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Impact of Intensive Case Management on Child Welfare System Involvement for Substance-Dependent Parenting Women on Public Assistance

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Abstract

This study examined the impact of intensive case management (ICM) on decreasing child welfare system involvement in a sample of substance-dependent parenting women who participated in a welfare demonstration study comparing ICM to usual screen-and-refer models employed in welfare settings. Previous research established the effectiveness of ICM in both increasing engagement in substance abuse treatment and in promoting abstinence, and the current study tested whether ICM had downstream impacts on child welfare outcomes not directly targeted by the intervention. The sample included 302 mothers recruited from welfare offices and their 888 minor children. Child welfare outcomes were available from administrative records for four years following study entry and included incident reports and out-of-home child placements. An initial positive effect of ICM was found on child placements, but its impact lessened over time and was likely due to the increased contact with case managers that occurred early in the study. Overall, minimal benefits of ICM were found, suggesting that while ICM was effective in the areas of treatment engagement and abstinence, there were no downstream benefits for child welfare outcomes. Implications of findings in terms of increased need for cross-system collaboration are discussed.

Keywords

substance abuse; child welfare; case management

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1. Introduction

Substance-dependent parenting women are a complex population with problems in multiple areas including education, employment, housing, mental and physical health, and legal issues (Cook et al., 2009). Children of these women are at high risk of poor developmental, behavioral, and emotional outcomes, as well as increased involvement in the child welfare system (Barnard & McKeganey, 2004). These women have historically not responded well to traditional substance abuse treatment models that focus on abstinence alone without incorporating services for problems in other areas (Marsh, Cao, & Shin, 2009; Marsh, D'Aunno, & Smith, 2000; Smith & Marsh, 2002; Marsh & Cao, 2005). In particular, substance abuse treatment attendance does not consistently predict positive child welfare system outcomes, especially in the absence of comprehensive services matched to clients' needs (Rittner & Dozier, 2000; Barth, Gibbons, & Guo, 2006; Marsh, Ryan, Choi, & Testa, 2006; Choi & Ryan, 2007). Case management is a promising intervention for substance-abusing multi-problem parenting women with child welfare system involvement, as it aims to overcome barriers to service access and coordinate services across systems. Case management has been successful in enhancing treatment participation and retention among vulnerable substance abusers facing multiple barriers, including pregnant women and mothers of young children (Brindis & Theidon, 1997; Laken & Ager, 1996), as well as those involved in the child welfare system (Marsh et al., 2000; Ryan, Marsh, Testa, & Louderman, 2006). However, few studies have examined the direct impact of case management on child welfare outcomes such as child protective service investigations and child placement for substance using caregivers (Ryan et al., 2006). The current study was designed to test the impact of intensive case management (ICM) on reducing reports to child protective services and child out-of-home placements in a sample of substance-dependent parenting women who participated in a welfare demonstration project comparing ICM to usual screen-and-refer procedures for increasing engagement in substance use treatment, promoting abstinence, and securing employment (Morgenstern et al., 2006). Prior studies on this sample demonstrated the success of ICM at improving substance abuse treatment attendance, and increasing abstinence and employment rates, thus setting participants on a positive path towards self-sufficiency and family stability (Morgenstern et al., 2006; 2009). However, it is not yet known whether the impact of ICM on abstinence and treatment attendance has broad downstream effects on child welfare system involvement. Finding such broad impacts would lend increased support to the utility and cost-effectiveness of ICM for the complex population of substance dependent parenting women involved with multiple systems.

1.1. Parental Substance Abuse and Child Welfare System Involvement

Substance-abusing parenting women have high rates of involvement in the child welfare system, with recent studies showing that between 50 and 80 percent of child welfare cases involve parental substance abuse (Osterling & Austin, 2008; Young, Boles, & Otero, 2007). Once in the system, these families tend to have poorer outcomes, including higher rates of maltreatment recurrence (Fuller & Wells, 2003), child removal (Maluccio & Ainsworth, 2003; Young et al., 2007), and loss of parental rights (Marcenko, Kemp, & Larson, 2000), as well as greater numbers of placements, longer lengths of stay in out-of-home care (Berger, Slack, Waldfogel, & Bruch, 2010), and increased risk of re-entry into foster care following reunification (Brook & McDonald, 2009). Substance using caregivers in the child welfare system often do not receive needed treatment due to a combination of logistical barriers, high rates of co-occurring problems, and lack of coordination between the child welfare and substance abuse treatment systems (Marsh et al., 2006; Rockhill, Green, & Newton-Curtis, 2008; Ryan et al., 2006; Staudt & Cherry, 2009).

1.2. Impact of Substance Abuse Treatment on Child Welfare Outcomes

Even when caregivers do enter substance abuse treatment, research is mixed on the impact of treatment on child welfare outcomes. Some studies have found that completing treatment increased the odds of both reunification (Green, Rockhill, & Furrer, 2007; Grella, Needell, Shi, & Hser, 2009; Smith, 2003) and of maintaining child custody and parental rights (Gregoire & Schultz, 2001). However, other studies found no relationship between treatment attendance and child welfare outcomes (e.g., Rittner & Dozier, 2000), or increased involvement in the child welfare system for mothers who attended substance abuse treatment (Barth et al., 2006). One potential explanation for these negative outcomes is that traditional substance abuse treatment programs often do not address the multiple areas of service need characteristic of women with young children (Smith & Marsh, 2002). Comprehensive programs that involve children, include specialized health and mental health services, and offer concrete assistance with basic needs, have been shown to improve child welfare outcomes for mothers involved with the child welfare system (Arthur, Mellacheruyu, Hansen, & Schafer, 2006; Marsh, Smith, & Bruni, 2010). There is a need for interventions to increase access to and retention in appropriate substance abuse treatment programs for child welfare involved parents and to coordinate services in other areas, with the ultimate goal of improving child safety and permanency and family stability.

1.3. Case Management as Promising Approach for Substance-Dependent Parenting Women

Case management interventions aimed at both coordinating service delivery across sectors of care and reducing practical barriers to service receipt have been viewed as attractive solutions for substance-dependent parenting women, given their multiple needs and many barriers to accessing services (Vanderplasschen, Rapp, Wolf, & Broekaert, 2004; Vanderplasschen, Wolf, Rapp, & Broekaert, 2007). Case management has shown promise in increasing engagement and retention in substance abuse treatment in several vulnerable populations including low-income individuals seeking publicly funded treatment (Rapp et al., 2008), homeless people (Vanderplasschen et al., 2004), dually diagnosed people (Vanderplasschen et al., 2004), and pregnant and post-partum women (Eisen, Keyser-Smith, Dampeer, & Sambrano, 2000; Laken & Ager, 1996). Receipt of case management as an adjunct to drug treatment has also been associated with better treatment outcomes in pregnant and post-partum women (Corsi, Rinehart, Kwiatkowski, & Booth, 2010; Lanehart, Clark, Rollings, Haradon, & Scrivner, 1996; McLellan et al., 1999). Case management provided within the context of the child welfare system has been effective at increasing access to substance abuse treatment (Ryan et al., 2006; Worcel, Furrer, Green, Burrus, & Finigan, 2008) and increasing sobriety (Reynolds & Edwards, 2006).

Studies examining the broader impacts of case management, beyond those relating directly to substance use, have found more mixed results. Case management provided on-site at drug treatment units was effective in promoting utilization of certain ancillary services, such as financial counseling and housing assistance, but not medical and other psychosocial services in a national sample (Friedmann, D'Aunno, Jin, & Alexander, 2000; Friedmann, Hendrickson, Gerstein, & Zhang, 2004). Additionally, case management delivered within the context of drug treatment has been associated with reductions in legal, employment, family, and psychiatric problems, however these effects faded over time (Vaughan-Sarrazin, Hall, & Rick, 2000; Saleh et al., 2002). A small number of studies have found positive effects of case management on increasing receipt of ancillary services as well as on broader outcomes in areas of mental health, employment, and criminal justice involvement when delivered in conjunction with addictions treatment (Corsi et al., 2010; Lanehart et al., 1996; McLellan et al., 1999; Vanderplasschen et al., 2007).

Very few studies have examined the direct impact of case management on child welfare outcomes for substance using caregivers, but those that have support its potential for success in this area. Case management provided to drug-using mothers in the child welfare system has been associated with reduced time in foster care (Jansson, Svikis, & Beilenson, 2003), improved safety, permanency and well-being (Moe, 2006), and higher rates of family reunification (Ryan et al., 2006). Additionally, case management provided within family treatment drug courts was associated with higher likelihood of reunification, and lower likelihood of termination of parental rights, though not with less time spent in out-of-home care (Dakof, Cohen, & Duarte, 2009; Dakof et al., 2010; Worcel et al., 2008). It should be noted that these studies all tested specialized case management interventions designed to be delivered within the context of the child welfare system. The current study expands upon this literature by examining whether a less specialized model of case management (ICM), delivered within the public assistance system, would have broad impacts on participants' child welfare system involvement in addition to its established impact on substance use and employment outcomes (Morgenstern et al., 2006; 2009).

1.4. Study Aims and Hypotheses

The current study tested the impact of ICM on reducing child welfare system involvement for multi-problem substance-dependent parenting women receiving public assistance. Specifically, we hypothesized that women who received ICM would experience decreases in their child welfare system involvement over time (i.e., less likely to be reported to child protective services and to have a child in out-of-home placement) compared to those who received the usual screen-and-refer protocol typically provided to substance-dependent public assistance recipients. We also examined the differential impact of treatment attendance and abstinence on child welfare system involvement for the two conditions (ICM and Usual Care). Given the established effectiveness of ICM in the areas of treatment engagement and abstinence (Morgenstern et al., 2006), the current study examined whether these positive effects had downstream impacts on child welfare outcomes that were not directly targeted by the intervention.

2. Methods

2.1. Participants

2.1.1. Caregivers—Caregivers were 302 substance-dependent women receiving TANF as part of a welfare demonstration project and recruited from public assistance offices in one urban county in New Jersey from September 1999 to May 2002. Caregivers were mothers (91%), grandmothers (5%), or other related or unrelated caretakers (4%). Study eligibility criteria were: (1) DSM-IV substance dependence diagnosis; (2) TANF eligible; (3) entering New Jersey's welfare-to-work program and not deferred for a medical problem; and (4) comprehend and speak English well enough to complete an interview. Women were excluded if they were assessed as currently psychotic (via administration of a diagnostic screening measure), receiving or seeking methadone treatment, seeking long-term residential treatment, or currently enrolled in substance abuse treatment. Clients were screened at the public assistance office for study eligibility and informed consent was obtained (see Morgenstern et al., 2006 for more information about recruitment and screening). Approximately 7% (n = 595) of public assistance participants screened positive for substance use problems. Of clients screening positive, 47% (n = 280) did not meet eligibility criteria (e.g., receiving methadone treatment, no DSM-IV diagnosis). Of the 315 eligible participants, 302 (95.9%) were randomized and 13 (4.1%) refused study participation.

Sample characteristics by condition have been presented in a previous publication (Morgenstern et al., 2006). In the full sample, caregivers ranged in age from 18 to 54 years

(M = 36.3, SD = 6.7) at study entry, and were mostly African American (94%) or Hispanic (3%). The majority of caregivers had less than a high school education (52%), had a median annual income of less than $10,000 (56%), and had received public assistance as an adult for an average of 12.4 years (SD = 7.6). The primary substance dependence diagnosis was for a hard drug (69.8%), either heroin or cocaine, and 49% of mothers were also diagnosed with alcohol dependence. The majority of caregivers reported chronic patterns of problematic substance use. Slightly more than half of the women had experienced a child welfare incident report prior to study entry, and 28% had at least one child placed in out-of-home care prior to study entry. During the four-year follow-up period, 45% had an incident report and 27% had a child in placement. As previously reported (Morgenstern et al., 2006), conditions were similar across demographic and clinical characteristics, except that women assigned to the Usual Care (UC) condition were more likely to be married and had higher baseline scores on the combined ASI alcohol and drug problem measure (see measures section 2.4.5).

2.1.2. Children—All biological or non-biological minor children that were under the care of the study participant caregivers at baseline were included in the child sample for this study. Children were identified via three data sources: (1) public assistance system records on the caregivers; (2) child welfare system records on the caregivers; and (3) caregiver self-report collected at the 15- and 24-month follow-up interviews. The public assistance system record was considered the primary data source, and included 1957 individuals listed as belonging to the public assistance cases of the study participants during the study time period. We excluded 484 unlikely children of participants (e.g., caregiver's siblings or sibling's children on the same case) with birthdates earlier than the plausible reproductive age of participants (i.e., birth before participant's 13^{th} year of life). We also excluded all individuals who were older than 18 years at the study start date ($N = 223$). We then matched individuals from the public assistance system database to the child welfare and self-report databases based on gender and date of birth. The final dataset included 888 children of the study participants.

The number of children per caregiver ranged from 1 to 11, with a mean of 3 children (SD = 2.0). Study conditions did not differ in the number of children per family. Of the total sample of 888 children, 63 (7%) were not born until after the study start date. The remaining 825 children ranged in age from under 1 year to 18 years at study entry, with a mean age of 9.4 years (SD = 5.0). No significant condition differences in child age at study entry were found.

2.2. Study Interventions

Women were randomly assigned to either ICM or UC, and could receive services during the 24-month study period. Case managers for both conditions were Master's and Bachelor's level addiction counselors. Study interventions and the monitoring of treatment fidelity and discriminability are described in further detail elsewhere (Morgenstern et al., 2006).

ICM is a manual-guided intervention that addressed barriers to treatment entry and provided needed services. Once clients entered treatment, case managers met with them weekly and assisted treatment facility staff by coordinating needed services. Clients also received vouchers as incentives for attending substance abuse treatment. It should be noted that the ICM intervention was focused on engaging participants in substance abuse treatment and helping them secure employment. The intervention was not designed to focus on child and family outcomes and did not include coordination with the child welfare system. Case management services were provided throughout the 24-month study period, with a tapering in contact frequency after the first 12 months.

Women assigned to the UC group met with a clinical care coordinator who reviewed their need for substance use treatment and made appropriate referrals where indicated. If clients failed to attend a first session of treatment, outreach was limited to several phone calls and letters. Clients had the option of returning for re-assessment during the 24 months of study participation.

2.3. Data Collection Procedures

2.3.1. Interview Data—Interview data were collected by research staff at entry into the study (baseline), and follow-up interviews were conducted at 3, 9, 15, and 24 months after the baseline assessment. Study procedures have been described previously (Morgenstern et al., 2006). Interview data used in the current study included baseline characteristics of the caregivers included in study analyses as covariates (education, substance use, mental health, legal involvement), as well as monthly self-report data on abstinence and provider-reported data on substance use treatment attendance. Follow-up rates for the baseline sample of 302 women were 82.4% at 3 months, 86.4% at 9 months, 89.1% at 15 months, and 94% at 24 months. No condition differences in follow up rates were found.

2.3.2. Administrative Data—Administrative data consisted of child welfare agency records on the caregivers obtained from the Department of Youth and Family Services (DYFS). As part of their participation in the original research study, women consented to the release of their DYFS records. Study participants were matched to DYFS case files based on a combination of first and last name, date of birth, social security number, and welfare case number. DYFS case files were searched for all study participants and case records were found for 208 (69%) participants documenting DYFS involvement before, during, and/or after the study period. The data included information on general case characteristics, incident reports, and living arrangements for each individual associated with each case.

For the purposes of the main study outcome variables, available child welfare data were limited to include the period of time beginning with the date of entry into the research study (ranged from 9/15/1999 to 4/10/2002) and ending 48 months after that date. Thus, four years of data were used to create the outcome variables for all participants. Data on incident reports and child placements were used in the analyses for the current study. For each child on each DYFS case, the agency records contained the dates that incident reports were made to the agency, as well as start and end dates associated with the child's living arrangements during the time their case was active. This information was used to calculate the number of incident reports per year of the four-year follow-up period, as well as whether each child spent any time in out-of-home care during each year. Participants with no DYFS records were assumed to have no involvement with the child welfare system.

2.4. Measures

2.4.1. Incident Reports—Incident reports made to the child welfare agency during the 48-month follow-up period served as one of the two main study outcomes. For each incident, the DYFS records included codes indicating the reason for the report (e.g., parental substance abuse, housing, domestic violence, child problem, parent mental health, referral for evaluation/assessment) and the type of maltreatment indicated (physical abuse, neglect, sexual abuse, institutional abuse). A dichotomous variable was created indicating whether any incident report was made in each year (0=no, 1=yes), and children without a DYFS case record were coded as having no incident reports in any year.

2.4.2. Out-Of-Home Placements—The DYFS records also included detailed information on living arrangements and out-of-home placements for all children. For the purposes of the current study, an out-of-home placement was defined as the child residing in

kinship care (placement with a relative or family friend), unrelated foster care (placement with a DYFS foster family with no prior connection to the child), adoptive care (placed in a DYFS-selected adoptive home, with adoption either pending or finalized), emergency foster care (short-term placement in a DYFS-approved foster family home for the care of children on an emergency basis), or other substitute care (other placement type due to parents' inability to care for the child). The placement data was transformed into a dichotomous variable indicating whether any out-of-home placement occurred in each year (0=no, 1=yes). Children without a DYFS case record were coded as having no placements in any year.

2.4.3. Abstinence—Abstinence data was gathered using the Timeline Follow Back method (TLFB: Sobell & Sobell, 1996). The TLFB is a structured interview technique that evaluates quantity and frequency of substance use, and has demonstrated good reliability and validity (Sobell, Brown, Leo, & Sobell, 1996). Data on use of any substances was collected for each day from the date of baseline and was used to construct a dichotomous measure of abstinence (abstinent or not) for each month of the two-year study period. Self-report abstinence data was verified using urine screens administered at all follow-up interviews. Agreement between urine screens and self-reported substance use (defined as any outcome other than a positive urine screen but a negative self-report) ranged from 89.3% to 95.5% (Cohen's kappa = .71–.84) (Morgenstern et al., 2006). For the purposes of the current study, the total number of months of abstinence in the first study year (range: 0–12 mos.) was summed to examine the association between abstinence and DYFS involvement.

2.4.4. Treatment Attendance—Case managers collected treatment attendance data weekly from the substance abuse treatment programs in which study participants were enrolled. Programs reported on the total number of days participants attended substance abuse treatment per week. For the current study, we used the total number of days participants attended any treatment during year 1 of the study (range: 0–305 days, mean days 48, SD = 61.0). ICM participants attended significantly more treatment in year 1 than UC participants ($t(298) = 4.0$, $p < .001$). Treatment attendance has been measured in this way in other studies (Friedmann, Lemon, & Stein, 2001; Zhang, Friedmann, & Gerstein, 2003).

2.4.5. Covariates—Caregiver baseline characteristics included in the analyses as covariates were education, substance use, legal involvement, and mental health. Education was coded dichotomously to indicate whether the study participant had graduated from high school. Substance use, legal involvement, and mental health were measured using the *Addiction Severity Index—Expanded Female Version* (ASI-F: Center for Substance Abuse Treatment, 1997). The ASI-F is a structured clinical interview that records demographics and asks respondents to report lifetime and current problems in physical health, employment and financial support, illegal activity, family and social relationships, psychiatric symptoms, and alcohol and substance use. It has shown solid psychometric properties (McLellan et al., 1992) and has been widely used with a variety of special populations, including substance-abusing parenting women (Center for Substance Abuse Treatment, 1997). ASI composite scores for drug and alcohol use (combined by taking the highest value), psychiatric symptoms, and legal involvement were included in the analyses as covariates.

2.5. Data Analysis

The outcome data for this study have a two-level nested structure: children are nested within families (i.e., there are multiple children per caregiver), and there are repeated measures over time per child. When data are nested, ordinary least squares regression produces biased

standard error estimates because it assumes all observations are independent and thus does not account for the correlated error terms produced by the clustered data (Hedeker, Gibbons, & Flay, 1994; Raudenbush & Bryk, 2002). In order to account for the dependence of observations produced by the nested data structure, we used multilevel mixed-effects logistic regression models to examine condition differences in yearly incident reports and child placements, controlling for covariates. These models use adaptive quadrature estimation and allow for the estimation of both fixed and random effects (Rabe-Hesketh & Skrondal, 2005). Separate models were run for the two child welfare outcomes (incident reports and out-of-home placements). Models examined effects of time, condition (0=UC; 1=ICM), and time-by-condition interactions, controlling for the following covariates, selected based on their well-established association with child welfare involvement: child age at study entry, caregiver baseline substance use, child welfare system involvement prior to study entry, caregiver education, caregiver baseline mental health, and caregiver baseline legal involvement.

We also conducted additional analyses to examine the influence of caregivers' attendance at substance use treatment and abstinence from drugs on child welfare outcomes. Because data on abstinence and treatment attendance were only available for the study period (Years 1 and 2), these analyses were limited to that time period. We used generalized estimating equation (GEE) models to examine the impact of abstinence and treatment attendance in Year 1 of the study on child welfare outcomes in Year 2. GEE is an extension of the General Linear Model that corrects variance estimates for correlated data and was used to account for the nesting of children within families (Zeger & Liang, 1986; Zeger, Liang, & Albert, 1988). Note that repeated measurement over time was not an issue in these analyses, as only Year 2 outcomes were examined. Separate models were conducted to examine the effects of abstinence and treatment attendance on each of the child welfare outcomes, for a total of four models. In each model, we tested the main effect of abstinence (or treatment attendance) as well as its interaction with condition. All analyses were conducted in Stata version 11.2 (Stata Corp, 2009).

3. Results

3.1. Description of Incident and Placement Rates and Types

Family-level incident rates for the entire study sample were 24%, 16%, 15%, and 12% for years 1–4 respectively. The proportions of children in placement for the full sample were 19% (Y1), 17% (Y2), 17% (Y3), and 16% (Y4). These figures suggest an overall decline in incident rates over time, with placement rates remaining relatively stable across the four year follow-up period. Similar patterns were found for each condition separately. Incident rates in the UC condition were 28%, 14%, 17%, and 16% for years 1–4 respectively, and in the ICM condition were 21% (Y1), 17% (Y2), 13% (Y3), and 9% (Y4). The proportions of children in placement in the UC condition were 23% (Y1), 19% (Y2), 18% (Y3), and 19% (Y4), and in the ICM condition were 15% (Y1), 15% (Y2), 16% (Y3), and 14% (Y4).

Across the four year follow-up period, 527 incidents were reported to DYFS for study families. Of these, 26% involved parental substance abuse. The most common type of maltreatment was neglect (78%), followed by physical abuse (16%) and sexual abuse (4%). Across all four years, the most common out-of-home placement type for the full sample was unrelated foster care (46% of placements). An additional 43% of placements were kinship care, 8% other substitute care, 2% adoptive care, and one person was placed in an emergency foster home. No condition differences were found for incident type or placement type.

3.2. Condition Differences in Yearly Incident and Placement Rates

Results of the multilevel models examining condition effects on child welfare outcomes are depicted in Table 1. Rates of both incident reports (OR = .82, 95% CI = .71–.95, $p < .01$) and child placements (OR = .77, 95% CI = .65–.90, $p < .01$) declined significantly over time across conditions. Prior DYFS involvement was a strong predictor of both incident reports (OR = 5.3, 95% CI = 3.8–7.6, $p < .001$) and child placement (OR = 15.7, 95% CI = 9.7–25.4, $p < .001$). Child age was also significantly associated with both incident reports (OR = .93, 95% CI = .90–.95, $p < .001$) and child placement (OR = .87, 95% CI = .84–.90, $p < .001$), with younger children having higher rates of both. Caregivers with more legal involvement at baseline were more likely to have a child in placement during the four year follow-up period (OR = 13.5, 95% CI = 1.4–127.5, $p < .05$). No other caregiver baseline characteristics (substance use, mental health, education) were associated with either child welfare outcome.

No condition effects were found for incident reports, suggesting that conditions did not differ over time in rates of incident reports to the child welfare agency. There was a significant main effect of condition for child placements (OR = .18, 95% CI = .06–.53, $p < .001$), as well as a significant condition-by-time interaction (OR = 1.5, 95% CI = 1.2–1.9, $p < .01$). See Figure 1 for a graph of the interaction for child placement. The interaction was probed by splitting the sample by condition and conducting separate multilevel mixed models to examine the effects of time on child placement in each condition. Results of these models revealed a significant decline in child placements over time for UC (OR = .78, 95% CI = .66–.91, $p < .01$) and a trend-level increase in placements for ICM (OR = 1.2, 95% CI = .99–1.4, $p < .10$). Looking at the graph suggests that there is a difference between the conditions in Year 1, with ICM having a lower rate of child placement than UC. However, this difference appears to degrade over time. Chi-square tests of condition differences in child placement in each study year support this conclusion, with a trend-level condition difference in Year 1 (χ^2 (1) = 3.04, $p = .08$) and no significant differences in Year 2 (χ^2 (1) = .97, $p = .32$), Year 3 (χ^2 (1) = .27, $p = .61$), or Year 4 (χ^2 (1) = 1.61, $p = .20$).

3.3. Impact of Treatment Attendance and Abstinence on Child Welfare Outcomes

As described above, GEE models were used to examine the potential effects of caregiver treatment attendance and abstinence on child welfare outcomes. These analyses were conducted to determine whether the increased attendance at substance abuse treatment programs and increased abstinence associated with receiving the ICM intervention (Morgenstern et al., 2006) had downstream impacts onto broader areas of participants' lives, namely child welfare system involvement. We examined treatment attendance and abstinence in Year 1 as potential predictors of incident reports and child placements in Year 2. Additionally, we examined interactions between treatment attendance and abstinence and study condition to determine whether the effects of these variables on child welfare outcomes differed across conditions. No significant main effects of treatment attendance or abstinence were found for either incidents or placements. There was a significant abstinence-by-condition interaction predicting Year 2 incident reports (OR = .84, 95% CI = .72–.97, $p < .05$). To probe this interaction, abstinence effects were examined separately by condition. More months of abstinence in Year 1 predicted a lower likelihood of an incident report in Year 2 for ICM clients only (OR = .88, 95% CI = .79–.98, $p < .05$). For UC clients, the finding was in the opposite direction, with more months of abstinence marginally associated with a greater likelihood of an incident report in Year 2; however, the association was not significant. No other effects of abstinence or treatment attendance were found for either child welfare outcome.

4. Discussion

This study examined the impact of intensive case management on child welfare system involvement in a sample of substance-dependent parenting women participating in a welfare demonstration project that compared the impact of ICM to usual screen-and-refer procedures on engagement in substance abuse treatment, abstinence, and employment. Previous studies on this sample established the success of ICM on increasing treatment engagement, abstinence, and employment among participants (Morgenstern et al., 2006; 2009). The current study examined whether the positive effects of ICM extended to the recipients' involvement with the child welfare system. Thus, this study tested whether ICM had broader effects on an area of participants' lives that was not a direct target of the intervention. Findings revealed minimal effects of ICM and abstinence and no effects of substance abuse treatment attendance on child welfare system involvement.

4.1. Impact of ICM on Child Welfare Outcomes

As expected, rates of child welfare system involvement were high in the study sample, with approximately half of families having either an incident report or a child in placement during the four-year follow-up period. Study findings demonstrate reductions in incident reports across the follow-up period in both conditions, with no clear benefit of ICM emerging. ICM did appear to have an initial impact on child placements during the first year of the study with a lower proportion of children in placement in the ICM condition compared to UC; however, this effect lessened over time, so that in later years, little difference between conditions was observed. The ICM intervention was designed to be most intensive in the first year, with a decrease in client contact with the case managers in the second year. Thus, the Year 1 effect of ICM on child placements may have been due to the higher levels of contact with the case managers during that year. Other studies have found similar diminishing effects of case management on outcomes associated with decreasing intensity of intervention (Jansson et al., 2003; Vaughan-Sarrazin, Huber, & Hall, 2001).

Overall, the ICM intervention appeared to have little direct impact on child welfare outcomes in the study sample. The small impact that was found can likely be attributed to the close contact with the case managers that occurred during the first year of the study. The ICM intervention provided in this study was focused primarily on engaging women in substance abuse treatment and helping them achieve abstinence and secure employment. Thus, child welfare outcomes were not specifically targeted by the case managers, and no direct coordination with the child welfare system was provided. While ICM was successful in helping clients achieve positive outcomes in the areas specifically targeted by the case managers, there were no downstream effects onto child welfare outcomes. These findings are consistent with the growing body of literature demonstrating the need for matching services to clients' specific needs in order to maximize impact (Friedmann et al., 2004; Marsh et al., 2009; Smith & Marsh, 2002). Prior studies that did find positive impacts of case management services on child welfare outcomes tested models of case management that were developed specifically for child welfare populations, included direct coordination with the child welfare system, and aimed to break down specific barriers between the child welfare and substance abuse treatment systems (Moe, 2006; Ryan et al., 2006).

4.2. Other Predictors of Child Welfare Outcomes

Prior involvement with the child welfare system was the strongest predictor of both incident reports and child placements. This finding is consistent with studies that have found high rates of child maltreatment recurrence, as well as multiple placements and lower likelihood of reunification in substance-abusing families (Brook & McDonald, 2009; Fuller & Wells, 2003; Young et al., 2007). Many of these families may be stuck in an ongoing cycle of

substance abuse, failure to engage or remain in treatment, failure to retain employment, and consequent inability to adequately care for their children. Surprisingly, caregiver baseline substance use and mental health did not predict child welfare outcomes in the study sample. A large body of research has demonstrated negative effects on parenting associated with parental substance use and mental health problems, as well as a higher likelihood of being reported to the child welfare system (Stromwall et al., 2008). Thus, the lack of association between parental baseline psychological problems and the child welfare outcomes was unexpected. Because the sample as a whole had moderate to severe levels of psychological problems, baseline variation may not meaningfully predict longer-term involvement with the child welfare system in this sample. It is possible that the relation among parental problems and child welfare system involvement unfolds over time in ways that are obscured by relying solely on baseline measures of these problems. We plan to examine this possibility in future studies.

4.3. Impact of Caregiver Treatment Attendance and Abstinence on Child Welfare Outcomes

Caregiver treatment attendance and abstinence appeared to have little overall impact on child welfare outcomes in this study. This finding is consistent with other studies that have not found effects of substance abuse treatment on child welfare outcomes (Barth et al., 2006; Rittner & Dozier, 2000). The lack of relationship between treatment attendance and child welfare outcomes may be partly explained by conflicting agendas between the substance abuse treatment system and the child welfare system. The time it takes to complete treatment and achieve sobriety often conflicts with laws requiring expedited timelines for achieving permanent placements for children residing in out-of-home care (Osterling & Austin, 2008). Thus, women may have been less motivated to stay in treatment for long periods of time for fear of their children being placed permanently with other caregivers. Additionally, previous research suggests that treatment attendance has a positive impact on child welfare outcomes only when the treatment programs include comprehensive services (Grella et al., 2009). Our data did not include measures of the type and quality of treatment programs clients attended; thus, it is possible that a stronger relation between attendance and child welfare outcomes may have been found for those women attending comprehensive programs.

Study Limitations

The results of this study must be considered in light of several limitations. First, the use of dichotomous data for the child welfare outcomes did not allow us to examine more fine-grained patterns of change in the number of incidents and placements over time. Second, no measure of child well-being was available. Thus, it is unknown whether the child welfare outcomes examined in this study actually translated into more positive developmental outcomes for children. Child well-being has received increased attention recently as an important outcome for child welfare agencies and is monitored as part of the Child and Family Service Reviews (McCarthy, Rider, Fawcett, & Sparks, 2008). Future studies on case management for child-welfare involved families should examine child well-being outcomes in addition to the child welfare outcomes included in the current study. Finally, the ICM intervention was designed to focus specifically on treatment engagement, abstinence, and employment. While case managers were encouraged to assist clients with problems in other areas, no specific coordination with the child welfare system was mandated. Thus, evaluating the impact of ICM on child welfare outcomes that were beyond the reach of what the intervention was designed to target may have limited our ability to detect significant effects.

Conclusions and Implications of Findings

Despite its limitations, this study provided a strong test of whether broad benefits of case management beyond those directly related to substance abuse treatment can be achieved for

the complex population of multi-problem substance-dependent parenting women involved with multiple systems. Strengths of the study included randomization to condition, high follow-up rates, substance use outcomes confirmed by biological reports, and child welfare administrative data received directly from the state. Our findings support past research that has found that helping parenting women overcome their substance use problems in the absence of more comprehensive services addressing child welfare issues is not sufficient to positively impact child welfare outcomes (Marsh et al., 2006; Marsh et al., 2010; Smith & Marsh, 2002). Given the multiple complex problems cutting across systems experienced by this group of women, a much greater level of coordination between systems and particular focus on child welfare issues is required for broad positive outcomes to be achieved. Even prior to the results of this evaluation, the state of New Jersey put into place a number of child welfare reform initiatives aimed specifically at coordinating services across the child welfare and substance abuse treatment systems. These initiatives included increased access to substance abuse services for DYFS-involved women and children with wrap-around services, direct coordination across systems, and case conferencing consortiums to address fragmented services. While outcome data from these initiatives are not yet available, other studies of child welfare samples have shown that substance-abusing families achieve more positive substance abuse and child welfare outcomes when they receive comprehensive, integrated services that address their co-occurring problems (Choi & Ryan, 2007; Grella et al., 2009; Marsh et al., 2006; Ryan et al., 2006; Stromwell et al., 2008; Testa & Smith, 2009). Case management has been identified as a key ingredient in integrated models as an “access service” that reduces barriers and promotes linkages across systems and access to needed services (Marsh et al., 2010). Thus, the service models initiated as part of child welfare reform in New Jersey will likely have greater success in achieving broad impacts in multiple domains due to their focus on reducing fragmentation of care across systems by coordinating services across multiple stakeholders, while specifically focusing on child welfare outcomes in addition to substance abuse outcomes. It is important to note, however, that fostering integration across disparate governmental agencies and service providers is exceedingly challenging and that simpler approaches such as ensuring drug abusing mothers receive substance abuse treatment may be more feasible to implement. As findings of this study illustrate, such simpler approaches may fall short of achieving expected outcomes in this population.

Highlights

- Minimal impact of intensive case management and abstinence on child welfare outcomes.
- No effect of substance abuse treatment attendance on child welfare outcomes.
- Need for more comprehensive coordinated services to address multiple problems.
- Need for direct coordination with child welfare system.

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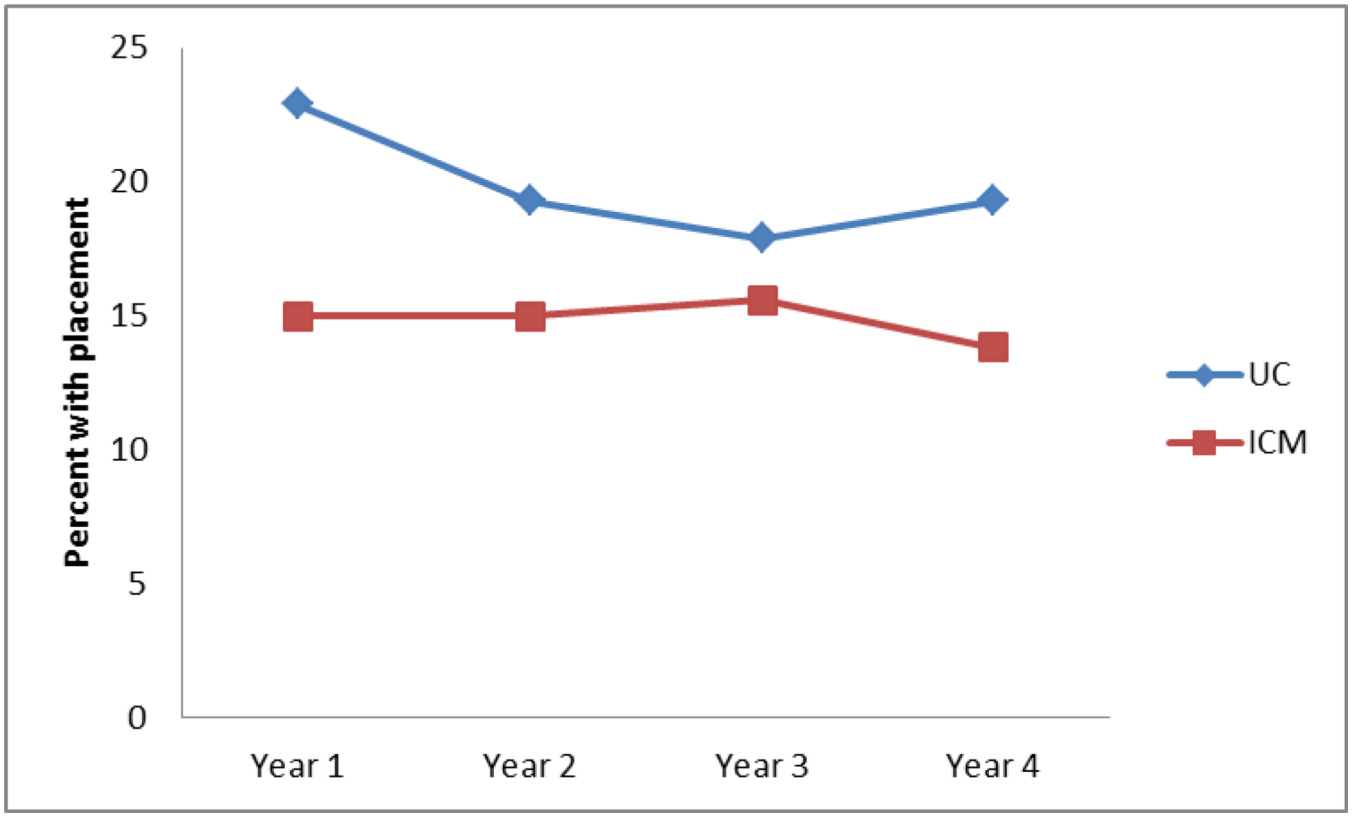

Figure 1.
Condition differences in the proportion of families with a child in placement per year.
Note. UC = Usual Care; ICM = Intensive Case Management. The points on the graph illustrate the difference between conditions in the proportion of families with a child in placement in each study year. The lines illustrate change over time in placement rates within condition.

Table 1

Mixed-effects modeling of condition differences in yearly incident reports and yearly child placements.

	Any Incident Report (1=any report)	Any Time in Placement (1=any placement)
	OR (95% CI)	OR (95% CI)
Time	.82 (.71–.95) **	.77 (.65–.90) **
Any prior incident/placement	5.3 (3.8–7.6) ***	15.7 (9.7–25.4) ***
Baseline substance use	1.1 (.48–2.5)	.21 (.03–1.4)
Child age	.93 (.90–.95) ***	.87 (.84–.90) ***
Baseline mental health	1.01 (.86–1.2)	1.0 (.72–1.5)
Baseline legal involvement	1.1 (.36–3.1)	13.5 (1.4–127.5) *
Less than high school education	.83 (.55–1.2)	1.1 (.45–2.7)
Condition (1=ICM)	1.3 (.71–2.5)	.18 (.06–.53) ***
Condition×Time	.81 (.66–1.0)	1.5 (1.2–1.9) **

* $p < .05$,

** $p < .01$,

*** $p < .001$