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Substance-abusing mothers and disruptions in child custody: An attachment perspective

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Abstract

Using an attachment framework, we examined (1) whether substance-abusing mothers' perceptions of how they were parented were related to the severity of their substance abuse and psychological maladjustment and (2) whether these two factors mediated the association between mothers' perceptions of how they were parented and their children's placement out of home. There were 108 mothers of 248 children who completed interviews upon admission to a methadone maintenance program for women. Measures included lifetime risk composite scores derived from the Addiction Severity Index, the Parental Bonding Instrument, and a demographics questionnaire. A multilevel modeling approach was used to model effects of the hierarchically organized data (e.g., children nested within families). Findings are consistent with an attachment perspective on parenting suggesting that the internal psychological processes of a parent play a critical role in the continuity of parenting.

Keywords

Maternal drug abuse; Comorbid psychopathology; Child abuse; Parent–child relations; Attachment

1. Introduction

Although parental substance abuse is the single most common predictor of children's out-of-home placement (Chaffin, Kelleher, & Hollenberg, 1996; Department of Health and Human Services [DHHS], 1999; Marcenko, Kemp, & Larson, 2000), children's out-of-home placement is not simply a function of substance abuse alone but rather a function of complex interactions of risk factors at many levels (Hans, Bernstein, & Henson, 1999; Suchman & Luthar, 2000). At the family/social level, for example, children's out-of-home placement is more frequent among substance-abusing women with histories of childhood abuse and neglect, exposure to negative events, and experiences of domestic violence (DHHS, 1999; Marcenko et al., 2000; Nair et al., 1997). Demographic factors such as poor education, teen pregnancy, single parenthood, and chronic unemployment also place substance-abusing women at greater risk for losing child custody (DHHS, 1999; Nair et al., 1997). Maternal psychosocial risk, including substance abuse severity and comorbid psychopathology, also predicts higher rates

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of children's out-of-home placement among substance-abusing women (DHHS, 1999; Nair et al., 1997).

1.1. Applying an attachment framework to the study of child custody loss

One useful framework for examining how multiple risk factors work together to influence children's out-of-home placement is the ecological model of parenting set forth by Belsky (1993). Belsky's model takes into account demographic context, family and social history, individual psychosocial adjustment, and child characteristics in examining how multiple risk factors influence the parenting process. However, as Abidin (1992) and others (Mash & Johnston, 1990; Webster-Stratton, 1990) have noted, the ecological model may not fully capture a parent's internal psychological processes that may have significant influence on parenting (Abidin, 1992, p. 410). In this regard, Bowlby (1982), the originator of the attachment theory, had proposed that young children form "psychological representations" of early caregivers based on their own early experiences of the caregiving relationship, particularly during moments of emotional distress (Bowlby, 1982; van IJzendoorn, Juffer, & Duyvesteyn, 1995). Bowlby suggested that these psychological representations formed during early childhood serve as prototypes for expectations and behaviors in subsequent relationships. Thus, parents who viewed their own early caregivers as sensitive and flexible are thought to be more likely to provide a more secure environment for their own children (Slade & Cohen, 1996).

Although few investigators have directly assessed substance-abusing parents' own representations of their early caregivers, several have examined their perceptions of how they were parented. In three studies examining substance-abusing adults' perceptions of their own parents, investigators reported that substance-abusing adults viewed their parents as less caring and more intrusive than did non-substance-abusing adults (Bernardi, Jones, & Tennant, 1989; Schweitzer & Lawton, 1989; Torresani, Favaretto, & Zimmermann, 2000). However, no investigator, to date, has examined how substance-abusing adults' perceptions of how they were parented might influence the continuity of care with children in the next generation.

Bowlby (1982) also proposed that adults' psychological representations of early caregivers influence their psychological adjustment during adulthood. In their seminal longitudinal study on attachment, Sroufe, Carlson, Levy, and Egeland (1999) found that children who perceived their early caregivers as uncaring and demanding were more likely to develop social and emotional problems during adolescence and adulthood. Similarly, in several studies examining adults' perceptions of how they were parented, investigators found that perceptions of parents as uncaring and demanding were associated with poor psychological adjustment (Parker, 1989, 1990; Plantes, Prusoff, Brennan, & Parker, 1988; Warner & Atkinson, 1988). No investigator, to date, has examined associations of perceptions of early parenting with psychological adjustment in substance-abusing adults.

1.2. Objectives of this investigation

In this investigation, we were first interested in determining if, when examined together with multiple risk factors related to child custody loss, maternal psychosocial adjustment factors (e.g., maternal substance abuse severity and psychological maladjustment) are most strongly correlated with the actual decision to place children out of home. Our second objective was to explore the association between mothers' perceptions of how they were parented and their children's out-of-home placement. We expected (1) that substance-abusing mothers who perceived their own mothers as uncaring and intrusive would be more likely to have lost custody of a child and (2) that the link between mothers' perceptions of how they were parented and loss of child custody would be mediated by the severity of maternal substance abuse and psychological maladjustment.

2. Methodology

2.1. Sample

Participants in this study were drawn from a cohort of 162 women who were consecutively admitted to a New Haven-based, Center for Substance Abuse Treatment-funded methadone maintenance program for women across a 36-month period. Complete data for 125 of 132 women, who were the biological mothers of at least one child, were available for analysis. Data for 7 mothers were missing because, shortly after admission, these mothers were imprisoned, hospitalized, or discharged because they did not return for ongoing treatment. Of the 125 mothers, 108 had at least one minor (i.e., younger than 18 years) biological child. In this study, we report on data collected from the 108 mothers and their 248 minor children.

Demographic data are presented in Table 1. Most women in the sample were aged between 30 and 40 years, single, high school educated, and chronically unemployed mothers from minority backgrounds. On average, the women had 2.3 minor biological children and 23% had a minor child placed out of home at the time of the interview. The minor children's ages ranged from newborn to 17 years ($M = 8.8$ years). The demographic characteristics of the women in the sample are proportionately similar to those of the population of women in the United States with open child welfare cases involving maternal substance abuse (DHHS, 1999).

2.2. Procedures

All mothers completed informed consent procedures and assessments during a 2-hour meeting with a research assistant upon enrollment at the clinic. Assessments included a structured demographic interview and standardized assessments of global intelligence and addiction severity. Mothers also completed written questionnaires about their perceptions of how they were parented, psychiatric symptoms, family environment, and interpersonal relationships. Research assistants provided assistance with reading and comprehension of written questionnaires as needed.

2.3. Constructs and measures

2.3.1. Development of composite risk scales—We computed composite risk scores using data from the Addiction Severity Index (ASI; McLellan, Luborsky, Woody, & O'Brien, 1980) and a demographics interview. The ASI is a widely used structured interview that measures severity and duration of problems (e.g., medical, legal, employment, psychiatric, and family/social) commonly associated with substance abuse. Four composite risk scales composed of items known to be risk factors for child custody loss were developed for this study (see Table 2). Each scale item was coded 0 for the absence of risk and 1 for the presence of risk. For each composite scale, the sum of item codes was divided by the total number of items (to ensure comparability of scales), yielding a composite scale range of 0–1. ASI item construct and criterion validity has been well documented (McDermott et al., 1996).

2.3.2. Mothers' perceptions of how they were parented—Mothers' perceptions of how they were parented were assessed using the Parental Bonding Index (PBI; Parker, Tupling, & Brown, 1979). The PBI is a widely known instrument used to assess perceptions of parenting on two dimensions: caring versus uncaring and intrusive versus undemanding. Mothers rated their perceptions of how they were parented by their mothers prior to age 16 years (27% of the women reported the absence of their father in any caregiving role and therefore paternal caregiving was not assessed). The PBI is a 25-item questionnaire rated on a four-point scale with two subscales: the 13-item care scale assesses an individual's perceptions of her parent's affection, emotional warmth, and empathy, with higher scores representing more optimal parenting (Parker et al., 1979), whereas the 12-item overprotection scale assesses an individual's perceptions of her parent's intrusions and prevention of independence, with lower

scores indicating more optimal parenting (Parker et al., 1979). The PBI has demonstrated satisfactory reliability and validity in samples of drug-dependent adults (Bernardi et al., 1989; Cosden & Cortez-Ison, 1999; Parker, 1989; Schweitzer & Lawton, 1989; Torresani et al., 2000). For this sample, Cronbach's α coefficients were .87 for the care scale and .73 for the overprotection scale. A composite PBI score was derived by subtracting each mother's over-protection score from her care score, yielding a single score on a continuous scale where negative scores represented maladaptive parenting and positive scores represented optimal parenting (Warner & Atkinson, 1988).

2.4. Data analysis

2.4.1. Multilevel modeling—Multilevel modeling has been increasingly used to model effects for hierarchically organized data (e.g., children nested within families; Kreft & de Leeuw, 1998; Singer, 1998). We used the SAS GLMMIX macro with the SAS PROC MIXED program to conduct a random effects logistic regression (Littell, Milliken, Stroup, & Wolfinger, 1996). In all analyses, child age and sex (Level 1) and maternal age (Level 2) were entered as covariates. Estimates for the random effects portion of the unconditional model (i.e., a model that included only the dependent variable) were examined first to confirm variation in out-of-home placement *across* mothers and across children *within* families. Results of this step confirmed that mothers differed in the number of children placed out of custody (est = 6.896, $SE = 1.35$, $Z = 5.12$, $p < .0001$) and that out-of-custody placement varied across children within the same family (est = 0.2966, $SE = .03$, $Z = 9.26$, $p < .0001$). Results of this step thus supported the assumption that a random effects logistic regression is more appropriate than a conventional single-level (Level 2) logistic regression approach.

2.4.2. Maternal psychosocial adjustment and loss of child custody—To test the first hypothesis that maternal substance abuse severity and psychological maladjustment are the strongest correlates of children's placement out of home, we examined bivariate correlations of each risk composite score with children's placement out of home to confirm that each risk domain, when considered alone, was associated with children's placement out of home. A random effects logistic regression analysis was then conducted, with Levels 1 and 2 covariates (child age, child sex, and mothers' age) and composite risk scores for demographic, family/social, psychological maladjustment, and substance abuse severity entered simultaneously. Simultaneous entry allowed for the examination of each risk domain's unique contribution to the model while controlling for all other factors.

2.4.3. Maternal substance abuse severity and psychological maladjustment as mediators—Tests of mediation require significant associations between (1) predictor and mediator variables, (2) mediator and dependent variables, and (3) predictor and dependent variables. Once these associations have been confirmed, mediation is tested by determining whether, and how much, associations between the predictor and the dependent variable are reduced when the mediators are present (Baron & Kenny, 1986). Results of the first regression analysis examining types of risk associated with child custody loss were used to determine whether the mediators of interest, maternal substance abuse severity and psychological maladjustment, met the first requirement (i.e., association with the dependent variable). Second, in two random effects logistic regression analyses, mothers' perceptions of how they were parented were regressed on maternal (1) substance abuse severity and (2) psychological maladjustment (each was recoded such that 0 = *low risk* and 1 = *high risk*) to confirm associations between predictor and mediator variables. Third, in a random effects logistic regression, children's out-of-home placement was regressed on mothers' perceptions of how they were parented to confirm associations between predictor and dependent variables.

Finally, the third regression analysis was repeated, adding maternal substance abuse severity and psychological maladjustment to the model, to determine mediator effects. The percentage of change in parameter estimates for mothers' perceptions of how they were mothered before and after the mediator variables were added was computed to determine the presence and magnitude of mediation effects (Krull & MacKinnon, 2001). In all steps of the test of mediation, Levels 1 (child age and sex) and 2 (maternal age) factors were entered as covariates.

3. Results

3.1. Descriptive data

Descriptive data are presented in Table 3. Most women in the sample were from demographically disadvantaged backgrounds, reported having personal and family histories of substance abuse, had psychiatric symptoms (primarily depression and anxiety), and perceived their own mothers as uncaring and intrusive. Of these women, 23% had at least one child placed out of home.

3.2. Maternal substance abuse severity, psychological maladjustment, and children's placement out of home

As expected, bivariate correlations of risk domains with children's out-of-home placement indicated that, when considered alone, each risk domain was associated with children's placement out of home. Pearson's r correlations were .21 ($p < .001$) for demographic risks, .16 ($p < .05$) for family/social risks, .31 ($p < .001$) for substance abuse severity, .32 ($p < .001$) for psychological maladjustment, and $-.17$ ($p < .01$) for mothers' perceptions of how they were parented. As shown in Table 4, when composite risk scores were tested for association with children's placement out of home in the same model, with maternal age, child age, and child sex held constant, maternal substance abuse severity and psychological maladjustment were most strongly associated with children's placement out of home.

3.3. Maternal substance abuse severity and psychological maladjustment as mediators

Results presented in Table 5 are consistent with the hypothesis that the association between mothers' perceptions of how they were parented and children's placement out of home was partially mediated by maternal substance abuse severity and psychological maladjustment (Fig. 1). First, results of the regression analysis presented in Table 5 show that mothers' perceptions of how they were parented (predictor variables) were associated with maternal substance abuse and psychological maladjustment (mediator variables). Second, results of regression analyses in Table 4 were consistent with the hypothesis that maternal substance abuse and psychological maladjustment (mediator variables) were each associated with children's placement out of home (dependent variable). Third, as shown in Table 5, mothers' perceptions of how they were parented (predictor variable) were associated with children's placement out of home (dependent variable). Finally, when maternal substance abuse and psychological adjustment (mediator variables) were added back to the model (Table 5), associations between mothers' perceptions of how they were parented (predictor variable) and children's placement out of home (dependent variable), $(-.06) - (-.04)$, were reduced by 33%, suggesting a partial mediation effect.

4. Discussion

Rather than any single factor, out-of-home placement of substance-abusing mothers' children appears to be a function of cumulative risk factors at multiple levels of influence. Bivariate associations tested in this study are consistent with previous findings (DHHS, 1999; Marcenko et al., 2000; Nair et al., 1997) that children's out-of-home placement is linked with risks at

multiple levels of influence (e.g., sociodemographic, family/social, individual maternal adjustment, and child characteristics).

Results of this study also conform to predictions of attachment theory. One aim of this study was to explore whether internal psychological processes of substance-abusing mothers play a critical role in the actual decision to place children out of home. This exploration was based on an attachment perspective that the internal psychological processes of a parent play a critical role in the continuity of parenting. In this study, when multiple risk domains associated with children's out-of-home placement were examined together within the same statistical model, maternal substance abuse severity and psychological maladjustment were the strongest predictors of children's out-of-home placement.

A second aim of this study was to explore (1) whether substance-abusing mothers' perceptions of their own mothers as demanding and intrusive were linked with their children's placement out of home and (2) whether the link was explained by mothers' psychosocial adjustment (i.e., the severity of their substance abuse and psychological maladjustment). This exploration was based on the attachment perspective that (1) enduring perceptions of early caregiving influence continuity of parenting in the next generation and (2) the link is partially mediated by the impact of enduring representations of caregiving on individual psychosocial functioning (Bowlby, 1982). In other words, perceptions of early caregivers as uncaring or intrusive are thought, in part, to predispose individuals to higher levels of psychosocial maladjustment (i.e., substance abuse severity and psychological maladjustment).

Results of the second exploration conform to predictions from attachment theory; that is, mothers who perceived their own mothers as uncaring and intrusive were more likely to have lost custody of a minor child. There was also evidence that this effect was partially mediated (a magnitude of 33%) by maternal substance abuse severity and psychological maladjustment. In other words, mothers who perceived their mothers as uncaring and intrusive were more likely to have developed severe substance abuse problems and psychological maladjustment. It is thus possible that the observed maladjustments were at least partly caused by mothers' early caregiving experience—and, in turn, this may have negatively affected their caregiving practices with their own children—leading to out-of-home placement. That maternal substance abuse severity and psychological maladjustment were found to be only partial mediators suggests (1) that perceptions of early caregiving may also have a direct effect on children's out-of-home placement and (2) that other factors are likely operating in this complex decision process.

4.1. Limitations and implications for future work

Several limitations of this study warrant that the findings be considered preliminary. First, the absence of data on the ages of children or mothers at the time of the children's removal from the home is a limitation. Second, although items in the composite risk scales represent lifetime occurrences of risk, increasing the probability that they occurred before a child was removed from a mother's care, the cross-sectional nature of the data precludes any assumption about the temporal relations among variables. Third, the measurements derived from ASI items do not show the magnitude or recency of the events they represent. Fourth, although this investigation provides rudimentary evidence of mechanisms in families affected by maternal substance abuse, no conclusion can be drawn about the status of maternal or child attachments. Fifth, although the multilevel analytic strategy has been widely used to investigate causal relationships in data sets such as this, it is not possible to imply causality in the absence of known mechanisms and experimental designs. Thus, the findings reported are consistent with the theory under exploration but cannot at this point be said to confirm that theory or the implied mechanisms of action.

Limitations notwithstanding, the results of this study suggest that early caregiving experiences (and enduring memories of them) play an important role in directly shaping mothers' substance-abusing behavior and comorbid psychopathology and in directly and indirectly influencing their continuity of parenting. This finding warrants continued systematic evaluation of the ways in which attachment mechanisms (e.g., psychological representations of parenting and behavioral correlates in the mother–child relationship) and parental substance abuse coincide to influence parenting. Research programs with these aims will also help determine if targeting change at the representational level is feasible and/or likely to sustain parenting continuity in this population (Pajulo, Suchman, Kalland, & Mayes, in press; Suchman, Mayes, Conti, Slade, & Rounsaville, 2004; Suchman, Pajulo, DeCoste, & Mayes, 2006).

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Fig. 1. Mediation model showing maternal substance abuse severity and psychological maladjustment as mediators of the association between mothers' perceptions of how they were parented and their children's placement out of home.

Table 1
Demographic data for Levels 2 ($n = 108$) and 1 ($n = 248$) variables

Demographic characteristics	<i>M (SD) or %</i>
<i>Mothers (Level 2)</i>	
Age	34.84 (5.65)
Ethnicity	
Caucasian	39.8
African American	39.8
Hispanic	20.4
Educational attainment	
Lower than junior high school	2.8
Junior high school	33.3
High school	61.2
College (4 years)	2.7
Marital status	
Married	14.9
Divorced or separated	37.0
Never married	48.1
Widowed	5.6
Employment status (past 3 years)	
Full time	21.3
Part time	10.2
Unemployed	68.5
Family income (monthly) ^a	754.55 (585.13)
No. of minor biological children	2.30 (1.24)
With at least one child placed out of home	23.1
<i>Children (Level 1)</i>	
Age	8.8 (4.97)
Male	50.0
Mother's age at child's birth	25.3 (5.31)

^a Includes legal income and entitlements (e.g., welfare, food stamps, and social security benefits).

Table 2

Composite risk scale items

Composite risk scale	ASI items
Family/social risk	1 Lifetime physical, sexual, or emotional abuse by family member or acquaintance
	2 Presence of drug or alcohol problems in relatives of the previous generation (parents, grandparents, aunts, uncles)
Demographic risk	3 Presence of psychiatric problems in relatives of the previous generation
	1 Never married
	2 Lower than high school education completed
	3 Unemployed for 3 years
	4 Large family (≥ 3 minor children)
	5 Average annual income below poverty level (\$13,000)
Psychological maladjustment	6 Child's birth to a teenage mother (younger than 21 years) ^a
	1 History of suicidal ideation or attempt
	2 History of serious depression
	3 Use of prescription psychotropic medication
Substance abuse severity	4 Chronic psychiatric disability ⁵ . History of serious anxiety
	1 Onset of substance use prior to age 16 years
	2 Intravenous route of drug administration
	3 Drug overdose
	4 Incarceration

^aLevel 1 (child) factor.

Table 3Descriptive data ($n = 108$ mothers and 248 children)

Risk items (scored 0 or 1) and composite scores	<i>M (SD) or %</i>
<i>Level 2 (maternal variables)</i>	
Demographic	
Never married	48.1
Lower than high school education	36.1
Chronic unemployment	68.5
Annual income < \$13,000	81.5
Large family (> 3 children)	52.8
Teen mother (Level 1 variable)	23.0
<i>Demographic risk composite score^a</i>	.56 (.22)
Family/social history	
History of abuse	55.6
History of drug/alcohol problems	56.5
History of psychological problems	20.4
<i>Family/social risk composite score^a</i>	.40 (.29)
Maternal psychological maladjustment	
Serious depression	60.2
Serious suicidal thought/attempt	29.6
Psychiatric medication	24.3
Psychiatric disability	02.8
Absence of anxiety	46.3
<i>Maternal psychological risk composite score^a</i>	.33 (.18)
Maternal drug use severity	
First used drugs before age 16 years	13.9
Intravenous drug use	50.9
Drug overdose	25.9
Ever incarcerated	40.7
<i>Maternal drug use risk composite score^a</i>	.20 (.17)
<i>Level 1 (child variables)</i>	
Born to teen mother (< 21 years) ^b	01.6
Placed out of home	17.3
<i>Mothers' perceptions of how they were parented</i>	
Care	22.04 (7.51)
Below care cutoff score	74.1
Overprotection	16.95 (6.66)
Beyond overprotection cutoff score	72.2
Care-overprotection difference score	4.5 (11.42) ^c

^aComposite risk scores for each category were computed by dividing the sum of the individual risk items (each scored 0 or 1) by the total number of items in the category. This transformation placed risk scores on the same scale of 0 to 1.

^bItem included in demographic risk composite score.

^cRange = -30 to 31.

Table 4

Results of random coefficient logistic regression analysis testing associations of risk factors simultaneously with child out-of-home placement ($n = 108$ mothers and 248 children)

	Out-of-home placement	
	Est	<i>t</i>
<i>Covariates</i>		
Level 1 (child) factors		
Age	0.29	5.73 *
Sex	-0.18	-0.53
Level 2 (maternal) factors		
Age	-0.24	-2.78 *
<i>Risk factors</i>		
Demographic context	-0.27	-0.15
Family/social history	0.26	0.18
Drug abuse severity	5.33	2.12 **
Psychological maladjustment	5.55	2.39 **

* $p < .01$, one-tailed.

** $p < .001$, one-tailed.

Table 5
Results of random coefficient logistic regression analyses testing mediation model ($n = 108$ mothers and 248 children)

	Out-of-home placement					
	Substance abuse severity		Psychological maladjustment		Without mediation	
	Est	<i>t</i>	Est	<i>t</i>	Est	<i>t</i>
<i>Covariates</i>						
Level 1 (child) factors						
Age	0.01	2.19**	0.00	0.00	0.28	6.25***
Sex	0.02	0.48	0.00	0.00	-0.25	-0.74
Level 2 (maternal) factors						
Age	0.40	1.06	-0.38	-7.35	-0.29	-3.63***
<i>Risk factors</i>						
Substance abuse severity						
Psychological maladjustment						
Mothers' perceptions of how they were parented	-0.25	-1.41*	-0.22	-1.55*	-0.06	-1.64*
					0.29	6.34***
					-0.17	-0.51
					-0.33	-3.88***
					4.72	2.67***
					4.23	1.77*
					-0.04	-0.98

* $p < .05$, one-tailed.
 ** $p < .01$, one-tailed.
 *** $p < .001$, one-tailed.