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Maternal cocaine use and caregiving status: Group differences in caregiver and infant risk variables

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Abstract

This study examined differences between cocaine and non-cocaine-using mothers, and between parental and non-parental caregivers of cocaine-exposed infants on caregiver childhood trauma, psychiatric symptoms, demographic, and perinatal risks. Participants included 115 cocaine and 105 non-cocaine mother–infant dyads recruited at delivery. Approximately 19% of cocaine mothers lost custody of their infants by 1 month of infant age compared to 0.02% of non-cocaine mothers. Mothers who used cocaine during pregnancy had higher demographic and obstetric risks. Their infants had higher perinatal risks. Birth mothers who retained custody of their infants had higher demographic risks and perinatal risks, higher childhood trauma, and higher psychiatric symptoms compared to birth mothers who did not use cocaine and non-parental caregivers of cocaine-exposed infants. Results highlight the importance of addressing childhood trauma issues and current psychiatric symptoms in substance abuse treatment with women who engaged in substance use during pregnancy.

Keywords

Cocaine; Prenatal; Foster care

Maternal cocaine use during pregnancy has been described as a significant problem affecting large numbers of children. Although there is considerable consensus in the field regarding the impact of prenatal cocaine exposure on infant growth outcomes (Bateman & Chiriboga, 2000; Coles, Platzman, Smith, James, & Falek, 1992), the results with other aspects of development have been mixed and somewhat inconsistent (see Lester, LaGasse, & Brunner, 1997). However, consistent and significant effects of prenatal cocaine exposure have been noted on the development of regulatory processes in childhood (see Mayes, Grillon, Granger, & Schottenfeld, 1998; Schuetze & Eiden, 2006). While it is clear that there may be a direct, teratological impact of cocaine on children's regulation of arousal, there is an increasing recognition that the quality of the caregiving environment of cocaine-exposed infants is compromised and this may also exert a significant influence on the quality of child outcomes (Brown, Bakeman, Coles, Platzman, & Lynch, 2004; Hans, 2002; Kettinger, Nair, & Schuler, 2000).

A relatively large proportion of cocaine-exposed infants are cared for by caregivers other than parents. Among the few studies reporting such data, the rate of cocaine-exposed children in non-parental care varied from study to study, but was consistently high. For instance, Wasserman and Leventhal (1993) reported that 20% of cocaine-exposed children were in nonparental care compared to 2% of a matched comparison group sample over the first 2 years of life. Lewis et al. (2004) reported a similar rate of 22% by 4 years of child age. Others have reported higher rates ranging from 31% (Hurt, Malmud, Betancourt, Brodsky, & Gianetta, 2001) to 46% (Wobie, Eyler, Garvan, Hou, & Behnke, 2004) over the first 1–3 years of life. Several recent studies have noted the importance of examining the potential effects of these differences in the caregiving situation of cocaine-exposed children on developmental outcomes (e.g., Brown et al., 2004; Hurt et al., 2001; Lewis et al., 2004). With a few exceptions, results from most studies indicate that cocaine-exposed children placed in nonparental care have better cognitive and behavioral outcomes compared to those in parental care. One explanation for this may be that non-parental caregivers have a lower constellation of demographic, developmental (e.g., childhood trauma), and psychiatric risk factors compared to cocaine-using mothers who retain custody of their children. A second explanation may be the lower likelihood of continued drug use among non-parental caregivers of cocaine-exposed infants.

Theoretical models of parenting (e.g., Belsky, 1984) have discussed the importance of maternal developmental experiences such as childhood trauma in predicting current psychiatric risk. Although a number of studies have reported associations between childhood trauma and higher rates of substance abuse among women (Molnar, Buka, & Kessler, 2001; Wilsnack, Vogeltanz, Klassen, & Harris, 1997), few have examined group differences in childhood trauma among cocaine-using mothers who retained custody of their children, non-biological caregivers, and mothers who did not use cocaine during pregnancy. Childhood experiences of abuse not only increase the risk for subsequent substance abuse and other forms of psychopathology such as depression and post-traumatic stress disorder (Eiden, Stevens, Schuetze, & Dombkowski, 2006; Molnar et al., 2001), but such experiences also have adverse effects on parenting quality, either directly or indirectly via higher maternal psychopathology and current experiences of violence (Cole, Woolger, Power, & Smith, 1992; Schuetze & Eiden, 2005). Thus, more frequent experiences of childhood trauma or abuse among mothers who used cocaine during pregnancy may provide one explanation for more negative outcomes among cocaine-exposed children in maternal care.

In addition to childhood trauma, mothers' current psychiatric symptoms are likely to be predictive of parenting behavior and the quality of the caregiving environment they provide their children. Indeed, studies have noted that mothers who used cocaine and other substances during pregnancy were more likely to report psychiatric symptoms compared to non-cocaine-using mothers (Bendersky, Alessandri, Gilbert, & Lewis, 1996; Singer et al., 1995; Woods, Eyler, Behnke, & Conlon, 1993). However, with one exception (Brown et al., 2004), little is known about the extent of psychiatric symptomatology among caregivers who retain custody of their children compared to the caregivers of children in non-parental care. This is important because there is a large developmental literature highlighting the predictive role of maternal or caregiver psychiatric symptoms for numerous developmental outcomes. Perhaps one explanation for improved developmental outcomes for cocaine-exposed children who are in non-parental care is the reduced rates of psychiatric symptomatology in this group. Indeed, in a recent study, the Global Severity Index from the Symptom Checklist (SCL-90-R; Derogatis, 1994) was not only higher among the caregivers in the cocaine group who retained custody of their children compared to caregivers of children in non-parental care, it was also predictive of children's behavior problems and the quality of dyadic interaction at 2 years of age (Brown et al., 2004).

Thus, the purpose of the present study was to describe the demographic and perinatal risk characteristics of infants and caregivers in three groups: cocaine, parental care group, cocaine, non-parental care group, and a matched non-cocaine comparison group. We hypothesized that cocaine-using mothers would evidence higher demographic, obstetric, and developmental (childhood trauma), and psychiatric risk compared to mothers in the comparison group. Infants of cocaine-using mothers would experience more negative birth outcomes and be more likely to experience non-parental care. Moreover, we expected that cocaine-using mothers with infants in non-parental care would be heavier users of cocaine during pregnancy and would have greater demographic, obstetric, developmental, and psychiatric risk characteristics. Additionally, within the cocaine group, infants in non-parental care would experience more negative birth outcomes because of exposure to heavier amounts of cocaine.

1. Method

1.1. Participants

Participants consisted of 220 mother–infant dyads (115 cocaine-exposed and 105 non-cocaine-exposed) recruited into an ongoing longitudinal study of maternal substance use and child development. By 4–8 weeks of infant age, 22 infants (19.1% of those exposed to cocaine) had been removed from parental care. Approximately 72% of these infants were in non-kin care, with the remainder being cared for by a grandmother or maternal aunt. Only 1 infant in the non-cocaine group was placed in non-parental care and was not included in data analyses. All the 1 month assessments were conducted with the primary caregiver of the child at that time.

An outreach worker on the project staff recruited all participants after delivery from two local area hospitals. Biological mothers ranged in age from 18 to 42 ($M=30.52$, $S.D.=5.45$). The majority of the mothers were African-American (72%), were receiving Temporary Assistance for Needy Families (TANF, 70%) at the time of their first laboratory visit (years 2001–2004), and were single (60%). The two groups were matched on maternal education, maternal age, maternal race/ethnicity, and infant gender. 47% of the infants were male. 86% of the cocaine-exposed infants and 97% of the comparison infants were full-term (>37 weeks gestational age). The study received approval from the institutional review boards of the hospitals as well as the primary institutions with which the authors were affiliated. In addition, informed written consent was obtained from all recruited participants and HIPAA authorization was obtained from all participants after April 2003. Participants received \$35 in monetary incentives at the 1 month visit.

1.2. Procedure

All mothers were approached by study staff at two local hospitals and were invited to participate in a study of maternal health and infant development. While identifying the primary caregiver is a difficult issue in studies of substance-using mothers because the child may be cared for by different adults within the same day or week (Mayes & Bornstein, 1995), following previous studies, we identified the primary caregiver as the adult who had legal guardianship of the child and accompanied the child at the 1 month visit. Thus, under circumstances of a change in custody arrangements, the person who had legal guardianship of the child was contacted and asked to participate in addition to the biological mother. Interested and eligible mothers and caregivers were given detailed information about the study and asked to sign consent forms. About 2 weeks after delivery, caregiver–infant dyads were contacted and scheduled for their first laboratory visit, which took place at the time that their infant was approximately 4–8 weeks old. This visit consisted of a caregiver

interview, a feeding session, and infant and maternal physiological assessments. Only the data from the caregiver interviews were used in this study.

1.3. Assessment of growth and risk status

Three measures of growth were used in this study: birth weight (in grams), birth length (in centimeters), and head circumference (in centimeters). All measurements were taken by obstetrical nurses in the delivery room and recorded in the infant's medical chart. Research staff recorded this information from the charts after recruiting the mother–infant dyad. Medical chart review at the time of recruitment was also used to complete the Obstetrical Complication Scale (OCS; Littman & Parmelee, 1978), a scale designed to assess the number of perinatal risk factors experienced by the infant. Higher numbers on this scale indicate a more optimal obstetric score.

1.4. Identification of substance use

Cocaine status was determined by a combination of maternal report, chart review, and maternal hair analysis. Urine toxicologies were routinely conducted at the first prenatal visit on maternal urine and/or at delivery (for those mothers who tested positive prenatally, obtained prenatal care elsewhere, or did not receive any prenatal care) on infant and maternal urine by participating hospitals. Mothers were included in the cocaine group if self-reports were positive, regardless of urine toxicology or hair sample results. Similarly, mothers who reported that they did not use cocaine but had positive urine toxicology or hair samples were included in the cocaine group.

Urine toxicologies consisted of standard urine screening for drug level or metabolites of cocaine, opiates, benzodiazepines, and tetrahydrocannabinol (THC). Urine was rated positive if the quantity of drug or metabolite was >300 g/ml. Hair samples were collected from the mothers at the first laboratory visit and sent to Psychomedics Corporation for radioimmunoanalyses (RIAH). Drugs and their metabolites are absorbed into the hair and can be extracted and measured. As hair grows at an average rate of 0.5 in./month, it can record a pattern of drug consumption related to the amount and frequency of use (see Baumgartner, Hill, & Blahd, 1989). Thus, a 2-in. length of hair could contain a record of approximately 4 months of use, and given adequate hair length (about 4–5 in.), use per trimester may be recorded. Drugs become detectable in hair about 3–4 days after use, a time when cocaine is rendered undetectable by urinalysis. RIAH is the most well established hair analysis technique and has been replicated by independent laboratories across the world (see Magura, Freeman, Siddiqi, & Lipton, 1992). Gas chromatography–mass spectrometry (GC-MS) confirmations of RIAH have not revealed any false positives because of testing errors (see Magura et al., 1992). Sectional analysis of hair was conducted to differentiate postnatal use from prenatal use.

Approximately 55% of the mothers in the cocaine group had positive urine toxicologies at delivery and 79% of the mothers in the cocaine group had hair samples that tested positive for cocaine during pregnancy. The remainder of mothers in the cocaine group admitted having used cocaine in the brief, self-report screening instrument administered after delivery. Mothers in the comparison group reported not having used any illicit substances other than marijuana, did not test positive on toxicology screens for other substances. Additional exclusionary criteria for all mothers consisted of the following: maternal age below 18, use of illicit substances other than cocaine or marijuana, and significant medical problems for the infant (e.g., genetic disorders, major perinatal complications, baby in critical care for over 48 h).

1.5. Continuous measures of substance use

To assess maternal substance use before, during, and after pregnancy participants completed the Timeline Follow-Back Interview (TLFB; Sobell, Sobell, Klajner, Pavan, & Basian, 1986). Participants were provided a calendar and asked to identify events of personal interest (i.e., holidays, birthdays, vacations, etc.) as anchor points to aid recall. This method has been established as a reliable and valid method of obtaining longitudinal data on substance use patterns and has good test-retest reliability and is highly correlated with other intensive self-report measures (Brandon, Copeland, & Saper, 1995; Brown, Bakeman, Coles, Sexson, & Demi, 1998). The TLFB yielded data about the number of days of cocaine use, number of cigarettes smoked, number of joints smoked, and alcohol binges (5 or more standard drinks) for each trimester and in the postnatal period.

1.6. Childhood history of abuse

The Childhood Trauma Questionnaire (CTQ; Fink, Bernstein, Handelsman, Foote, & Lovejoy, 1995) was used to assess childhood history of abuse. The CTQ consists of five scales that assess childhood emotional, physical, and sexual abuse, and emotional and physical neglect. The internal consistency of these scales was high (coefficient $\alpha=.84$).

1.7. Caregiver psychopathology

The Brief Symptom Inventory (BSI; Derogatis, 1993) is a brief form of Symptom Checklist 90-R and is a widely used mental health screening measure in a variety of clinical and research settings. It consists of 53 items rated on a five-point scale. The items are grouped into nine scales of Anxiety, Hostility, Somatization, Obsessive-Compulsive, Interpersonal Sensitivity, Depression, Phobic Anxiety, Paranoid Ideation, and Psychoticism. A positive symptom distress index was computed by summing the items for all the subscales and dividing by the number of items endorsed with a positive response. The BSI has been reported to have high internal consistency and has been used in a large number of studies, including studies of maternal cocaine use (e.g., Eiden, Lewis, Croff, & Young, 2002; Singer et al., 2002). The Buss and Perry's Aggression Questionnaire (Buss & Perry, 1992) was used to measure maternal anger and hostility. This questionnaire consists of the following 4 scales: physical aggression, verbal aggression, anger, and hostility. For this study, a total score was derived by averaging the four scales. The internal consistency of this scale was $\alpha=.81$. High scores on this scale indicate higher anger/hostility. Finally, symptoms of Post-Traumatic Stress Disorder (PTSD) were measured using the Impact of Events Scale-Revised (IES-R; Weiss & Marmar, 1997). The items in this scale parallel the DSM-IV criteria for PTSD and assess current subjective distress for any specific life event. The scale consists of 22 items and has been shown to have good psychometric properties (Briere, 1997; Horowitz, Wilner, & Alvarez, 1979; Weiss & Marmar, 1997).

1.8. Antisocial behavior

Antisocial behavior was assessed with the Antisocial Behavior Checklist (ASB; Zucker & Noll, 1980). Caregivers were asked to rate their frequency of participation in a variety of aggressive and antisocial activities along a 4-point scale ranging from 1 (*never*) to 4 (*often*). The measure has been found to discriminate among groups with major histories of antisocial behavior (e.g., prison inmates, individuals with minor offenses in district court, and university students, Zucker & Noll, 1980) and between alcoholic and nonalcoholic adult males (Fitzgerald, Jones, Maguin, Zucker, & Noll, 1991). Parents' scores on this measure were also associated with maternal reports of child behavior problems among preschool children of alcoholics (Jansen, Fitzgerald, Ham, & Zucker, 1995).

2. Results

2.1. Demographics and infant growth outcomes

Results from MANOVA with the demographic variables as the dependent measures and group status (non-cocaine, cocaine parental care, cocaine non-parental care) yielded a significant multivariate effect of group status, $F(10,428.67)=5.63, p<.001$. Results from univariate analyses followed by simple contrasts indicated that biological mothers in the control group were younger and had lower parity compared to biological mothers in the cocaine group who did not retain custody of their children. Both control group mothers and foster mothers of cocaine-exposed children had higher education and higher occupation compared to cocaine-using mothers who retained custody of their children (see Table 1). A second MANOVA was conducted to examine group differences in infant risk variables, namely, gestational age, birth weight, birth length, and head circumference. Results indicated a significant effect of group status on infant risk, $F(10,428.67)=8.84, p<.001$. Univariate analyses indicated that cocaine-exposed infants in foster care had lower gestational age and birth length compared to those in the control group. Cocaine-exposed infants in both groups had lower birth weight compared to those in the control group. Moreover, among cocaine-exposed infants, those in foster care had lower birth weight compared to those in care of their biological mothers (see Table 1).

2.2. Maternal substance use

Results from MANOVA with the prenatal substance use variables as the dependent measures and group status as the independent variable yielded a significant multivariate effect of group status, $F(8,430)=16.80, p<.001$. Univariate analyses followed by simple contrasts indicated that the three groups were significantly different on cigarettes, alcohol, and cocaine use during pregnancy (see Table 2). As expected, mothers with children in foster care were heavier users of cocaine during pregnancy compared to cocaine-using mothers who retained custody of their children, but did not differ from the other two groups on use of alcohol or cigarettes. Mothers in the cocaine group who retained custody of their children were heavier users of cigarettes and alcohol compared to those in the control group. There were no group differences in marijuana use during pregnancy (see Table 2).

Results of MANOVA with postnatal substance use measures as the dependent variables yielded a significant effect of group status, $F(8,430)=3.55, p<.001$. A small number of mothers who used cocaine during pregnancy and retained custody of their children continued to use cocaine in the postnatal period (15% of those in the cocaine group) according to the TLFB. In addition, cocaine-using mothers who retained custody of their children also smoked more cigarettes in the postnatal period compared to foster mothers or those in the control group (see Table 2).

2.3. Caregiver childhood trauma and psychiatric symptoms

Results from MANOVA with childhood trauma measures as the dependent variables yielded a significant, multivariate effect of group status, $F(10,428.67)=2.43, p<.01$. Results of univariate analyses, followed by simple contrasts, indicated that cocaine-using mothers who retained custody of their children reported higher levels of childhood emotional abuse, sexual abuse, and emotional neglect compared to foster mothers (see Table 3). Results from MANOVA with psychiatric symptoms as the dependent variables also yielded a significant multivariate effect of group status, $F(10,428.67)=5.17, p<.001$. Cocaine-using mothers who retained custody of their children had higher PTSD symptoms, higher antisocial behavior, and higher levels of anger/hostility compared to foster or control group mothers. Indeed, foster mothers had the lowest levels of psychological symptoms on the BSI compared to the other two groups, and the lowest levels of anger/hostility (see Table 3).

3. Discussion

The major purpose of this study was to examine potential differences in maternal and infant characteristics between cocaine and non-cocaine-using mothers, and within the cocaine group, between infants in parental and non-parental care and caregivers of these infants. As expected, cocaine-exposed infants were more likely to be cared for by a primary caregiver other than their biological mothers. Although there is some variability in the definition of a primary caregiver (see Bandstra et al., 2002; Hurt et al., 1996), the rate of cocaine-exposed children in non-parental care by 1 month of age is similar to that reported by other studies (e.g., Lewis et al., 2004; Wasserman & Leventhal, 1993), although most of these reports are with older children (2–4-year-olds).

Within the cocaine group, there were significant differences in demographic and obstetric risks between mothers who retained custody of their children and those who did not. Cocaine-using mothers who retained custody of their children had lower education and occupation compared to foster mothers. Cocaine-exposed infants in foster care were more biologically vulnerable compared to the other two groups as indicated by lower birth weight and heavier exposure to cocaine in utero. However, these infants experienced the lowest levels of exposure to cigarette use by caregivers in the postnatal period and did not have caregivers who used cocaine postnatally. These results also lend further support to other recent studies indicating that cocaine-exposed infants who are placed in non-parental care are more biologically vulnerable and exposed to higher obstetric risks compared to those in parental care (e.g., Brown et al., 2004; Wobie et al., 2004).

Although cocaine-exposed infants in non-parental care were at higher perinatal risk, their caregiving environment as evidenced by levels of caregiver psychopathology was significantly more positive. Few previous studies have investigated potential differences in psychological functioning between parental and non-parental caregivers of cocaine-exposed infants (see Brown et al., 2004, for an exception). Results from the current study suggest that non-parental caregivers of cocaine-exposed infants have significantly fewer psychiatric symptoms in a number of different domains compared to cocaine-using mothers who retain custody of their children. They also reported significantly higher levels of childhood abuse and emotional neglect compared to foster mothers. These results are similar to those reported by Brown et al. (2004) who reported lower scores on the global severity index (of psychological symptoms) among non-parental caregivers of cocaine-exposed infants compared to birth mothers.

The finding that cocaine-using mothers who retain custody of their children have significantly higher childhood trauma and psychiatric symptoms has significant implications for treatment or clinical intervention. One implication of these findings is that cocaine-using mothers who retain custody of their children may be in need of clinical intervention and support. Treatment services that combine substance abuse treatment with treatment for psychiatric symptoms may be particularly effective in improving the caregiving environment of substance exposed infants and ameliorate negative developmental outcomes. A second implication of these findings is the importance of incorporating treatment for other substance use, especially cigarette smoking in the treatment plan for cocaine-using mothers. Results from the current study indicate significant levels of postnatal cigarette use among cocaine-using mothers who retain custody of their children. Given the significant effects of environmental tobacco exposure on infant health and development, treatment plans that focus on abstinence from both cocaine and cigarettes during pregnancy and the postnatal period may be important.

As hypothesized, cocaine-using women (both groups) were at higher obstetric risk compared to women in the comparison group. These results have been reported numerous times in the literature, even when cocaine and non-cocaine groups are group matched on certain key demographic variables such as maternal education and the sample as a whole is characterized by low socio-economic status (e.g., Brown et al., 2004; Hurt et al., 2001; Lewis et al., 2004). Cocaine-exposed infants were also more likely to have lower birth weight compared to those not exposed to cocaine. This constellation of infant birth risks has been extensively documented by previous studies (see Institute of Medicine, 1996). Thus, this study lends further support to the fairly well documented findings of poor obstetric and growth outcomes as a result of polysubstance cocaine exposure.

There are two major limitations of this study. First, the number of cocaine-exposed infants in non-parental care were relatively small. Second, while the measurement of prenatal cocaine exposure was based on multiple measures including urine and hair analyses, the assessment of other substance use was based in self-report alone. This limitation is similar to that faced by other studies of prenatal cocaine exposure.

In summary, this study adds to a growing body of literature indicating that cocaine-exposed infants in non-parental care have higher perinatal risk characteristics, but experience lower caregiving risks. The higher levels of psychiatric symptoms among mothers who retained custody of their infants has been reported by few other studies and has significant implications for clinical intervention. This is especially important in light of a large body of literature highlighting the salience of the maternal psychological well-being for both parenting and a number of different developmental outcomes.

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Table 1

Group differences in demographic risks and birth outcomes

Variables	Non-cocaine		Cocaine: PC		Cocaine: FC		F value	η^2
	M	S.D.	M	S.D.	M	S.D.		
	n=105		n=93		n=22			
<i>I. Demographics</i>								
BM age	27.38 ^a	5.78	31.10 ^b	5.78	32.90 ^b	9.34	$F(2,218)=12.55$	.10
BM parity	3.15 ^a	1.69	4.18 ^b	2.42	4.43 ^b	2.20	$F(2,218)=7.50$	.07
Number of prenatal visits	15.22	7.16	12.96	9.46	12.19	4.72	$F(2,218)=2.50$	.02
Occupation	2.58	1.93	1.97 ^b	1.36	2.71 ^a	1.73	$F(2,218)=3.69$	.03
Education	12.05 ^a	1.83	11.38 ^b	1.78	12.62 ^a	2.31	$F(2,218)=5.38$	.05
<i>II. Infant risks</i>								
Gestational age	39.27 ^a	1.24	38.73	1.73	37.90 ^b	2.34	$F(2,218)=7.58$	.07
Birth weight	3322.20 ^a	493.19	2979.8 ^b	543.1	2559.2 ^c	428.3	$F(2,218)=24.48$	.18
Birth length	50.03 ^a	2.89	48.11	3.11	47.55 ^b	2.70	$F(2,218)=13.08$	.11
Head Circ.	33.56	1.36	33.12	2.23	32.80	1.44	$F(2,218)=2.37$	.02
OCS	100.27 ^a	16.72	87.14 ^b	15.39	80.86 ^b	12.22	$F(2,218)=23.82$	.18

OCS; Obstetrical Complications Scale, higher scores indicate more optimal obstetrical outcomes. BM: Biological Mother; PC: Parental Care; FC: Foster Care. With the exception of demographics labeled BM, all other variables for the foster care group refer to the foster parent.

Means with different superscripts are significantly different from each other.

Table 2

Group differences in prenatal and postnatal substance use

Variables	Non-cocaine		Cocaine: PC		Cocaine: FC		F value	η^2
	<i>M</i>	S.D.	<i>M</i>	S.D.	<i>M</i>	S.D.		
<i>I. Prenatal</i>								
Number of cigarettes/week	12.08 ^a	25.29	40.90 ^b	45.42	28.99	29.08	$F(2,218)=16.42$	.13
Number of drinks/week	0.18 ^a	0.80	4.64 ^b	12.67	1.27	2.21	$F(2,218)=7.34$	.06
Number of joints/week	1.32	7.15	1.13	4.06	2.22	4.55	$F(2,218)=.32$	.003
Number of days cocaine/week	0 ^a	0	0.73 ^b	1.45	2.12 ^c	1.67	$F(2,218)=38.61$	.26
<i>II. Postnatal</i>								
Number of cigarettes/week	13.81 ^a	28.29	31.55 ^b	35.66	11.21 ^a	28.95	$F(2,218)=8.84$	.08
Number of drinks/week	.37	.88	1.42	4.57	.30	1.05	$F(2,218)=3.24$	.03
Number of joints/week	.52	2.15	1.54	6.09	.11	.48	$F(2,218)=1.80$	.02
Number of days cocaine/week	0 ^a	0	.06 ^b	.24	.01	.04	$F(2,218)=4.24$	.04

All prenatal measures refer to the biological mother's substance use and all postnatal measures refer to the current caregiver's substance use. PC: Parental Care; FC: Foster Care.

Means with different superscripts are significantly different from each other.

Table 3
Group differences in caregiver childhood trauma and psychiatric symptoms

Variables	Non-cocaine		Cocaine: PC		Cocaine: FC		F value	η^2
	<i>n</i> =105	<i>n</i> =93	<i>M</i>	S.D.	<i>M</i>	S.D.		
<i>I. Childhood trauma</i>								
Emotional abuse	9.88	5.61	11.61 ^a	6.65	7.05 ^b	3.41	<i>F</i> (2,218)=5.70	.05
Physical abuse	8.68	5.29	9.58 ^a	5.83	6.38 ^b	1.77	<i>F</i> (2,218)=3.22	.03
Sexual abuse	9.06	7.00	10.67 ^a	7.76	6.10 ^b	4.38	<i>F</i> (2,218)=3.82	.03
Emotional neglect	18.75 ^a	6.03	18.52 ^a	5.75	23.19 ^b	2.80	<i>F</i> (2,218)=6.11	.05
Physical neglect	13.01	2.02	12.66	2.26	12.76	0.94	<i>F</i> (2,218)=0.74	.007
<i>II. Psychiatric symptoms</i>								
PTSD symptoms	31.05 ^a	17.78	36.50 ^b	19.86	25.33 ^a	9.17	<i>F</i> (2,218)=4.22	.04
BSI	2.51 ^a	0.44	2.66 ^a	0.55	2.21 ^b	0.19	<i>F</i> (2,218)=8.23	.07
ASB	55.34 ^a	9.50	63.94 ^b	15.76	50.42 ^a	8.47	<i>F</i> (2,218)=13.56	.11
Anger/hostility	70.84 ^a	18.76	79.39 ^b	22.23	53.86 ^c	16.11	<i>F</i> (2,218)=14.83	.12

PC: Parental Care; FC: Foster Care. All measures refer to the current caregiver's childhood trauma and psychiatric symptoms.
Means with different superscripts are significantly different from each other.