ADULT ANTISOCIAL BEHAVIOR AND AFFECT REGULATION AMONG PRIMARY CRACK/COCAINE-USING WOMEN

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The relationship between deficits in affect regulation and Adult Antisocial Behavior (ASB) in primary crack/cocaine-using women was explored in a sample of 80 inner-city women. Narrative early memories were coded for two components of affect regulation, Affect Tolerance and Affect Expression, using the Epigenetic Assessment Rating Scale (EARS; Wilson, Passik, & Kuras, 1989). ASB was measured by the adult criteria of Antisocial Personality Disorder on the SCID-SAC (Spitzer, Williams, Gibbon, & First, 1993). Analyses compared primary crack/cocaine-using women with and without ASB on the affect regulation measures. Findings using memories of primary caretakers revealed that women with ASB had significantly poorer capacity for Affect Tolerance and Affect Expression than women without ASB, suggesting that ASB is significantly associated with differences in the capacity to regulate emotional experience among primary crack/cocaine-using women.

Substance abuse has repeatedly been shown to correspond to increased rates of antisocial behavior among both men and women (e.g., Brooner, King, Kidorf, Schmidt, & Bigelow, 1997; Robins, Tipp, & Przybeck, 1991). Nevertheless, variability among substance abusers supports the need for further exploration of the factors that underlie antisocial behavior in this population. Female antisocial behavior, in particular, is a relatively understudied area in need of further attention. Multiple interactive factors are likely to impact a drug-using woman’s potential for antisocial behavior; however, there is a growing literature which indicates that deficits in emotional self-regulation, including the capacity for affect tolerance and affect expression, may play a particularly important role in the development of antisocial behavior (e.g., Snyder, Schrepferman, & St. Peter, 1997; Zlotnick, 1999). The present study examined the potential relationship between affect dysregulation and adult antisocial tendencies among primary crack/cocaine-using women.

Impairment in affect regulation has long been considered influential in the development of substance abuse. The “self-medication” view of substance use disorders proposes that individuals seek out substances in an attempt to manage overwhelming affective experiences that are difficult to identify and articulate, such as anger and intense rage (e.g., Greenspan, 1977; Khantzian, 1985; Krystal, 1975). Clinical reports (Krystal, 1997; Horowitz, Overton, Rosenstein, & Steidl, 1992) highlight the difficulties in emotional regulation, inability to self-soothe, and instability of behavioral control that are typical of adolescent and adult substance abusers. Research also supports the hypothesis that substance users have greater difficulty regulating emotional experience. Keller and Wilson (1994), for example, observed that opiate and cocaine abusers demonstrated significant impairments in affect regulation relative to a control group of nonusers of drugs. Miller (1991), in a review of the literature on substance abuse treatment outcome, noted that frustration-tolerance among substance users was an important indicator of continued abstinence.

Vulnerabilities in the capacity for affect regulation have likewise been implicated in the development of adult antisocial behavior. Adult antisocial behavior, as indicated by the adult criteria of Antisocial Personality Disorder in the Diagnostic and Statistical Manual (DSM-III-R, American Psychiatric Association, 1987; DSM-IV; American Psychiatric Association, 1994) includes, among other features, tendencies toward violence and impulsivity, disregard for legal
standards of behavior, and indifference toward the rights and feelings of others.

Psychoanalytic theorists have suggested that the capacity for antisocial behavior reflects trauma, deprivation, or inconsistencies in early caretaking relationships that undermine the individual’s ability to integrate and regulate aggressive impulses. Psychoanalytic “object relations” theorists, who highlight the significance of interpersonal relationships in personality development, have underscored the importance of early relationships in developing affect regulation skills, through a caretaker’s capacity to help a child absorb and comprehend overwhelming emotions (e.g., Bion, 1962). The process through which emotions become known, elaborated, and modulated is developed through early interactions with a primary caretaker who enables the child to understand and integrate affective experience. Deficits in early relationships leave the child with a potentially disorganized and unmanageable internal experience. In an effort to defend against a flood of inchoate emotion and a “life-long dread of affects” (Krystal, 1975, p. 187), the individual may resort to maladaptive patterns of substance use and/or antisocial or aggressive manipulation of the environment. Unintegrated aggression may resurface later in life as antisocial or aggressive tendencies (Freud, 1949); an inability to integrate self-regulatory functions has been associated with typical antisocial features, including unpredictable aggression, lack of empathy, and an incapacity to experience elaborate affective states (Kernberg, 1989).

Object relations theorists also suggest that if early relationships are traumatizing, an individual might develop an internalized “persecutory” mental experience of others against which he or she must constantly defend, leading to the development of an antisocial character marked by primitive psychological defenses. With this defense structure, the antisocial character fails to develop the capacity to integrate and modulate conflicting and unpleasant emotions. In an effort to avoid distress, he or she cultivates a “profound detachment” (Meloy, 1992) from others and wards off feelings of vulnerability through a “grandiose isolation” (Kernberg, 1975).

Integrating neuroscience with contemporary psychoanalytic theory, Shore (1999) proposed a developmental neurobiological model of affect regulation and attachment. From this perspective, affect dysregulation stems from right hemispheric dysfunction, rooted in deficits in the transfer of affective information in early caretaking relationships (Shore, 1997). Limbic abnormalities have also been implicated in difficulties in affective processing among psychopathic personalities (Kiehl et al., 2001).

Behavior theories have also linked deficits in affect regulation with antisocial behavior. Emotional regulation theory, for example, suggests that negative emotions decrease the processing of social information and increase the use of learned behavior, such as aggression. From this perspective, antisocial behaviors are shaped by social-environmental contingencies that emerge in response to those behaviors (see Snyder et al., 1997 for a review).

While empirical investigation into the relationship between affect regulation and antisocial behavior has been limited, findings suggest that antisocial behavior, particularly aggressive antisocial behavior, stems from a range of affect regulation deficits. In a sample of incarcerated women, for example, Zlotnick (1999) found that a greater degree of affect dysregulation, especially poor anger modulation, was significantly related to antisocial personality disorder. Fonagy, Moran, and Target (1993) found that an inability to recognize mental states of self and others, including affects, beliefs and intentions, underlies aggressive antisocial behavior. From a developmental perspective, studies of children with disturbances in self-regulation, as demonstrated by disruptive behavioral disorders, have demonstrated a link between self-regulation deficits and aggressive and antisocial behavior in adolescence and adulthood (Campbell, 1991; Shaw & Bell, 1993; Snyder et al., 1997; Sroufe, Egeland, & Kreutzer, 1990; Urban, Carlson, Egeland, & Sroufe, 1991).

Researchers have considered the role of affect regulation in the development of both substance abuse and antisocial behavior; however, no studies have specifically explored the role that deficits in affect regulation may play in predicting antisocial behavior among substance users. Although substance abuse has been associated with affect dysregulation, substance abusers who also display antisocial behaviors, particularly violence, may have even greater difficulty managing and responding to strong emotions.

In this study, we propose that significant deficits in affect management among a subgroup of substance-using women are associated with adult antisocial behavior. This potential relationship was explored by looking specifically at two dimensions of affect regulation: (a) Affect Tolerance and (b) Affect Expression. Affect Tolerance reflects the capacity to tolerate and appropriately manage diverse and potentially intense emotional states. Affect Expression reflects the capacity to identify, differentiate, and express emotional complexity. We examined a sample of primary crack/cocaine-using women, using the Adult Antisocial Behavior (ASB) criteria of Antisocial Personality Disorder as an indicator of antisocial tendencies. The following hypotheses were presented: (a) Primary crack/cocaine-using women with Adult Antisocial Behavior would demonstrate significantly lower Affect Tolerance scores (AT) than primary crack/cocaine-using women without Adult Antisocial Behavior, and (b) primary crack/cocaine-using women with Adult Antisocial Behavior would demonstrate significantly lower Affect Expression scores (AE) than primary crack/cocaine-using women without Adult Antisocial Behavior.

METHOD

Participants

The women in this study were recruited from a large, urban hospital center in New York City, serving a population that is almost exclusively composed of ethnic/racial minorities of low socio-economic status. The current study was part
of a larger epidemiological study, which included a broader exploration of female victimization and perpetration (N = 333; Hien, 1994). For clarity, only the current study will be described.

Inclusion criteria for this study required participants to be: (a) willing to participate, (b) between 18 and 55 years of age, (c) English-speaking, and (d) to have a mailing address or family contact person. Exclusion criteria were: (a) a diagnosis of a psychotic disorder; (b) any serious cognitive impairment, physical ailment, or chronic disease which might have prevented a participant from completing the study; (c) illicit drug use within the 48 hours prior to the interview; or (d) a drug history that excluded either current or lifetime primary crack/cocaine use. Crack/cocaine was chosen in the parent study for two reasons: (a) its use has already been associated with antisocial and aggressive behavior in men, and (b) it was highly available in urban settings, such as New York City, and was being used in epic proportions.

For the current study, participants were divided into two groups: (a) primary crack/cocaine-using women with Adult Antisocial Behaviors (n = 28), and (b) primary crack/cocaine-using women without Adult Antisocial Behaviors (n = 52), for a total sample of 80 participants.

Women designated as having Adult Antisocial Behavior in this study all met adult diagnostic criteria for Antisocial Personality Disorder (Diagnostic and Statistical Manual III-R [DSM-III-R]; American Psychiatric Association, 1987), but did not necessarily meet criteria for Conduct Disorder before age 15. The presence of Conduct Disorder is required for a diagnosis of Antisocial Personality Disorder. This criterion was not required for inclusion in the Adult Antisocial Behavior group, as this study focused on the influence of antisocial behavior on adult functioning; thus, participants were not formally diagnosed with Antisocial Personality Disorder. Nevertheless, studies of subtypes of Antisocial Personality Disorder in drug users (Cacciola, Rutherford, Alterman, & Snider, 1994; Cottler, Price, Compton, & Mager, 1995), have found participants with adult-only antisocial behaviors to be similar to those who had satisfied childhood criteria.

Measures

Demographic and Severity Characteristics

Demographics. Demographic information was obtained through the Demographic and Treatment History Form (DTF; Hien & Zimberg, 1991). This is a structured 62-item interview designed to gather basic demographic information, sexual and reproductive history, information on general physical health, and both substance abuse and psychiatric treatment history.

Socio-economic status. Socio-economic status was calculated based upon the Hollingshead-Redlich model (Hollingshead & Redlich, 1958). Using this model, the highest levels of education and occupation attained by each participant were identified and used to calculate a composite score ranging from one to five, with one being the highest SES level and five being the lowest SES level.

Drug use severity. Drug use severity was measured as a composite of the total number of substances participants were currently using, plus the intensity of their use for each drug on a scale from 0 to 3 (no use = 0, mild use = 1, moderate use = 2, severe use = 3). Participants received a single composite score for use of the following substances: alcohol, cocaine, crack, or any other drug, including but not limited to opiates, hallucinogens, stimulants, sedatives, or cannabis. Number of drugs used and intensity of use were determined through the SCID-SAC interview (Spitzer et al., 1993), described below. Number of drugs used is also presented separately from the composite score.

Predictor Variables

Structured clinical interview for the diagnostic and statistical manual III revised-SAC version (SCID-SAC; DSM-III-R; Spitzer et al., 1993). The SCID is a semi-structured clinical interview for diagnosing major Axis I psychiatric disorders listed in the DSM. The SCID-SAC is a modified version of the SCID developed for detection of current and lifetime mood and anxiety disorders among substance abusers, and substance abuse/dependence among those with a lifetime history of psychiatric disorders. Of particular interest in the current study was the presence or absence of Adult Antisocial Behavior. Identifying the existence of primary crack/cocaine use was also essential in order to appropriately classify participants into diagnostically homogeneous groups. The presence or absence of current depression was also established through the SCID.

A multi-site reliability study for the DSM-III-R version of the SCID (Williams et al., 1992) revealed adequate inter-rater reliability (K = .68 for patient lifetime diagnoses and K = .51 for nonpatient lifetime diagnoses). Field trials with this instrument have yielded evidence of good inter-rater and test-retest reliability (Nunes et al., 1993).

Outcome Variables

Early memories test (Mayman, 1967). Early memories provided the basis for the assessment of Affect Tolerance and Affect Expression. Mayman (1967) developed the use of early memories as a projective measure to assess adult characterological issues. Participants were asked to recall two early memories, one at a time in the following order: (a) earliest memory, (b) earliest memory of primary caretaker. The concept of “primary caretaker” was self-defined by each participant as the person who cared for her most. Although many minority women in an urban environment may have experienced multiple caretakers in their lives, all women but eight were able to identify and recall a memory of someone they identified as a primary caretaker.

The epigenetic assessment rating scale (EARS; Wilson et al., 1989). The EARS is a measure used to rate narrative speech samples such as TAT stories, material from
psychotherapy narratives, or early memories. In this study the EARS was used to code the Early Memories Test.

Although the development of affect regulation skills can be understood through a more complex theoretical model, a psychoanalytically informed measure was chosen for its potential to capture subtle differences in affective experience based on verbal narratives. The EARS is based on an “epigenetic” model of development (Wilson, Kuras, Passik, Morral, & Turner, 1988) that views personality functioning as organized into a hierarchy of developmental phases, in which each phase is dependent upon the outcome of, and subsumes the achievements of, earlier phases of development. As a measure of psychological functioning, the EARS assesses both the content and structure of a narrative, thereby tapping into early preverbal processes, which may be activated during times of stress or high arousal (Wilson & Passik, 1993).

The EARS measure operationalizes epigenetic principles of development and personality organization as five hierarchical modes of functioning. These five modes can be applied to ten different personality variables. Each variable is scored for one of the five modal levels delineated in the EARS Scoring Manual (Wilson et al., 1988). The five modes reflect different levels of personality functioning, with modes 1 and 2 corresponding to early, presubjective nonverbal personality organization and modes 3, 4, and 5 reflecting predominantly later developmental achievements around self-enhancement and resolution of competitive conflicts. The current study assessed 2 of the 10 EARS variables: (a) Affect Tolerance, and (b) Affect Expression.

Affect Tolerance (AT) measures the management of affect arousal, ranging from extreme intolerance of affect to progressively more sophisticated, modulated, and accepted responses to affect. Modes 1 and 2 are typically marked by responses to affective experience such as avoidance of unpleasurable feelings, outbursts or impulsivity, or highly charged, polarized affect states. Modes 3, 4, and 5 reflect greater integration and tolerance of divergent emotional experiences. Sample memories scored for Affect Tolerance are presented in Appendix A.

Affect Expression (AE) measures the role emotions play in interpersonal communication and the degree to which affects are experienced as global, differentiated, or fragmented. Affect Expression may range from undifferentiated affect states to specific but polarized experience in Modes 1 and 2, to more complex, integrated understanding and expression of affect states in Modes 3, 4, and 5. Sample memories scored for Affect Expression are presented in Appendix B.

It is important to note that although the narratives that formed the basis of evaluation for the EARS were early memories, the use of the Early Memories Test provided a means of characterizing current Affect Tolerance and Affect Expression, as reflected in the EARS scoring of the narratives. This enabled us to analyze current Affect Tolerance and Affect Expression in relation to Adult Antisocial Behavior status.

Three advanced doctoral students in clinical psychology conducted the EARS ratings in the current study. Inter-rater reliability standards for the EARS include reliability of at least .80, and 90% of raters’ scores must be within one scale point of those of an established expert rater trained by the author of the measure (A. Wilson). In the current study, inter-rater reliability was achieved according to the prescribed protocol (see Kling, 2000). All raters were blind to the study groups when scoring participants’ early memories.

Validity for the EARS scale has been established using high and low arousal conditions, with low arousal stimuli defined as posing minimal adaptive demands, and high arousal stimuli defined as presenting greater adaptive and integrative challenges to the self (Wilson et al., 1989). Principal components analysis of the EARS (Wilson et al., 1989) confirmed the EARS’ ten independent dimensions. The EARS has been used to distinguish between normal and severely mentally ill research participants, in both high and low arousal conditions (Wilson et al., 1989). The EARS has also been used to distinguish between levels of affect tolerance among cocaine and opiate users and normal subjects (Keller & Wilson, 1994), to assess affectivity and object relational capacities in patients with chronic somatic distress (Blaustein, 1995), and to identify a subset of adolescents at risk for suicide who were not identified by a traditional depression inventory (Feldman & Wilson, 1997).

Procedure

Women with primary crack/cocaine use were recruited from the inpatient detoxification unit and outpatient (drug-free) drug and alcohol treatment programs at the hospital center. Informed consent was obtained and participants were compensated for their participation with $25 food coupons. Initial interviews included the measures described above, as well as other questionnaires specific to the parent study that were not part of the current study.

For the current sample, a subset of women were also administered the Early Memories Test within six months of the initial interview. Early memories were available for a total of 80 participants. Twenty-eight of these participants (35%) were in the Adult Antisocial Behavior group and the remaining 52 (65%) were in the group without Adult Antisocial Behavior. Eight women did not report a memory of their primary caretaker. Each reported memory was scored for the EARS dimensions, Affect Tolerance and Affect Expression. Mean Affect Tolerance and Affect Expression scores were calculated to yield summary scores on each dimension. Women who did not report a memory of primary caretaker were not excluded; in cases where a memory of primary caretaker was not available, the summary score reflected the score for earliest memory. It was not felt that the interval between the initial interview and the administration of the Early Memories Test created any significant bias in the use of this measure. The patterns of affect regulation measured through the use of the Early Memories Test are considered to be personality characteristics that are stable across time.
Table 1
Comparison Data for Demographic Variables and Severity Characteristics by Group

<table>
<thead>
<tr>
<th>Variable</th>
<th>With Adult Antisocial Behavior (n = 28)</th>
<th>Without Adult Antisocial Behavior (n = 52)</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agea</td>
<td>33.07 (6.01)</td>
<td>33.14 (6.93)</td>
<td>−.04</td>
</tr>
<tr>
<td>Monthly Incomea</td>
<td>99.83 (66.89)</td>
<td>118.39 (135.54)</td>
<td>−.68</td>
</tr>
<tr>
<td>Number Drugs Usedb</td>
<td>2.71 (1.08)</td>
<td>2.28 (.96)</td>
<td>1.86</td>
</tr>
<tr>
<td>Drug Use Severitya</td>
<td>.96 (.74)</td>
<td>.36 (.54)</td>
<td>4.21***</td>
</tr>
<tr>
<td>Current Depressionc</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>12</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td>%</td>
<td>42.9%</td>
<td>55.8%</td>
<td></td>
</tr>
<tr>
<td>Ethnicityd</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>21</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td>%</td>
<td>75%</td>
<td>59.6%</td>
<td></td>
</tr>
<tr>
<td>Latina</td>
<td>7</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>%</td>
<td>25%</td>
<td>26.9%</td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>–</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>%</td>
<td>–</td>
<td>5.8%</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>–</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>%</td>
<td>–</td>
<td>7.7%</td>
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<tr>
<td>SESe</td>
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<td></td>
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<tr>
<td>I</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>III</td>
<td>5</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>%</td>
<td>17.9%</td>
<td>25%</td>
<td></td>
</tr>
<tr>
<td>IV</td>
<td>12</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>%</td>
<td>42.9%</td>
<td>32.7%</td>
<td></td>
</tr>
<tr>
<td>V</td>
<td>11</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>%</td>
<td>39.3%</td>
<td>42.3%</td>
<td></td>
</tr>
</tbody>
</table>

Note. SES reflects a composite score ranging from one (highest SES) to five (lowest SES).

To ensure that there were no substantial clinical or demographic differences between participants who reported early memories and those who did not, t tests and chi-square analyses were performed on the following variables: ethnicity, socio-economic status, depression, and severity of drug use. No significant differences were found between these two groups, confirming that the 80 participants for whom early memories were available were representative of the study sample as a whole.

RESULTS

Demographic and Severity Characteristics

Chi-square statistics and t tests were used to test for differences between the Adult Antisocial Behavior group and the group without Adult Antisocial Behavior on four demographic and clinical variables: ethnicity, socio-economic status (SES), depression, and drug use severity. No significant between-group differences were observed on ethnicity, SES, or depression. These data are presented in Table 1. The majority of participants were either African American (65%) or Latina (26%). All participants were in the lowest three of five SES groups. Just over half of the women (51%) met criteria for current depression on the SCID-SAC.

There was no significant between-group difference on the number of substances used (see Table 1). There was, however, a significant between-group difference on drug use severity. Drug use severity for participants with Adult Antisocial Behavior was significantly greater than that of participants without Adult Antisocial Behavior. Accordingly, drug use severity was entered as a covariate into all statistical analyses in order to control for its potential effect on study outcomes.

Hypothesis 1

We hypothesized that Adult Antisocial Behavior would be associated with lower Affect Tolerance scores. Statistical analyses supported this prediction on mean EARS summary scores and EARS scores for earliest memory of primary caretaker. Simple analyses of covariance (ANCOVA) were used to test differences between study groups, controlling for the potential influence of drug use severity. There was a significant between-group difference for the mean Affect Tolerance summary score and for Affect Tolerance scores for earliest memory of primary caretaker.

These Affect Tolerance summary scores for primary crack/cocaine-using women without Adult Antisocial Behavior (M = 2.52, SD = .63) were significantly greater than those for primary crack/cocaine-using women with Adult Antisocial Behavior (M = 2.21, SD = .67) F(1, 79) = 4.80,
Table 2
Proportions for Drug Use Characteristics by Group

<table>
<thead>
<tr>
<th>Variable</th>
<th>With Adult Antisocial Behavior (n = 28)</th>
<th>Without Adult Antisocial Behavior (n = 52)</th>
<th>X²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Substance Abuse or Dependence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alcohola</td>
<td>11 (39.3%)</td>
<td>9 (17.3%)</td>
<td>4.69*</td>
</tr>
<tr>
<td>Cocainea</td>
<td>6 (21.4%)</td>
<td>14 (26.9%)</td>
<td>.29</td>
</tr>
<tr>
<td>Cracka</td>
<td>20 (71.4%)</td>
<td>20 (38.5%)</td>
<td>7.91**</td>
</tr>
<tr>
<td>Other Drugsa</td>
<td>11 (39.3%)</td>
<td>13 (25%)</td>
<td>1.77</td>
</tr>
<tr>
<td>Lifetime Substance Abuse or Dependence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alcoholb</td>
<td>19 (67.9%)</td>
<td>24 (46.2%)</td>
<td>3.45</td>
</tr>
<tr>
<td>Cocaineb</td>
<td>13 (46.4%)</td>
<td>33 (63.5%)</td>
<td>2.16</td>
</tr>
<tr>
<td>Crackc</td>
<td>25 (89.3%)</td>
<td>29 (56.9%)</td>
<td>8.79**</td>
</tr>
<tr>
<td>Other Drugsb</td>
<td>19 (67.9%)</td>
<td>31 (59.6%)</td>
<td>.53</td>
</tr>
</tbody>
</table>

a df = 1,79, b df = 1,78
*p < .05, **p < .01 two-tailed significance.

p < .05. Affect Tolerance scores for earliest memory of primary caretaker for primary crack/cocaine-using women without Adult Antisocial Behavior (M = 2.54, SD = .83) were significantly greater than those for primary crack/cocaine-using women with Adult Antisocial Behavior (M = 2.17, SD = .82). F (1, 71) = 5.11, p < .05. No significant differences were detected between groups for Affect Tolerance ratings on earliest memory.

**Hypothesis 2**

It was hypothesized that Adult Antisocial Behavior would be associated with lower Affect Expression scores. Statistical analyses supported this prediction on mean EARS summary scores and EARS scores for earliest memory of primary caretaker. Using ANCOVA to control for the potential influence of drug use severity, there was a significant between-group difference for the mean Affect Expression summary score and for Affect Expression scores for earliest memory of primary caretaker. These Affect Expression summary scores for primary crack/cocaine-using women without Adult Antisocial Behavior (M = 2.63, SD = .62) were significantly greater than those for primary crack/cocaine-using women with Adult Antisocial Behavior (M = 2.27, SD = .71). F (1, 79) = 4.49, p < .05. Affect Expression scores for earliest memory of primary caretaker for primary crack/cocaine-using women without Adult Antisocial Behavior (M = 2.71, SD = .85) were significantly greater than those for primary crack/cocaine-using women with Adult Antisocial Behavior (M = 2.13, SD = .85). F (1, 71) = 5.52, p < .01. No significant differences were detected between groups for Affect Expression ratings on earliest memory.

**DISCUSSION**

The present study found that variability in adult antisocial tendencies among primary crack/cocaine-using women was significantly associated with differences in the capacity for Affect Tolerance and Affect Expression, two dimensions of the ability to regulate emotional experience. Early memories of primary caretakers for primary crack/cocaine-using women who did not meet the criteria for Adult Antisocial Behavior reflected a greater tolerance for and more mature, integrated responses to affect compared to their antisocial counterparts. Early memories of primary caretakers for women without Adult Antisocial Behavior also reflected a better ability to differentiate affect and to experience the expression of affect with less disruption to self-cohesion than the early memories of primary caretakers of women with Adult Antisocial Behavior. Previous findings have demonstrated that substance abusers suffer impairment in their capacity to manage emotional experience (Keller & Wilson, 1994); the current study contributes to our understanding of how more pronounced differences in affect regulation skills among a subset of substance users can help explain the antisocial behavior differential within a substance-abusing population.

The current findings support the view that even among a population noted for difficulties in emotional self-regulation, antisocial behaviors are associated with a more primitive capacity to manage and express affect. Lower levels of Affect Tolerance and Affect Expression among primary crack/cocaine-using women with Adult Antisocial Behavior compared to women without Adult Antisocial Behavior were indicative of a more compromised ability to discriminate emotions in self and others, and to tolerate strong feelings, as reflected in the EARS scoring of their early memories. These conclusions are consistent with the psychoanalytic literature that has elaborated on the relationship between antisocial behavior and affect dysregulation.

Interestingly, between-group differences noted in this study were driven by EARS scores derived from the memories of primary caretakers. There were no significant differences for EARS scores derived from...
the earliest memories. Although not originally conceived of as being distinct from one another, it is possible that these two narratives placed different demands on participants, specifically varying levels of affective arousal. The EARS was developed with the notion that different arousal conditions could be associated with regressive and progressive shifts in affective functioning, that is, that more emotionally stressful conditions would engender lower EARS scores than less arousing conditions. Keller and Wilson (1994) noted that responses to arousing stimuli led to regressive, or lower, modal levels of affective functioning on the EARS among both normal controls and substance users. It is suggested that asking women with Adult Antisocial Behavior to recall their earliest memory of their primary caretaker may have created a high-arousal condition, more evocative than the general early memory. Particularly for a population for whom we expect profound deficits in early caretaking relationships, it is reasonable to consider that reflections on early caretaking might induce greater stress than other memories. Mean EARS scores for women without Adult Antisocial Behavior were not lower for memories of primary caretaker. In fact, Affect Expression scores were slightly higher. The memory of primary caretaker condition elicited a greater disparity in functioning between groups, possibly secondary to a greater sensitivity to affect arousal by women with Adult Antisocial Behavior.

The results from the current study may reflect differences in affective functioning that emerge under potentially different arousal conditions; the differential capacity for Affect Tolerance and Affect Expression among primary crack/cocaine-using women with and without Adult Antisocial Behavior may be related to variability in emotional response to stressful situations. This finding is particularly significant given Keller and Wilson’s (1994) conclusion that Affect Tolerance in cocaine-abusing women, in general, is especially sensitive to arousal level. It should be noted, however, that high and low arousal conditions in the Keller and Wilson study were predetermined based on expert consensus of high and low arousal ratings of TAT cards.

Mean Affect Tolerance and Affect Expression scores in the current study are consistent with scores in the Mode 2 range reported for cocaine abusers by Keller and Wilson for high-arousal conditions (1994; AT: M = 2.64; AE: M = 2.72). In the memory of primary caretaker condition, however, Affect Tolerance and Affect Expression scores for primary crack/cocaine-using women with Adult Antisocial Behavior were close to the Mode 1 range, the most primitive level of functioning denoted by the EARS measure. Affect Tolerance scores in the Mode 2 range reflect the experience of affects as highly polarized, overwhelming tension states, difficult to identify as separate from somatic states. Affect Tolerance that approaches Mode 1 suggests extreme intolerance of affective experience. The current data support prior findings linking antisocial behavior with an inability to modulate affective arousal (Zlotnick, 1999).

Affect Expression in the Mode 2 range similarly suggests severely compromised identification and expression of affect. Emotional experience may be highly charged and undifferentiated and experienced as extremely disruptive to self-integrity. Deficits in Affect Expression in the current sample are consistent with research that links poor awareness or recognition of mental states and emotional cues with aggressive antisocial behavior (Fonagy et al., 1993; Yelsma, 1996). As noted, antisocial behavior, one component of which is aggressive behavior, in the current primary crack/cocaine-using sample was associated with Affect Tolerance and Affect Expression scores in the lower modal range. By comparison, under even high-arousal conditions, normal controls tested in the Keller and Wilson study exhibited affective functioning in the Mode 3 range (AT: M = 3.40; AE: M = 3.32). The very low Affect Tolerance and Affect Expression scores identified on the early memories of the women in this study, particularly among women with Adult Antisocial Behavior, are also consistent with the more primitive defenses and poverty of integrative emotional capacity attributed to antisocial individuals in the psychoanalytic literature.

Clinical Implications

The compromised capacity for Affect Tolerance and Affect Expression among primary crack/cocaine-using women with antisocial features has important implications for clinical work. Although attention to affect regulation skills often forms an important part of substance abuse treatment, this research supports the need to be particularly attentive to helping women more effectively identify and articulate their own emotional experiences as well as those of people around them. Enabling women to more effectively sort out what may be experienced as an overwhelming, undifferentiated emotional reaction may help them to better tolerate difficult feelings and provide them with alternative ways of responding to affect, rather than to seek out substances to manage the experience and/or revert to antisocial or other defensive behavior. Treatments designed to emphasize the development of alternative coping skills to be used in emotionally charged situations, and particularly in interpersonal relationships, can help to achieve this. The broader the range of emotional expression that a woman is able to experience and comprehend, the more likely she may be to respond effectively and appropriately to affectively arousing situations.

Limitations of the Study

Caution needs to be taken in generalizing the findings of this study, which focused on a select group of substance-abusing women, that is, women with primary crack/cocaine use. Other studies have demonstrated that the capacity for affect regulation is not consistent across all substance-using populations (e.g., Keller & Wilson, 1994). Although the women in the current study were identified as primary crack/cocaine-using women based on the substance they used most heavily, the participants in this study were almost exclusively polysubstance users. It is possible that women who used
only crack/cocaine might have presented with a different capacity for Affect Tolerance and Affect Expression. From a recruitment standpoint, however, an inner-city sample of women with only crack/cocaine use was difficult to obtain.

In addition, the current study may not reflect the role of affect dysregulation in antisocial behavior in general. By examining only a substance-using population, the data presented here represent a subgroup of individuals with antisocial tendencies. The current study also focused only on women. Although this selective attention is warranted due to a tendency to overlook the role of Adult Antisocial Behavior in women’s lives, it does limit the ability to draw conclusions about Adult Antisocial Behavior and affect regulation among men and women as a whole.

This study also made several assertions as to the level of arousal generated by the request for women to report their earliest memories and their memories of a person they identified as a primary caretaker. Unlike studies in which high and low arousal ratings were determined by expert consensus (Keller & Wilson, 1994), the Early Memories Test did not enable us to conclusively demonstrate whether one set of memories was more emotionally arousing than the other set. Accordingly, we are limited in our ability to draw definitive conclusions about the potential arousal differential between the earliest memories and the earliest memories of primary caretaker and the implications for measuring affect regulation.

Similarly, the use of an inferential measure to assess affect regulation, instead of a more direct or multidimensional assessment, may also have implications for the results of the study. Although the EARS enables trained raters to extract nuances in the capacity for Affect Tolerance and Affect Expression from participants’ narratives, it does not provide a comprehensive assessment of affect regulation skills and deficits. Further research in this area might include a multidimensional approach to the measurement of affect regulation that incorporates more overt social and behavioral observations.

This study is also limited by a cross-sectional design using retrospective measures. Future studies might contribute to our understanding of the relationship between affect regulation and antisocial behavior over time by employing a longitudinal design. In addition, the Early Memories Test was administered at follow-up, whereas the rest of the measures were obtained at baseline. Although we presumed the constancy of affect regulation as a personality trait with stability over time, we cannot rule out the possibility that some women may have experienced significant life events between baseline and follow-up which may have influenced the measures of Affect Tolerance and Affect Regulation.

Conclusion
The current findings help to identify one of the differentiating factors in the relationship between primary crack/cocaine use and antisocial tendencies. Although substance use in general appears to be associated with significant impairments in affect regulation, for a subset of women with primary crack/cocaine use who may be particularly sensitive to affective arousal, emotional challenges may lead to even more primitive responses to highly charged situations. Antisocial behavior among primary crack/cocaine-using women may partially stem from a greater inability to tolerate strong emotion or adequately differentiate and verbalize experience than among primary crack/cocaine-using women who do not demonstrate antisocial tendencies.

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NOTES
1. Analyses were conducted with and without the covariate. Because differences were not appreciably different, we report only the analyses conducted with the covariate. We feel this approach more accurately represents the data.
2. Identifying information omitted.

REFERENCES


Hien, D. A. (1994). Predictors of Interpersonal Violence in Inner-City Cocaine Abusers. Grant funded by the National Institute on Drug Abuse (R29 DA08963), Washington, DC.


APPENDIX A

Sample EARS Scoring Criteria for Affect Tolerance (Wilson et al., 1988) and Scored Narrative Examples

Mode 1

Mode 1 criteria: affect tolerance. The participant’s response indicates an extreme intolerance for affect. This may be manifest in either the participant’s reaction to the
narrative or in the narrative content. Persons may be prone to explosive outbursts or impulsivity. Affects may be discharged through direct action designed to avoid displeasure. There may be rapidly shifting and fragmentary affect states.

Mode 1 example: earliest memory. Five years old. What I could remember—just the apartment. The way the apartment was—that’s about it. (What do you actually see as you picture it?) The kitchen and the living room, the bathroom. The glass door by the living room. On the fifth floor. And the bedroom. (Who was there?) No—no one there. (Do you see yourself in the memory, or feel yourself in it?) No—I’m just picturing the apartment. (What is the feeling accompanying the memory?) No feeling at all.

Mode 4

Mode 4 criteria: affect tolerance. The participant’s response indicates a simultaneous conscious representation of multiple affective experiences. This simultaneous representation produces conflict and anxiety but is tolerated. Affect states do not impede problem solving and working toward a resolution of the conflict.

Mode 4 example: earliest memory. I remember kindergarten. Should I remember before? I remember one time I was in school and I had to draw a picture of my mother. I’ll never forget this. The paper she gave me was the color of that manila envelope and the teacher kept insisting I color her in. She assumed my mother was the same color as me. (What do you actually see as you picture it?) How people could be so naive. I could have been adopted, interracial. The lady was very insensitive to a child’s feelings. And she was so adamant about it. She just assumed. She didn’t think about the different combinations that there are. That’s the first time I noticed my race. (Do you see yourself in the memory, or feel yourself in it?) I feel myself. The first time I noticed my race. My mother looks like she’s White, she’s a mulatto. That made me think of it that day. (What did you feel?) I felt—I don’t know—I felt confused. I was just a little kid. I was just doing it for her. Someone in authority was forcing me to do something that was wrong.

APPENDIX B

Sample EARS Scoring Criteria for Affect Expression (Wilson et al., 1988) and Scored Narrative Examples

Mode 1

Mode 1 criteria: affect expression. The participant’s response indicates global and undifferentiated affects organized around displeasure or overstimulation. Discrete affects are not yet differentiable from the experience of global displeasure. Sleeping or expressions of rage may be actions expressing displeasure or its relief. Affects are undifferentiated and fragmented and can serve to obliterate the experience of self.

Mode 1 example: earliest memory. When I was about four my mother was going to work. This was the first time she was leaving me. She was taking me to my grandmother’s house. I just remember a temper tantrum. I was kicking, freaking all out. Once I got to my grandmother’s house. (How are you picturing your mother?) I don’t remember her telling me that it was going to happen—I thought she was staying. She said goodbye and went out the door. Grandmother trying to calm me down. I was just screaming, kicking. (How did you feel?) Mad.

Mode 4

Mode 4 criteria: affect expression. The participant’s response indicates any of a full range of affects, and diverse affect states may contradict one another. The typical affective experiences of this mode may be loss of self-esteem, guilt over failure to live up to expectations, joy taken in achievement and competition, conflictual love or eroticism, jealousy, or feelings about ego-ideal ambitions and conflicts. The respondent may express anxiety-provoking but modulated forms of anger, sadness, or other emotions.

Mode 4 example: earliest memory of primary caretaker (mother). My mother was, she was unhappy. But she was good as far as doing what was expected of her—keeping house clean, making dinner, but sitting down and talking to me, no. We didn’t talk. (Can you recall a specific memory?) The only thing that I really remember is the night she left and how she left and how I felt. There was a rumor going around town that my father was messing around with a White woman and I felt that my mother knew about it. She’d never talk back to my father. Something happened—I was at the top of stairs and she raised voice and that’s something she never did. She was yelling, said she couldn’t do it anymore. She left and I went to see her and she still wouldn’t talk to me about what happened. Eventually she came . . . [back2] and sent for everybody but me. She sent for me later. I was scared. I was scared. In a way I feel sorry for her but later it was like I was really confused, asking myself why would she leave us. But now I can understand how she was feeling. Like, “I have to go, I don’t know where I’m going, but I have to go.” I hold some resentment against her because she never talked to me. Just her being sad. But without feeling, no emotions. I seen in her face. She was just like, there. She was unhappy.