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Outcomes of Programs Serving Mothers With Psychiatric Disabilities and Their Young Children: A Multisite Case File Abstraction Study

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Objective: This multisite study examined outcomes of mothers with mental illnesses receiving integrated clinical, rehabilitation, and parenting services for their preschool-age children. Mothers' outcomes included independent living and employment status, custody loss and reunification, psychiatric hospitalization, and substance abuse. ***Method:*** Retrospective case file abstraction yielded data regarding 104 mothers served over 12-month periods during 1995–1999 at 4 programs located in 3 different states. Multivariable logistic regression (MLR) analysis explored associations between outcomes and predictors from prior research, controlling for study site. ***Results:*** During their first 12 months of program participation, significant increases were found in the proportions of mothers employed and living independently. Significant decreases were noted in the proportion of mothers abusing substances. Although 10% of the women served lost formal custody during their first year of participation, 22% were reunited with 1 or more children. In MLR analysis, mothers who abused substances were more likely to have experienced childhood sexual abuse and custody loss; those who were psychiatrically hospitalized were more likely to have abused substances, lost custody of 1 or more children, and had more disabling forms of mental illness; and those who lost custody of 1 or more children were more likely to have experienced a psychiatric hospitalization and less likely to be residing with 3 or more children. ***Conclusions:*** Programs for mothers with mental illness and their preschool children address service needs in an integrated fashion that appears to improve clinical and rehabilitation outcomes, while preventing custody loss and supporting reunification.

Keywords: mothers with severe mental illness, parenting, psychiatric rehabilitation, integrated services, outcomes

Research indicates that women with mental health disorders, including serious mental illnesses (SMIs), are as likely to become parents as those without a mental illness. Analysis of prevalence data from a nationally representative household survey showed that of those respondents who were mothers, almost half (47%) had experienced one or more mental disorders in their lifetime (Nicholson, Biebel, Hinden, Henry, & Stier, 2001). Moreover, of the 31% of women who met criteria for a psychiatric disorder in the previous 12 months, 65% were mothers. Studies have indicated the often deleterious impact of unmanaged parental depression and anxiety on offspring, including childhood emotional disorders, poor academic performance, poor peer relations, and early nicotine and alcohol use (Leinonen, Solantaus, & Punam, 2003). At the same time, research suggests that a series of protective factors are associated with more positive outcomes for children of parents with mental health disorders, such as well-managed parental health and mental health, a supportive marital or intimate relationship, socioemotional support, lack of material hardship, and availability of treatment and rehabilitation (Huntsman, 2008; Logan, Moore, Manlove, Mincieli, & Cottingham, 2007).

Nonetheless, parents with psychiatric disorders are often at higher risk for parental role strain, parental disruption, and child welfare involvement. Research has demonstrated that the more severe a mother's psychiatric disorder is (Huntsman, 2008), the more likely there are to be disruptions in family life, with the prevalence of custody loss for parents with SMIs estimated to be around 60% in several studies (Seeman, 2004), and as high as 70% to 80% in others (Nicholson et al., 2001).

In a study of 4,827 mothers in the Philadelphia child welfare system, compared with those without SMI, those with SMI were 3 times as likely to experience custody loss, controlling for race, age, and type of psychiatric care received (Park, Solomon, & Mandell, 2006). In a study of 322 mothers with SMI, the likelihood of custody loss increased significantly among women with a larger number of

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children, and among those who were unmarried, who lived in poverty, who lacked social support, and who had a larger number of psychiatric hospitalizations (Hollingsworth, 2004).

Many mothers with mental illness face additional challenges that can disrupt coping and family functioning, including substance use, marital discord, physical and sexual abuse, poverty, unemployment, housing instability, and lack of access to culturally competent services (Helfrich, Fujiura, & Rutkowski-Kmitta, 2008; Larrieu, Heller, Smyke, & Zeanah, 2008; McPherson, Delva, & Cranford, 2007; Montgomery, Brown, & Forchuk, 2011; Nicholson & Henry, 2003; Parrot, Jacobs, & Roberts, 2008; Reupert & Maybery, 2007; Velleman, 2004). For example, Jones, Macias, Gold, Barreira, and Fisher (2008) reported substance abuse to be the strongest contributory factor to lower frequency of contact with children among parents with mental health disorders, controlling for psychiatric symptoms, diagnosis, and demographic features. Similarly, Westad and McConnell (2012) found that court action was more likely to be taken by child protective services in cases in which mothers experienced domestic violence, controlling for women's mental illness severity and other background characteristics. Finally, Hollingsworth (2004) showed that housing instability (living in a shelter or other publicly sponsored housing) increased the likelihood that children were removed from the homes of mothers with mental illness, controlling for the women's demographic features and mental health issues.

Another factor that has been found to lead to parenting disruption is psychiatric hospitalization. Joseph, Joshi, Lewin, and Abrams (1999) reported that, among mothers with SMI who experienced a psychiatric inpatient hospitalization, only about 20% retained full custody of their children. Another study found an 8% increase in the likelihood of custody loss for each additional psychiatric inpatient admission a mother experienced (Hollingsworth, 2004). Custody loss can result in negative mental health outcomes for both mother and child. Mothers may experience psychiatric symptom exacerbation, along with strong feelings of guilt, grief, and inadequacy (Hollingsworth, Swick, & Choi, 2011; Schen, 2005), while children's attachment, emotional, and social development may be impeded (O'Neill, 1999; Vorria et al., 2003; Williams et al., 2001).

In spite of unique parenting challenges such as poverty, substance use, trauma, and stigma toward mothers with mental illnesses, these women can take as much pride in parenting and get as much satisfaction from child rearing as other mothers (Montgomery, 2005; Nicholson, 2010). Moreover, the role of parent has been reported to have a positive impact on the mental health of these mothers (David, Styron, & Davidson, 2011). Mowbray, Oyserman, Bybee, MacFarlane, and Rueda-Riedle (2001) found that mothers with mental illnesses reported increased self-confidence, substance use cessation, improved motivation for their own treatment, and increased awareness of illness-related concerns. In a small qualitative study of mothers with mental illnesses, women were reported to experience major fulfillment and increased self-esteem as a result of engaging in a valued social role (Diaz-Caneja & Johnson, 2004). Similar to most parents, mothers with mental health disorders want the best for their children, and are concerned about their children's safety and well-being (Hollingsworth, 2004).

With the assistance of comprehensive, integrated service delivery programs, mothers with mental illnesses can be helped to parent successfully by enhancing their knowledge of child development and child-rearing skills (Huntsman, 2008). They can avoid custody loss through services that address substance abuse and circumvent the need for psychiatric hospitalization (David et al., 2011). Finally, they can be assisted in achieving important rehabilitation goals, such as employment and independent living, to counter the deleterious effects of low-income status and housing instability (Nicholson & Henry, 2003). Comprehensive services for mothers include psychological counseling, medication education, instrumental assistance, vocational and residential rehabilitation, peer and social support, and parenting interventions (Cook & Steigman, 2000). Services for preschool children include early childhood assessment, interaction-centered mother–child therapies, support for achievement of developmental milestones, educational enrichment, and play therapy (Mattejat & Remschmidt, 2008). Although a limited number of these comprehensive programs have been in operation for decades, to date, few studies have reported on outcomes of integrated service delivery for mothers with psychiatric disorders and their young children. The purpose of our study was to examine outcomes for women who were in their first year of participating in comprehensive programs for mothers with mental illnesses and their preschool-age children at four locations in the United States. Based on the findings of previous research, we predicted that outcomes would be superior for women who (a) did not experience a psychiatric admission (e.g., Joseph et al., 1999), (b) did not engage in substance abuse (e.g., Jones et al., 2008), (c) resided with fewer children (e.g., Hollingsworth, 2004), (d) did not meet criteria for SMI (e.g., Park et al., 2006), and (e) had not experienced childhood trauma (e.g., Marcenko, Kemp, & Larson, 2000), controlling for women's age, race/ethnicity, and program site. The five outcomes we examined were child custody loss, employment, independent living, substance use, and psychiatric hospitalization. We also conducted a qualitative analysis of instances of custody loss and family reunification, focusing on reasons for separation and to whom physical custody was given.

Method

Study Background

This multisite study used a participatory action research design (Baum, MacDougall, & Smith, 2006; Whyte, 1991), in which planning and research activities were guided by a national multistakeholder advisory committee. This seven-member committee included a psychiatrist, a child psychologist, two mothers with histories of SMI, two researchers studying mothers with psychiatric disabilities, and a state mental health system administrator of programs for mothers with mental illness. During a series of conference calls, committee members helped to identify programs with which they were familiar that could serve as study sites, compared the program characteristics of potential sites, reviewed research domains and protocols, and discussed design and methodological issues. They also provided feedback on human subjects' protections and consumer sensitivity. Following data collection and analysis, the committee reviewed study findings, offered interpretations, suggested new avenues of analysis, and interpreted those new results.

A major focus during the initial phase of the research was on locating programs in the United States that served mothers with mental illnesses together with their preschool age children. Twelve programs were identified by the advisory committee, and the nature of their organization, staffing, target populations, and service delivery were ascertained through interviews with program staff, published

articles, website descriptions, and articles in newsletters. After reviewing this information and discussing the merits of each program, the advisory committee selected five programs based on the following criteria: (a) serving mothers and preschool children together at a single program location, (b) diversity in the racial/ethnic composition of clientele, (c) providing both clinical and rehabilitation services, and (d) providing the majority of services directly rather than by referral. The study principal investigator approached the five agencies with an invitation to participate, describing the goals of the research, what study participation would involve, financial compensation, and procedures involved in data abstraction. Four of the agencies agreed to participate, yielding an 80% response rate. The agency that declined was undergoing a structural reorganization and staff felt that research participation would be too burdensome. Study design and research procedures were reviewed and approved by the University of Illinois at Chicago Institutional Review Board.

Programs Serving Mothers with Preschool-Age Children and Subject Inclusion Criteria

The four programs studied were located in Washington, DC, Chicago, IL, Goshen, NY, and New York, NY. They had been in operation from 4 to 23 years. As shown in Table 1, they offered a comprehensive array of 15 separate services to mothers and their young children, either directly or through referral and linkage. Direct services provided by all sites included case management, parenting skills training, vocational rehabilitation, remedial education, evaluation and testing, crisis intervention, home visiting, and parent–child interaction coaching. Other services provided directly at some sites and via referral at others included support groups, individual therapy, family therapy, medication management, therapeutic day care, residential assistance, and substance abuse treatment. The range of direct services provided per agency was 10 to 14. The range of services provided via referral per agency was one to five.

The study population included all women with preschool-age children who were served for a continuous 12-month period by one of the four programs from January 19, 1995, through October 6, 1999. Women absent from their programs for short periods of time (typically for residential substance abuse treatment) were retained in the study if these absences lasted no more than 10 weeks. Women were not required to have formal custody of the child(ren) served by the program at intake, and, in fact, 10% ($n = 11$) of women studied did not have formal custody when they began program participation.

Table 1
Types and Providers of Services Offered by Programs for Mothers With Mental Illness and Their Young Children

Services	Site 1	Site 2	Site 3	Site 4
Case management	direct	direct	direct	direct
Parenting skills training	direct	direct	direct	direct
Vocational rehabilitation	direct	direct	direct	direct
Remedial education	direct	direct	direct	direct
Evaluation and testing	direct	direct	direct	direct
Crisis intervention	direct	direct	direct	direct
Home visiting	direct	direct	direct	direct
Parent–child interaction coaching	direct	direct	direct	direct
Support groups	direct	direct	referral	direct
Individual therapy	referral	direct	direct	direct
Family therapy	referral	direct	direct	direct
Medication management	referral	referral	direct	direct
Therapeutic day care	referral	direct	direct	referral
Residential services	direct	direct	referral	referral
Substance abuse treatment	referral	direct	direct	referral

Note. direct = service provided by program staff; referral = service provided through referral and linkage to staff at another agency.

Case File Abstraction Protocol

A retrospective case record abstraction protocol was created by the researchers based on standard case file abstraction methodology (Allison et al., 2000; Findley & Daum, 1989; Smith, 1996). To develop and pilot test the protocol, researchers obtained three de-identified case files from each of the four programs. Two of these files were content analyzed in order to determine the cross-site data elements that could be collected from all programs, as well as any program-specific data elements that were necessary due to variations in the four programs. The third file was then used by the researchers to pilot test and refine the draft protocol. The protocol required abstractors to first read the entire case file from beginning to end. Next, they coded information related to six specific time periods: (a) any time prior to program intake, (b) at intake, (c) Months 1 through 6 of program participation, (d) at the 6-month anniversary, (e) Months 7 through 12 of program participation, and (f) at the 12-month anniversary. Information was coded in specific areas, such as demographic characteristics of the mother and child(ren), clinical characteristics of the mother and child(ren), services received by the family, occurrence of mothers' hospitalizations for psychiatric reasons, employment status, living situation, custody status, occurrence of reunification with children, and goals named in the treatment plan.

Data Collection

Working collaboratively with program staff, researchers recruited and hired a case record abstractor at each location. To help ensure their objectivity, in no instance was an abstractor a current or former employee of the program whose records were being abstracted. Charts were abstracted on-site at each agency; abstractors were trained and supervised by the researchers in Chicago. Abstractors traveled to Chicago and participated in a two-and-a-half-day training conducted by the researchers, at which they learned about (a) the goals of the study, (b) comprehensive services for mothers with mental illness and their children, (c) confidentiality and other human subjects protections, (d) general chart abstraction methodology, and (e) the study's detailed abstraction protocol. They also practiced using the abstraction protocol with three de-identified case files from the program whose files they would be coding. At these practice sessions, they received detailed feedback from researchers regarding the accuracy and completeness of their coding decisions, criteria for identifying coding issues that needed to be reported to the researchers, and under what circumstances they could seek additional information from program staff when case record information was missing or unclear.

Abstraction of case files occurred from February 2000 through March 2001. At the end of each week, completed protocols were mailed to the study coordinator for review and data entry. Mandatory weekly teleconferences were held with abstractors to answer questions, discuss coding issues, review the abstraction procedures, and resolve any discrepancies in how key concepts were conceptualized

and coded. Additional supervision was provided via phone calls and e-mails throughout the abstraction period. We were unable to assess interrater reliability because we did not have university institutional review board permission to let coders see files from sites other than their own, even redacted files. Thus, in supervision with abstractors, we emphasized the importance of using uniform coding definitions and decision rules to achieve consistency across study sites.

Outcome and control variables. We examined five outcome variables. The first was custody status. By "custody," we refer to physical custody in which the mother and child reside together. By "court order," we refer to a legal ruling regarding the child's physical custody issued by a judge or other court official. Court orders could be temporary or permanent, and even when they were permanent, they could be reversed by the court, or in some cases, disregarded by the social service agencies involved. Custody status was defined as whether or not the mother resided with the child(ren) served by the program. Loss of custody was defined as "formal" when child protective services removed the child from the home either temporarily or permanently under a court order, and as "informal" when the mother voluntarily relinquished custody of the child to another party, which could be a relative or a foster parent. Psychiatric hospitalization was defined as spending one or more nights in a state psychiatric hospital or other inpatient facility or unit designated for the treatment of patients with mental illness. Substance abuse was defined as using any illicit drug and/or misuse of prescription or over-the-counter medication and/or use of alcohol to the point of intoxication. Women were considered to be employed if they worked for pay on one or more days, and to be living independently if they resided in their own homes or apartments versus in agency-sponsored housing or housing supplied by family or friends. Mother's age at intake was recorded in years, and racial/ethnic status was defined as White versus all other. Dichotomous indicator variables were created for each of the four study sites. No more than 2% of data were missing across all variables, with the exception of education, which was missing for 14% ($n = 15$) of the women.

Analysis. Data were entered into a commercially available database system (SPSS Inc., 2006), and univariate statistics were computed to examine outcomes at different program participation time points. Next, associations between outcomes and all study variables were examined to test hypotheses at the zero-order level and identify potentially confounding relationships. Following that, multivariable logistic regression analysis was conducted to examine associations between three of the outcome variables, predictors identified from prior research, and potential confounds. Study site was controlled for by including three site indicator variables in the models, with the fourth site omitted as a contrast. For all analyses, $p < .05$ was considered significant using two-tailed tests. We also conducted a qualitative analysis of case record descriptions of custody loss and family reunification to identify reasons for separation, and the parties to whom physical custody was given during periods of separation.

Results

Women's Background Characteristics

A total of 104 women's case files were abstracted across the four participating programs: 28 at Program 1; 27 at Program 2; 32 at Program 3; and 17 at Program 4. These represented 70% (28/40) of all mothers served at Site 1 during the study time period, 69% (27 out of 39) of those served at Site 2, 46% (32/70) of those served at Site 3, and 31% (17/55) of those served at Site 4. As shown in Table 2, the majority of mothers were African American (60%), around one quarter were White (23%), 15% were Latina, and 1% were another race/ethnicity. The programs varied considerably in racial/ethnic makeup, with African American women predominating at two programs, Latinas at another, and Whites at the fourth. Most mothers were single at the time they began receiving services (74%), with single mothers predominating at all four programs. Mothers ranged in age at intake from 16 to 43 years, with the total group averaging 29.5 years ($SD = 7.4$). Average ages were similar across programs, ranging from a low of 26 to a high of 33 years. On average, mothers had completed 11 years of education ($SD = 1.9$), and at all four programs, the mean was less than 12 years of formal schooling.

Overall, mothers had an average of 2.8 children born to them, although over two thirds of the women (67%) had only one child participating in the programs studied. Women's average number of coresidents (including children) was 2.6 at intake, ranging from a low of 0 to a high of 9 coresidents. Around half (48%) of mothers were living independently in their own home or apartment at intake. The most commonly reported primary *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text rev.; American Psychiatric Association, 2000) Axis I diagnoses were major depression (23%), dysthymia or minor depression (33%), and adjustment disorder with depressed mood and/or anxiety (16%). Other reported primary diagnoses included schizophrenia or schizoaffective disorder (12%), bipolar disorder (8%), and anxiety disorder (4%). Finally, notable proportions of mothers at all programs had experienced childhood trauma, including physical abuse (38%), sexual abuse (44%), and emotional abuse (37%), with 62% experiencing all three types of trauma, and 59% experiencing both physical and sexual abuse. Around one quarter (23%) of women engaged in drug or alcohol use at intake, and only 7% were employed either full time or part time.

Rehabilitation Outcomes Over Time

As shown in Table 3, the proportion of women living in their own homes or apartments (vs. in agency housing, housing provided by friends or relatives, or a shelter) increased significantly ($p < .001$) from 48% at intake, to 50% at the 6-month anniversary and 55% at 12-month follow-up. The proportion employed increased significantly ($p < .001$) from 7% at intake to 15% at 6 months and 18% at 12 months. Although 11% ($n = 11$) of women were hospitalized for psychiatric reasons during their first 6 months of program participation, only 6% ($n = 6$) were hospitalized during their second 6 months in the program; however, this difference was not statistically significant. The proportion engaging in substance abuse decreased significantly ($p < .001$) from 44% ($n = 46$) during the first 6 months of program participation to 16% ($n = 17$) in the second 6 months of participation.

Custody Outcomes Over Time

As shown in Table 3, only 5% ($n = 5$) of women lost formal custody of one or more children during their first 6 months of program participation. Another 5% ($n = 5$) lost formal custody during their second 6 months of program participation. Of the five who lost formal custody between intake and 6-month

Table 2
Background Characteristics at Intake of Mothers With Mental Illness and Their Young Children by Study Site

Background information	Total (N = 104) *n* (%)	Site 1 (n = 28) *n* (%)	Site 2 (n = 27) *n* (%)	Site 3 (n = 32) *n* (%)	Site 4 (n = 17) *n* (%)
Ethnicity					
White	24 (23)	19 (68)	4 (15)	0	1 (6)
African American	62 (60)	7 (25)	19 (70)	32 (100)	4 (24)
Hispanic/Latina	16 (15)	1 (4)	3 (11)	0	12 (71)
Other	1 (1)	0	1 (4)	0	0
Marital status					
Married	13 (12)	7 (25)	1 (4)	2 (6)	3 (18)
Separated	7 (7)	4 (14)	1 (4)	1 (3)	1 (6)
Divorced	8 (8)	5 (18)	3 (11)	0	0
Never married	62 (60)	7 (25)	20 (74)	23 (72)	12 (71)
Living with partner	14 (14)	5 (18)	2 (7)	6 (19)	1 (6)
Age					
Years (mean)	29.5	30.5	25.9	32.9	27.1
Range	16.5–42.7	19.7–41.2	16.6–42.7	22.9–42.6	17.0–41.2
Education					
Years (mean)	10.8	11.1	11.1	10.6	10.4
Range	6–16	7–14	8–16	6–12	8–16
# Children born					
Mean	2.8	2.4	2.0	4.3	1.9
Range	1–9	1–5	1–5	1–9	1–4
# Children served in program					
1	70 (67)	13 (46)	20 (74)	20 (62)	17 (100)
2	22 (21)	10 (36)	5 (18)	7 (22)	0
3	10 (10)	4 (14)	2 (7)	4 (12)	0
4	2 (2)	1 (4)	0	1 (3)	0
# Coresidents (incl. children)					
Mean	2.6	2.4	1.3	3.6	3.0
Range	0–9	1–5	0–5	0–9	1–8
Mothers' residential status					
Living independently	50 (48)	19 (68)	8 (30)	12 (38)	11 (65)
Supervised group home/apt.	12 (10)	0	5 (18)	6 (19)	1 (6)
Friend or relative's home	33 (32)	6 (21)	11 (41)	12 (38)	4 (23)
Shelter	7 (7)	3 (11)	3 (11)	0	1 (6)
No info	2 (2)	0	0	2 (6)	0
DSM-IV diagnosis					
Major depression	24 (23)	12 (43)	6 (24)	5 (16)	1 (6)
Dysthymia or minor depression	34 (33)	6 (21)	6 (24)	15 (47)	7 (41)
Bipolar disorder	8 (8)	3 (11)	2 (8)	2 (6)	1 (6)
Schizophrenia/schizoaffective	12 (12)	3 (11)	7 (28)	2 (6)	0 (0)
Anxiety disorder	4 (4)	0 (0)	2 (8)	2 (6)	0 (0)
Adjustment disorder	17 (16)	4 (14)	2 (8)	4 (13)	7 (41)
Other	3 (3)	0 (0)	0 (0)	2 (6)	1 (6)
Mothers' childhood trauma Hx					
Physical abuse	40 (38)	6 (21)	9 (33)	15 (47)	10 (59)
Sexual abuse	46 (44)	12 (43)	13 (48)	16 (50)	5 (30)
Emotional abuse	38 (37)	4 (14)	11 (40)	16 (50)	7 (41)
Substance use at intake	24 (23)	4 (14)	3 (11)	16 (50)	1 (6)
Employed at intake	7 (7)	3 (11)	2 (7)	2 (6)	0 (0)

Note. Variations in *n* due to missing data. Some percentages do not sum to 100 due to rounding. apt. = apartment; DSM-IV = *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association, 2000); Hx = history.

follow-up, one regained custody during the first 6 months and two more regained custody over the last 6 months of program participation. Of the five women who lost formal custody during the second 6 months, one had regained custody by the end of her first year of program participation. Altogether, a total of 22 women had lost formal *or* informal custody either prior to program intake *or* during the first year. Of these 22, 11 women regained custody of child(ren) during their first 6 months of program participation, and 11 regained custody during their second 6 months of participation.[1]

Uni- and Multivariate Associations With Outcomes

Chi-square and Pearson correlation coefficients (not shown) indicated that none of our hypothesized model variables were related to the outcomes of employment or independent living, with

[1] It is important to note that some women lost and regained custody of more than one child, and some lost custody of the same child more than once. Thus, it is not possible to sum numbers together in the foregoing description.

Table 3
Mothers' Rehabilitation and Custody Outcomes Over First 12 Months of Program Participation (N = 104)

Outcome	At intake		At 6 months		At 12 months	
	n	%	*n*	%	*n*	%
Living independently*	50	48	52	50	57	55
Employed*	7	7	16	15	19	18
	Months 1 to 6[a]		Months 7 to 12[a]			
	n	%	*n*	%		
Psychiatric hospitalization	11	11	6	6		
Substance abuse*	46	44	17	16		
Lost formal custody of child(ren) served during program ($n = 10$)	5	5	5	5		
Reunited with child(ren) formally removed during Months 1 to 6 ($n = 5$)	1	20	2	40		
Reunited with child(ren) formally removed during Months 7 to 12 ($n = 5$)	—	0	1	20		
Reunited with child(ren) formally or informally removed before intake or during program ($n = 22$)	11	11	11	11		

[a] Time participating in program.
* $p < .001$, Fisher's exact test.

one exception. That exception was a significant inverse relationship ($p < .05$) between substance abuse and independent living. Given the absence of significant zero-order relationships, we did not proceed with multivariable analysis of these two outcomes. Table 4 presents the results of multiple logistic regression analysis of the remaining three outcomes (substance abuse, psychiatric hospitalization, and custody loss), controlling for age and race as well as study site. Turning first to substance abuse, women who were sexually abused in childhood were over 10 times as likely to engage in substance abuse during their first 12 months of program participation as those who were not sexually abused in childhood, controlling for all other model variables. Those who were hospitalized for psychiatric reasons during their first year in the program were over 15 times as likely to have abused substances during that time as those who were not psychiatrically hospitalized. All other variables in the model were nonsignificant. Regarding the outcome of inpatient psychiatric admission, those who had lost custody of one or more children during their first 12 months of program participation were over 8 times as likely to have been admitted to an inpatient unit during that time as those who had not lost custody. Those women who engaged in substance abuse during their first year in the program were over 16 times as likely to be psychiatrically hospitalized during that year as those who did not abuse substances. Finally, those with an Axis I diagnosis of major mental disorder (i.e., schizophrenia, bipolar disorder, major depressive disorder) were significantly more likely to experience an inpatient psychiatric admission than those with other diagnoses. Turning next to the outcome of formal custody loss due to a court order, women who were psychiatrically hospitalized during their first 12 months in the program were over 7 times as likely to experience custody loss during that time period as women who were not psychiatrically hospitalized. Finally, women who were residing with three or more children at intake were significantly less likely to experience formal custody loss during their first 12

Table 4
Logistic Regression Analyses of Mothers' Outcomes, Controlling for Study Site

	Substance abuse[a]			Psychiatric hospitalization[b]			Custody loss[c]		
	B	*SE B*	Odds ratio	*B*	*SE B*	Odds ratio	*B*	*SE B*	Odds ratio
White	−0.35	1.73	0.70	0.12	1.06	1.12	−0.14	0.91	0.87
Mother's age at intake, in years	−0.07	0.06	0.93	0.03	0.05	1.00	0.04	0.04	1.04
3+ children living with mother	−0.77	0.93	0.46	1.35	0.82	3.85	−2.01	0.91	0.13*
Childhood sexual abuse	2.34	0.86	10.42**	−0.67	0.75	0.51	0.66	0.59	1.94
Psychiatric hospitalization	2.72	1.01	15.11**				2.04	0.74	7.66**
Custody loss[c] of child(ren) in program				2.18	0.78	8.84**			
Substance abuse while in program				2.82	1.05	16.80**	−1.04	0.85	0.35
Severe mental illness[d]	−1.41	0.87	0.24	2.80	0.95	16.44**	−2.70	1.49	0.07

[a] Use of illegal drugs or abuse of alcohol or over-the-counter medication while in program = 1; no substance abuse = 0. [b] Hospitalized for psychiatric condition while in program = 1; not hospitalized = 0. [c] Child(ren) enrolled in program removed by child protective services due to court order = 1; Child(ren) not removed = 0. [d] *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text rev.; American Psychiatric Association, 2000) diagnosis of schizophrenia spectrum disorder, bipolar disorder, or major depressive disorder = 1; other diagnosis = 0.
* $p < .05$. ** $p < .01$. *** $p < .001$.

months of program participation than women with less than three coresident children.

Contexts of Custody Loss and Family Reunification

We conducted a qualitative analysis of case file descriptions of 10 instances in which women *lost formal custody* during their first 12 months of program participation (i.e., children were removed from the mothers' home following a court order). Five of these occurred *between intake and 6 months*. In three of these five cases, the child went to live with nonrelative foster parents. In the two remaining cases, the child went to live with relatives: one with a grandmother and the other with an aunt. Reasons for custody loss included physical violence in the home in two instances, child neglect in two instances, and the mother's mental health problems in one instance. In two of these five cases, physical custody was not regained in the first 12 months. In the remaining three cases, custody was regained by one mother in the first 6 months of program participation (i.e., relatively quickly), and by the other two mothers during their second 6 months of program participation.

In the five instances in which women *lost formal custody* in the time period *between 6 and 12 months*, children went to nonrelative foster parents in four instances and the child's location was unclear in the fifth instance. In one case, the reason for custody loss was concern about the mother's abusive boyfriend and his access to the child. In another case, unsafe home conditions were cited, including a loaded gun in the house. A third case was due to the mother's mental health problems. A fourth case was due to child neglect and the mother's inability to manage the child. In the fifth case, the reasons were unknown. In four of these five cases, women had not regained physical custody by 12 months after program intake. In the fifth case, physical custody was returned to the mother by the end of the first year.

We also examined 22 instances in which women were *reunited with their children* (i.e., resumed physical custody) *between intake and 12 months*. Note that these reunifications followed both preprogram and during-program instances of custody loss, and include the four reunifications just described. Here, we found that most of the reunions (72%) followed voluntary, informal relinquishment of custody to a relative or nonrelative ($n = 16$), rather than formal court-ordered removal of the child ($n = 6$). Reasons for voluntary custody loss included the mother's admission to a psychiatric hospital, being jailed for 30 days, having no money for food and other necessities, active drug use, becoming homeless, experiencing domestic partner violence, and a death in the family. In most voluntary relinquishments, relatives—typically grandmothers or aunts—assumed custody. But in two cases, a nonrelative informally assumed custody: one was the child's babysitter and the other was the child's former foster parent. Of the six cases of reunion following formal, involuntary custody loss initiated by child protective services, half ($n = 3$) of the children had been cared for in foster care, whereas the other half ($n = 3$) had been cared for by an aunt or grandmother. Interestingly, in two of the six involuntary cases, the mother's custody had been formally and permanently terminated by a court order, yet the child returned to live with the mother, presumably because of the support of the program's staff and services. In the other four cases, the child was formally, but temporarily, removed from the home and eventually returned to live with the mother once conditions had improved.

In summary, we learned that formal custody loss during the period of program participation was typically attributed to neglect of the child or unsafe living conditions, and that reunification occurred in only 40% of these instances. The majority (72%) of reunifications that occurred in the first year followed instances in which mothers had voluntarily and informally relinquished custody to female relatives. However, reunification did occur in six instances following formal custody loss that occurred prior to or during the time the woman was in the program.

Discussion

We found significant increases in employment and independent living, and significant decreases in substance abuse, in comprehensive programs serving mothers with mental health disorders and their preschool aged children. Whereas 10% of women served lost formal custody in their first 12 months of program participation, 22% of women were reunited with children from whom they had been separated prior to or during program participation, either voluntarily or involuntarily. Although the absence of an experimental design prohibits us from attributing these outcomes to the services delivered by the programs, our findings suggest that integrated psychiatric rehabilitation services for mothers and children could be beneficial, and that further research in this area is warranted.

Our multivariable analysis supported our hypotheses that several outcomes were better for mothers who did not experience a psychiatric admission and who did not engage in substance abuse during the first 12 months of program participation. Specifically, we found significant associations between custody loss and psychiatric hospitalization, with mothers who were admitted to inpatient care being more likely to lose formal custody than those who were not hospitalized for mental health reasons. Hospitalization was also significantly related to the outcome of substance abuse. Here, mothers who were psychiatrically hospitalized were more likely to engage in substance abuse than women who were not hospitalized for psychiatric reasons. These strong associations between hospitalization and custody loss, as well as hospitalization and abuse of drugs or alcohol, suggest that clinical treatment and support for avoidance of inpatient admissions is a worthy goal of these programs, along with effective treatment for addiction recovery. Additionally, interventions to assist mothers of minors to develop advance directive plans for child care during periods of parental hospitalization or residential substance abuse treatment could be especially beneficial. Such plans could include the naming of surrogate caregivers and backup caregivers to the surrogates, and documentation of the children's full range of needs and preferences (Seeman, 2012).

Our hypothesis that mothers who survived childhood trauma would have poorer outcomes than those who were not trauma survivors was also supported. We found that a major predictor of substance abuse in particular was the mother's experience of childhood sexual abuse, a finding that is mirrored in many other studies (Putman, 2003; Simpson & Miller, 2002). Recognition of the strong association between women's childhood trauma and their outcomes, as well as the outcomes of their children, is a critical aspect of integrated psychiatric rehabilitation programming

for mothers and children (Harris, 1994). Indeed, the introduction of trauma-informed care into these programs is essential for improving outcomes of mothers and their offspring (Cocozza et al., 2005; Hopper, Bassuk, & Olivet, 2010). Principles of trauma-informed care involve recognizing that various behaviors and symptoms represent adaptations to past traumatic experiences; addressing trauma directly as part of collaborative treatment and person-centered planning; identifying and minimizing sources of retraumatization in treatment; and building upon strengths and personal choice as the foundation for mental health and addiction recovery in families (Elliot, Bjelajac, & Fallor, 2005).

Finally, our qualitative analysis also supports the recommendation that women and their young children would benefit from integrated psychiatric rehabilitation, along with reassurance that seeking such services will not automatically result in custody loss. Our qualitative analysis revealed that unaddressed symptoms of mental illness, unemployment, and poverty often led to custody loss because mothers became unable to provide for their children due to lack of income, housing instability, psychiatric distress, and inability to manage child development issues. The biopsychosocial approach applied in evidence-based psychiatric rehabilitation (Jonikas & Cook, 2000) addresses these multiple needs, providing a strong platform on which to build comprehensive, integrated services for parents and their children. These services include (a) assessment of parenting strengths and needs; (b) case management aimed at helping parents negotiate multiple systems of care; (c) peer support, self-help, and parent mentoring; (d) medication management, especially during pregnancy and lactation; (e) child-friendly housing and support for independent living; (f) training in child care and parenting skills; (g) vocational rehabilitation and supported education; (h) custody relinquishment counseling and support; (i) birth control counseling and pregnancy decision-making support; (j) crisis and respite care; (k) trauma counseling and treatment; (l) substance abuse and harm reduction treatment; (m) marital and family counseling; (n) assistance with school issues; (o) advance directive planning and support; and (p) benefits planning and financial education (Cook & Steigman, 2000). Although funding such a diverse array of services presents a myriad of organizational and fiscal challenges, David and colleagues (2011) note that incorporation of family planning into Medicaid under the Patient Protection and Affordable Care Act (2010) offers potential opportunities to expand existing services.

One unexpected finding was an *inverse* association between custody loss and number of children in which mothers were less likely to lose formal custody when residing with three or more dependent children than when residing with fewer children. Instead, prior studies have found that the likelihood of custody loss is greater for mothers living with a larger number of children (Hollingsworth, 2004). It may be that in our study, women with larger families received additional care and attention from their service delivery program or from natural supporters such as relatives, compared with women living with just one or two children. It also may have been the case that in larger families, older children cared for younger siblings during periods when maternal support was unavailable, providing a protective barrier against custody loss or relinquishment (Groza, Maschmeier, Jamison, & Piccol, 2003).

We also found that although psychiatric hospitalization decreased by 45% from 11% of women in their first 6 months of participation to 6% in their last 6 months, this change fell short of statistical significance. This may indicate that these programs were less effective in helping women avoid readmission, or may have been related to our study's small sample size, the relatively short follow-up period, or other uncontrolled factors. Two other unexpected findings were that our model variables were not predictors of two of the rehabilitation outcomes we studied, namely, employment and independent living. Clearly, other correlates should be explored in understanding which women achieve these outcomes in future research.

A number of caveats apply to our study's findings. First, we included programs from only three states, and our sample of mothers and their preschool children was not nationally representative. Second, our use of case file abstraction methodology limited our data to what was contained in the family's case record. Although the on-site program location of our abstractors enabled them to supplement this source by consulting with agency staff when information was missing or unclear, direct assessment of women and their children would have been preferable, and may have yielded more valid and reliable information. Third, we studied only the first year of the families' participation in the program, whereas a longer follow-up period might have revealed different outcomes as the effects of program services changed over time or natural maturation of mothers and children occurred. Fourth, we included in our sample only women who entered and remained in these programs for at least 12 months, making our findings subject to selection bias because we were not able to account for program refusers or dropouts. Fifth, although our abstractors were closely supervised and used a detailed abstraction protocol designed to limit subjective judgments and coding inaccuracies, we were unable to assess interrater reliability statistically. Thus, it is possible that between-site variations in abstraction procedures may have created another source of study bias. Sixth, our study design prevents us from being able to say that program participation caused the positive outcomes we observed. Finally, a more recent replication of our study would be advisable given that our data were collected in 2000–2001.

In summary, our findings contribute to the growing literature on comprehensive, integrated services for mothers with mental health disorders and their preschool children. They suggest that such services may enhance clinical and rehabilitation outcomes for mothers, limit custody loss, and support family reunification in cases in which it can occur safely, and with positive outcomes for women and children. By providing mothers and children with needed services and supports, these programs have the potential to foster recovery in the context of successful and rewarding parenting.

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