Methamphetamine-Using Parents: The Relationship Between Parental Role Strain and Depressive Symptoms*

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ABSTRACT. Objective: The methamphetamine epidemic in the United States involves a large number of men and women with dependent-age children. However, we know little about the parenting strains experienced by methamphetamine-using mothers and fathers and the relationship of these parenting strains to mental health outcomes, specifically depressive symptoms. **Method:** The primary goal of this study was to examine five dimensions of parental role strain in relation to depressive symptoms in a sample of 180 methamphetamine-using parents of dependent-age children in San Diego, CA. Dimensions of parental role strain included child emotional and behavioral problems, child physical health problems, child-related financial strain, interpersonal conflict involving children, and intrapsychic strain related to children. **Results:** Methamphetamine-

using mothers reported significantly more child-related emotional and behavioral problems compared with methamphetamine-using fathers (7.9 vs. 6.8; $t = 2.5$, $p < .05$). In multiple regression analysis, higher Beck depression scores were associated with being a mother ($\beta = .186$, $p < .05$), having more children younger than 18 years old ($\beta = .165$, $p < .05$), less emotional support ($\beta = -.230$, $p < .01$), and higher scores on intrapsychic parental role strain related to children ($\beta = .288$, $p < .01$). **Conclusions:** These findings suggest the importance of considering the multidimensional nature of parenting strain in the development of drug treatment and counseling programs for methamphetamine-using parents. (*J. Stud. Alcohol Drugs*, 72, 954–964, 2011)

IN THE EARLY 1990s, methamphetamine use in the United States was concentrated among gay and bisexual men in the southwestern states (Reback, 1997). Increasing rates of methamphetamine use in the U.S. general population have altered the demographics of the epidemic to include large numbers of heterosexual men and women (Molitor et al., 1998; Semple et al., 2004). According to the U.S. National Survey on Drug Use and Health, the highest rates of methamphetamine use during the period 2002–2009 occurred in the 18- to 25-year-old age category (Substance Abuse and Mental Health Services Administration [SAMHSA], 2010b). Although rates of use among adults age 26 or older were considerably lower than those reported for 18- to 25-year-olds (SAMHSA, 2010b), there was an increase in methamphetamine use in the older age group between 2008 and 2009 (SAMHSA, 2010a). Because individuals in the 18- to 35-year-old age group are likely to be rearing young children, we can anticipate a concomitant increase in the number of methamphetamine-using parents with dependent-age children.

Stressors that arise in the context of child rearing may be especially potent among parents who have a substance use disorder. The primacy of the parenting role, as well as the

social importance associated with the care and protection of young children, makes parenthood a major source of stress (Evenson and Simon, 2005). Exposure and vulnerability to parental role strain may be higher among methamphetamine-using parents because of their greater experiences of social stigma, social marginalization, and social disadvantage (Semple et al., 2005a, 2005b).

Families of methamphetamine users may differ in several ways from those of users of other substances (e.g., cocaine, heroin, or alcohol). As documented in studies of heterosexual users, many of whom are parents, the highly addictive, sexually stimulating, “binge and crash” nature of methamphetamine may result in children being exposed to a set of parental behaviors that include parents staying “high” and awake for days, having multiple sex partners, exhibiting erratic and bizarre behaviors, and experiencing extreme euphoria followed by painful withdrawal symptoms (e.g., depression, paranoia, irritability, aggression, delusions, or hallucinations; Centers for Disease Control and Prevention, 2006; Cheng et al., 2010; Semple et al., 2004, 2005a; Zule et al., 2007). The children of methamphetamine users also may experience a chaotic home life, with inadequate supervision, inconsistent parenting, chronic neglect, parental aggression, violence, and other safety risks (e.g., exposure to chemical and toxic fumes from home-based methamphetamine laboratories, to weapons, or to criminal activity; Amatetti and Young, 2006; McMahon, 2005). Although researchers have examined parenting stress and child outcomes in samples of drug users (e.g., heroin, cocaine) and of persons with alcohol use disorders (e.g., Barnard and McKeganey, 2004; Kroll and Taylor, 2003; Mayes et al., 2002; McKeganey

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et al., 2002; Velleman and Templeton, 2007), data on the prevalence of parenting strain and its association with mental health outcomes among methamphetamine-using parents are scarce.

Research has shown that drug-using parents have high levels of parental role strain and psychological distress (e.g., Bagner et al., 2009; Minnes et al., 2008). Parents' mental health is important to society because it can affect the quality of the parent-child relationship and, in turn, the children's well-being over both the short and the long term. For example, Bagner et al. (2009) found, in a sample of mothers with a history of prenatal substance use, that parenting stress was associated with more externalizing behaviors in children. Another recent study found associations among maternal trauma (e.g., childhood sexual abuse), substance use disorders, depressive symptoms, and maternal abuse potential (Cohen et al., 2008), thus highlighting the important role of co-morbidities in relation to parenting behaviors. Indeed, Morrissey et al. (2005a) reported that the majority of women with co-occurring mental health and substance use disorders who participated in the Women, Co-occurring Disorders and Violence Study had histories of trauma, including physical and sexual abuse in childhood and adulthood.

Depressive symptoms in parents with substance use disorders have been associated with a range of adverse outcomes in preschool and school-age children, including depression, anxiety, lower social competence, and behavioral problems (Eiden et al., 2007, 2009a, 2009b). Among preteens and adolescents, parental depression has been associated with externalizing behavior (e.g., conduct disorder) on the part of children, school problems, functional impairment (social, cognitive), internalizing symptoms (e.g., depression, anxiety), and alcohol use (Gance-Cleveland et al., 2008; Nunes et al., 1998, 2000).

To our knowledge, no published studies have examined exposure and vulnerability to parental role strain among methamphetamine-using parents. Previous research has, however, identified multiple child-related stressors in the lives of individuals with substance use disorders. Parenting strains in the form of physical and emotional problems affecting the child are common in drug-using populations. In particular, some children who are exposed to drugs in utero experience cognitive deficits and developmental delays (D'Apolito, 1998; Singer et al., 2002). Prenatal exposure to methamphetamine has been associated with lower birth weight, fetal growth restriction, and lower gestational age at birth (Nguyen et al., 2010; Smith et al., 2006). Heavy use of methamphetamine and third-trimester use have been associated with increased neonatal physiological stress, increased lethargy, lower arousal, central nervous system irritability, and poor quality of movement (LaGasse et al., 2011; Smith et al., 2008). A few studies have reported high levels of post-traumatic stress disorder as well as externalizing and internalizing behaviors among preschool and school-age children

of methamphetamine users (Asanbe et al., 2008; Ostler et al., 2007, 2010).

Parental role strain also occurs in the form of conflict with children and regarding children. In one study of family conflict and depressive symptoms among methamphetamine users, 24% of the sample reported having had conflict with their children in the past year. Conflict with other family members often concerned the custody, care, and protection of minor children. Overall, conflict with family members had a significant negative impact on the psychological well-being of methamphetamine users, independent of drug use (Semple et al., 2009).

As do parents with other types of substance use disorders (e.g., alcohol, opiate dependence), methamphetamine-using parents may face intrapsychic stressors. For example, opiate-dependent parents report guilt and regret associated with their drug use lifestyle, preoccupation with drugs, and reduced physical and emotional availability to children (Hogan, 2007). The children of parents with substance use disorders sometimes manifest a variety of negative emotions and behaviors. Christensen and Bilenberg (2000) reported that children of parents with alcohol use disorders had higher levels of internalizing and externalizing behaviors compared with controls. The parents in Hogan's study (2007) reported negative emotional responses from children in the form of anger, resentment, and accusations directed at their parent. In turn, parents expressed major concerns about how their drug use was negatively affecting their relationships with their children.

Financial strain among methamphetamine-using parents also is likely to be great. Anxieties about providing food, shelter, and clothing for children may be exacerbated by compulsions to spend money on drugs. In addition, parents with substance use disorders, especially those who have been convicted of a felony, may face barriers to employment, with resulting reductions in income. Meara (2006) reported that women with substance use disorders had lower employment rates and lower earnings when working compared with non-drug-using women who had also received support from the Temporary Assistance to Needy Families program. In the United States, Pollack and Reuter (2006) reported that welfare benefits to low-income mothers with substance use disorders have decreased since the passing of the Welfare Reform Act in 1996. With a smaller proportion of drug-using parents eligible to receive welfare, the financial strain associated with child rearing is likely to be exacerbated.

Several other factors have been identified in the literature as being associated with depressive symptoms in samples of drug-using parents. Being female, not living with one's children, and higher-intensity drug use have been positively associated with more depressive symptoms or psychological distress among drug-using parents (Davis et al., 2008; Field et al., 1998; Gilchrist and Taylor, 2009; Meier et al., 2004). Studies also have identified daily problematic alcohol use,

unstable living situations, and lack of emotional support as characteristic of drug-using parents (Meier et al., 2004). To date, these factors have not been examined in relation to depressive symptoms in methamphetamine-using parents.

The primary objective of this study was to examine dimensions of parental role strain in relation to depressive symptoms in a sample of methamphetamine-using parents. The following three questions were addressed: (a) Do methamphetamine-using mothers and fathers differ on five dimensions of parental role strain? (b) Do dimensions of parental role strain relate differentially to depressive symptoms? and (c) Is the relationship between parenting strain and depressive symptoms modified by the gender of the parent?

We hypothesized that methamphetamine-using mothers would have significantly more parenting strain compared with fathers because women typically assume primary responsibility for the rearing of young children (Galinsky et al., 2009). We also hypothesized an interaction effect whereby the relationship between parenting strain and depressive symptoms would be stronger for methamphetamine-using mothers compared with fathers. Because many women are socialized to view motherhood as their primary social role, their emotional investment in that role may place them at increased risk for experiencing negative emotions in response to parenting strains. Answers to these questions could have implications for the development of family-focused drug treatment programs that address parental role strain as an antecedent of depressive symptoms among methamphetamine users.

Method

Sample selection

The sample consisted of 103 female and 77 male methamphetamine users who self-identified as a parent of at least one child younger than 18 years of age. This sample was drawn from a larger cohort of participants enrolled in a sexual risk-reduction intervention for methamphetamine users (Semple et al., 2010). The intervention study (ClinicalTrials.gov NCT00344214) required that participants be at least 18 years of age and HIV negative, that they self-identify as heterosexual or bisexual, and that they report having unprotected vaginal or anal sex with at least one opposite-sex partner in the previous 2 months. Participants also had to report using methamphetamine at least twice in the past 2 months and at least once in the past 30 days. Persons were excluded from study participation if they had not been sexually active or always used condoms with all partners in the past 2 months, had unprotected sex with a spouse or steady partner only (i.e., were monogamous), were trying to get pregnant or trying to get a partner pregnant, had a psychiatric diagnosis with current psychotic symptoms or suicidal ideation, or were currently enrolled in a formal outpatient or residential

drug treatment program. The mood regulation component of the intervention required that participants score at least 4 on the 7-item Beck Depression Inventory (BDI)–Fast Screen for medical patients (Beck et al., 2000); those with lower scores were excluded. The research protocol was reviewed and approved by the responsible institutional review board.

Measures

Parental role strain. Our measure of parental role strain was a modified version of a multidimensional scale developed for use with HIV-positive parents of dependent-age children (<18 years; Semple et al., 1997). Items that referred specifically to the parent's HIV serostatus were rewritten to reflect methamphetamine use. The scale assesses five different dimensions of parental role strain during the past year. Items were measured on a 4-point scale: 1 = *never*, 2 = *once in a while*, 3 = *fairly often*, and 4 = *very often*.

STRESSORS INVOLVING CHILD(REN)'S EMOTIONAL HEALTH: Children's behavioral problems—including interpersonal difficulties at school or on the playground, learning disabilities, and “run-ins” with the law—have been identified as highly stressful for parents. Four items assess this dimension of parental role strain ($\alpha = .80$; e.g., How often did your child[ren] show behavioral problems at school or on the playground; for example, acting out, withdrawn, not getting along with other children?).

STRESSORS INVOLVING CHILD(REN)'S PHYSICAL HEALTH: Physical health problems of a child that can cause parental stress include usual childhood illnesses (e.g., flu, measles), chronic conditions such as diabetes, and hospitalization or surgery resulting from acute illness, accidents, and birth defects. Three items tap this dimension of parental role strain ($\alpha = .87$; e.g., How often did your child[ren] experience a serious health event that required hospitalization or surgery?).

FINANCIAL STRAIN RELATED TO CHILD(REN): Child-related financial strain can result from insufficient income to provide for children's basic needs, problems paying or collecting child support, and problems finding affordable and reliable child care. This is a 3-item scale with an α of .71 (e.g., How often did you have problems either getting child-support payments or making your child-support payments?).

INTERPERSONAL CONFLICT RELATED TO CHILD(REN): Conflict can occur with children directly or with a mate or ex-mate and can involve parenting issues. Conflicts with children can include communication problems, children's objections to the parent's drug use, and disputes over homework, to name a few examples. Conflict with a mate or ex-mate can include disputes over child-rearing practices and child custody or visitation rights. This 3-item scale had an α of .62 (e.g., How often did you have a serious argument or physical confrontation with your child[ren]?).

INTRAPSYCHIC STRESSORS RELATED TO CHILD(REN): This category of stressor includes feelings of guilt and shame about

TABLE 1. Characteristics of a sample of methamphetamine-using parents ($N = 180$)

Variable	Mothers ($n = 103$)	Fathers ($n = 77$)	Test statistic	p
Marital status, % (n)			$\chi^2 = 3.8$	.435
Never married	41.7 (43)	49.4 (38)		
Married	12.6 (13)	7.8 (6)		
Divorced or separated	45.6 (47)	41.6 (32)		
Widowed	0.0 (0)	1.3 (1)		
Ethnicity, % (n)			$\chi^2 = 2.9$	.406
White	34.0 (35)	23.4 (18)		
African American	29.1 (30)	37.7 (29)		
Hispanic	25.2 (26)	28.6 (22)		
Other	11.7 (12)	10.4 (8)		
Education, % (n)			$\chi^2 = 8.7$	.069
Some high school or less	35.0 (36)	22.1 (17)		
High school diploma or GED	32.0 (33)	49.4 (38)		
2-year degree or some college	31.1 (32)	23.4 (18)		
4-year degree	1.9 (2)	3.9 (3)		
Some graduate work or advanced degree	0.0 (0)	1.3 (1)		
Annual income, % (n)			$\chi^2 = 5.9$	.015
$\leq \$10,000$	77.7 (80)	61.0 (47)		
$> \$10,000$	22.3 (23)	39.0 (30)		
No. of children <18 years old, % (n)			$\chi^2 = 11.2$	.025
1	36.9 (38)	50.6 (39)		
2	29.1 (30)	28.6 (22)		
3	17.5 (18)	6.5 (5)		
4	11.7 (12)	3.9 (3)		
≥ 5	4.9 (5)	10.4 (8)		
Household composition, % (n)			$\chi^2 = 16.6$	.001
Child(ren) and spouse or steady partner	10.7 (11)	18.2 (14)		
Children only	28.2 (29)	6.5 (5)		
Spouse or steady partner only	8.7 (9)	19.5 (15)		
No spouse, steady partner, or children	52.4 (54)	55.8 (43)		
Lives with at least one child <18 years old, % (n)	38.8 (40)	24.7 (19)	$\chi^2 = 4.0$	.045
Homeless, % (n)	18.4 (19)	5.2 (4)	$\chi^2 = 6.9$	.008
Employed, % (n)	20.4 (21)	26.0 (20)	$\chi^2 = 0.78$	.377
Children's age in years, M (SD)	10.2 (4.3)	9.1 (4.8)	$t = 1.64$	.104
Parent's age in years, M (SD)	36.1 (7.7)	35.7 (8.7)	$t = 0.36$	.716
Depressive symptoms, M (SD) ^a	27.2 (12.9)	19.0 (12.7)	$t = 4.20$	.000

Note: **Bold** indicates statistical significance. GED = General Educational Development credential. ^aScore on the Beck Depression Inventory (BDI-II) for medical patients, range: 0–63; higher scores indicate greater depressive symptoms.

being drug dependent, fears of losing esteem with one's children, worries about having additional children, and concerns about what will happen to the children if the parent should become unable to care for them. The α for this 5-item scale was .60 (e.g., How often did you feel guilty that you are a methamphetamine-using parent?).

Depressive symptoms. Depressive symptoms experienced over the previous 2 weeks were assessed using the 21-item BDI-II (Beck et al., 1996b). Each item has four graded statements that are scored from 0 to 3 to show increasing depressive symptoms. Summary scores ranged from 0 to 63.

Substance use variables. Intensity of methamphetamine use was measured as the number of grams used in the past 30 days. Alcohol use was measured with one item from

the Alcohol Use Disorders Identification Test (Babor et al., 2001): "How often do you have a drink containing alcohol?" Response categories ranged from 0 (*never*) to 4 (*four or more times a week*).

Emotional support. Emotional support (i.e., the availability of family and friends who are perceived as caring, trustworthy, uplifting, and able to keep a confidence) was assessed using a 7-item scale developed by Pearlin et al. (1990). Items were rated on a 4-point scale from 1 (*strongly disagree*) to 4 (*strongly agree*). Mean scores were used in these analyses. The α coefficient for this scale in the present sample was .91.

Background characteristics. The gender of the parent was coded 1 = male, 2 = female. Children living with the parent

and spouse or steady partner living with the parent were both coded 1 = yes, 0 = no. The number of children younger than 18 years old was coded as a continuous variable.

Statistical analysis

A single hierarchical multiple regression analysis was performed. BDI-II scores were defined as the dependent variable. In Step 1, the gender of the parent, the number of children less than 18 years of age, children living with the parent (yes/no), the spouse or steady partner living with the parent (yes/no), the number of grams of methamphetamine used in the past 30 days, the frequency of alcohol use, and emotional support were entered as control variables. Controlling for these variables helped to guard against producing a spurious relationship between parenting strain and depression that could be attributable to each variable's association with the outcome. In Step 2, our five variables for parental role strain were entered as a block. In Step 3, five interaction terms for gender-by-parenting strain were entered as a separate block of variables.

Results

Characteristics of our sample of methamphetamine-using mothers and fathers are presented in Table 1. By design, the study excluded HIV-positive persons. There were no significant differences between the sexes with respect to age, ethnicity, education, marital status, or current employment. However, mothers and fathers differed on two economic indicators. Methamphetamine-using mothers were significantly more likely to be homeless compared with fathers, and fathers were significantly more likely to earn more than \$10,000 per year compared with mothers. Both mothers and fathers had an average of 2.1 dependent-age children. The children of mothers ranged in age from younger than 1 year of age to 17 years ($M = 10.2$ years, $SD = 4.3$), and those of fathers ranged from 1 year of age to 17 years ($M = 9.1$ years, $SD = 4.8$). A larger percentage of mothers reported

having at least one child younger than 18 years living in their household compared with fathers (38.8% vs. 24.7%; $\chi^2 = 4.0$, $p < .05$). Twenty-seven percent of parents reported living with a spouse or steady partner. Methamphetamine-using fathers were more likely than mothers to be living in a household that included a spouse or steady partner (37.7% vs. 19.4%; $\chi^2 = 7.4$, $p < .01$). Mothers also had significantly higher depression scores compared with fathers. Using a cut point of 20 on the BDI-II (Beck et al., 1996a), 71% of mothers and 40% of fathers met criteria for moderate to severe depression. Mothers and fathers did not differ in terms of emotional support, amount of methamphetamine used in the past 30 days, or frequency of alcohol use.

Do methamphetamine-using mothers and fathers differ on dimensions of parental role strain?

Compared with fathers, mothers reported significantly more emotional and behavior problems in their children. The two groups did not differ on any of the other four dimensions of parenting strain or on total parental role strain scores (Table 2).

Do dimensions of parental role strain relate differentially to depressive symptoms?

As shown in Table 3, when all control variables were included in the regression equation, only intrapsychic parenting strain was associated with increased depressive symptoms. The other four dimensions were not related to the outcome of interest. Other factors associated with increased depressive symptoms were being a mother, having a greater number of children younger than 18 years of age, and having less emotional support.

Is the relationship between parenting strain dimensions and depressive symptoms modified by the gender of the parent?

None of the five interaction terms for parenting strain by gender was significantly related to depressive symptoms. Four variables remained significantly associated with parental depression in this final step in the regression analysis: being a mother, number of children less than 18 years of age, emotional support, and intrapsychic parenting strain.

Discussion

The findings from this analysis highlight the importance of considering the multidimensional nature of parental role strain. Although methamphetamine-using mothers and fathers did not differ in overall levels of parental role strain, methamphetamine-using mothers of dependent-age children reported higher levels of emotional and behavioral problems

TABLE 2. Group means (standard deviations) for parental role strain dimensions

Stressor	Mothers (<i>n</i> = 103)	Fathers (<i>n</i> = 77)	<i>t</i>	<i>p</i>
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)		
Emotional or behavioral problems of child(ren), range: 4–16	7.9 (3.2)	6.8 (2.6)	2.5	.012
Physical health problems of child(ren), range: 3–12	3.7 (1.7)	3.6 (1.6)	0.46	.649
Interpersonal conflict related to child(ren), range: 3–12	5.7 (2.4)	5.1 (2.3)	1.49	.137
Financial strain related to child(ren), range: 3–12	6.1 (3.0)	6.0 (2.7)	0.34	.734
Intrapsychic strain related to child(ren), range: 5–20	10.6 (3.5)	10.3 (3.3)	0.52	.602

Note: **Bold** indicates statistical significance.

TABLE 3. Depressive symptoms regressed on control variables (Step 1), dimensions of parental role strain (Step 2), and Parental Role Strain Dimensions $\times$ Gender of Parent (Step 3) ($N = 180$)^a

Variable	Step 1		Step 2		Step 3	
	β	sr^2	β	sr^2	β	sr^2
Gender of parent	.283***	.071	.263***	.058	.186*	.022
Children live with parent, yes/no	-.043	.002	-.025	.001	-.021	.000
Spouse or steady partner lives with parent, yes/no	.086	.006	.075	.005	.062	.003
No. of children <18 years of age	.162*	.025	.165*	.023	.165*	.023
Frequency of alcohol use	-.013	.000	-.032	.001	-.034	.001
Grams of methamphetamine used	.129	.016	.125	.014	.130	.015
Emotional support	-.263***	.066	-.223**	.045	-.230**	.042
Child-related physical health stressors			.092	.005	.013	.000
Child-related emotional/behavioral problems			.021	.000	.074	.002
Child-related intrapsychic strain			.304***	.073	.288**	.035
Child-related financial strain			.033	.001	.042	.001
Child-related interpersonal conflict			.001	.000	.077	.002
Child-Related Interpersonal Stressors $\times$ Gender of Parent					.203	.004
Child-Related Physical Health Stressors $\times$ Gender of Parent					.266	.006
Child-Related Emotional or Behavioral Problems $\times$ Gender of Parent					.356	.008
Child-Related Intrapsychic Strain $\times$ Gender of Parent					.035	.000
Child-Related Financial Strain $\times$ Gender of Parent					.032	.000
R^2	.206		.303		.316	
Multiple R	.454		.550		.563	
Adjusted R^2	.173		.252		.244	
F (df)	6.30*** (7, 170)		5.97*** (12, 165)		4.36*** (17, 160)	

Notes: β = standardized regression coefficient; ^atwo cases missing data.

* $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed tests).

in their children compared with their male counterparts. This finding may reflect gender differences in exposure to children's problems, given that mothers were significantly more likely to be living with their children compared with fathers.

It is also possible that there are gender differences in the mechanisms through which parental drug dependence affects children's behavior. Previous research suggests that negative emotions experienced by parents who use drugs may be a potential pathway through which substance dependence adversely influences functioning in children. For example, a study of parents with alcohol use disorder identified maternal depression as a mediator between parental problem drinking and children's internalizing behaviors (El-Sheikh and Flanagan, 2001). In the present study, 71% of methamphetamine-using mothers could be considered moderately to severely depressed compared with only 40% of fathers. This finding might help to explain the higher levels of strain regarding children's emotional and behavioral problems reported by methamphetamine-using mothers compared with fathers.

Also, maternal depression may combine with past experiences of trauma, including physical and sexual abuse, to further compromise mothers' abilities to cope with children's

behavioral problems, thereby elevating their level of stress compared with fathers'. Several studies have reported that interventions that target women with co-occurring substance use and mental health disorders and that include trauma-related counseling have demonstrated treatment improvements (e.g., reduced mental health symptoms and improved substance use behaviors; Brown and Melchior, 2008; Morrissey et al., 2005a, 2005b). The development and testing of comprehensive programs for parents with co-occurring disorders is warranted.

A key finding in this study was the significant positive association between intrapsychic child-related stressors and depressive symptoms. This dimension of parenting strain involves elements of guilt, shame, and worry associated with being a methamphetamine-using parent, and it captures core elements of self-concept. Those who struggle with drug dependence are likely to experience feelings of inadequacy or failure as a parent, because parenting is a highly valued role in society. Those feelings might increase as the duration and intensity of parents' methamphetamine use escalates. In a qualitative study, opiate-dependent parents reported feelings of guilt and regret associated with their preoccupation

with drugs and negative child outcomes, especially unmet social and emotional needs of their children (Hogan, 2007). It is not unreasonable to expect that intrapsychic strain experienced by methamphetamine-using parents also would increase in the face of escalating drug use and symptoms of internalizing and externalizing behaviors in their children. Future research should use longitudinal designs that examine the psychological effects of intrapsychic role strain across the entire spectrum of methamphetamine use disorder.

Exposure to intrapsychic role strain was associated with increased depressive symptoms for both mothers and fathers. This finding is consistent with a study of non-drug users that found that parenting strain was associated with increased psychological distress, regardless of gender (Evenson and Simon, 2005). Although we hypothesized that the salience of the parenting role would make women more vulnerable to psychological distress, it appears that the emotional costs associated with being a drug-dependent parent are considerable for both men and women. More research is needed to assess how intrapsychic strains experienced in the parenting role may compromise psychological well-being. Possible mechanisms involve the undermining of self-concept and damage to an important role identity (Thoits, 1991)—a process that we propose may be a consequence of drug dependency.

Several non-child-related factors also were associated with elevated levels of depressive symptoms among methamphetamine-using parents. Being female was positively associated with depressive symptoms. This finding is consistent with previous studies of drug users (Brienza et al., 2000; Compton et al., 2000; Cottler et al., 2005; Wisniewski et al., 2006). The consequences of maternal depression for the children of methamphetamine-using mothers have not been studied; however, studies of non-drug-using mothers have identified adverse consequences on the parent-child relationship. For example, depressive symptoms in non-drug-using mothers have been linked to lower levels of maternal sensitivity and less secure parent-child attachments during infancy and early childhood (Campbell et al., 2004; Easterbrooks et al., 2000; Toth et al., 2009; Trapolini et al., 2008). In the case of methamphetamine-using parents, drug use might interact with depressive symptoms to exacerbate children's behavioral and emotional responses. Treatment programs that address the co-occurrence of depressive symptoms and methamphetamine use disorder may be needed to help parents manage or reduce parental role strain.

Our findings suggest the need for parent-child-focused drug treatment programs for methamphetamine-using parents. Psychosocial approaches to substance use treatment (e.g., cognitive-behavioral therapies, psychodynamic and interpersonal methods, and self-help groups or 12-step-oriented treatments) may be more efficacious if treatment is placed in the context of the parenting role. The Children's Bureau website provides child-welfare professionals with a list of evidence-based programs that are supported by

research. Several programs are available in the areas of parent training (e.g., Incredible Years, Triple P—Positive Parenting Program, Parent-Child Interaction Therapy) and substance use disorders treatment that includes a child and family well-being component (e.g., Family Behavior Therapy for Adults, Parent-Child Assistance Program) (California Evidence-Based Clearinghouse, 2011). SAMHSA, part of the U.S. Department of Health and Human Services, also offers family-centered treatment programs for women with substance use disorders (Werner et al., 2007).

Drug treatment programs that address parenting needs are likely to have greater success in achieving long-term parental drug cessation as well as in enhancing the physical and mental well-being of the children of parents with drug dependence. At least two studies have demonstrated improvements in maternal outcomes (e.g., reduced drug use, enhanced family interaction skills, or reduced parenting distress) and child outcomes (e.g., improved developmental markers) in response to a comprehensive substance use disorders treatment program for women and their children (Connors et al., 2001, 2006). Longitudinal studies to assess the efficacy of parent-child-focused substance use disorder treatment programs for methamphetamine users are warranted.

This research also points to the importance of emotional support as a factor in the mental health of methamphetamine-using parents. Participants with higher levels of emotional support reported fewer depressive symptoms. From a treatment perspective, enhancement of social support systems could be crucial to improving mental health in this population. Drug treatment programs that promote the development and mobilization of formal support networks have been shown to improve children's health outcomes. In particular, family-support programs that provide in-home training in parenting and family skills for mothers with substance use disorders have resulted in stronger parent-child attachments and improved child outcomes (e.g., prevention of later substance use in children; Kumpfer and Fowler, 2007). Although family members are thought to provide valuable emotional support to patients with substance use and psychiatric disorders (Mueser et al., 2009), we were unable to identify any family-focused treatment models that assessed the impact of emotional support on the well-being of drug-dependent parents and their children. Randomized controlled intervention trials that evaluate the role of family support in the treatment of depressive symptoms in methamphetamine-using parents are warranted.

In this sample, approximately 70% of methamphetamine-using parents were living apart from their children. Other studies have reported that about half of drug-using parents (46%–53%) did not live with their children (Copenhaver et al. 2010; Gilchrist and Taylor, 2009; Meier et al., 2004). Drug-using parents who have access to drug treatment and mental health services as well as programs to develop parenting skills and family support may have greater opportu-

nity to regain or retain custody of their children. In one study of mothers with substance use disorders, those who participated in programs that offered high levels of family-related and employment services were almost twice as likely to be reunited with their children as mothers who received low levels of these services in their treatment program (Grella et al., 2009). Copenhaver et al. (2010) reported that, among intravenous drug-using fathers who participated in a treatment program, those who lived with their children demonstrated greater motivations to reduce their HIV risk behavior compared with fathers who were not living with their children. Another study reported that drug-using parents who lived with their children used drugs less frequently and had more favorable social circumstances (e.g., more stable housing) compared with their counterparts who did not live with their children (Meier et al., 2004). Future studies should examine the protective effects of parenthood in the treatment of methamphetamine use disorder.

Also, the current findings need to be replicated with a larger sample that includes more parents who have children living with them. It is likely that certain dimensions of strain—such as financial strain, interpersonal conflict, and emotional and behavioral problems of children—will be exacerbated in the context of living with children. On the other hand, intrapsychic strain may be greater among parents who are not living with their children. It is not unreasonable to suggest that parents who live apart from their children worry about the well-being of their children and experience feelings of guilt and shame associated with missing out on their children's day-to-day lives.

This preliminary study focused on an important yet understudied area of psychosocial functioning in a population of drug users who are at high risk for elevated levels of depressive symptoms (Glasner-Edwards et al., 2009). Despite the potential significance of these findings for the psychological well-being of methamphetamine-using parents and their children, this research has a number of limitations. The representativeness of our sample is an important issue to consider. Although the methamphetamine-using parents in our sample were both socially and economically disadvantaged (the majority were unemployed, single parents), their situations may not be representative of those of other methamphetamine users, particularly those who reside with their children, are HIV positive, or suffer from severe clinical depression. The exclusion of monogamous couples and parents who were not sexually active or always used condoms raises additional concerns. In particular, it is conceivable that monogamous couples have less parental role strain because they have the support of a significant relationship. Accordingly, we caution against generalization of these findings to the overall population of methamphetamine-using parents.

Moreover, this study addressed parenting strain by comparing methamphetamine-using mothers and fathers. Researchers should consider subgroup differences in exposure

and vulnerability to parental role strain based on other sociocultural factors, including ethnicity, socioeconomic status, and family structure (number, age, and sex of children). Our sample lacked variability in terms of household composition. Only 27% of the parents lived with a parenting partner. Future studies should examine the importance of household composition using larger samples of parents with greater variability on this factor. In addition, the moderating effects of "whether children live with the parent" on the relationship between parenting strain and depressive symptoms should be examined in future studies.

This study also is limited by the use of self-reported, cross-sectional data. It is possible that elevated levels of depressive symptoms influenced parents' perceptions of child-related stressors. Longitudinal data are crucial to disentangling the reciprocal relationship between parenting strain and depressive symptoms. Additionally, two of the parenting subscales had α coefficients less than .70, indicating the need to improve our measurement of the underlying constructs by modifying or adding scale items.

Future studies should obtain clinical assessments of depression using standard diagnostic instruments such as the Diagnostic Interview Schedule (Robins et al., 1981). This approach would indicate whether dimensions of parental role strain are associated with clinically meaningful levels of depressive symptoms. Furthermore, because methamphetamine withdrawal has been associated with depressive symptoms, it is also important to conduct comprehensive psychiatric assessments to determine whether current symptoms represent a primary or a secondary depressive disorder (Glasner-Edwards et al., 2008). The Psychiatric Research Interview for Substance and Mental Disorders has shown good reliability in the diagnosis of psychiatric disorders (based on the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*; American Psychiatric Association, 1994) in persons with substance use disorders (Hasin et al., 1996, 2006).

Future research into the relationship between parenting strain and the psychological health of methamphetamine-using parents needs to be conducted with larger, more representative samples. It also will be important to use control-group designs that compare methamphetamine-using parents with their non-drug-using counterparts. Although methamphetamine use among young adults decreased between 2002 and 2009 (SAMHSA, 2010a), an urgent need remains to improve our understanding of the relationship between parenting strains and mental health outcomes in this psychologically vulnerable group.

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