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WHEN PARENTS WITH SEVERE MENTAL ILLNESS LOSE CONTACT WITH THEIR CHILDREN: ARE PSYCHIATRIC SYMPTOMS OR SUBSTANCE USE TO BLAME?

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Abstract

This study compared parental psychiatric symptom severity, and the absence or presence of severe substance abuse, as predictors of contact with minor children for a representative sample of adults with diagnoses of serious mental illness ($N = 45$). Child contact and psychiatric symptom severity were measured during regularly scheduled 6-month research interviews over a total 30-month period following each participant's entry into the project. Severe substance abuse was documented as present or absent for the 6-month interval preceding each interview. Results revealed that incidence of severe substance abuse was repeatedly associated with less frequent parent-child contact, even after controlling for psychiatric symptoms, diagnosis, gender, age, ethnicity, and socioeconomic status. Neither psychiatric diagnosis nor symptom severity predicted frequency of child contact when substance abuse was taken into account. Mental health agencies offering parenting classes for adults with serious mental illness should incorporate substance use interventions to reduce loss of child custody and strengthen parent-child relationships.

Children who are separated from their parents in childhood often experience traumatic and lingering feelings of rejection or desertion (Webb, 2006), regardless of whether separation is

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intended to prevent maltreatment (Haight, Kagle, & Black, 2003), a result of divorce (Pollack & Mason, 2004), required for medical treatment (Hollenbeck, 1980), or essential to the family's survival during immigration (Pottinger, 2005) or periods of homelessness (Cowal, Shinn, Weitzman, Stojanovic, & Labay, 2002). Parents who lose contact with their minor children are also vulnerable to grief, desperation, and loss of self-respect (Miranda, Siddique, Der-Martirosian, & Belin, 2005; Sands, Koppelman, & Solomon, 2004; Schen, 2005; Zeman, 2005). Fortunately, restoration of regular, nonconflictual parent-child contact can substantially alleviate emotional distress (McWey & Mullis, 2004; Waterman, 2001), even in late childhood or adolescence (Stewart, 2003).

Dissolutions of parent-child bonds are common among parents with diagnoses of serious mental illness, who typically see their children infrequently (Gewurtz, Krupa, Eastabrook, & Horgan, 2004; Hearle, Plant, Jenner, Barkla, & McGrath, 1999) and are continuously at risk for losing custody and visitation rights (Ackerson, 2003; Barnes, 2001; Dipple, Smith, Andrews, & Evans, 2002; Hollingsworth, 2004; Park, Solomon, & Mandell, 2006). Separations from children are often court-mandated, ostensibly to prevent child neglect, abuse, or homicide (Jacobsen & Miller, 1998; Leverton, 2003; Oates, 1997; Ramsey, Howard, & Kumar, 1998; Stroud & Pritchard, 2001), but no doubt they are also intended to prevent the generational transmission of psychiatric illnesses, especially depression and anxiety disorders (Bellis, Broussard, Herring, Moritz, & Benitez, 2001; Hall, 2004; Smith, 2004).

Dissolution of parent-child ties is strongly associated with parental substance abuse (Kovalesky, 2001; Suchman, McMahon, & Zhang, 2006), poverty (Holloway, Fuller, Rambaud, & Eggers-Pierola, 1997; Kovach, Becker, & Worley, 2004; Turley, 2003), and homelessness (Cowal et al., 2002; Zima, Wells, Benjamin, & Duan, 1996), all of which often accompany severe mental illness (Cohen, 1993; Dixon, 1999; Draine, Salzer, Culhane, & Hadley, 2002; Gonzales & Rosenheck, 2002; Mowbray & Bybee, 1998) and further complicate the difficult lives of parents caring for minor children (Mowbray et al., 2000). Substance abuse, in particular, has been identified as a primary threat to child well-being and parent-child relationships for adults with serious mental illness (Hoffman & Rosenheck, 2001; VanDeMark et al., 2005), but it is not clear whether dissolutions of parent-child ties are attributable to gradual deterioration in parent traits and functioning due to sustained substance use, the concurrent worsening of psychiatric symptoms, or static life disruptions caused by periodic crises or binges. Nor is it evident to what extent negative parental influence contributes to child misbehavior, and eventual child substance use, over and above the trauma of repeated life crises (Mowbray & Oyserman, 2003). Parents' dysfunctional behaviors that lead to child neglect or maltreatment are likely to worsen during substance use-related crises, so that dysfunctional behavior, psychiatric disturbance, and substance use all escalate over time (Center for Substance Abuse Prevention [CSAP], 2000; Ventura, Nuechterlein, Subotnik, Hardesty, & Mintz, 2000). Interventions in crisis situations depend heavily on service providers' or family members' perceptions of causality because relationships between variables are so complex in a natural environment.

Substance abuse and mental health professionals are often at odds in their reactions to the life crises of adults with co-occurring psychiatric and substance use disorders (Grella, 2006), and child welfare workers and family members may choose to consult with either type of agency, depending on their labeling of the immediate problem and which type of agency takes charge of the situation. To be optimally effective, intervention should focus on parental dysfunction, rather than formal diagnoses (Mowbray, Oyserman, Bybee, & MacFarlane, 2002), and crisis intervention should be combined with efforts to prevent future crises. Optimally, child welfare workers and family members can support and encourage continuity in parent-child contact while the parent receives treatment for both mental illness and substance abuse, as well as practical help to improve living conditions (Benjet, Azar, & Kuersten-Hogan, 2003; Mowbray,

Oyserman, Bybee, MacFarlane, & Rueda-Riedle, 2001). Episodes of severe substance use and psychiatric emergencies often precipitate a chain reaction of negative events (unemployment, arrests, residential treatment, or temporary homelessness) that can radically alter a parent's life circumstances and limit his or her ability to care for a child (Menard, Bandeen-Roche, & Chilcoat, 2004). To effectively guard against loss of child contact, professionals need to know what types of parental dysfunction are most likely to precipitate the separation of parent and child. Does family unity depend more on psychiatric stability or on moderation in substance use?

The present study utilized existing longitudinal data for a sample of 45 parents with minor children to test two research hypotheses derived from the parenting, substance use disorder, and psychiatric illness literatures.

Hypothesis 1: Among adults diagnosed with a serious mental illness, frequency of contact with minor children, as well as parent-child co-residence, are more strongly associated with the presence or absence of a severe substance use disorder than with other parent attributes, including psychiatric symptom severity, psychiatric diagnosis, socioeconomic status, or demographic characteristics.

Hypothesis 2: Based on the assumption that substance abuse crises are a stronger threat to parent-child contact than stable parent traits associated with prolonged substance use, periods of low parent-child contact should temporally follow severe episodes of parent substance abuse.

Method

Participants

The sample of 45 parents with minor children constituted a portion of a larger research sample recruited in Worcester, Massachusetts, during 1996–1997 for a randomized controlled evaluation of mental health service programs (Cook et al., 2005). Eligibility criteria were (a) age 18 or older; (b) primary DSM-IV diagnosis of a serious mental illness such as schizophrenia, bipolar disorder, or recurrent major depression; (c) absence of severe mental retardation ($IQ > 70$); and (d) no current employment. Study enrollees ($N = 177$) were referred by service organizations, as well as through family or self-referrals in response to local advertisements. The percentage of participants who were parents of minor children (34%) was equivalent to the 34% to 38% parent rates for recent psychiatric outpatient samples of 1,315 adults in Michigan (Mowbray et al., 2002), 806 adults in Massachusetts (Nicholson, Nason, Calabresi, & Yando, 1999), and 181 adults in Ontario, Canada (Gewurtz et al., 2004). The parent sample for this study included all enrollees with a child under age 18 who provided data on child contact past the baseline interview ($N = 45$).

In terms of representativeness, the total sample was heterogeneous (Jones et al., 2004) and similar to a larger epidemiological sample from the same state (Dickey, Normand, Weiss, Drake, & Azeni, 2002) in regard to age, gender, ethnicity, and prevalence of chronic physical illness and lifetime occurrence of substance abuse. The subsample of parents was similar to the total sample in baseline characteristics reflective of functioning: 93% were not married, 64% received Social Security benefits, 42% had less than a high school education, 47% had not worked for pay in the previous 5 years, and 57% had a history of substance abuse. However, as would be expected, parents of minor children were younger than other study participants (mean age = 36 vs. 39 years), more likely to be women (67% vs. 39%), and less likely to have a diagnosis of schizophrenia (31% vs. 58%). Similar to the sample as a whole, parents of minor children were 70% Caucasian, 13% African American, 11% Hispanic, and 6% Asian or Native American. This ethnic distribution was similar to that for another Massachusetts parent sample (Nicholson et al., 1999; Nicholson, Sweeney, & Geller, 1998a) and a Canadian sample

(Gewurtz et al., 2004), but was in striking contrast to the predominantly (60%) African American parent sample of the Michigan study (Mowbray et al., 2002). However, ratings of neighborhood safety (1 = terrible, 7 = delighted) from the Brief Quality of Life Scale (Lehman, Kernan, & Postrado, 1997) by the parents in our study ($M = 4.67$) were similar to neighborhood ratings by African Americans ($M = 4.11$) and non-African Americans ($M = 4.56$) in the Michigan study sample (Mowbray, Oyserman, Bybee, Callahan, & MacFarlane, 2004), suggesting cross-study comparability in level of poverty and risks associated with urban living.

The current study's sample had greater variability in frequency of parent-child contact than the planned samples of previous studies, which were often restricted to parents who had regular contact or child care responsibilities (e.g., Bybee, Mowbray, Oyserman, & Lewandowski, 2003; Mowbray et al., 2001; Mullick, Miller, & Jacobsen, 2001; Nicholson, Sweeney, & Geller, 1998b). Variability in contact frequency is necessary for the identification of predictor variables, so this sample difference was essential to the purpose of the present study.

Most important, the present study's parent sample was similar to previous parent samples (Gewurtz et al., 2004; Mowbray et al., 2001; Nicholson et al., 1998a, 1999) in psychiatric diagnoses and number of children. Number of minor children ranged from 1 to 6, with a median of 2 children ($M = 2.07 \pm 1.21$). Six babies were born during the project to single mothers, so number of children per parent increased slightly over time. As in other research studies, mothers reported having more children than fathers. Whereas 37% of mothers reported having more than two children, only one father listed more than two.

Measures

Data other than diagnosis were collected through structured private interviews conducted with participants on a 6-month basis, beginning at each individual's study enrollment and continuing across the project's 2.5 years. Half of the sample participated in at least four interviews ($M = 4.36 \pm 1.33$; range: 2 to 6 interviews per participant).

BACKGROUND CHARACTERISTICS—Demographic variables included gender, age at enrollment, and ethnicity (minority status, 1; Caucasian, 0). Socioeconomic status (SES) was coded as either high (1) or low (0), with high SES defined as having a postsecondary education or having held a white-collar or managerial job lasting more than 5 years. Primary psychiatric diagnoses were retrieved from medical records and were broadly classified as schizophrenia spectrum disorder ($n = 14$), bipolar disorder ($n = 12$), or recurrent major depression ($n = 19$). ANOVAs revealed no significant ($p > .30$) differences between any two of these three diagnostic categories in frequency or proximity of child contact or incidence of severe substance abuse, so diagnosis was dummy coded as schizophrenia (1) versus affective disorders (0) to conserve statistical power.

PSYCHIATRIC SYMPTOMS SEVERITY—Psychiatric symptoms were measured at each 6-month interview as each individual's total score on the Positive and Negative Syndrome Scale (PANSS; Kay, Fiszbein, & Opler, 1987), with the positive, negative, and general subscales equally weighted. The PANSS is a structured clinical interview that assesses a variety of positive (e.g., hallucinations, delusions), negative (e.g., blunt affect, cognitive impairments), and general (e.g., anxiety, depression) symptoms. Higher scores indicate more severe symptoms. The validity of the PANSS is well-established (Bell, Milstein, Beam-Goulet, Lysaker, & Cicchetti, 1992), and it is used extensively in clinical research, requiring about 45 minutes to administer. Interviewers administering the PANSS were trained by instrument co-designer Lewis Opler, and had adequate interrater reliability (Salyers et al., 2001) for the positive ($r = .95$), negative ($r = .89$), and general ($r = .94$) subscales. Two-week test-retest reliability was also acceptably high, with scores (r_s) of .93, .95, and .87 for the positive,

negative, and general subscales, respectively. PANSS baseline scores for the total study sample ($Mdn = 66$, $M = 67 \pm 14$; range: 38–104) and the parent subsample ($Mdn = 66$; $M = 66 \pm 14$; range: 40–97) were comparable to scores for samples of adults with severe mental illness recruited in seven other states (Razzano et al., 2005).

SUBSTANCE USE DURING PROJECT—Presence of substance use was identified through routine interviews with participants, as well as through participant-approved retrieval of hospital and Medicaid claims data and occasional telephone calls to treating clinicians and family members. Substance use during any 6-month interval qualified as severe if it was described as severe or life disruptive by the interviewee, if the participant was described as inebriated and dysfunctional by the interviewer, or if hospital or Medicaid claims data indicated substance abuse treatment lasting more than 5 days. After each participant's 30th month in the project, retrospective interviews were conducted in which the participant reviewed a personal timeline generated from the research data, which had approximate dates of severe use episodes clearly labeled, along with other important positive and negative life events (e.g., family deaths, hospitalizations, imprisonment) that had been reported in previous interviews or by treating agencies. Participants were asked to verify the accuracy of their timeline, add any missing life events they considered important, and rate the impact of each event on their personal well-being. Newly identified substance use episodes were considered severe if they were given a "very strong impact" rating by the participant. The 6-month interval preceding each regularly scheduled 6-month interview was coded 1 if the participant had at least one episode of severe alcohol or drug abuse during that period and 0 if there was no substance use or substance use was evident but not severe.

Count of substance use crises during the project did not correlate with participants' mean scores on the PANSS at any interview or across interviews ($r = .07$, $p > .60$), and there were no differences in crisis counts between individuals with different psychiatric diagnoses (t tests, $p > .30$). Within the total project sample, participants who had at least one substance use crisis during the project were fairly comparably distributed across categories of schizophrenia ($n = 48$, 53%), bipolar disorder ($n = 15$, 48%), and major depression ($n = 31$, 57%). Although study participants diagnosed with substance dependence by a referring clinician had more severe psychiatric symptoms at baseline than those without a diagnosis of substance dependence ($t = 2.45$, $df = 2$, $p < .05$), these correlations between severity of psychiatric illness and substance use reflect lifetime comorbidity, not temporal associations (Kraemer, Wilson, & Hayward, 2006).

PARENT-CHILD CONTACT—Two self-report measures of contact with minor children were included in every 6-month research interview.

Residential proximity: Does your child live with you (6), in the same neighborhood (5), less than an hour away (4), a few hours away (3), within a day's drive=ride (2), or further away (1)?

Frequency of contact: How often do you have contact with your child? every day (7), several times a week (6), once a week (5), a few times a month (4), once a month (3), a few times a year (2), or once a year or less (1).

Each parent rated his or her proximity and frequency of contact with each minor child, beginning with the oldest child under age 18 and continuing in descending order of age. Following standard procedures in family research, the youngest child was the index child for all data analyses.

Descriptive findings are presented for both variables, but analyses of the immediate impact of substance use and psychiatric symptoms were conducted only for frequency of contact. Few parents in the study sample lived with their minor children, and, once lost, residential custody is difficult to regain, so temporal changes in parent-child residential proximity and co-residence were expected to be minimal during the study years.

Statistical Analysis Plan

Hierarchical regression analyses were conducted to test the first hypothesis that the presence or absence of co-occurring substance abuse is the primary determinant of frequency of child contact for parents with serious mental illness. An omnibus analysis was first conducted based on mean scores for the entire 30-month study period. Six separate regression analyses were then conducted that corresponded to the timing of each of six semiannual interviews. Timepoints were based on individual timeframes, extending from baseline through each participant's 30-month point of project participation. The study hypothesis had to be supported by the omnibus test before findings from any of the six time-specific analyses were assessed. Each parent's interview report of the frequency of current child contact was the dependent variable in every analysis. Incident versus no incident of serious substance abuse during the 6-month period preceding each interview was entered as a predictor variable in Block 1 of each analysis to test our basic assumption that parental substance use predicts less frequent contact with children. Interviewer ratings of parents' psychiatric symptoms were then entered in Block 2 to rule out the assumption that co-occurring psychiatric illness might account for the negative relationship between substance use and child contact. A final block containing five parent baseline characteristics (age, gender, ethnicity, SES, and psychiatric diagnosis) was then added to check on the robustness of the relationship between substance use and child contact when these background variables were statistically controlled.

These regression analyses relied only on data available at each point in time, so lack of data for 5 participants who had died ($n = 2$) or moved out of state ($n = 3$) at varying points during the study biased only later analyses. However, all 5 parents who left the study had at least one severe substance use incident, and both deaths were substance use related, so any bias due to missing data favors the null hypothesis and thus strengthens confidence in the present findings if our hypotheses are supported by the existing data.

We relied on a pattern-matching analysis (Campbell, 1966; Shadish, Cook, & Campbell, 2002) to test our second hypothesis that substance use crises are a stronger threat to parent-child contact than stable negative traits associated with a parent's prolonged substance use. We plotted the pattern of significant correlations between substance use crises and child contact between all time points, and then examined the frequency, causal sequence, and duration of predicted versus unpredicted correlations. Temporal trends in child contact frequency associated with substance abuse and psychiatric symptoms were also examined in a random regression analysis using SAS PROC MIXED, with substance abuse and PANSS-rated symptoms entered as random effects.

Results

Descriptive Findings

Table 1 depicts parents' mean self-ratings for residential proximity and frequency of contact with youngest minor child. As would be expected, frequency of contact was strongly dependent on physical distance between parent and child residences, and the two outcome variables were highly correlated ($r = .73, p < .01$). On average, parents with severe mental illness lived less than an hour away from their child ($Mdn = 4, M = 4.07 \pm 1.57$) and saw the child about once a week ($Mdn = 5, M = 5.27 \pm 1.50$). However, as Table 2 reveals, patterns of child contact were

extremely diverse, and this diversity was apparent both across individuals and within individual lives. Nearly half (42%, $n = 19$) of the parent sample generally saw their children less than once a week, but every parent reported seeing their child at least once a month, except when visitation rights were temporarily lost or the parent had moved out of state. Of the 8 parents who lost or regained regular contact with their child during the project, 5 experienced losses and 3 regained custody or visitation rights with substantial help from psychiatric rehabilitation agencies. No parent both lost and regained rights during this 30-month follow-up period, although 2 losses were regained shortly afterward. Median length of time required to regain child contact rights was 4 years; no participant regained lost contact rights in less than 3 years.

DIFFERENCES BETWEEN MOTHERS AND FATHERS—Pattern of contact (residential vs. visitation) and residential proximity were heavily influenced by gender. Mothers were more likely than fathers to live with their children at some point during the project ($n = 16$, 53%, vs. $n = 3$, 20%), and fathers were twice as likely as mothers ($n = 9$, 60%, vs. $n = 10$, 33%) to have sporadic, infrequent contact. Because more mothers lived with their children, mothers had higher proximity ratings than fathers ($M = 4.42 \pm 1.45$ vs. 3.38 ± 1.62 ; $t = 2.18$, $p < .05$), but there was no significant gender difference in frequency of contact ($M = 5.55 \pm 1.37$ vs. 4.71 ± 1.64 , ns). This was possibly because almost half ($n = 7$) of the mothers who lived with a minor child lost custody rights immediately before or during the project.

The greater percentage of mothers who co-resided with their minor children does not appear attributable to gender differences in level of functioning. More fathers (53%) than mothers (20%) had a primary diagnosis of schizophrenia ($\chi^2 = 5.18$, $p < .05$), but more fathers (80%) than mothers (40%) worked for pay in the 5 years preceding project enrollment ($\chi^2 = 6.43$, $p < .05$). Rate of severe substance abuse incidents during the project was fairly comparable across mothers and fathers (53% vs. 60%, respectively; $\chi^2 = .67$, ns).

CORRELATES OF CHILD CONTACT—Severe substance abuse during the 30-month follow-up was the only participant characteristic correlated with both frequency and proximity of parent-child contact. By contrast, severity of psychiatric symptoms and psychiatric diagnosis correlated with neither frequency nor proximity of child contact in bivariate analyses. Average self-ratings for residential proximity and frequency of child contact (Table 1) were significantly lower for parents who had a documented incident of severe substance abuse during the 30 months of the project. This was particularly evident for the larger subsample of mothers, although mean scores for the smaller subsample of fathers were in the predicted direction.

As Table 2 shows, parents who had any episode of severe substance abuse during the project were less likely to live with their child or to have at least weekly visitations, and, again, this difference was primarily evident for mothers. The majority of mothers who co-resided continuously with their children (7 of 9) had no documented incidence of severe substance abuse during the project, while the majority of mothers who saw their children less than once a week (9 of 10) had one or more incidents of severe substance abuse.

Multivariate Hypothesis Tests

Our first hypothesis was that parents' interview reports of current child contact would be predicted by the absence or presence of parental substance abuse in the 6-month period preceding each interview. To test this hypothesis, we first conducted an omnibus regression analysis with mean rating of each parent's reports of child contact frequency across the six interviews conducted during the study as the dependent variable, and total count of substance use crises and interviewer mean ratings of psychiatric symptoms as the two predictor variables. Number of substance use incidents was a negative predictor of contact frequency, whether considered alone, adjusted $R^2 = .28$, $F(1, 43) = 17.92$, $p < .001$) or while statistically controlling

for psychiatric symptoms and background characteristics, adjusted $R^2 = .29$, $F(7, 37) = 3.61$, $p = .005$. In keeping with our hypothesis, no other variable was significant in this analysis.

We next conducted six separate regression analyses, one for each 6-month time period in the 30-month study. As Table 3 shows, the first variable block containing only substance abuse significantly predicted frequency of parent-child contact in four of the six hierarchical regression analyses (at baseline, 6, 24, and 30 months). Substance abuse remained a statistically significant predictor of child contact frequency in these four models even when parent psychiatric symptoms, and then background variables (gender, age, ethnicity, SES, and psychiatric diagnosis), were added to each regression model. Parent psychiatric symptoms did not predict frequency of child contact at any time point when controlling for substance abuse, and the negative impact of substance use incidents on child contact does not appear to have been mediated by a worsening of psychiatric symptoms attributable to substance use, since prerequisites for mediation (Hoyle & Kenny, 1999) were not evident. The block of background variables was significant only in the 12-month analysis, and this single finding may have been spurious. However, the addition of the block of background variables to the regression model raised the beta for substance abuse by .05 to .10 in four analyses. Since none of the background variables correlated with both child contact frequency and substance abuse at any time point, or across time points, it appears that the statistical control of these individual differences enhanced the substance abuse beta through the reduction of random error.

We tested the second hypothesis that the impact of severe substance use on parent-child contact is immediate and crisis-related, rather than attributable to more stable negative factors (parent traits or home environment) associated with prolonged substance use, by visually examining whether the pattern of significant relationships between substance abuse and child contact followed a temporal pattern reflective of short-term impact. Table 4 illustrates the pattern of significant correlations between substance abuse measured in the 6 months prior to each time point and child contact reported at every time point. Out of 36 total variable comparisons, 16 were statistically significant, 13 of which were in the predicted cause-effect direction. As was evident in the regression analyses, the presence of a substance abuse crisis during any 6-month interval predicted a report of less child contact in the interview that immediately followed the incident in four out of six instances. Closer visual inspection reveals that substance abuse crises in these four time periods continued to predict lower child contact at a second time point, or for a total duration of about a year. In one of the two time periods that showed no immediate impact of substance use on child contact (6 to 12 months), the predicted negative correlation was evident after a delay of 6 months. This overall pattern of findings matches the predicted cause-effect sequence of correlations between substance use crises and child contact, with only 3 out of 16 total significant correlations not in the predicted sequence. The impact of severe substance use on child contact appears to be relatively short-term and crisis-related, generally lasting about a year. As Table 4 shows, there was no discernible pattern of correlations between child contact and psychiatric symptom severity.

These same findings were produced when time-varying measures of substance abuse and PANSS-rated symptoms were entered as random effects in a longitudinal random regression analysis. Substance abuse during each pre-interview period (estimate = $-.93$, $SE = .42$; $t = -2.22$, $df = 146$, $p < .05$) and parent gender (estimate = $-.62$, $SE = .30$; $t = -2.43$, $df = 40$, $p < .05$) were the only significant covariates in the full model. Average magnitude of contact frequency remained largely unchanged over the 30-month period.

Supplemental Analyses

To check on the possibility that a significant correlation between psychiatric symptoms and child contact might be obscured by our use of the total PANSS score in lieu of subscale scores, we repeated the six analyses depicted in Table 3 substituting PANSS positive, negative, and

general subscale scores. None of the betas for these more specific measures approached statistical significance. Likewise, recoding of diagnosis to allow a comparison between bipolar disorder, major depression, and schizophrenia revealed no significant difference in child contact between any two diagnostic categories.

We also examined individual rates of substance use incidents to see if a distinct group of repeater parents might account for the overall negative correlation ($r = -.45, p = .02$) between count of substance use incidents and frequency of child contact depicted in Table 4. The percentage of parents with incidents of severe substance abuse at one time point who also had a substance use incident at another time point exceeded 80% in 6 out of 30 time-point comparisons, of which 4 comparisons involved the baseline 0- to 6-month time point. Mean rate of sample overlap across all other time points (24 comparisons) was 56%. Apparently, the observed proximal (6 to 12 month) effects of substance use crises were more attributable to the events themselves than to a distinct group of parents who were continually in crisis.

Discussion

Substance abuse is prevalent among adults who have diagnoses of serious mental illness, including those who are parents of minor children, and crisis episodes of severe substance abuse appear to repeatedly disrupt parent-child contact. Our findings reveal a strong association over time between occurrence of substance abuse crises and parents' concurrent or subsequent interview reports of decreases in frequency of child contact following each crisis. By contrast, parent psychiatric diagnosis, SES, demographic characteristics, and even psychiatric symptom severity did not correlate with level of child contact when substance abuse was taken into account. Although severe psychiatric symptoms can reduce quality of parenting (Mowbray, Lewandowski, & Bybee, 2004; Mowbray, Lewandowski, Bybee, & Oyserman, 2005; Mowbray et al., 2002), parental psychiatric symptoms alone do not appear to reduce frequency of contact with minor children, and the impact of substance abuse on child contact does not appear to be mediated by a concurrent worsening of psychiatric symptoms.

Patterns of maternal child contact were nearly equally divided between continuous co-residence ($n = 9$), fluctuation in custody and visitation schedules ($n = 11$), and infrequent contact ($n = 10$). Among mothers, continuous co-residence was characterized by an absence of substance abuse, while infrequent contact was correlated with a high rate of severe substance use incidents. Fathers' contact with their children tended to be primarily infrequent with a high incidence of active substance abuse. In keeping with previous research (Knight & Wallace, 2003; Rittner & Dozier, 2000), parents with dual diagnoses of mental illness and substance use disorders, and fathers with these co-occurring disorders in particular (Styron, Pruett, McMahon, & Davidson, 2002), appear vulnerable to the loss of parental rights. Over the 30-month follow-up period of the present study, mothers and fathers who were able to regain lost custody or visitation rights did so only with substantial legal aid and help from mental health service agencies. Once lost, child custody and visitation rights for either parent were difficult to regain, invariably resulting in separations lasting 3 to 4 years.

The present study did not collect interview data on child well-being or quality of parenting, so our assumptions that frequent parent-child contact is generally beneficial and that separations are often detrimental cannot be directly confirmed. The small study sample was adequate for detecting the strong impact of substance abuse on parent-child contact but inadequate for testing moderation hypotheses, such as whether receipt of certain types of mental health services might ameliorate the negative effects of substance abuse on parent-child contact. Randomized studies are needed to examine reciprocal causal relationships between study variables, such as whether strengthening a sense of parental responsibility through more frequent child contact might reduce the incidence or severity of parental substance use.

Conclusions

Mentoring, support groups, and education interventions have been designed to improve the parenting skills of adults with serious mental illness (e.g., Brunette & Dean, 2002; Fischer, 2002; Grella, 1996; Hoagwood, 2005; Kovach et al., 2004; Mowbray et al., 2000), and these innovative services address many of the daily hassles that beset psychiatrically disabled parents of young children, including loneliness associated with single parenthood, poverty, lack of safe housing, and poor job qualifications (Brandon & Fisher, 2001; Cairney, Boyle, & Offord, 2003; Emerson-Davis Family Development Center, 2000; Hoard & Anderson, 2004; Kost, 2001; Strug, 2003). However, few parenting programs are designed to serve parents of minor children who are dually diagnosed with a serious mental illness and a severe substance use disorder. Moreover, most programs, and most recent research studies of parenting by adults with mental illness, have targeted parents who have regular child-care responsibilities, excluding parents who see their children infrequently. Considering the prevalence with which substance abuse crises separate parents and children, it appears imperative to implement parenting programs that integrate mental health and substance use services with efforts to safeguard or restore parental rights.

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References

- Ackerson BJ. Coping with the dual demands of severe mental illness and parenting: The parents' perspective. *Families in Society* 2003;84:109–118.
- Barnes, H. *British Journal of Social Work*. Vol. 31. 2001. A comment on Stroud and Pritchard: Child homicide, psychiatric disorder and dangerousness: A review and an empirical approach; p. 481-492.
- Bell M, Milstein R, Beam-Goulet J, Lysaker P, Cichetti D. The Positive and Negative Syndrome Scale and the Brief Psychiatric Rating Scale: Reliability, comparability, and predictive validity. *Journal of Nervous and Mental Disease* 1992;180(11):723–728. [PubMed: 1431824]
- Bellis D, Broussard ER, Herring SW, Moritz G, Benitez JG. Psychiatric co-morbidity in caregivers and children involved in maltreatment: A pilot research study with policy implications. *Child Abuse and Neglect* 2001;25:923–944. [PubMed: 11523869]
- Benjet C, Azar ST, Kuersten-Hogan R. Evaluating the parental fitness of psychiatrically diagnosed individuals: Advocating a functional-contextual analysis of parenting. *Journal of Family Psychology* 2003;17:238–251. [PubMed: 12828020]
- Brandon PD, Fisher GA. The dissolution of joint living arrangements among single parents and children: Does welfare make a difference? *Social Science Quarterly* 2001;82:1–19.
- Brunette MF, Dean W. Community mental health care for women with severe mental illness who are parents. *Community Mental Health Journal* 2002;38:153–165. [PubMed: 11944792]
- Bybee D, Mowbray CT, Oyserman D, Lewandowski L. Variability in community functioning of mothers with serious mental illness. *Journal of Behavioral Health Services & Research* 2003;30:269–289. [PubMed: 12875096]
- Cairney J, Boyle M, Offord DR. Stress, social support and depression in single and married mothers. *Social Psychiatry & Psychiatric Epidemiology* 2003;38:442–449. [PubMed: 12910340]
- Campbell, DT. *Pattern matching as an essential in distal knowing*. New York: Holt, Rinehart; 1966.
- Cohen C. Poverty and the course of schizophrenia: Implications for research and policy. *Hospital & Community Psychiatry* 1993;44:951–958. [PubMed: 8225275]

- Cook JA, Leff HS, Blyler CR, Gold PB, Goldberg RW, Mueser KT, et al. Results of a multisite randomized trial of supported employment interventions for individuals with severe mental illness. *Archives of General Psychiatry* 2005;62:505–512. [PubMed: 15867103]
- Cowal K, Shinn M, Weitzman BC, Stojanovic D, Labay L. Mother-child separations among homeless and housed families receiving public assistance in New York City. *American Journal of Community Psychology* 2002;30:711–730. [PubMed: 12188057]
- CSAP. Youth in transition: Background, bibliography, literature review. Rockville, MD: Center for Substance Abuse Prevention; 2000.
- Dickey B, Normand S-L, Weiss R, Drake R, Azeni H. Medical morbidity, mental illness, and substance use disorders. *Psychiatric Services* 2002;53:861–867. [PubMed: 12096170]
- Dipple H, Smith S, Andrews H, Evans B. The experience of motherhood in women with severe and enduring mental illness. *Social Psychiatry & Psychiatric Epidemiology* 2002;37:336–340. [PubMed: 12111026]
- Dixon L. Dual diagnosis of substance abuse in schizophrenia: Prevalence and impact on outcomes. *Schizophrenia Research* 1999;35:s93–s100. [PubMed: 10190230]
- Draine J, Salzer M, Culhane D, Hadley T. Role of social disadvantage in crime, joblessness, and homelessness among persons with serious mental illness. *Psychiatric Services* 2002;53:565–572. [PubMed: 11986504]
- Emerson-Davis Family Development Center. Supportive residential services to reunite homeless mentally ill single parents with their children. *Psychiatric Services* 2000;51:1433–1435. [PubMed: 11058192]
- Fischer RL. Gaining access to one's children: An evaluation of a visitation program for noncustodial parents. *Families in Society* 2002;83:163–174.
- Gewurtz R, Krupa T, Eastabrook S, Horgan S. Prevalence and characteristics of parenting among people served by assertive community treatment. *Psychiatric Rehabilitation Journal* 2004;28:63–65. [PubMed: 15468638]
- Gonzales G, Rosenheck R. Outcomes and service use among homeless persons with serious mental illness and substance abuse. *Psychiatric Services* 2002;53:437–446. [PubMed: 11919357]
- Grella CE. Background and overview of mental health and substance abuse treatment systems: Meeting the needs of women who are pregnant or parenting. *Journal of Psychoactive Drugs* 1996;28:319–343. [PubMed: 9017555]
- Grella CE. Contrasting the views of substance misuse and mental health treatment providers on treating the dually diagnosed. *Substance Use & Misuse* 2006;38:1433–1446. [PubMed: 14509546]
- Haight WL, Kagle JD, Black JE. Understanding and supporting parent-child relationships during foster care visits: Attachment theory and research. *Social Work* 2003;48:195–207. [PubMed: 12718415]
- Hall, A. Parental psychiatric disorder and the developing child. In: Gopfert, M.; Webster, J.; Seeman, M., editors. *Parental psychiatric disorder: Distressed parents and their families*. Cambridge, England: Cambridge University Press; 2004.
- Hearle J, Plant K, Jenner L, Barkla J, McGrath J. A survey of contact with offspring and assistance with child care among parents with psychotic disorders. *Psychiatric Services* 1999;50:1354–1356. [PubMed: 10506307]
- Hoagwood KE. Family-based services in children's mental health: A research review and synthesis. *Journal of Child Psychology and Psychiatry* 2005;46:690–713. [PubMed: 15972066]
- Hoard LR, Anderson EA. Factors related to depression in rural and urban noncustodial low-income fathers. *Journal of Community Psychology* 2004;32:103–119.
- Hoffman D, Rosenheck R. Homeless mothers with severe mental illnesses and their children: Predictors of family reunification. *Psychiatric Rehabilitation Journal* 2001;25:163–169.
- Hollenbeck AR. Behavioral correlates of separation and isolation. *Child Psychiatry & Human Development* 1980;11:3–11. [PubMed: 6772390]
- Hollingsworth LD. Child custody loss among women with persistent severe mental illness. *Social Work Research* 2004;28:199–209.
- Holloway, SD.; Fuller, BMF.; Rambaud, MF.; Eggers-Pierola, C. *Through my own eyes: Single mothers and the culture of poverty*. Cambridge, MA: Harvard University Press; 1997.

- Hoyle, RH.; Kenny, DA. Sample size, reliability, and tests of statistical mediation. In: Hoyle, RH., editor. *Statistical strategies for small sample research*. Thousand Oaks, CA: Sage; 1999.
- Jacobsen T, Miller LJ. Mentally ill mothers who have killed: Three cases addressing the issue of future parenting capability. *Psychiatric Services* 1998;49:650–657. [PubMed: 9603571]
- Jones DR, Macias C, Barreira PJ, Fisher WH, Hargreaves WA, Harding CM. Prevalence, severity, and co-occurrence of chronic physical health problems of persons with serious mental illness. *Psychiatric Services* 2004;55:1250–1257. [PubMed: 15534013]
- Kay SR, Fiszbein A, Opler LA. The Positive and Negative Syndrome Scale (PANSS) for schizophrenia. *Schizophrenia Bulletin* 1987;13:261–276. [PubMed: 3616518]
- Knight DK, Wallace G. Where are the children? An examination of children's living arrangements when mothers enter residential drug treatment. *Journal of Drug Issues* 2003;33:305–324.
- Kost K. The function of fathers: What poor men say about fatherhood. *Families in Society* 2001;82:499–508.
- Kovach AC, Becker J, Worley H. The impact of community health workers on the self-determination, self-sufficiency, and decision-making ability of low-income women and mothers of young children. *Journal of Community Psychology* 2004;32:343–356.
- Kovalesky A. Factors affecting mother-child visiting identified by women with histories of substance abuse and child custody loss. *Child Welfare* 2001;80:749–768. [PubMed: 11817660]
- Kraemer HC, Wilson KA, Hayward C. Lifetime prevalence and pseudocomorbidity in psychiatric research. *Archives of General Psychiatry* 2006;63:604–608. [PubMed: 16754833]
- Lehman, AF.; Kernan, E.; Postrado, L. *Toolkit for evaluating quality of life for persons with severe mental illness*. Cambridge, MA: HSRI; 1997.
- Leverton T. Parental psychiatric illness: The implications for children. *Current Opinion in Psychiatry* 2003;16:395–402.
- McWey LM, Mullis AK. Improving the lives of children in foster care: The impact of supervised visitation. *Family Relations* 2004;53:293–300.
- Menard C, Bandeen-Roche KJ, Chilcoat HD. Epidemiology of multiple childhood traumatic events: Child abuse, parental psychopathology, and other family-level stressors. *Social Psychiatry & Psychiatric Epidemiology* 2004;39:857–865. [PubMed: 15549237]
- Miranda J, Siddique J, Der-Martirosian C, Belin TR. Depression among Latina immigrant mothers separated from their children. *Psychiatric Services* 2005;56:717–720. [PubMed: 15939949]
- Mowbray CT, Bybee D. The importance of context in understanding homelessness and mental illness: Lessons learned from a research demonstration project. *Research on Social Work Practice* 1998;8:172–199.
- Mowbray CT, Lewandowski L, Bybee D. Children of mothers diagnosed with serious mental illness: Patterns and predictors of service use. *Mental Health Services Research* 2004;6:167–183. [PubMed: 15473103]
- Mowbray CT, Lewandowski L, Bybee D, Oyserman D. Relationship between maternal clinical factors and mother-reported child problems. *Community Mental Health Journal* 2005;41:687–704. [PubMed: 16328583]
- Mowbray CT, Oyserman D. Substance abuse in children of parents with mental illness: Risks, resiliency, and best prevention practices. *Journal of Primary Prevention* 2003;23:451–482.
- Mowbray CT, Oyserman D, Bybee D, Callahan J, MacFarlane P. Diagnostic differences among women with long term serious mental illness. *Psychological Services* 2004;1:5–21.
- Mowbray CT, Oyserman D, Bybee D, MacFarlane P. Parenting of mothers with a serious mental illness: Differential effects of diagnosis, clinical history, and other mental health variables. *Social Work Research* 2002;26:225–240.
- Mowbray CT, Oyserman D, Bybee D, MacFarlane P, Rueda-Riedle A. Life circumstances of mothers with serious mental illness. *Psychiatric Rehabilitation Journal* 2001;25:114–123.
- Mowbray CT, Schwartz S, Bybee D, Spang J, Rueda-Riedle A, Oyserman D. Mothers with mental illness: Stressors and resources for parenting and living. *Families in Society* 2000;81:118–129.
- Mullick M, Miller LJ, Jacobsen T. Insight into mental illness and child maltreatment risk among mothers with major psychiatric disorders. *Psychiatric Services* 2001;52:488–492. [PubMed: 11274495]

- Nicholson J, Nason EM, Calabresi AO, Yando R. Fathers with severe mental illness: Characteristics and comparisons. *American Journal of Orthopsychiatry* 1999;69:134–141. [PubMed: 9990445]
- Nicholson J, Sweeney EM, Geller JL. Focus on women: Mothers with mental illness: I. The competing demands of parenting and living with mental illness. *Psychiatric Services* 1998a;49:635–642. [PubMed: 9603569]
- Nicholson J, Sweeney EM, Geller JL. Focus on women: Mothers with mental illness: II. Family relationships and the context of parenting. *Psychiatric Services* 1998b;49:643–649. [PubMed: 9603570]
- Oates M. Patients as parents: The risk to children. *British Journal of Psychiatry* 1997;170:22–27.
- Park JM, Solomon P, Mandell DS. Involvement in the child welfare system among mothers with serious mental illness. *Psychiatric Services* 2006;57:493–497. [PubMed: 16603744]
- Pollack D, Mason S. Mandatory visitation: In the best interest of the child. *Family Court Review* 2004;42:74–84.
- Pottinger AM. Children's experience of loss by parental migration in inner-city Jamaica. *American Journal of Orthopsychiatry* 2005;75:485–496. [PubMed: 16262508]
- Ramsey R, Howard L, Kumar C. Schizophrenia and safety of parenting of infants: A report from a U.K. mother and baby service. *International Journal of Social Psychiatry* 1998;44:127–134. [PubMed: 9675632]
- Razzano LA, Cook JA, Burke J, Mueser KT, Pickett-Schenk S, Grey DD, et al. Clinical factors associated with employment among people with severe mental illness: Findings from the employment Intervention Demonstration Program. *Journal of Nervous and Mental Disease* 2005;193:705–713. [PubMed: 16260923]
- Rittner B, Dozier CD. Effects of court-ordered substance abuse treatment in child protective services cases. *Social Work* 2000;45:131–140. [PubMed: 10710986]
- Salyers MP, McHugo GH, Cook JA, Razzano LA, Drake RE, Mueser KT. Reliability of instruments in a cooperative, multisite study: Employment Intervention Demonstration Program. *Mental Health Services Research* 2001;3:129–139. [PubMed: 11718205]
- Sands RG, Koppelman N, Solomon P. Maternal custody status and living arrangements of children of women with severe mental illness. *Health & Social Work* 2004;29:317–325. [PubMed: 15575459]
- Schen CR. When mothers leave their children behind. *Harvard Review of Psychiatry* 2005;13:233–243. [PubMed: 16126609]
- Shadish, WR.; Cook, TD.; Campbell, DT. *Experimental and quasi-experimental designs for generalized causal inference*. New York: Houghton Mifflin; 2002.
- Smith M. Parental mental health: Disruptions to parenting and outcomes for children. *Child and Family Social Work* 2004;9:3–11.
- Stewart SD. Nonresident parenting and adolescent adjustment. *Journal of Family Issues* 2003;24:217–244.
- Stroud J, Pritchard C. Child homicide, psychiatric disorder and dangerousness: A review and an empirical approach. *British Journal of Social Work* 2001;31:249–269.
- Strug D. Fathers in the social work literature: Policy and practice implications. *Families in Society* 2003;84:503–511.
- Styron TH, Pruett MK, McMahon T, Davidson L. Fathers with serious mental illnesses: A neglected group. *Psychiatric Rehabilitation Journal* 2002;25:215–222.
- Suchman N, McMahon T, Zhang H. Substance-abusing mothers and disruptions in child custody: An attachment perspective. *Journal of Substance Abuse Treatment* 2006;30:197–204. [PubMed: 16616163]
- Turley RNL. Are children of young mothers disadvantaged because of their mother's age or family background? *Child Development* 2003;74:465–474. [PubMed: 12705567]
- VanDeMark NR, Russell LA, O'Keefe M, Finkelstein N, Noether CD, Gampel JC. Children of mothers with histories of substance abuse, mental illness, and trauma. *Community Psychology* 2005;33:445–459.

- Ventura J, Nuechterlein KH, Subotnik KL, Hardesty JP, Mintz J. Life events can trigger depressive exacerbation in the early course of schizophrenia. *Journal of Abnormal Psychology* 2000;109:139–144. [PubMed: 10740945]
- Waterman B. Mourning the loss builds the bond: Primal communication between foster, adoptive, or stepmother and child. *Journal of Loss & Trauma* 2001;6:277–300.
- Webb, NB. Working with traumatized youth in child welfare. New York: Guilford Press; 2006.
- Zeman L. Etiology of loss among parents falsely accused of abuse or neglect. *Journal of Loss & Trauma* 2005;10:19–31.
- Zima BT, Wells KB, Benjamin B, Duan N. Mental health problems among homeless mothers: Relationship to service use and child mental health problems. *Archives of General Psychiatry* 1996;53:332–338. [PubMed: 8634011]

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TABLE 1
 Level of Contact with Minor Children over 30 Months for Parents with and without any Episode of Severe Substance Abuse

	Mothers (n = 30)				Fathers (n = 15)				Total (N = 45)			
	Episode (n = 16)		No episode (n = 14)		Episode (n = 9)		No episode (n = 6)		Episode (n = 25)		No episode (n = 20)	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Mean scores ^a	3.79	1.48	5.14	1.05	3.07	1.57	3.83	1.72	3.53	1.52	4.75	1.39
Residential proximity ^b	4.87	1.25	6.32	1.09	4.34	1.69	5.26	1.52	4.68	1.41	6.01	1.29
Contact frequency ^c												

Note. Substance abuse mean difference ($df = 43$): proximity, $t = 2.78, p < .01$; frequency, $t = 3.25, p < .01$. Mothers only ($df = 28$): proximity, $t = 2.85, p = .008$; frequency, $t = 3.38, p < .01$. Fathers only: proximity, ns ; frequency, ns . Mean difference for gender ($df = 43$): proximity, $t = 2.18, p < .05$; frequency, ns . Gender by substance abuse interaction: proximity, ns ; frequency, ns .

^aScores were averages for each participant's youngest child across all available interviews.

^bResidential proximity: same house or apartment (6), same neighborhood (5), less than hour away (4), a few hours away (3), a day's ride=drive (2), more than a day's ride=drive (1).

^cFrequency of contact: every day (7), several times a week (6), once a week (5), a few times a month (4), once a month (3), a few times a year (2), once a year or less (1).

TABLE 2
 Categories of Contact with Minor Children over 30 Months for Parents with and without any Episode of Severe Substance Abuse

Contact category	Mothers (n = 30)				Fathers (n = 15)				Total (N = 45)			
	Episode		No episode		Episode		No episode		Episode		No episode	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Continuous co-residence	2	12	7	50	1	11	1	17	3	12	8	40
Regain or loss of contact rights	4	25	3	21	0	0	1	17	4	16	4	20
Frequent visitation ^a	1	7	3	21	2	22	1	17	3	12	4	20
Infrequent contact ^b	9	56	1	7	6	67	3	50	15	60	4	20
Total	16	100	14	100	9	100	6	100	25	100	20	100

Note. Contact category by substance abuse: $\chi^2 = 8.33, df = 3, p < .05$. Mothers only: $\chi^2 = 10.23, df = 3, p < .05$. Fathers only: *ns*. Contact category by parent gender: *ns*.

^aMean frequency of contact equivalent to at least one contact per week.

^bMean frequency of contact equivalent to less than once a week.

TABLE 3
 Hierarchical Regression of Parents' Frequency of Contact with Minor Children on Time-Varying Substance Abuse and Psychiatric Symptoms, Controlling for Baseline Characteristics

Models	Baseline (n = 37)			6 months (n = 30)			12 months (n = 32)		
	Block 1	Block 2	Full	Block 1	Block 2	Full	Block 1	Block 2	Full
Block 1: Parent substance use during preceding 6-month interval ^a	-.391*	-.380*	-.456*	-.388*	-.359*	-.461*	-.276	-.278	-.380*
Block 2: Parent psychiatric symptoms averaged across all interviews ^b		.054	.034		.034	.222		-.029	-.077
Block 3: Parent baseline characteristics (full model)									
Schizophrenia diagnosis			-.085			-.157			.058
Socioeconomic status (high)			.117			-.057			.308
Gender (male)			-.097			-.262			-.282
Age at baseline			-.274			-.191			-.709*
Ethnicity status (minority)			-.012			-.084			.123

Models	18 months (n = 35)			24 months (n = 33)			30 months (n = 33)		
	Block 1	Block 2	Full	Block 1	Block 2	Full	Block 1	Block 2	Full
Block 1: Parent substance use during preceding 6-month interval ^a	-.157	-.155	-.202	-.463*	-.482*	-.455*	-.499*	-.499*	-.553*
Block 2: Parent psychiatric symptoms averaged across all interviews ^b		.049	-.036		.096	-.022		.132	.070
Block 3: Parent baseline characteristics (full model)									
Schizophrenia diagnosis			-.124			.047			-.180
Socioeconomic status (high)			.307			.084			-.023
Gender (male)			-.116			-.255			-.268
Age at baseline			-.387			-.148			.068
Ethnicity status (minority)			.227			.286			.046

Note. Dependent variable: self-reported frequency of contact with youngest child at each interview. Cell values: standardized beta coefficients.

^a Any incidence of severe substance abuse during the preceding 6-month interval.

^bTotal score for the Positive and Negative Syndrome Scale (PANSS); higher scores = more severe symptoms.

* $p < .05$.

TABLE 4
 Bivariate Correlations of Child contact with Substance Abuse (SA) Incidents and Psychiatric Symptom Severity (*N* = 45)

Parent variables	Frequency of child contact reported by parent					
	Baseline (<i>n</i> = 37)	6 months (<i>n</i> = 30)	12 months (<i>n</i> = 32)	18 Months (<i>n</i> = 35)	24 months (<i>n</i> = 33)	30 months (<i>n</i> = 29)
SA prior to baseline (η)	.39*	-.48**	<i>ns</i>	<i>ns</i>	.36*	<i>ns</i>
Baseline symptoms (<i>r</i>)	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>
SA 0 to 6 months (η)	.58**	.39*	.37*	<i>ns</i>	<i>ns</i>	<i>ns</i>
6-month symptoms (<i>r</i>)	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>
SA 6 to 12 months (η)	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	.44*	.53**
12-month symptoms (<i>r</i>)	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>
SA 12 to 18 months (η)	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	.53**	.53**
18-month symptoms (<i>r</i>)	<i>ns</i>	-.43**	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>
SA 18 to 24 months (η)	<i>ns</i>	<i>ns</i>	.38*	<i>ns</i>	.46**	.57**
24-month symptoms (<i>r</i>)	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>
SA 24 to 30 months (η)	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	.57**	.57**
30-month symptoms (<i>r</i>)	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>	<i>ns</i>

* *p* < .05;

** *p* < .01.