</td>
</tr>
<tr>
<td>Multi-Racial/Bi-Racial</td>
<td>6 14</td>
<td>2 6</td>
</tr>
<tr>
<td>Other</td>
<td>0 0</td>
<td>1 3</td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single/Never Married</td>
<td>17 40</td>
<td>13 36</td>
</tr>
<tr>
<td>Married</td>
<td>10 24</td>
<td>9 25</td>
</tr>
<tr>
<td>Separated</td>
<td>4 10</td>
<td>4 11</td>
</tr>
<tr>
<td>Divorced</td>
<td>9 21</td>
<td>8 22</td>
</tr>
<tr>
<td>Widowed</td>
<td>2 5</td>
<td>2 6</td>
</tr>
<tr>
<td>Education Level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 8th grade</td>
<td>8 19</td>
<td>3 9</td>
</tr>
<tr>
<td>High School/GED</td>
<td>15 36</td>
<td>18 51</td>
</tr>
<tr>
<td>Some College</td>
<td>12 29</td>
<td>5 14</td>
</tr>
<tr>
<td>Associates Degree</td>
<td>7 17</td>
<td>7 20</td>
</tr>
<tr>
<td>Bachelors Degree</td>
<td>0 0</td>
<td>2 6</td>
</tr>
<tr>
<td>Foster Care</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>14 33</td>
<td>6 17</td>
</tr>
<tr>
<td>No</td>
<td>28 67</td>
<td>30 83</td>
</tr>
</tbody>
</table>

Note: Total percentages may not equal 100% due to rounding.

Average scores on the Childhood Trauma Questionnaire indicated that individuals in the total sample (N=78) reported low levels of emotional abuse\(^2\) (M=12.73, SD=6.57), moderate levels of physical abuse (M=10.73, SD=6.16), severe levels of sexual abuse

\(^2\) Levels of abuse severity (minimal, low, moderate, severe) are based on Bernstein and Fink’s (1997) published cut-off scores for determining abuse severity (severity, frequency, duration) for each type of abuse.
(M=13.37, SD=8.30), low levels of emotional neglect (M=12.94, SD=6.24), and low levels of physical neglect (M=9.19, SD=4.78). Women in the CSA group reported severe levels of emotional abuse (M=15.85, SD=6.05), severe levels of physical abuse (M=13.78, SD=6.23), severe levels of sexual abuse (M=20.54, SD=3.89), moderate levels of emotional neglect (M=15.02, SD=6.20), and moderate levels of physical neglect (M=10.90, SD=5.27). Women in the non-CSA group reported low levels of emotional abuse (M=9.08, SD=5.17), minimal levels of physical abuse (M=7.16, SD=3.71), no sexual abuse, low levels of emotional neglect (M=10.52, SD=5.42), and minimal levels of physical neglect (M=7.19, SD=3.18). In the original sample of 99 women, 64% reported a history of sexual abuse (any sexual abuse at or below age 13), 32% reported emotional abuse (low to severe levels at or below age 13), and 44% experienced physical abuse (low to severe levels at or below age 13).

The majority of all women in the sample reported having received mental health treatment\(^3\) before entering prison (53%). Forty-seven percent reported having received therapy, 35% reported having received psychiatric care, 9% reported having received residential treatment and 10% reported having been hospitalized for mental health treatment in the past. The majority of women in this sample (64%) reported that they currently receive mental health services in prison\(^4\). Finally, 54% of the sample reported that they currently take psychiatric medications. Mental health histories of the comparison groups are presented in Table 3.

\(^3\) Any type of treatment.
\(^4\) Includes case management, psychiatric care, individual therapy, or group therapy.
Table 3

*Mental Health History of Sample by History of Severe Early Childhood Sexual Abuse*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Childhood Sexual Abuse (CSA)</th>
<th>No Childhood Sexual Abuse (non-CSA)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n = 42) &amp; %</td>
<td>(n = 36) &amp; %</td>
</tr>
<tr>
<td>Any prior mental health treatment</td>
<td>29 &amp; 69</td>
<td>12 &amp; 33</td>
</tr>
<tr>
<td>Prior therapy or counseling</td>
<td>26 &amp; 62</td>
<td>11 &amp; 31</td>
</tr>
<tr>
<td>Prior psychiatric care</td>
<td>21 &amp; 50</td>
<td>6 &amp; 17</td>
</tr>
<tr>
<td>Prior residential treatment</td>
<td>6 &amp; 14</td>
<td>1 &amp; 3</td>
</tr>
<tr>
<td>Prior psychiatric hospitalization</td>
<td>7 &amp; 17</td>
<td>1 &amp; 3</td>
</tr>
<tr>
<td>Receiving prison mental health services</td>
<td>29 &amp; 69</td>
<td>21 &amp; 58</td>
</tr>
<tr>
<td>Current psychiatric medication use</td>
<td>27 &amp; 64</td>
<td>15 &amp; 42</td>
</tr>
</tbody>
</table>

In regards to substance abuse treatment, women in the CSA group reported higher frequencies of past substance treatment outside of prison/jail than women without CSA (CSA= 60%, non-CSA= 47%). Women in the CSA group also reported a higher frequencies of past substance abuse treatment while incarcerated (CSA= 31%, non-CSA= 19%). Overall, 54% of the total sample reported previous substance abuse treatment outside of prison/jail and 26% percent of the sample reported having received substance abuse treatment while incarcerated. Women in this study were asked to rate the importance of substance abuse treatment during their incarceration. In the CSA group 71% of women considered treatment to be “important to extremely important” compared to 63% of women in the non-CSA group who rated treatment to be highly important. In
comparison, 84% of women in the total sample considered treatment to be highly important during their incarceration. Methamphetamine use was very common in this population. Sixty seven percent of women with CSA reported regular methamphetamine use compared to 50% of women in the non-CSA group. Overall, 59% of the sample reported a history of regular methamphetamine use\(^5\) prior to incarceration.

Women were also asked about their experiences with parental substance abuse. The majority of women in the sample (62%) reported that their caregiver’s abused alcohol or drugs during the participant’s childhood. In the CSA group, 71% of women reported that a caregiver abused alcohol or drugs during their childhood compared to 50% of women in the non-CSA group. Of those with parents who abused substances, 40% of the total sample reported that their mother abused substances and 53% reported that their father abused substances during the participant’s childhood\(^6\). Women with CSA reported maternal substance abuse at higher frequencies than women in the non-CSA group. (CSA= 55%, non-CSA= 22%). Women in the CSA group also reported higher frequencies of paternal substance abuse (CSA= 60%, non-CSA= 44%). Frequencies for individual and family substance abuse history by group are presented in Table 4. Mental health and substance abuse histories will be compared with significance testing in the results.

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\(^5\) For the purposes of this study ‘regular use’ was described as using a drug at least once a week for a month or more.

\(^6\) Parental ‘substance abuse’ was based on participant’s opinions of parental substance abuse history.
Table 4

*Substance Abuse History of Sample by History of Severe Early Childhood Sexual Abuse*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Childhood Sexual Abuse (CSA)</th>
<th>No Childhood Sexual Abuse (non-CSA)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n = 42)</td>
<td>(n = 36)</td>
</tr>
<tr>
<td></td>
<td>(n)</td>
<td>(%)</td>
</tr>
<tr>
<td>History of substance abuse treatment outside of prison/jail</td>
<td>25</td>
<td>60</td>
</tr>
<tr>
<td>History of substance abuse treatment during incarceration</td>
<td>13</td>
<td>31</td>
</tr>
<tr>
<td>Caregivers abused drugs/alcohol during childhood</td>
<td>30</td>
<td>71</td>
</tr>
<tr>
<td>Mother abused drugs/alcohol during childhood</td>
<td>23</td>
<td>55</td>
</tr>
<tr>
<td>Father abuse drugs/alcohol during childhood</td>
<td>25</td>
<td>60</td>
</tr>
</tbody>
</table>

**Measures**

*Personality Assessment Inventory*

The PAI (Morey, 1991) is a 344-item multi-scale self-administered measure designed to provide information regarding diagnosis, treatment planning and screening for psychopathology. It was developed for individual’s ages 18 through adulthood who read at least at the fourth grade level. The PAI contains 22 non-overlapping full scales, 4 validity scales, 11 clinical scales, 5 treatment consideration scales, and 2 interpersonal scales. The clinical scales are designed to measure: somatic complaints (SOM), anxiety (ANX), anxiety-related disorders (ARD), depression (DEP), mania (MAN), paranoia (PAR), schizophrenia (SCZ), borderline personality features (BOR), anti-social features
(ANT), drug problems (DRG) and alcohol problems (ALC). Each clinical scale contains three subscales, except for BOR, which contains four subscales. Morey (1991) has suggested that PAI profiles with Infrequency scale (INF) scores ≥ 75 T or Inconsistency scale (ICN) ≥ 73 T are invalid due to random responding, carelessness, reading difficulties, confusion or the failure to follow directions. Research has shown that the PAI has satisfactory reliability and validity (Morey, 1991; Schinka, 1995). Recent research supports the utility of the PAI in identifying mental health disorders among prison inmates (Edens & Ruiz, 2008).

**Childhood Trauma Questionnaire**

The Childhood Trauma Questionnaire (CTQ) is a 28-item self-report measure designed to screen individuals ages 12 and over for a childhood history of abuse or neglect. The CTQ has five subscales that assess for different types of abuse and neglect. Three scales assess for abuse (Emotional, Physical, Sexual) and two scales assess for neglect (Emotional and Physical). There are five items on each subscale that contain a five-point Likert scale ranging from Never True to Very Often True. Subscale scores range from 5 (no history of abuse or neglect) to 25 (very extreme history of abuse and neglect). According to Bernstein and Fink (1997) cut scores were developed for the purpose of differentiating different levels of abuse. Research on the CTQ (Fink et al., 1995) indicates that higher scale scores are related to higher severity, longer duration, and higher frequency of abuse. The following are cut scores for the CSA scale: scores equal to 5 represent none to minimal abuse, scores between 6 and 7 indicate low to moderate abuse, scores between 8 and 12 represent moderate to severe abuse, and scores of 13 or higher represent severe to extreme abuse. Bernstein and Fink (1997) suggest using the
severe to extreme category in order to avoid including most low to moderate levels of abuse (specificity for severe abuse = 98%). Since the focus of this study is on severe and chronic abuse the most stringent cut score was used (CSA CTQ score ≥ 13). The CTQ has been shown to have good reliability and validity (Bernstein et al., 2003).

**Participant Information Questionnaire**

The Participant Information Questionnaire is a 13-item clinician administered questionnaire designed to obtain information about the participant’s background, mental health status, mental health usage, and substance abuse history. The questionnaire contains the following questions regarding demographics: (a) age, (b) ethnicity, (c) marital status, (d) number of children, (e) educational level, and (d) history of being placed in foster care. The substance abuse history was designed to obtain information about the types of drugs used, the age of first use, frequency of substance use, and substance use at time of offense. The following questions were asked regarding mental health and treatment history: (a) substance abuse treatment in prison, (b) importance of substance use treatment, (c) family history of substance abuse, (d) psychiatric medication use, and (e) history of mental health treatment (see Appendix B).

**Procedure**

Institutional Review Board approval was obtained through Pacific University and the Department of Corrections Research Department and Behavioral Health Services approved the study. Inmate identification numbers were randomly chosen through the prison’s computer system. Inmates were excluded from the study if they were found to be housed in the Disciplinary Housing Unit or the Mental Health Infirmary. Once
chosen, the inmate was approached by one of the two graduate student authors\textsuperscript{7} and asked if they were interested in participating in a research study. If the inmate was willing to meet, one of the graduate students met with the inmate to explain the nature of the study and obtain consent (see Appendix A). The research interview consisted of a demographics questionnaire, a structured substance abuse history interview, and the Childhood Trauma Questionnaire (CTQ; see Appendix D).

While inmates were not expected to have significant emotional reaction to the questionnaires, the interviewers were prepared to assist inmates in returning to baseline emotional functioning before ending the interview. This was accomplished by giving each inmate a handout on grounding techniques (see Appendix C) and offering instructions on how to use the skill. If any inmate had expressed emotional distress they would have been instructed to contact their case manager for further mental health treatment. Furthermore, if any inmate had expressed suicidal ideation or was in danger of harming themselves a prison officer would have been contacted immediately. During the course of interviews no participants expressed emotional distress or suicidal ideation during or after the interview, asked for further assistance with the grounding technique or requested assistance from an officer or case manager.

\textsuperscript{7} Two graduate students collaborated to collect data that was used for was used for two separate research projects.
RESULTS

Demographic Comparison

In order to examine potential demographic differences between the non-CSA and CSA group several analyses were run. An independent-samples t-test was used to determine whether there was a difference in mean age between the CSA and non-CSA group. The t-test revealed no significant age differences between the groups (CSA, $M = 36.38$, $SD = 1.58$; non-CSA, $M = 37.33$, $SD = 12.47$; $t(76) = .37$, $p = .71$). Several categories within ethnicity, marital status, and education had expected frequencies that were less than 5 observations per cell. In order to fulfill the assumption, several categories within each category were collapsed. The chi-square analyses for ethnicity, marital status, education and foster care showed no significant differences between groups (Ethnicity: $X^2(1, N=78) = .75$, $p = .39$; Marital Status: $X^2(2, N=74) = .14$, $p = .93$; Education: $X^2(4, N=78) = 6.85$, $p = .14$; Foster Care: $X^2(1, N=78) = .2.82$, $p = .09$).

Additional analyses were performed in order to explore differences between the two groups in regards to mental health. A significantly higher proportion of women with CSA (69%) reported having received mental health treatment (including therapy, psychiatric care, residential treatment and inpatient hospitalization) before entering prison compared to women in the non-CSA group, (33%), $X^2 (1, N=78) = 8.53$, $p < .01$. In regards to specific forms of prior mental health care, a significantly higher proportion of women in the CSA group (62%) reported having received therapy compared to the non-CSA group (31%), $X^2 (1, N=78) = 6.43$, $p < .05$. In the non-CSA group only one woman (3%) reported having received residential treatment before prison compared to six (14%) in the CSA group. Women in the CSA group were also more likely to have had a
psychiatric hospitalization (CSA= 17%; Non-CSA= 3%). Women with histories of CSA were more likely than those in the non-CSA group to receive mental health treatment in prison (CSA= 69%, Non-CSA= 58%), however, there was not a statistically significant difference between groups, $X^2 (1, N=78) = .557, p = .45$.

Women in the CSA group were significantly more likely to have received psychiatric medication (50%) compared to those in the non-CSA group (17%), $X^2 (1, N=78) = 8.10, p <.01$. In regards to psychiatric medication usage, a higher proportion of women in the CSA group (64%) reported that they currently take psychiatric medication compared to the non-CSA group (42%), however this difference was not statistically significant, $X^2 (1, N=78) = 3.13, p = .07$. Frequencies for mental health treatment history are presented in Table 3.

Further analyses were run in order to investigate differences between the groups on substance abuse history (individual and family). An independent-samples t-test was used to compare the mean age that individuals first used drugs or alcohol. There was a significant difference in the mean age that individuals initiated substance use, $t(76) = 1.62, p<.05$, with the CSA group ($M=12.41, SD=5.03$) initiating substance use at a younger age than the non-CSA group ($M=15.39, SD=5.29$). Chi-square analyses were run to determine differences between groups in regards to parental substance use. A higher proportion of women in the CSA group (71%) reported that their caregivers abused substances during the participant’s childhood compared to the non-CSA group (50%), however this difference was not statistically significant, $X^2 (1, N=78) = 2.91, p = .08$. In regards to mothers substance abuse, significantly more women with CSA (55%) reported that their mothers abused alcohol or drugs during the participants’ childhood in
comparison to the non-CSA group (22%), $X^2 (1, N=78) = 7.26$, $p < .01$. There was no
significant difference in the number of participants who reported that their fathers abused
drugs or alcohol during the inmate’s childhood (CSA=60%; non-CSA=44%), $X^2 (1, N=78) = .121$, $p = .27$.

Participant’s personal history of substance abuse was also examined. A
significantly higher proportion of women in the CSA group reported a history of
marijuana use (59%), $X^2 (1, N=78) = 5.30$, $p < .05$, stimulant use (61%), $X^2 (1, N=78) = 4.87$, $p < .05$, and heroin use (75%), $X^2 (1, N=78) = 4.84$, $p < .05$. There were no
significant differences found between the two groups in regards to having received
substance abuse treatment outside jail or prison or while incarcerated, (Treatment before
incarceration: $X^2 (1, N=78) = .73$, $p = .39$, Treatment during incarceration: $X^2 (1, N=78) = .81$, $p = .36$).

Hypothesis I

*PAI Scales: MANOVA*

I hypothesized that female inmates with self-reported histories of early, severe
CSA (age $\leq 13$; CTQ CSA scale $\geq 13$) will have significantly higher levels of overall
psychopathology than female inmates without early histories of CSA. A one-way
multivariate analysis of variance (MANOVA) was conducted in order to investigate
differences in overall psychopathology between the groups. CSA status was used as the
independent variable and the 11 PAI clinical scales were used as the dependent variables
(Somatic Complaints Scale, Anxiety Scale, Anxiety-Related Disorders Scale, Depression
Scale, Mania Scale, Paranoia Scale, Schizophrenia Scale, Borderline Personality Features
Scale, Anti-Social Features Scale, Drug Problems Scale, and Alcohol Problems Scale).
Preliminary assumption testing was conducted to check for linearity, normality, univariate and multivariate outliers, homogeneity of variance-covariance matrices and multicollinearity. Two extreme outliers were identified based on Mahalanobis’ distance. These two participants were excluded from the sample in order to improve normality and multivariate homogeneity of variance. No other serious violations were found. The MANOVA was significant: $F(11, 66) = 2.35, p = .02$ Wilks’ Lambda = .01, $\eta^2 = .26$. This indicates that the mean T score on the combined dependent variables was significantly higher for the CSA group compared to the non-CSA group.

*Profile Configuration*

Profiles for each group’s mean full-scale and subscale T scores are represented in Figures 1 and 2. The full-scale profiles have similar configurations, with the CSA group scoring higher on every clinical scale compared to the non-CSA group. A visual comparison of the subscale profiles also shows similar profile configurations with the CSA group scoring higher on all subscales except: Depression-Cognitive (DEP-C), Mania-Grandiosity (MAN-G), Borderline Features-Self-Harm (BOR-S), Antisocial Features-Egocentricity (ANT-E), and Antisocial Features-Stimulus seeking (ANT-S). According to Morey (1991), approximately 84% of individuals from a non-clinical sample will have a T score less than 60T (one standard deviation above the mean) on most scales, while 98% of non-clinical individuals will score less than 70T (two standards deviations above the mean). Compared to the standardization sample used by Morey (1991), the CSA group scored at least one standard deviation (60T) above the mean (50T) on the following clinical full-scales: Anxiety (ANX), Anxiety-Related Disorders (ARD), Depression (DEP), Paranoia (PAR), Borderline Features (BOR),
Antisocial Features (ANT) and Drug Problems (DRG). The CSA group also scored one standard deviation higher than the standardization sample on the following subscales: Anxiety-Physiological (ANX-P), Anxiety-Traumatic Stress (ARD-T), Depression-Physiological (DEP-P), Paranoia-Hypervigilance (PAR-H), Borderline Features-Identity Problems/Negative Relationships/Self-Harm (BOR-I, BOR-N, BOR-S), and Antisocial Behaviors (ANT-A). In comparison, the non-CSA group scored one standard deviation higher than the standardization sample on the Depression (DEP), Borderline Features (BOR), and Drug Problems Scales (DRG) as well as the Borderline-Negative Relationships and Self-Harm (BOR-N, BOR-S) subscales. Both groups scored two standard deviations higher than the community sample on the Drug Problems (DRG) scale. See Table 5 for mean full-scale and subscale t scores for both groups.
Figure 1. Mean PAI Profile Full Scale T-Scores by CSA Status
Figure 2: Mean PAI Profile Subscale T-Scores by CSA Status
# Table 5

*PAI Mean Clinical Scale and Subscale T Scores by CSA Status*

<table>
<thead>
<tr>
<th>PAI Scales and Subscales</th>
<th>CSA (n = 42)</th>
<th>Non-CSA (n = 36)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Clinical Scales</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOM</td>
<td>M</td>
<td>M</td>
</tr>
<tr>
<td>SOM-C</td>
<td>57.00</td>
<td>55.25</td>
</tr>
<tr>
<td>SOM-S</td>
<td>58.55</td>
<td>56.92</td>
</tr>
<tr>
<td>SOM-H</td>
<td>52.95</td>
<td>52.44</td>
</tr>
<tr>
<td>ANX</td>
<td>60.24*</td>
<td>57.39</td>
</tr>
<tr>
<td>ANX-C</td>
<td>59.67</td>
<td>56.14</td>
</tr>
<tr>
<td>ANX-A</td>
<td>57.71</td>
<td>53.78</td>
</tr>
<tr>
<td>ANX-P</td>
<td>60.52*</td>
<td>57.64</td>
</tr>
<tr>
<td>ARD</td>
<td>64.76*</td>
<td>55.14</td>
</tr>
<tr>
<td>ARD-O</td>
<td>56.40</td>
<td>49.00</td>
</tr>
<tr>
<td>ARD-P</td>
<td>55.71</td>
<td>51.78</td>
</tr>
<tr>
<td>ARD-T</td>
<td>69.79*</td>
<td>59.28</td>
</tr>
<tr>
<td>DEP</td>
<td>61.88*</td>
<td>61.11*</td>
</tr>
<tr>
<td>DEP-C</td>
<td>59.10</td>
<td>59.44</td>
</tr>
<tr>
<td>DEP-A</td>
<td>58.76</td>
<td>58.00</td>
</tr>
<tr>
<td>DEP-P</td>
<td>61.36*</td>
<td>59.53</td>
</tr>
<tr>
<td>MAN</td>
<td>52.05</td>
<td>48.61</td>
</tr>
<tr>
<td>MAN-A</td>
<td>54.74</td>
<td>48.86</td>
</tr>
<tr>
<td>MAN-G</td>
<td>49.14</td>
<td>50.75</td>
</tr>
<tr>
<td>MAN-I</td>
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<td>47.11</td>
</tr>
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<td>60.19*</td>
<td>57.39</td>
</tr>
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<td>PAR-H</td>
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<td>57.39</td>
</tr>
<tr>
<td>PAR-P</td>
<td>57.14</td>
<td>56.11</td>
</tr>
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<td>53.89</td>
</tr>
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<td>SCZ</td>
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<td>SCZ-P</td>
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</tr>
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</tr>
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<td>SCZ-T</td>
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<td>55.33</td>
</tr>
<tr>
<td>BOR</td>
<td>63.93*</td>
<td>60.69*</td>
</tr>
<tr>
<td>BOR-A</td>
<td>55.17</td>
<td>52.28</td>
</tr>
<tr>
<td>BOR-I</td>
<td>63.14*</td>
<td>59.58</td>
</tr>
<tr>
<td>BOR-N</td>
<td>66.10*</td>
<td>60.69*</td>
</tr>
<tr>
<td>BOR-S</td>
<td>60.62*</td>
<td>61.92*</td>
</tr>
<tr>
<td><strong>ANT</strong></td>
<td>60.26*</td>
<td>58.25</td>
</tr>
<tr>
<td><strong>ANT-A</strong></td>
<td>66.88*</td>
<td>60.72*</td>
</tr>
<tr>
<td><strong>ANT-E</strong></td>
<td>48.62</td>
<td>50.47</td>
</tr>
<tr>
<td><strong>ANT-S</strong></td>
<td>56.38</td>
<td>56.97</td>
</tr>
<tr>
<td>ALC</td>
<td>59.00</td>
<td>54.03</td>
</tr>
<tr>
<td><strong>DRG</strong></td>
<td>79.24**</td>
<td>71.67**</td>
</tr>
</tbody>
</table>

*1SD above mean than standardization sample
**2SD above mean than standardization sample
**PAI Scales: Univariate Analyses of Variance**

Eleven follow-up univariate ANOVAS were conducted to investigate differences on each of the dependent variables. In order to reduce Type I errors the Bonferroni correction (Tabachnick & Fidell, 1996) was applied. The Bonferroni correction resulted in a critical alpha level of .005. There was a statistically significant difference found between the groups on the Anxiety-Related Disorders scale (ARD): $F(1,76) = 10.66, p = .002, \eta^2 = .12$. While not statistically significant with the Bonferroni correction, it should be noted that there was a sizable difference found between the groups on the Schizophrenia scale (SCZ): $F(1,76) = 4.08, p = .029, \eta^2 = .06$. The ANOVAS for the 11 clinical scales are reported in Table 6.

Table 6

*One-Way ANOVA Results for PAI Clinical Scales*

<table>
<thead>
<tr>
<th>PAI Clinical Scales</th>
<th>Df</th>
<th>F</th>
<th>P</th>
<th>$\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOM</td>
<td>1</td>
<td>.43</td>
<td>.512</td>
<td>.00</td>
</tr>
<tr>
<td>ANX</td>
<td>1</td>
<td>.835</td>
<td>.364</td>
<td>.01</td>
</tr>
<tr>
<td>ARD</td>
<td>1</td>
<td>10.66</td>
<td>&lt;.005</td>
<td>.12</td>
</tr>
<tr>
<td>DEP</td>
<td>1</td>
<td>.06</td>
<td>.807</td>
<td>.00</td>
</tr>
<tr>
<td>MAN</td>
<td>1</td>
<td>2.34</td>
<td>.130</td>
<td>.02</td>
</tr>
<tr>
<td>PAR</td>
<td>1</td>
<td>.98</td>
<td>.324</td>
<td>.01</td>
</tr>
<tr>
<td>SCZ</td>
<td>1</td>
<td>4.98</td>
<td>.029*</td>
<td>.06</td>
</tr>
<tr>
<td>BOR</td>
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<td>1.17</td>
<td>.292</td>
<td>.01</td>
</tr>
<tr>
<td>ANT</td>
<td>1</td>
<td>.56</td>
<td>.455</td>
<td>.00</td>
</tr>
<tr>
<td>ALC</td>
<td>1</td>
<td>1.65</td>
<td>.202</td>
<td>.02</td>
</tr>
<tr>
<td>DRG</td>
<td>1</td>
<td>2.18</td>
<td>.144</td>
<td>.02</td>
</tr>
</tbody>
</table>

* Significant at p<.05

**Complex PTSD Symptoms**

Additionally, it is hypothesized that the CSA group will have significantly higher levels of symptoms indicative of complex PTSD compared to the non-CSA group. A one-way multivariate analysis of variance (MANOVA) was conducted to evaluate group
differences on PAI scales thought to be indicative of CPTSD symptoms: NIM, SOM, ARD, BOR, and DEP. Preliminary assumption testing was conducted and no serious violations were found. A statistically significant difference was found between the CSA group and the non-CSA group on the combined dependent variables, F(5,72)= 3.25, p=.01; Wilks’s Lambda= .82; $\eta^2= .18$. As presented earlier, the follow-up ANOVAS indicated that there was a significant difference between the two groups on the ARD scale (see previous analysis).

In order to examine group differences on the ARD subscales, a one-way MANOVA was conducted. The MANOVA was significant, F(3,74)= 4.6, p<.01; Wilks’s Lambda= .84; $\eta^2= .16$, indicating that there was a significant difference between the two groups. A follow-up one-way ANOVA was conducted to investigate differences on each of the subscales of ARD. In order to reduce Type I errors the Bonferroni correction (Tabachnick & Fidell, 1996) was applied. The Bonferroni correction resulted in a critical alpha level of .02. There was a statistically significant difference found between the CSA and non-CSA group on the Traumatic Stress (ARD-T), F(1,76)= 8.95, p<.05, $\eta^2= .10$ (CSA= 69.79, non-CSA= 59.28), and Obsessive-Compulsive (ARD-O) subscales, F(1,76)= 9.23, p<.05, $\eta^2= .10$ (CSA= 56.4, non-CSA= 49). No significant difference was found on the phobia subscale although the CSA group did have a higher mean score (ARD-P): F(1,76)= 2.35, p= .13 (CSA= 55.71, non-CSA= 51.78).

Hypothesis II: Relationship of PTSD to Drug and Alcohol Use

Second, it is hypothesized that higher levels of PTSD symptoms (ARD-T) will be associated with higher levels of alcohol and drug use as reported on the PAI (ALC, DRG). The relationship between PTSD symptom severity (ARD-T) and drug and alcohol
use (DRG, ALC) was investigated using Pearson product-moment correlation coefficients. Preliminary analyses were performed to assess for violations of the assumptions of normality, linearity, and homoscedasticity. No violations were found. There was a medium, positive correlation between traumatic stress levels (ARD-T) and drug use severity (DRG) ($r = .40$, $n= 78$, $p=.000$), with higher levels of traumatic stress associated with higher levels of drug use. No relationship was found between traumatic stress levels and alcohol use ($r = .17$, $n= 78$, $p = .17$). Due to the lack of findings, an additional analysis was run using the original 99 participants in order to increase the sensitivity of the test. Using a larger sample size a small, a positive correlation was found between traumatic stress levels and alcohol use ($r = .20$, $n= 99$, $p = .04$).
DISCUSSION

The purpose of this study was to examine how experiences of early, severe CSA affect the PAI profiles of incarcerated women. Despite the common usage of the PAI with this population no studies have investigated how CSA may be reflected on PAI profiles. Based on past research, female inmates with CSA were hypothesized to have significantly higher levels of overall psychopathology than inmates without such histories as well as high levels of symptoms associated with complex PTSD. Furthermore, it was predicted that traumatic stress symptoms (ARD-T) and severity of CSA would be associated with higher levels of drug use (DRG) on the PAI. Lastly, this study aimed to provide descriptive information about this population’s substance abuse and mental health history.

Demographic Comparison

There were no differences found between the CSA and non-CSA group in regards to ethnicity, age, marital status, education and being placed in foster care. Similar to national statistics on female inmates (Frost et al., 2006), the majority of women in this incarcerated sample were in their mid-thirties, unmarried mothers of minor children, and had a high school or GED diploma. As is true nationwide, women of color, particularly African Americans (5%) and Native Americans (5%) were disproportionally represented in this sample when compared to the percentage of African Americans (2%) and Native Americans (1.4%) who reside in Oregon.

Experiences of childhood victimization were remarkably high in this population and higher than other reported rates among incarcerated women. In the original sample of 99 women, 64% reported having a history of childhood sexual abuse at or below age
13 using the lowest cut-scores on the Childhood Trauma Questionnaire (Bernstein & Fink, 1997). While rates elsewhere have varied widely from 12% (Greenfeld & Snell, 2000) to 40% (Zlotnick, 1997), rates in this population appear dramatically higher. One possible reason for these differences is that researchers have traditionally relied on methods that have the potential to suppress rates of CSA in populations. As has been pointed out by others, the vast majority of studies on CSA use unreliable measures that rely on single question items or reviews of clinical records (Browne, Miller, Maguin, 1999; Bernstein & Fink, 1997), which may underestimate the frequency of reported CSA. The CTQ was designed to address the deficiencies of existing trauma measures by using multiple items, objective terms, and a Likert scale that assesses multiple types of abuse. Given the CTQ’s good validity, reliability, and adequate sensitivity and specificity it is likely that the high rates of CSA found in this population are indeed reliable.

Regarding mental health history, women with CSA were found to have significantly higher rates of mental health care utilization prior to entering prison. Specifically, women in the CSA group reported that they received psychotherapy, psychiatric hospitalization, and psychiatric medications at significantly higher rates prior to entering prison. Higher mental health care utilization in this population is in line with previous research that has found that CSA severity is associated with higher rates of mental health treatment (Simpson, 2002). The findings from this study are supported by previous research that has shown that women with CSA have higher overall psychiatric distress, higher global severity of symptoms, and higher rates of anxiety, depression, and suicidal ideation (Callahan et al., 2003).
Women with CSA tended to receive prison behavioral health services (case management, group therapy, individual therapy, psychiatric medications) at higher rates than women without CSA, although these differences were not statistically significant. A possible explanation for the lack of significant findings is that women with less severe mental health problems, who did not have access to services on the outside, are now able to access mental health services, thus increasing the rate of service use by non-abused women in prison (Blitz, Wolff, and Paap, 2006). Whereas outside of prison, only women with severe mental health problems received treatment, now all women have equal access to treatment. While small differences exist between groups, with women with CSA receiving more prison mental health care, this ‘leveling of the playing field’ reduces any large treatment disparities.

Significant differences were found between the groups in regards to individual and familial substance abuse histories. Women in the CSA group were found to have begun using alcohol and drugs at a significantly younger age (M=12.41) than individuals without CSA (M=15.39). These results are similar to findings by Ompad et al. (2005) who found that CSA is associated with earlier initiation of injection drug use. While the relationship between CSA and substance use is complex, some have hypothesized that PTSD, which can develop after CSA, mediates substance use (Epstein, Saunders, Kilpatrick, & Resnick, 1998). According to this hypothesis, individuals with PTSD learn that alcohol and drugs numb emotional distress and subsequently this learned association becomes a way to self-medicate (Stasiewicz & Maisto, 1993). This hypothesis is supported by this study’s findings that women with CSA were found to use methamphetamines and cocaine at significantly higher rates than women without CSA.
Similarly, Kilpatrick (1992) found that women who were sexually abused were six times more likely to use cocaine and ten times more likely to use heroin and amphetamines.

While women with CSA used drugs at higher rates than those without CSA, these results did not translate into higher rates of past or current substance abuse treatment. While surprising, these result fit with findings by Simpson (2002) who found that women with more severe histories of CSA were actually less likely to have received substance abuse treatment compared to women with no history of CSA. Reasons for this remain unclear but one possible explanation is that women with PTSD or CPTSD may be resistant to traditional substance abuse treatment due to problems with hypervigilance, avoidance of men, and anxiety in groups.

In this study, women with CSA were more likely to have had mothers who used substances during the participant’s childhood. Interestingly, women with CSA were also more likely to have father’s who used substances but the differences between the two groups was not statistically significant. Research by Vogeltanz, Wilsnack, Harris, Wilsnack, Wonderlich and Kristjansn (1999) found that CSA is more likely to occur in households where mothers drink and fathers do not. One possible explanation for these differences are that mother’s who abuse substances may leave their children less protected and supervised.

Hypothesis I

Based on past research, it was hypothesized that female inmates with histories of early, severe CSA (age ≤ 13 years; CTQ CSA scale = ≥ 13) would have significantly higher levels of overall psychopathology than inmates without such histories and thus score higher on every PAI full-scale. The results supported this hypothesis, as there was
a significant overall difference between the two groups with the CSA group scoring significantly higher on every full-scale and most sub-scales. These results reinforce previous research that has found that CSA is associated with greater psychiatric distress and higher global symptom severity (e.g. Callahan et al., 2003). These results also mirror the findings of Schmidt (2002) who examined the PAI profiles of female treatment seeking college students with CSA. Schmidt (2002) found that the average PAI scale scores across the PAI’s 22 scales were higher for the treatment-seeking female college students with CSA group compared to the non-CSA group.

It was predicted that the CSA group would have significantly higher levels of symptoms thought to be indicative of CPTSD: negative impression management (NIM), somatic complaints (SOM), anxiety-related disorders (ARD), borderline features (BOR), and depression (DEP). Additionally, it was hypothesized that the CSA group would have significantly higher levels of affect dysregulation (BOR-A), identity disturbance (BOR-I), negative relationships (BOR-N), self-destructiveness (BOR-S), and traumatic stress (ARD-T). These hypotheses were partly borne out. Statistically significant differences were found between the two groups on the combined variable, indicating that the average T score for the five scales combined was higher for the CSA group. However, when individual scales were examined, significant differences were only found on the anxiety-related disorders scale (ARD) and the traumatic stress (ARD-T) and obsessive-compulsive (ARD-O) subscales. In comparison, Schmidt (2002) found significant group differences on NIM, ARD, and BOR, as well as PAR. On the subscales Schmidt found differences on the traumatic stress (ARD-T), hypervigilance (PAR-H), persecution (PAR-P), affective instability (ARD-T), and negative relationships (BOR-N) subscales. While
both studies found differences on ARD and ARD-T, it is surprising that the current study did not find differences on the other scales hypothesized to be related to CPTSD.

One potential reason for the lack of expected findings in the current study is that there may not have been sufficient power to detect small or medium effects sizes. A post hoc power analysis revealed that only large effect sizes could be detected with relative certainty due to the small sample size. Therefore, small and medium effect sizes were potentially missed due to the limitation. Another potential reason that the expected findings were not found may relate to the high levels of psychopathology and substance abuse in the total sample. Previous studies on the mental health of female inmates in Oregon have shown that affective disorders are common this population (Birecree, Bloom, Leverette & Williams, 1994). Furthermore, this study found that most women had more than one diagnosis. Due to the high prevalence of psychiatric disorders among Oregon’s female inmates it can be assumed that women in both groups had high levels of psychopathology. Therefore, it is possible that the high levels of psychopathology among the non-CSA group and lowered statistical power combined to make small to medium size effects harder to detect.

This raises the question of whether clinical differences exist between women with and without CSA histories given the general lack of statistically significant differences. A visual comparison of T scores shows that group differences are generally small but clear differences are indeed apparent if a clinical cut-off of 60T is used to differentiate clinically significant symptom levels⁸. Looking at the configuration of the mean profile, women with CSA scored above 60T on scales measuring anxiety (ANX), anxiety-related

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⁸ 84% of nonclinical will have a T score below 60 (1 SD above the mean; Morey, 1991).
disorders (ARD), depression (DEP), paranoia (PAR), borderline features (BOR), drug problems (DRG) and anti-social features (ANT). On the sub-scales women in the CSA group scored above 60T on the subscales measuring traumatic stress (ARD-T), physiological symptoms of depression (DEP-P), hypervigilance (PAR-H), identity problems (BOR-I), negative relationship (BOR-N), and self-harm (BOR-S). In comparison, women without histories of CSA scored above 60T on scales measuring depression (DEP), borderline features (BOR), anti-social features (ANT), and drug problems (DRG). Additionally, women without CSA scored above 60T on subscales measuring negative relationships (BOR-N) and self-harm (BOR-S). By examining these differences much can be gained in our understanding of how early, severe CSA influences the long-term psychological functioning of incarcerated women.

After drug problems (DRG), women with CSA scored highest on the traumatic stress (ARD-T) subscale with scores reaching nearly two standard deviations above the correctional mean. This suggests that incarcerated women with histories of early, severe CSA tend to experience high levels of symptoms associated with PTSD. Although this scale was not intended to diagnose PTSD, multiple studies have found that ARD-T has good discriminant validity, is moderately correlated to other measures of PTSD, and has excellent diagnostic utility (McDevitt-Murphy et al., 2007; McDevitt-Murphy et al., 2005; Mozley et al., 2005). Besides ARD-T, inmates with CSA had clinically elevated physiological anxiety (ANX-P) but not clinically elevated cognitive anxiety (worry, rumination; ANX-C) or affective anxiety (tension, fatigue; ANX-A) scale scores. In the current study anxiety appears to be more clearly manifested physiologically versus affectively or cognitively. This physiological expression of anxiety most likely
corresponds to symptoms of physiological hyperarousal associated with PTSD. This hypothesis fits recent findings by McDevitt-Murphy (2007) who found that PTSD was associated with higher levels of ANX-P. Women in the CSA group also had clinically significant levels of paranoia (PAR) with a particular elevation on the hypervigilance scale (PAR-H). This finding is in line with previous studies that have found that individuals with high ARD-T tend to have higher levels of PAR (McDevitt-Murphy, 2007). Interestingly, women in the CSA group had significantly higher levels of obsessive-compulsive symptoms (ARD-O) than the non-CSA group, however, these symptoms were not found to be clinically significant. One possible explanation for this difference is that women with CSA may be more ruminative and rigid due to the re-experiencing and avoidance symptoms of PTSD. The high levels of PTSD symptoms found in this population correspond to research that has found that individuals with histories of early, severe CSA are at increased risk of developing PTSD (Roth et al., 1997).

Besides PTSD, research has shown that women with CSA are at increased risk of developing symptoms associated with complex PTSD such as difficulties with affect regulation, negative relationships, self-harm, identity problems, depression, and somatization (Roth et al., 1997). While these symptoms are commonly associated with Borderline Personality Disorder (BPD), researchers are beginning to reconceptualize these symptoms as trauma-related disturbances (Hodges, 2003). This distinction is likely important for women who are incarcerated because women with complex PTSD may be inappropriately diagnosed with BPD. Interestingly, both CSA and non-CSA groups scored at least 60T on the borderline traits scale (BOR) indicating that both groups of incarcerated women display moderately high levels of these symptoms, although there
are subtle differences between the groups that may have clinical significance. In this sample, both groups of women scored above 60T on BOR-N with the CSA group reporting more severe problems with negative relationships. This finding is similar to other studies that have shown that women with CSA histories tend to have interpersonal difficulties and be less trusting, and have ambivalence and fear about being vulnerable (Briere, 1999). In addition, women with CSA have been shown to display greater interpersonal hypersensitivity and maladaptive relational patterns (Callahan et al., 2003). This pattern of scores was also evident for BOR-S, which is a measure of self-harming behaviors, with both groups scoring above 60T and the CSA group scoring slightly higher than the non-CSA group. These findings are similar to other studies that have found that women with CSA tend to engage in activities that have the potential for self-harm including indiscriminate sex, binging/purging, self-injury, and substance abuse (Briere, 1999). The unique difference between the two groups in this study was on identity problems (BOR-I), with only the CSA group scoring above the cut-off. Identity problems related to CSA have been described in the work of Briere (1999), Pearlman (1997), Herman (1992), and Gold (1986). Surprisingly, neither group scored above 60T for affective instability. This was an unexpected finding given the large body of research that has shown strong associations between childhood abuse and affect regulation (Briere, 2002; Van der Kolk et al., 1996; Zlotnick, 1997). While it is unclear why the CSA group did not have clinically significant levels of affect dysregulation, one possibility is that BOR-A may not be a valid measure of the types of affect dysregulation commonly seen in this population. Given Zlotnick’s (1997) findings that incarcerated women with histories of childhood abuse scored significantly higher on measures of affect regulation
there is clearly a need for additional research on the use of the PAI as a valid measure of affect regulation in prison settings.

Symptoms of depression have been shown to be common among individuals with CPTSD (Roth et al., 1997). More specifically, feelings such as ineffectiveness, feeling permanently damaged, guilt and responsibility, shame, despair and hopelessness are believed to be associated with experiences of early, severe trauma (Roth et al., 1997). Interestingly, in this sample, both groups experienced clinically significant depressive symptoms with the CSA group experiencing slightly higher levels of physiological symptoms of depression. One possible explanation for the lack of significant difference is that incarcerated female samples tend to have high rates of depression (Birecree et al., 1994). These high rates may make any depression related to CSA less detectable. In this sample, the women in the CSA group tended to express depression more somatically and were more likely to report changes in physical functioning, activity level, and energy in addition to changes in sleep patterns, loss of sexual interest and changes in appetite. This is noteworthy because women in the CSA group were also found to experience anxiety physiologically (e.g. shortness of breath, irregular heartbeats, sweaty palms). While women in the CSA group did not have elevated scores on the somatic complaints scale (SOM) there is evidence that women in this group may express anxiety and depression more somatically.

Lastly, both the CSA group and the non-CSA group scored above 60T on anti-social features (ANT) with the CSA group scoring higher on anti-social behaviors (ANT-A). While it is unclear why anti-social behaviors are higher in this group it is possible
that these scores are elevated due to higher levels of acting-out behaviors described by Briere (1994) among women with CSA.

Hypothesis II

Based on past research it was predicted that the severity of traumatic stress symptoms (ARD-T) and severity of childhood sexual abuse would be associated with higher levels of drug use (DRG) as measured by the PAI. A moderate, positive correlation was found between traumatic stress levels (ARD-T) and drug problems (DRG) with higher levels of drug problems associated with higher levels of traumatic stress. Women in both groups scored two standard deviations above the norm for drug problems with women with CSA scoring higher than women without CSA. Numerous studies have found strong links between substance abuse and PTSD (Najavits et al., 1997; Triffleman, Marmar, Delucchi, & Ronfeldt, 1995; Kessler et al., 1995; Brady et al., 1994). The findings of this study are similar to the results of Brady et al. (1994) who found that women with PTSD had significantly higher severity scores on the Addiction Severity Index (ASI). Because correlations do not show causation, from this research it is unclear the directionality of traumatic events to drug use, however, other studies suggest that women with trauma histories attempt to “self-medicate” with drugs. Unexpectedly, the relationship between CSA severity and drug use (DRG) was found to be very small. This is very surprising given that multiple studies have found that CSA increases the likelihood that women develop later substance dependence (Briere & Runz, 1987, Wilsnack et al., 1997). Due to this unexpected outcome further research will need needed to determine the strength and directionality of the relationship between CSA severity and drug use as measured on the PAI.
Implications

Theory and Clinical Application

The findings from this study have important implications both theoretically and clinically. First, the findings from this study highlight the importance of using assessment measures that have adequate sensitivity and specificity in identifying women with CSA. Typically studies on CSA in incarcerated populations have used unreliable measures with a single question item or use clinical records. These methods can be unreliable and are likely to underestimate rates of CSA and therefore skew data. It is important that rates of CSA be adequately captured so prisons can accurately respond the needs of this population.

As discussed earlier, this study found that women with CSA histories tended to initiate substance use at an earlier age and have more severe levels of substance abuse. These findings add credence to the hypothesis that women with trauma histories may use drugs in order to “self-medicate” emotional distress related to trauma symptoms (Briere, 1994, Epstein et al., 1998). This suggests that early intervention programs that treat PTSD symptoms in children may prevent the occurrence of later substance abuse disorders. Another interesting finding was that women with CSA in this study were more likely to have mothers who used substances, suggesting an association between maternal substance abuse and increased risk for CSA. This raises the possibility that treatment of substance abuse in mothers may be a protective factor against childhood sexual abuse for their daughters. Furthermore, substance abuse treatment in mothers of young children may strengthen mother-child attachment by allowing mothers to better meet the needs of their children and increasing their level of emotional attunement. By strengthening
mother-child attachment the problems long-term problems associated with insecure attachment may be ameliorated or reduced. While prevention or intervention is beyond the scope of this study, both of these findings raise questions that could have important clinical and public health implications.

Similar to other studies, the long-term sequelae of early, severe CSA were found to be complex. In comparison to women without CSA, women with early, severe CSA were found to have PAI profiles that showed higher overall levels of psychopathology as well as elevated levels of anxiety, anxiety-related disorders, depression, paranoia, borderline features, drug problems and anti-social features. These findings touch on the debate about whether symptoms associated with early, severe CSA and other forms of childhood abuse are best conceptualized as PTSD with co-morbidities, BPD, or complex PTSD. Recent research supports the notion that symptoms typically described as “co-morbidities” or a personality disorder constitute post-traumatic adaptations to trauma that include problems with self-regulation, self-definition, and changes to adaptation style (Briere & Spinazzola, 2005; Briere & Rickards, 2007; Courtois, 2004; Roth et al., 1997; van der Kolk et al., 2005). Women with CSA in this sample had unique PAI profiles that were visually distinct from typical incarcerated populations or individuals with PTSD, BPD or substance abuse. This suggests that early, severe CSA does have a prototypical profile that captures a more complex symptom constellation than PTSD alone. Besides traumatic stress symptoms, the most notable differences between the two groups were in regards to identity disturbances, negative relationships and drug abuse. These findings lend support to the hypothesis that disruptions in attachment can lead to identity

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9 Compared to Morey’s 1991 census-matched standardization samples.
disturbances which have been described in the literature as impairments in self-awareness and self-monitoring (Pearlman, 1997), distorted self-perceptions (Herman, 1992), feelings of “emptiness,” confusion over identity, and opposing thoughts and feelings (Linehan, 1993). Additionally, findings from this study support research that has shown that early abuse causes a host of relational problems that lead to negative relational patterns (Pearlman & Courtois, 2005).

The findings from this study provide additional support for the argument that women with CPTSD require treatment that has been adapted to their unique needs. Research has shown that emotional dysregulation is predictive of poor prognosis in trauma-focused PTSD treatment (Ford & Kidd, 1998). While the current study did not find elevated levels of affect dysregulation, these findings do not dismiss the large body of research that has found frequent problems with affect regulation among individuals with CSA (e.g. Briere, 2002). With the knowledge that trauma-focused PTSD treatment is often poorly tolerated by individuals with child abuse histories, Cloitre et al. (2002) developed a two-phase treatment (STAIR) where the first phase includes skills training in affect and interpersonal regulation and the second phase includes modified prolonged exposure. This approach has been found to produce significant improvement in PTSD symptoms, affect regulation, and interpersonal skills in self-referred treatment-seeking women from the community (Cloitre et al.). The results of the current study, while not focused on treatment efficacy, suggest that incarcerated women with CSA histories may have unique psychosocial needs, some of which may be best addressed through targeted interventions for this population.
While evidence-based treatment has been developed for PTSD and co-morbid substance abuse in incarcerated women (Seeking Safety; Najavits, Weiss et al., 1997; Zlotnick, 2003) this treatment does not specifically address symptoms related to complex trauma. Until further advances are made in the treatment of co-morbid complex PTSD and substance abuse, this treatment appears best suited for this population. In order for prisons to adequately address co-morbid substance abuse and CPTSD changes will need to be made to traditional substance abuse treatment programs. Hopefully by addressing underlying trauma symptoms, substance abuse will be stemmed and further incarceration prevented.

Limitations

One goal of this study was to address several of the limitations from previous studies that have examined PAI profiles of women with childhood abuse histories. While this study was able to address previous problems in measuring childhood abuse, this study was not able to address limitations due to a relatively small sample size. Due to the small sample size and frequency of abuse histories among incarcerated individuals, it was untenable to create a CSA group that had not experienced any other form of abuse. Moreover, it was not tenable to create a non-CSA group that had not experienced any other forms of abuse, thereby limiting our ability to parcel out the associations between abuse more generally and the outcomes of interest in this study. While this is concerning, analyses revealed that the non-CSA group tended to experience low levels of physical and emotional abuse while women in the CSA group tended to experience high levels of others types of abuse, indicating that abuse profiles tend to covary and somewhat mitigating the problem of other types of abuse across the CSA groups. However, caution
should still be taken when interpreting the findings. Another consideration is that it is also possible that the profile of the CSA group may not be specific to women with CSA but rather a typical profile of child abuse in general. Further research should be done where other types of abuse are used as covariates.

As mentioned above, one limitation of the study was the small sample size. A post-hoc power analysis indicated that a sample of 788 individuals would have been necessary to detect a small effect size, 126 individuals to detect a medium effect size and 80 cases to detect a large effect size. With a total sample size of 78 individuals it is likely that a large effect size should have been detected. In order to compensate for the inability for the test to detect small effect sizes, PAI scores were compared using clinical cut-offs. In order to more accurately compare scores, future studies on the PAI and CSA should include larger sample sizes if at all possible.

Another possible limitation to this study is the role of confounding variables. The design of the study resulted in the inability to control for factors besides CSA that may contribute to the long-term sequelae of CSA. In the future attempts to control for variables such as SES, parental reaction to disclosure of abuse, length of abuse, age at abuse, parental psychopathology, relationship of child to perpetrator, other Axis I and Axis disorders, attachment styles, and cultural factors should be undertaken. Another question that arises from this study is the generalizability of the results to other incarcerated samples. Factors that should be considered when generalizing these results to other population are potential regional differences (e.g. degree of substance abuse, SES, availability of resources, cultural differences) and ethnic differences. Compared to other regions, Oregon lacks diversity and has few numbers of African Americans or
Asians. When conducting future studies it will be important to include greater ethnic and racial diversity.

Directions for Future Research

This study contributes to an area of research that has largely been unexplored. While this study provides some clues as to the long-term sequelae of CSA in incarcerated women, there are many questions yet to be answered. As noted above, future research is needed to parse out the long-term effects of CSA from other types of abuse. While studies suggest that CSA has unique long-term sequelae (Callahan, Price, & Hilsenroth, 2003), more research is needed to differentiate the effect of CSA from other forms of abuse. Additional research on the differences between PAI profiles of women with physical, sexual, and emotional abuse will provide clarity on how abuse type contributes to psychopathology. It will also be important for future research to examine how abuse characteristics (e.g. age of abuse, severity, duration) impact PAI profiles.

Because the focus of this study was on incarcerated women, it remains unclear how these results might generalize to incarcerated male samples, clinical samples, or community samples. In order to separate out the effect that incarceration has on PAI profiles more research is needed that compares incarcerated samples to non-incarcerated samples. This also raises the question of how internal and external variables moderate and mediate long-term psychopathology. For example, how does maternal substance abuse mediate psychopathology in women with CSA? How does attachment style moderate adult interpersonal functioning? Furthermore, additional research is needed on the relationship between substance abuse and CSA. For example, what is the role of
CSA in later substance abuse? Also, does CSA cause substance abuse or is it a marker for other risk factors?

Lastly, this study raises awareness about the importance of developing and implementing interventions in prisons that address the unique problems related to complex trauma in women. Based the initial promising results from studies on Seeking Safety (Zlotnick, 1997) it would be wise to direct funding towards the further development and implementation of treatment programs for incarcerated women with co-morbid CPTSD and substance abuse.
REFERENCES

Bell-Pringle, V., Pate, J., & Brown, R. (1997). Assessment of Borderline Personality Disorder using the MMPI-2 and the Personality Assessment Inventory. *Assessment, 4*, 131-139.


APPENDIX A: Informed Consent

Informed Consent Form

1. Study Title

Childhood abuse and substance use in women in prison

2. Study Personnel

<table>
<thead>
<tr>
<th>Name</th>
<th>Principle Investigator</th>
<th>Principle Investigator</th>
<th>Faculty Advisor</th>
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3. Study Location and Dates

This study will take place at Coffee Creek Correctional Institution in Wilsonville, Oregon. The data collection for this study will run through April 2009 with the full study completed by June 2010.

4. Study Invitation and Purpose

You are invited to participate in a research study examining child abuse and substance use among women in prison. You have been invited to participate because you are a female inmate at the Oregon Department of Corrections. Please read this form carefully and ask any questions you may have before agreeing to be in this study. This study is being conducted by Amy Jenks, Kimberly Rideout and Michelle Guyton.

5. Study Materials and Procedures

If you agree to be in this study, we will ask you to take part in an interview with a researcher. This interview will take approximately 45 minutes. In this interview we will ask you about your history, including childhood abuse and past substance use. No further participation will be required after this interview.

6. Participant Characteristics and Exclusionary Criteria

Only participants who meet the following conditions will be included in the study: persons 18 years or older, persons who can speak and understand English, have completed the Personality Assessment Inventory, and persons who are stable enough to complete a
45-minute long interview. Individuals will be excluded from the study if they are found to be currently housed in the Disciplinary Housing Unit or in the Mental Health Infirmary.

7. Anticipated Risks and Steps Taken to Avoid Them

There are no physical or economic risks to participating in this study. There is minimal emotional risk in the administration of the Participant Information Questionnaire as well as the Childhood Trauma Questionnaire. These questions may cause minor emotional distress due to content of about childhood abuse and mental health history. You may choose to have a break or end the study at any time with no negative consequences. After you finish the interview, the interviewer will explain the study in more detail. You will be given a coping skill handout and can choose to go over it with the interviewer.

There is a small risk that confidentiality could be broken if paperwork is lost or stolen and someone outside of the study sees it. However, the researchers are protecting your data in a number of ways. Researchers will protect confidentiality by giving all participants a random ID number and removing all identifying information from the data. Data will be stored in locked drawers at Pacific University in a locked office and all data analysis will take place at the Portland campus of Pacific University. This consent form will be kept separately from the data that we will be collecting. If the results of this study are published or presented, no information will be included that would make it possible to identify you as an individual. None of your information will be shared with the Oregon Department of Corrections, except in cases where you express desire to commit violence against yourself or others.

8. Anticipated Direct Benefits to Participants

There are no direct benefits to taking part in this study.

9. Clinical Alternatives (i.e., alternative to the proposed procedure) that may be advantageous to participants

Not applicable.

10. Participant Payment

You will not be paid for your participation.

11. Medical Care and Compensation In the Event of Accidental Injury

During your participation in this project it is important to understand that you are not a Pacific University clinic patient or client, nor will you be receiving complete mental health care as a result of your participation in this study. If you are injured during your participation in this study and it is not due to negligence by Pacific University, the researchers, or any organization associated with the research, you should not expect to receive compensation or medical care from Pacific University, the researchers, or any organization associated with the study.

12. Adverse Event Reporting Plan
Should an unexpected or adverse reaction occur, you should report this to the research interviewer who will immediately contact a corrections officer who will decide how to best handle the situation. Should an adverse event occur Pacific University’s Institutional Review Board (IRB) will be notified.

### 13. Promise of Privacy

The researchers will keep your information confidential. The records of this study will be kept private. Researchers will protect confidentiality by giving all participants a random ID number and removing all identifying information from the data. Data will be stored in thumbdrives in locked drawers at Pacific University in a locked office and all data analysis will take place at the Portland campus of Pacific University. This consent form will be kept separately from the data that we will be collecting. If the results of this study are published or presented, data will be presented about the whole group, not about individuals. None of your information will be shared with the Oregon Department of Corrections, except in cases where you express desire to commit violence against yourself or others. This information may be used to help DOC provide better mental health services to inmates.

### 14. Voluntary Nature of the Study

Your decision whether or not to participate will not affect your current or future relations with Pacific University. If you decide to participate, you are free to not answer any question or withdraw at any time without prejudice or negative consequences. The researchers will not tell the prison about who participates and who does not, and will not tell who completes or does not complete the study. That information is confidential. None of your confidential mental health information has been used or viewed at this point in the study.

### 15. Contacts and Questions

The researchers will be happy to answer any questions you may have at any time during the course of the study. Complete contact information for the researchers is noted on the first page of this form. If the study in question is a student project, please contact the faculty advisor. If you are not satisfied with the answers you receive, please call Pacific University’s Institutional Review Board, at XXX XXX-XXXX to discuss your questions or concerns further. All concerns and questions will be kept in confidence.

### 16. Statement of Consent

I have read and understand the above. All my questions have been answered. I am 18 years of age or over and agree to participate in the study. I have been offered a copy of this form to keep for my records.

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Participant’s Signature
Date
17. Participant contact information

This contact information is required in case any issues arise with the study and participants need to be notified and/or to provide participants with the results of the study if they wish.

Would you like to have a summary of the results after the study is completed? ___Yes ___No

Participant’s name: (Please Print) ____________________________

SID: ____________________________

[ ] By checking this box and initialing _____ I grant permission to you to review my mental health file. This permission does not guarantee that I will be included in the study as a participant.
Appendix B: Participant Information Questionnaire

Participant Information Questionnaire - Demographics

Participant Number: I / E ___________

Today’s Date: ___________

Age: ___________

1) What is your ethnicity?
   1- African American
   2- Asian American
   3- American Indian/Alaska Native
   4- Latino
   5- White/Caucasian
   6- Biracial/Multiracial
   7- Other

2) What is your marital status?
   1- Single/Never Married
   2- Married
   3- Separated
   4- Divorced
   5- Widowed

3) How many children under age 18 do you have? _______
   * include legally adopted.

4) How many years of school have you completed? _______
   *total number of years starting in 1st grade.

5) What is the highest degree you have completed?
   1- Less than 8th grade
   2- High School/GED Diploma
   3- Some College
   4- Associates Degree/Technical School
   5- Bachelors Degree
   6- Masters Degree
   7- Doctorate Degree

6) Were you ever placed in foster care as a child (under 18)?
   1- Yes
   2- No

-Administer CTQ-

Substance Use and Mental Health History

1) I am now going to ask you about what types of drugs you may have used in the past.
<table>
<thead>
<tr>
<th>Type</th>
<th>Have you ever used?</th>
<th>Did you use it at least once a week for at least a month?</th>
<th>Did you use the drug in the month before your offense?</th>
<th>Were you using the drug at the time of your offense?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1- Marijuana <em>(Pot, Weed, Cannabis, Hashish)</em></td>
<td>Y/N</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2- Any Hallucinogens like <em>Ecstasy or LSD</em> <em>(Acid, MDMA, PCP, Peyote, Mushrooms, Psychedelics)</em></td>
<td>Y/N</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3- Cocaine or Crack</td>
<td>Y/N</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4- Any stimulants like speed or meth <em>include amphetamines and methamphetamine</em></td>
<td>Y/N</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5- Methamphetamines <em>(Crank, Crystal, Ice)</em></td>
<td>Y/N</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6- Any depressants, including Barbiturates, Tranquilizers and Quaalude</td>
<td>Y/N</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7- Taken Tranquilizers like Xanax or Valium not as prescribed</td>
<td>Y/N</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8- Heroin</td>
<td>Y/N</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9- Street methadone</td>
<td>Y/N</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10- Other opiates, like OxyContin, Vicodin, Darvon <em>(Demerol, Percodan, Oxycodone, Morphine, Codeine)</em> type:</td>
<td>Y/N</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11- Alcohol</td>
<td>Y/N</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12- Inhalants <em>(Huffing, Laughing Gas, Whippets)</em></td>
<td>Y/N</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13- Injectable Drugs</td>
<td>Y/N</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14- None</td>
<td>Y/N</td>
<td></td>
<td></td>
<td><strong>SKIP TO #6</strong></td>
</tr>
</tbody>
</table>

Anything else that I didn’t list? ________________________________________

2) How old were you when you first used drugs or alcohol? _____  
*including substances given to child

3) Not including prison, have you ever received alcohol or drug treatment?

1- Yes  
   How many times_____  
   How many inpatient programs have you attended?_____  
   How many outpatient programs have you attended?_____  
   *not including AA/NA
2) No

4) Have you ever received drug or alcohol treatment in prison?
   1- Yes
   How many times_____
   2- No

5) How important do you consider treatment for drug or alcohol abuse during your incarceration?
   1- Not at all important
   2- Somewhat important
   3- Important
   4- Extremely important

Start HERE if no history of substance abuse:
6) Did your mother or father (or caregiver) abuse alcohol or drugs while you were growing up?
   1- Yes
   Who?
   Mother ____
   Father ____
   Other caregiver ____
   2- No

7) Are you currently taking any prescribed psychiatric medications?
   1- Yes
   2- No (IF NO skip to #11)
   3- Don’t know

8) What are you currently taking? (clarify meds by cross referencing chart)

_______________________________________________________________
_______________________________________________________________

9) What is the primary reason?
   1- Depression
   2- Anxiety (any anxiety disorder)
   3- Mania
   4- Hallucinations/Psychosis
   5- Problems with sleeping
   6- Mood swings (Bipolar)
   7- Attention/Concentration (ADHD/ADD)
   8- Aggression/Anger
   9- Pain
   10- Other ______________

10) Before entering prison were you ever prescribed psychiatric medications? As an adult.
   1- Yes
   2- No
3- Don’t know

11) Did you ever receive mental health treatment before entering prison? As an adult.

1- Yes
   What types?
   Counseling or Therapy, including group therapy____
   Psychiatric Care____
   Residential Treatment/Day Treatment____
   Overnight hospital stay____
2- No

12) Are you currently receiving mental health or BHS services (case management, psychiatrist, group therapy, individual therapy)?

1- Yes
2- No (IF NO, ASK #13)

13) Have you ever received mental health or BHS services while in prison?

1- Yes
2- No

Thank you for taking the time to complete this interview with me. In this interview, you were asked several questions about childhood abuse as well as substance use and your mental health history. In this study we are looking at how childhood abuse and substance use affect scores on the Personality Assessment Inventory (one of the assessments you completed at intake). This study will help us better identify individuals who may benefit from treatment that takes into account childhood abuse and substance use.

The Oregon Department of Corrections offers treatment to inmates dealing with mental health problems. Behavioral Health Services (BHS) can be contacted by sending an inmate communication form.

Please remember that the DOC does not have access to the results of the tests that you just took. This is for research purposes only, and the information about you will not be shared with anyone else. The DOC may learn about the general results of the study where everyone’s results are summarized, but no particular inmate’s results could ever be identified or used in any way to affect your time here.

This handout is for you to keep. It is about grounding yourself when you are dealing with emotionally painful feelings. If you would like, we can go over this handout together.

Demographic Information From Chart

Mental Health Level (from chart): ______________________

Type of Crime Committed? (from chart) ______________________

____________________________________________________________________

____________________________________________________________________

Problems resulting from alcohol or drug use in year prior to incarceration (from chart):
1- Serious depression
2- Serious anxiety or tension
3- Hallucinations
4- Difficulty understanding/concentrating/remembering
5- Thoughts of suicide
6- Serious problems at school or work
7- Serious problems with friends
8- Serious problems with family
9- Problems with the police
10- Arrests
11- Difficulty controlling violent behavior

Diagnoses given at intake:
______________________________________________________________
______________________________________________________________
______________________________________________________________

IRMA score:
math:_____ reading:_____

Current Psychiatric Medications:
______________________________________________________________