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Identifying Predictors of Treatment Outcomes in Substance-Abusing Parents in a Recovery Case Management Program in Connecticut

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Identifying Predictors of Treatment Outcomes in Substance-Abusing Parents in a Recovery Case Management Program in Connecticut

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Introduction

Parental substance abuse is a leading cause of child neglect and maltreatment in the United States. Parental substance abuse is a contributing factor for more frequent and longer out-of-home placements (Semidei, Radel, & Nolan, 2001; Smith, Johnson, Pears, Fisher, & DeGarmo, 2007). Unfortunately, relatively few parents with substance abuse or dependence problems are required to attend and complete drug and alcohol abuse treatment programs. In Connecticut, numerous barriers exist for caregivers seeking substance abuse treatment services, including access to treatment programs and differing perspectives and timeframes among the various state agencies involved with parental substance abuse. Family drug treatment courts were developed in the United States in order to address the challenges parents with substance use disorders encounter after becoming involved with the child welfare system (Dauber, Neighbors, Dasaro, Riordan, & Morgenstern, 2012; Marsh & Smith, 2011). Family drug courts have proven to be an effective model to improve treatment outcomes (Oliveros & Kaufman, 2011). The State of Connecticut, which has not adopted family drug courts to address the issue of parental substance abuse in the child welfare system in large part because of perceived costs to the judicial system, began in 2008 seeking a solution of its own to rectify this problem.

In 2008, the Departments of Children and Families (DCF) and Mental Health and Addiction Services (DMHAS) and the Connecticut Judicial Branch, responsible for the family court system, joined together to develop Connecticut's Recovery Specialist Voluntary Program (RSVP). RSVP is a recovery case management program designed to improve the safety and permanency of children removed from their home due to parental or guardian substance abuse. RSVP developed as an extension of DCF's Substance Abuse Family Evaluation (Project SAFE) Program, which was created to centralize substance abuse screening and referrals for child

welfare cases with families affected by substance abuse. RSVP offers parents who have been issued an Order of Temporary Custody (OTC), and have had their child(ren) removed from their home due to parental substance abuse problems, recovery support services to improve child permanency and family reunification.

This study will determine the extent to which parents enrolled in RSVP experience improvements in functional outcomes after three months of enrollment in the program. In addition, this analysis will determine if there are any characteristics of RSVP clients that are predictors of treatment outcomes in this intensive case management program. Knowledge of indicators of substance abuse treatment success may lead to program refinements that will contribute to improved treatment outcomes and child permanency decisions. Moreover, better understanding of the factors associated with treatment outcomes may lead to more individualized treatment programs with greater effect and cost efficiency.

Background

Substance abuse and dependence is a prominent issue affecting many adults in the United States. In 2013, approximately 21.6 million adults (8.2% of the total population) aged 12 and older met the Diagnostic and Statistical Manual of Mental Disorders, 4th edition (DSM-IV) criteria for substance dependence or abuse (National Survey of Drug Use and Health (NSDUH), 2013). The DSM-IV, which was developed by the American Psychiatric Association, contains criteria used to define psychiatric disorders, including substance use disorders (Hasin, Hatzenbuehler, Keyes & Ogburn, 2006). In order to be given a diagnosis of substance dependence, an individual must display a maladaptive pattern of substance use that causes impairment or distress and meet at least three of the following criteria within 12 months: need for

increased amounts of substance(s) to achieve desired effect or for greater length of time than intended, develop withdrawal syndrome associated with substance use, inability to successfully decrease use, loss of occupational or social activities due to use, spend large amounts of time to obtain, to use or to recover from the effects of use or persistent use despite having knowledge of the negative effects of substance use (Hasin et al., 2006). In 2013, an estimated 2.6 million Americans diagnosed with substance dependence or abuse reported use of both alcohol and illicit drugs (NSDUH).

In general, the rate of substance use disorders among adults 18 and over in Connecticut is on par with the national averages. According to the NSDUH, the rate of alcohol dependence or abuse among Connecticut residents 18 years and older during of 2012 and 2013 was 7.48%, slightly higher than the national average of 7.08%. The proportion of Connecticut residents 18 and over with illicit drug abuse and dependence was 2.4% in Connecticut compared to 2.6% nationally. The combined rate of alcohol and drug abuse and dependence was 8.65% in Connecticut in 2012-2013 compared to 8.5% in the United States. These rates have remained relatively constant over time. According to historical NSDUH data (2004), the prevalence of substance abuse and dependence was 8.2% in 2003 compared to 7.48% in the most recent NSDUH report. Certain subgroups of the population, including men, young adults, persons on public assistance, and those involved with the criminal justice system, have found to be at increased risk for substance abuse and dependence (Babor & Ungemack, 2001).

Just as the rates of illicit drug and alcohol abuse and dependence have remained relatively stable over time, the implications of parental substance abuse for their children have remained as well. More than 8 million children in the United States have at least one parent abusing an illegal substance (Dunn et al., 2002). While estimates of the percentage of children in the child

welfare system affected by parental substance abuse vary, it has become clear that children in the welfare system are disproportionately at risk of having substance-abusing caregivers. According to a report of the U.S. Department of Health & Human Services (DHHS) (2010), parental substance use may be responsible for up to 75% of referrals to child protective services. Other studies have estimated that 60% to 70% of children who have been placed in foster care have a parent with a substance use disorder (Osterling & Austin, 2008; Young, Boles, & Otero, 2007). Yet, despite the projected estimates of substance-involved welfare cases, there is reason to believe that parental substance abuse is under-identified by child welfare workers. An analysis of DCF OTC cases from January 2006 to December 2009 revealed that 32% of child welfare cases in Connecticut were the result of parental incapacity due to substance abuse or dependence (Ungemack, Restrepo-Ruiz, Sienna & Duan, 2013). This is very likely an under-estimate of the actual number of cases.

Parental substance abuse and dependence negatively impact children and their well-being. Parental substance abuse has been linked to a two-fold increase in the likelihood of child maltreatment (Walsh, MacMillan, & Jamieson, 2003). Children with substance abusing parents have a greater likelihood of exhibiting emotional and behavioral problems (Chuang, Wells, Bellettiere, & Cross, 2013). Moreover, these children are at risk for impaired growth and development, as well as physical harm (Maluccio, & Ainsworth, 2003). Children with substance-abusing caretakers are more likely to face economic deprivation, family instability, poor parenting skills (Magura & Laudet, 1996), and domestic violence (VanDeMark et al., 2005). Data from Connecticut's child welfare system indicate that children for whom substance abuse was identified as a reason for removal had longer placements in foster care than children from families without substance abuse (425 days compared to 377 days) and children from

substance abuse involved families were also less likely to be reunified with their parents (35% compared to 42%) (Ungemack et al., 2013).

Parents with a history of substance abuse are more likely to have a co-occurring mental illness which further increases their risk for termination of parental rights (Conners et al., 2004). According to the National Survey of Substance Abuse Treatment Services, almost half (45%) of individuals who enter substance abuse treatment are diagnosed with a co-occurring mental health problem (SAMSHA, 2013). According to the National Comorbidity Study, an estimated 41% to 65% of participants with a substance use disorder during their lifetime also had a history of at least one mental health disorder (Kessler et al., 1996). Similarly, the 2001-2002 National Epidemiologic Survey on Alcohol and Related Conditions revealed that 60% of adults seeking treatment for a current substance use disorder had at least one concurrent mood disorder (Grant et al., 2004). Mood disorders have been shown to increase the risk of substance abuse (Kessler, 1997). Unfortunately, individuals with co-occurring substance abuse and severe mental illness have poorer treatment outcomes compared to clients with a single disorder (Compton, Cottler, Jacobs, Ben-Abdallah, & Spitznagel (2003); Merikangas et al., 1998).

Few parents with a substance use disorder enter and complete substance abuse treatment (Oliveros & Kaufman, 2011). In 1998, the US General Accounting Office (GAO) reported that of the estimated 64% of parents with substance use problems who were referred for an initial treatment evaluation, only 13% actually completed treatment. There may be a variety of reasons for lower engagement in substance abuse treatment services, especially for women, including: increased barriers for pregnant women, fear of losing parental rights, fear of criminalization or legal consequences, and need for mental health services (Greenfield, 2007). Once in treatment, women are at a higher risk of dropping out (Greenfield, 2007). One study found that substance-

abusing parents, specifically mothers, involved with child welfare tend to have less severe addiction problems but greater service needs due to a history of trauma and violence and greater financial instability (Grella, Hser, & Yu, 2006). Parents, who enter substance abuse treatment typically, spend more days in treatment due to their tremendous need for support during recovery (Green, Rockhill, & Furrer, 2007). Therefore, coordinated recovery and support services are required to effectively address the complex challenges encountered by this high risk population.

The benefits of treatment for the individual parent and the family are clear. Treatment completion has been found to be the strongest predictor of permanent placement for the child and those mothers who completed substance abuse treatment were nine times more likely to be reunified with their children (Green et al., 2007).

Predictors of Treatment Outcomes

Various characteristics of parents with substance abuse or dependence have been identified as predictors of substance abuse treatment response. Age, specifically older age, has been shown to be one demographic characteristic known to be a positive predictor of treatment completion (Choi & Ryan, 2006; Green, Polen, Dickinson, Lynch, & Bennett, 2002; Nellori & Ernst, 2004). With respect to marital status, married individuals are more likely to complete treatment (Green et al., 2007; Knight, Logan, & Simpson, 2001; Mateyoke-Scrivner, Webster, Staton, & Leukefeld, 2004) than single or divorced adults (Guiterres, Russo, & Urbanski, 1994) with substance abuse problems. On the other hand, having a spouse with drug abuse or dependence problems has been shown to be a negative predictor of abstinence (Hser, Huang, Teruya, & Anglin, 2003). Furthermore, substance abusing parents who lack social support, primarily individuals who experience social isolation, tend to have greater dropout and relapse

rates (McLellan, Alterman, & Metzger, 1994; Carroll, Power, Bryant, & Rounsaville, 1993; Siddall & Conway, 1988).

As mentioned previously, criminal justice issues and co-occurring mental health problems play an important role in parental substance abuse. Needless to say, the treatment outcomes of parents involved with the child welfare system may be impacted by one's legal problems. Knight et al. (2001) found that mothers without an arrest six months prior to beginning substance abuse treatment were more likely to be reunited with their children. Alternatively, parents with pending legal problems (Choi & Ryan, 2006) or severe legal issues (Grella, Needell, Shi, & Hser, 2009; Lang & Belenko, 2000) were more likely to complete treatment. Co-occurring mental health illness is also an important predictor of treatment outcomes in parents with substance abuse issues. Given the high prevalence of co-occurring psychiatric disorders people with substance abuse problems, parents with a comorbid mental health illness and greater psychiatric symptoms at the time of entry into a treatment program, had worse treatment outcomes than those without psychiatric problems (Carroll et al., 1993; Green, Rockhill, & Furrer, 2006; Grella et al., 2009; McLellan et al., 1994).

Currently, there are conflicting results for demographic characteristics, such as race and gender, as predictors of treatment outcomes for parents with substance use issues. Some studies identified gender as a positive predictor of treatment completion (Choi & Ryan, 2006; Hser et al, 2003), while others determined no difference between genders (Green, Polen, Lynch, Dickinson, & Bennett, 2004; Greenfield et al., 1998). Similarly, race has been shown to be a predictor of treatment retention and completion in several studies (Choi & Ryan, 2006; Mateyoke-Scrivner, Webster, Staton, & Leukefeld, 2004) but others show there is no difference between races (Roberts & Nishimoto, 1996). Oftentimes, Caucasians have greater completion and retention

rates than substance abusers of other races or ethnicities (Choi & Ryan, 2006; Mateyoke-Scrivner, Webster, Staton, & Leukefeld, 2004). Yet, one study found African American mothers with children placed in foster care were more likely to complete treatment than mothers of other racial/ethnic groups (Scott-Lennox, Rose, Bohlig, & Lennox, 2000). Another study found African American mothers were more likely to enter treatment but had greater dropout rates than their Caucasian counterparts (Messer, Clark, & Martin, 1996).

The Recovery Specialist Voluntary Program

For the State of Connecticut, RSVP has become a promising model of a recovery-oriented system of care for parents/caregivers whose substance abuse problems have put the health and welfare of their families at risk. The main goals of RSVP, which targets parents who are at risk of losing their parental rights due to substance use problems, are to: provide a recovery-oriented integrated system of care for families in the child welfare system; improve communication, data sharing and problem-solving among child welfare, judicial and substance abuse treatment systems to better meet the needs of these parents; increase substance-abusing parents' access, engagement and retention in treatment; provide recovery management supports to help parents negotiate the various service systems; increase parents' recovery capital to help sustain their recovery from substance abuse; increase the timeliness of child permanency decisions; and increase family reunification rates.

Since 2009, RSVP has been implemented in seven DCF and Judicial service locations in Connecticut: Bridgeport, Norwalk, Hartford, Manchester, New Britain, Norwich and Willimantic. The target population for RSVP consists of parents who have had their child(ren) removed by the Judicial Court and were issued an Order of Temporary Custody (OTC). Parents are eligible for RSVP if the parent was issued an OTC, parental substance abuse was identified

as one reason for their child(ren) being removed from the household, the parent(s) had a scheduled OTC hearing in one of the designated RSVP sites, and there was potential for reunification. Potential participants were excluded from the study if they were incarcerated for 30 days or more after being issued an OTC or the OTC issued to a parent was not sustained.

Once a parent is issued an OTC, a court hearing is scheduled. At the OTC court hearing, the Court Services Officer (CSO) informs an eligible parent/caregiver was informed and his/her attorney about the availability of RSVP. The parent, with his/her attorney's counsel, has the opportunity to make a voluntary decision whether or not to participate in the program. If the parent agrees to participate in RSVP, the client signs an Agreement to Participate which becomes a court order and then immediately beings receiving services from a Recovery Specialist. Recovery Specialists, employees of ABH, help clients connect to substance abuse treatment and provide support services, including motivational interviewing to help the client engage in treatment, recovery coaching and advocacy. The Recovery Specialist will work with a client for up to nine months, monitoring the client's participation in treatment and recovery, conducting random alcohol/drug screening and attending court case conferences and DCF treatment planning meetings. Case conferences are mandated by court order to monitor progress and identify potential or existing barriers to treatment and their resolution to support the recovery process.

An evaluation of the first three years of the RSVP program revealed that the majority of RSVP clients accessed and engaged in substance abuse treatment. Eighty-five percent of RSVP clients entered treatment and 75% successfully completing treatment (Ungemack et al., 2014).

The purpose of this research study is to identify demographic characteristics and/or factors that predict treatment outcomes, specifically change in functioning, of RSVP clients. It is

hypothesized that age, family support, and co-occurring problems such as mental illness, violence and/or trauma will be predictors of clients' engagement and outcomes in RSVP. This research question may contribute to a better understanding of how a recovery support program can meet the needs of substance-using parents involved in the child welfare system.

Method

This study was based on a secondary analysis of service and administrative data collected for RSVP participants who enrolled in the program between May 2009 and June 2014. A total of 531 substance-abusing parents who were issued an OTC voluntarily agreed to participate in RSVP.

Data used for this analysis were retrieved in accordance with a Memorandum of Agreement entered into by DCF, DMHAS, the Judicial Branch, and ABH, to monitor RSVP outcomes across the different agencies involved in the program. Recovery Specialists, case manager/advocates employed by ABH, collected information from each RSVP enrollee at an initial intake assessment and at monthly intervals until the client was discharged from the program.

Variables

As shown in Figure 3 (Appendix C), the RSVP intake information sheet used in this study was collected baseline demographic information, criminal, mental health and trauma history, family history, pregnancy status, and spirituality from each participant. The intake form also requested information about prior substance abuse treatment, client goals, client support, strengths, and information about the number, ages, and living situation of their children. Data from the intake form and a monthly functional assessment were gathered by the RSVP Recovery

Specialists when the parents/caregivers were admitted into the program and then at monthly intervals until their discharge were used in the analysis.

Treatment outcomes in this study were evaluated using data measuring six functional domains at two time-points – baseline intake and 3 month follow – up were analyzed. The functional domains investigated in this study were substance abuse, mental health/trauma needs, treatment participation, self-care activities for daily living, interpersonal relationships, and legal conduct. As displayed in Figure 2 (Appendix B), the client's functional level in each was measured using a four-point ordinal scale ranging from no problem (1), mild problem (2), moderate problem (3) and severe problem (4) for each domain. During the monthly evaluations, participants were monitored for specific self-reported behavioral changes in each functional domain.

Data Analysis

SPSS (Version 21.0) was used for all statistical analyses. The dependent variables in this study were the 3 month treatment outcome for each of the six measured domains. The independent variables used for statistical analyses conducted in this experiment were: age, gender, race, marital status, living situation, criminal justice involvement (current probation or parole), personal and family history of mental health disorders and trauma or violence history. Descriptive statistics of the independent and dependent variables were computed for all RSVP clients. Cross-tabulations and Chi-square were run on RSVP discharge outcomes at baseline and 90 days to assess the characteristics of successful RSVP participants. A paired *t* test was conducted to evaluate change in the treatment outcomes measured by the functional domains. Lastly, a repeated measures ANOVA was used to identify predictors of treatment outcomes among RSVP clients. An alpha level of 0.05 was used for all statistical tests.

Results

Sample Description

As displayed in Table 1, 76.1% of the 531 participants enrolled in RSVP were women. The average age of RSVP clients was 33.27 years, ranging from 19 to 59 years of age. Study participants were ethnically diverse; 26.6% identified as Caucasian, 12.4% were African American, and 11.9% were Hispanic. Few parents reported a two-parent household and only 15.1% of RSVP clients were married and 7.5 % lived with their significant other. The remainder was divorced, widowed, or never married.

Table 1. Demographic Characteristics of RSVP Participants: All Sites Combined, May 2009 – June 2014 (N=531)

Age (Years)	
18-24	9.6%
25-34	52.4%
35-44	28.1%
>45	10.0%
Total	**100.0%**
Gender (N=531)	
Female	76.1%
Male	23.9%
Total	**100.0%**
Race (N=270)	
African- American	24.4%
Caucasian	52.2%
Hispanic	23.3%
Total	**100.0%**
Marital Status (N=498)	
Married	15.1%
Divorced, Separated, Widowed	12.9%
Cohabiting	8.0%
Never Married	64.1%
Total	**100.0%**
Current Living Environment	
Own Home	3.8%
Rent	76.0%
Shelter/Supportive Housing	10.9%
Homeless	5.3%
Other/Unspecified	4.0%
Total	**100.0%**

Nearly half of RSVP clients experienced unstable living situations at the time of enrollment. Approximately 30% of RSVP participants lived with a family member or friend while 16.2% were living in temporary housing or were homeless.

As shown in Tables 2 and 3, many RSVP participants had a criminal history, history of trauma or violence, or co-occurring mental health problem were common among RSVP participants. Sixty-four percent of clients reported being arrested in the past, including 27.1% with pending charges and 13.8% currently on parole or probation. In addition, 22.6% of RSVP enrollees had a history of violence, 37.7% reported a positive history of domestic violence, and 33.1% reported a history of trauma. Furthermore, 52.2% of RSVP clients admitted to having a history of a mental health disorder and 33.1% were currently receiving mental health services at the time of enrollment.

Table 2. Co-Occurring Problems of RSVP Participants: All Sites Combined, May 2009 – June 2014 (N=531)

Criminal History (Previous Arrest)	
Yes	64.4%
No	35.6%
Total	**100.0%**
Current Legal Status	
None	51.8%
Parole	0.6%
Pending Charges	27.1%
Probation	13.2%
Total	**100.0%**
History of Violence	
Yes	22.6%
No	77.4%
Total	**100.0%**
History of Domestic Violence	
Yes	37.7%
No	62.3%
Total	**100.0%**
History of Trauma	
Yes	33.1%
No	66.9%
Total	**100.0%**

Table 3. Co-Occurring Mental Health Problems of RSVP Participants: All Sites Combined, May 2009 – June 2014 (N=531)

History of Mental Health	
Yes	52.2%
No	47.6%
Total	**100.0%**
Family History of Mental Health	
Yes	44.6%
No	55.4%
Total	**100.0%**
Currently Receiving Mental Health Services	
Yes	31.3%
No	68.7%
Total	**100.0%**

RSVP Discharge Outcomes

Twenty-nine percent of RSVP clients fully completed the program and/or were reunited with their child(ren). Nearly 10% of parents enrolled in RSVP who were not reunited with their child(ren) had a final permanency decision made by the end of the program. Alternatively, forty-one percent of participants exited RSVP prematurely due to noncompliance, refusal of RSVP services, incarceration, or other reasons such as incarceration, relocation, and death.

RSVP Treatment Outcomes

A positive discharge status reflected improvements in functioning, as well. Fifty-seven percent of RSVP participants remained in RSVP for at least 90 days. The data in Table 3 below indicate that clients who remained in RSVP for at least 90 days showed statistically significant improvements in functioning across all domains.

Table 3. Change in Functional Level of RSVP Clients from Baseline to 90 Days: All Sites Combined, May 2009 – June 2014, (N = 303)

Functional Domain	Baseline	90 Days	Statistical Significance
Substance abuse	2.89	2.35	p<0.001
Mental health/trauma history	2.44	2.34	p<0.001
Participation in treatment	2.39	2.16	p<0.001
Self care/activities of daily living	1.97	1.80	p<0.001
Interpersonal relationships	2.58	2.31	p<0.001
Legal status	2.42	2.32	p<0.001

Note: Level of care scale ranges from 1 (Not a Problem) to 4 (Severe Problem)

A one-tailed paired samples *t* test revealed that RSVP participants who remained in the program three months or more showed significant improvements in the six measured functional domains (substance use, treatment participation, mental health, self-care, relationships, and legal conduct) 90 days after enrolling in RSVP. As shown in Table 4, participation in RSVP for 90 days resulted in a significant decrease in substance use from baseline (M=2.9, SD=0.7) to 90 days (M=2.4, SD=0.8) (Difference (M = 0.5, SD = 0.9)) $t(301) = 10.88$, $p < 0.001$, one-tailed. During the same time frame, RSVP clients significantly increased utilization of treatment services with less support, achieved greater mental health stability, engaged in more self-care activities, improved interpersonal relationships, and their legal status.

Table 4. Treatment Outcomes of RSVP Clients by Functional Domain from Baseline to 90 Days: All Sites Combined, May 2009 – June 2014, (N = 303)

Variable	Baseline				90 Days				*t*	df	*p* (1-t)	95% CI
	N	M	SD	Sk	N	M	SD	Sk				
Substance Use	302	2.9	0.7	-0.1	302	2.4	0.8	0.6	10.88	301	<.001	[0.44-0.63]
Treatment Participation	304	2.5	0.7	0.1	304	2.2	0.8	0.6	4.51	303	<.001	[0.13-0.33]
Mental Health	302	2.5	0.8	-0.3	302	2.3	0.8	-0.0	2.70	301	0.004	[0.03-0.18]
Self-Care/ADLs	302	2.1	0.8	0.1	302	1.8	0.7	0.4	4.88	301	<.001	[0.11-0.25]
Relationships	303	2.6	0.7	-0.5	303	2.3	0.8	0.2	7.06	302	<.001	[0.19-0.34]
Legal Conduct	303	2.5	0.9	-0.1	303	2.3	0.8	0.2	2.86	302	0.030	[0.03-0.18]

Predictive Factors in RSVP Treatment Outcomes

A preliminary analysis comparing treatment outcomes for each measured functional domain by gender showed no significant difference from baseline to 90 days for any of the six domains, and thus, the gender variable was not included in the main analysis. A preliminary analysis including age and marital status resulted in a significant difference between baseline and 90-day values, and therefore, age was used in subsequent analyses.

A repeated measures ANOVA was conducted to determine the extent to which the positive change in the treatment outcomes of RSVP clients at 90 days was due to certain demographic or baseline characteristics of the participants. In doing so, the repeated measures ANOVA identified predictors of treatment outcomes in RSVP participants in five of the six measured functional domain at 90 days.

The repeated measures ANOVA showed that, for RSVP clients, there was a differential change in substance use, as a function of age, such that the older the subject, the greater the

reduction in substance use ($p = 0.012$). Additionally, there was a significantly greater decline in substance use for participants who were receiving mental health services at intake ($p = 0.050$). As indicated in Table 4, a significant change in treatment participation was identified as a function of family mental health history and history of parole or probation, such that individuals with a positive family history of mental health disorder(s) or history of parole or probation resulted in greater treatment participation ($p = 0.048$ and $p = 0.029$), respectively. There was a differential change in RSVP clients' mental health status from baseline to 90 days as a function of age ($p = 0.009$), marital status ($p = 0.048$), and history of mental health disorders ($p = 0.005$). RSVP clients who were older in age, living alone without a significant other, or having a personal history of a mental health disorder(s) experienced greater mental health stability after three months of participation in the program. There was a significant change in self-care as a function of marital status ($p = 0.027$) and legal status ($p = 0.026$), such that individuals living without a significant other or having no history of criminal justice involvement were more likely to have resulted in greater personal self-care function over time. Lastly, there was a significant change in legal status as a function of marital status ($p = 0.028$), such that RSVP clients living without a significant other were less likely to have legal entanglements at 90 days.

Table 5. RSVP Client Predictors of Treatment Outcomes by Functional Domain from Baseline to 90 Days: All Sites Combined, May 2009 – June 2014, (N = 303)

Variable	Baseline			90 Days			*F*	*p*	η^2
	N	**M**	**SD**	**N**	**M**	**SD**			
Substance Use	302	2.9	0.7	302	2.4	0.8	121.55	<.001	0.289
Age									
18-33 years	160	2.9	0.7	160	2.4	0.8	6.38	0.012	0.021
34- 60 years	142	2.9	0.7	142	2.3	0.8			
Current Mental Health Services									
No	202	2.9	0.7	202	2.4	0.8	3.89	0.05	0.013
Yes	100	3.0	0.7	100	2.3	0.8			
Treatment Participation	304	2.4	0.7	304	2.2	0.8	20.81	<.001	0.065
Criminal History (Parole/Probation)									
No	217	2.4	0.7	217	2.1	0.8	3.94	0.048	0.013
Yes	87	2.3	0.7	87	2.2	0.9			
Family Mental Health History									
No	157	2.5	0.7	157	2.1	0.9	4.83	0.029	0.016
Yes	147	2.3	0.7	147	2.2	0.8			
MH/Trauma	302	2.5	0.8	302	2.3	0.8	7.65	0.006	0.025
Age									
18-33 years	160	2.4	0.8	160	2.4	0.8	7.01	0.009	0.023
34-60 years	142	2.5	0.8	142	2.3	0.8			
Marital Status (Married/Cohabitating)									
No	234	2.4	0.8	234	2.3	0.8	3.94	0.048	0.013
Yes	68	2.5	0.8	68	2.5	0.8			
History of Mental Health Illness									
No	127	1.9	0.8	127	1.9	0.7	8.03	0.005	0.026
Yes	175	2.6	0.7	175	2.6	0.7			
Self Care	302	2.1	0.8	302	1.8	0.7	24.89	<.001	0.078
Marital Status (Married/Cohabitating)									
No	233	2.0	0.8	233	1.8	0.7	4.93	0.027	0.017
Yes	69	1.9	0.7	69	1.8	0.7			
Legal Status (Current Parole/ Probation)									
No	133	2.1	0.7	133	1.8	0.7	5.02	0.026	0.017
Yes	163	1.9	0.8	163	1.8	0.7			
Legal Conduct	303	2.5	0.9	303	2.3	0.8	8.30	0.004	0.027
Current Legal Status (Parole/Probation)									
No	234	2.4	0.8	234	2.3	0.8	4.874	0.028	0.016
Yes	69	2.4	0.9	69	2.4	0.9			

Summary and Discussion

Initial evaluation of RSVP's three-year pilot program from May 2009 to May 2012 demonstrated success in increasing access to, engagement and retention in substance abuse treatment for substance-abusing parents who were at risk of losing custody of their children (Ungemack et al., 2013). Similarly, the analysis of RSVP client outcomes conducted for this study confirms that RSVP clients who remained in the program for at least 90 days were successful in achieving improvements in substance use, treatment, mental health, self-care and legal status over time.

The purpose of this study was to identify specific characteristics of substance-abusing parents that would predict improvements in various functional domains including: substance use, treatment participation, mental health stability, self-care, relationships, and legal conduct. Certain baseline characteristics of RSVP participants including age, marital status, legal status, and family or personal history of mental health problems, were shown to be predictors of treatment outcomes. These results are comparable with past research studies which found older age, current and prior criminal offenses, and mental health problems are predictive of substance abuse treatment outcomes (Choi, & Ryan, 2006; Mateyoke-Scrivbner et al., 2004). One potential explanation for better outcomes for adults over age 30 is that younger individuals are less experienced, mature and appreciative of adverse consequences of their behavior, and are more likely to be influenced by social pressures to use drugs (Mateyoke-Scrivbner et al., 2004). Length of time in treatment has been shown to be predictive of treatment outcomes in multiple studies (Greenfield et al., 2004). This result supports the hypothesis that age and no mental health history would be positively related to treatment success. On the other hand, the findings in

this study do not support the hypothesis that having a history of violence or trauma was associated with treatment outcomes.

Marital status has been found to be a predictor of treatment outcomes in many research studies (Knight et al., 2001; Gregoire & Schultz, 2001; Choi & Ryan, 2006). However, the results of this study are contrary to the other investigations which have shown that family support, specifically having a significant other, is a predictor of positive treatment outcomes for parents with substance abuse issues (Gregoire, & Schultz, 2001; Choi & Ryan, 2006). Instead, this study found that participants who were single (never married, divorced, or widowed) were more likely to have better treatment outcomes in half of the measured domains. Of note, marital status was found to be a predictor of 90-day mental health status, level of self-care, and legal status. These opposite results suggest significant others may not be as supportive in recovery efforts as previously thought. Furthermore, the social support provided by Recovery Specialists in RSVP may have helped single RSVP clients to a greater degree than married RSVP participants.

This study examined a wide range of characteristics across multiple functional domains and, therefore, adds value to the current knowledge base. However, the results of this study may not be generalizable to all substance abusing parents. RSVP participants were referred to the program due to issuance of an OTC. As a result of the clients' involvement with the judicial and child welfare systems, their motivation may be higher than substance abusing parents who are not involved with the child welfare system. In addition, RSVP clients are provided with many recovery and social support services not accessible by many parents with substance abuse issues who still have custody of their children. Oftentimes, mothers with drug abuse problems have difficulty accessing treatment due to the lack of family or social support to provide care for their

children during the recovery process (Knight et al., 2001). Therefore, women who are not involved with the child welfare system may have different predictors and treatment outcomes than the participants in this study. Nonetheless, the results from this study can be applied to local regions in the state, and beyond Connecticut, to states with similar child welfare laws and practices.

Limitations

This research study has some limitations in its design and implementation. The client data used in this study were obtained primarily for the administrative purposes for the RSVP program and they were not designed specifically to measure program outcomes. Much of the data collected was subjective and progress was measured using Recovery Specialists' perceptions of their clients with or without participant feedback. It is possible that many of the clients with co-occurring mental health problems and involvement with the legal and child welfare systems may have given inaccurate self-reported information about their status due to stigma or fear of consequences. As a result, the information gathered for this research study is subject to reporting bias, which is often difficult to identify and control.

This study did not compare the type of substance used, frequency of drug use, and/or number of substance(s) used by the subjects with treatment outcome success or failure. In addition, there were several confounding factors such as education level, family support, mental health illness that were closely related, which may have affected the results.

Recommendations

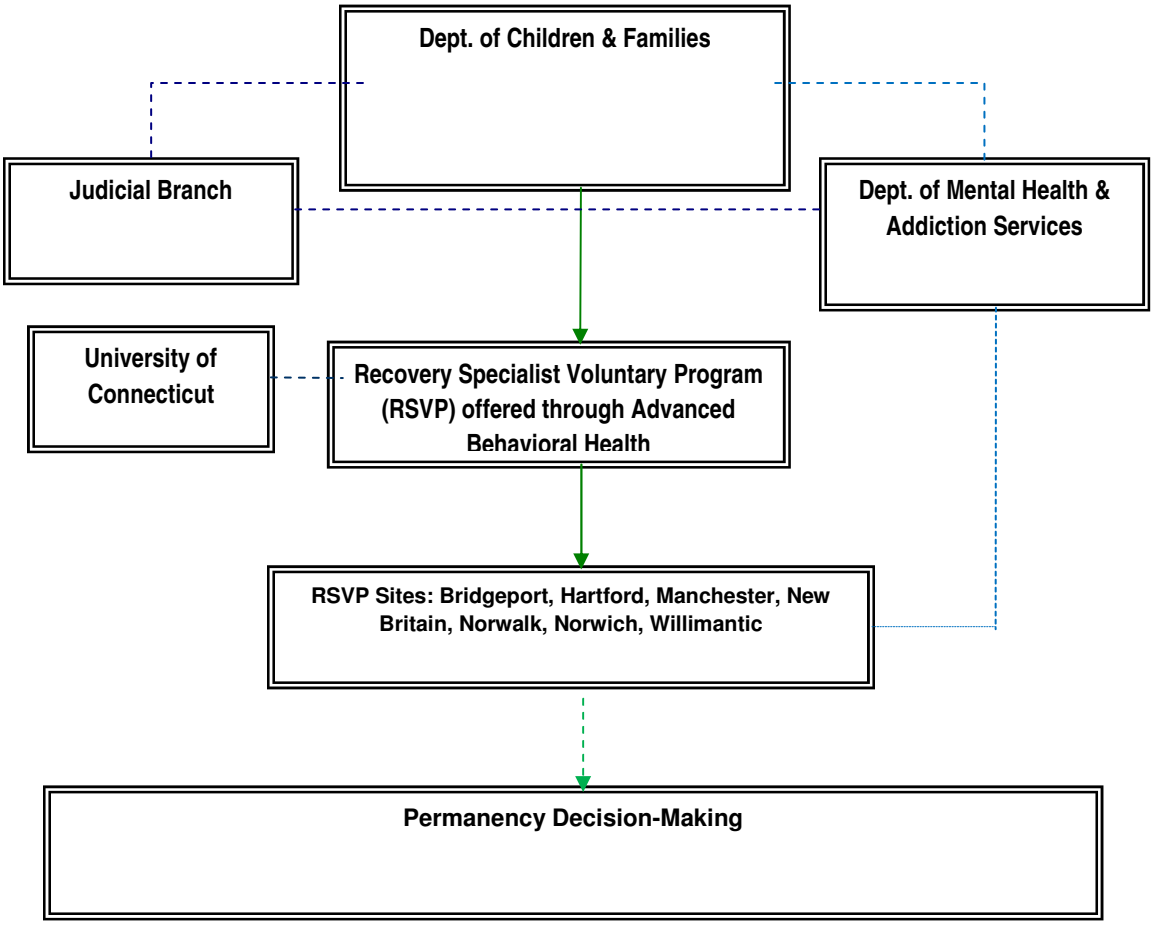
Parental substance abuse is a persistent issue for the child welfare and judicial systems in the Connecticut, as well as nationwide. Intensive case management programs such as RSVP help reduce barriers to accessing substance abuse treatment, leading to better treatment outcomes, which is likely to result in greater family reunification and more timely permanency decisions for children. Therefore, understanding some of the predictors of treatment outcomes in parents with substance use problems, a high-risk population, contributes to a better understanding of how to improve outcomes for substance abusing parents involved in the child welfare system who enter and complete substance abuse treatment. Nonetheless, this study does not address all the pertinent issues associated with substance-using parents involved with child welfare, and thus, further research is needed.

For this particular study, RSVP site data were not used in the statistical analysis although the recovery program was implemented in several different communities. Since RSVP service sites varied in population characteristics, available resources, and implementation occurred at different times during the enrollment period, future studies of the RVP program should explore treatment location as a possible factor in treatment success. Future research investigating predictive factors of parents who have not yet been issued an OTC, and therefore, not yet involved with the judicial system (or not mandated by the judicial court to receive treatment services) could potentially be useful in helping substance-abusing parents before they are facing loss of their parental rights. Finally, researchers should seek to understand the proportion of substance-abusing parents who have successfully completed treatment and still relapse, resulting in permanent termination of parental rights.

Children placed in the welfare system often have poor emotional, educational, physical and mental health outcomes. For children of parents who abuse substances, the chances of becoming an adult with substance use problems are even higher. There are few studies that assess the effect of intensive case management programs on children in the welfare system aside from family reunification and child permanency decisions (Dauber et al., 2012). Identifying predictive factors for children of substance-abusing parents, and their future well-being, has the potential to guide the management and treatment services for these parents and families, as well as provide solutions to this ongoing problem. Thus, a greater knowledge of factors that affect treatment outcomes of parents with substance use disorders can help achieve better outcomes for both populations.

Appendix A

Figure 1: Organization of RSVP



Appendix B

Figure 2. RSVP Intake Sheet

Recovery Specialist Voluntary Program (RSVP)
Information Sheet for RSVP Intake

CLIENT: _____ **DATE:** _____

A. Current Living Environment:

With whom: _____

Length of time at residence: _____

Rental Assistance/Section 8: ☐yes ☐no

Risk of Eviction?: ☐yes ☐no

B. Marital Status: ☐Cohabiting ☐Married ☐Separate ☐Divorced ☐Widowed ☐Single, Never Married

C. Education:

Highest level completed: _____

D. Current Monthly income:

Source: _____

Number of dependents:_____

E. Entitlements:

☐ Medicaid- Blue Care
☐ Medicaid – CHN
☐ Medicaid – Healthnet
☐ Medicaid – Preferred One/ First Choice
☐ SAGA Medical/General Assistance
☐ Private Insurance
☐ Title 19/Medicaid
☐ Medicare
☐ SSI
☐ SSD
☐ TANF
☐ TFA
☐ State Supplement
☐ Food stamps
☐ None
☐ CTBHP

F. Employment:

Currently employed? ☐yes ☐no

If yes, current position/employer_____

Number of hours/week: _____ Shift:_____

Longest length of employment _____

Ever lost a job or work opportunity due to use: ☐Yes ☐No If yes: how many?_____

Do you have any special work skills? _____

Do you have a car? ☐Yes ☐No

Do you have a valid driver's license? ☐Yes ☐No

Has your license ever been suspended? ☐Yes ☐No

G. Pertinent Medical History – *If client reports being prescribed medication, complete 'Client Medication Form'*

Current Medical Problems? ☐Yes (explain: _____)

☐No

Currently Pregnant?: ☐Yes ☐No ☐Unknown ☐ N/A

History of, or currently receiving, mental health services? ☐Yes ☐No

If yes, Type of Mental Illness: _____

Provider/Agency:_____ Current Tx? ☐Yes ☐No

Clinician: _____

Phone: _____

** If client reports being prescribed medication, complete 'Client Medication Form'*

Family History:

Mental Health: ☐yes ☐no ☐unknown

H. Legal Information/History:

Have you ever been arrested? ☐yes ☐no

Current legal status: ☐Pending charges ☐Parole ☐Probation ☐Transitional Supervision ☐None

Probation/Parole contact and #: _____

Completed probation/parole? ☐Yes ☐No

History of violence/assault? ☐Yes ☐No

History of Domestic Violence? ☐Yes ☐No Specify Perp or Victim: _____

I. Juvenile Court Information

Date Of OTC: _____

Client's Attorney for DCF case: _____ Phone: _____Fax: _____

Child(ren)'s Attorney: _____ Phone: _____Fax: _____

Court Service Officer: _____ Phone: _____Fax: _____

J. Spirituality/ Faith Background:

Are you currently involved with a church/faith community? ☐Yes (type _____) ☐No

What spiritual/faith practices do you currently use?

☐ Prayer

☐ Going to church, synagogue, mosque, other house of faith

☐ Reading scripture, religious writings

☐ Singing in a choir

☐ Meditation

☐ Religious dance or playing religious music

☐ Other: _____

☐ None or N/A

J. Family Member Information					
Children					
Name		**M/F**	**Age**	**Relationship**	**Currently living** (with client, with family member, in foster care, in residential tx, etc)

Other Individuals Currently Living in the Home							
Name		**M/F**	**Age**	**Relationship**	**Comments**		

Family History:

Substance Abuse: ☐yes ☐no ☐unknown

K. Substance Use History					
Substance	**Amt/Freq.**	**Last Used**	**Age First used**	**Route**	**Length of Use**
ETOH					
THC					
Cocaine/Crack					
Opioids					
Amphetamines					
Hallucinogens					
Inhalants					
PCP					
Sedatives					
Club Drugs					
Other					

Past SA Treatment:

Date(s)	Provider	Level of Care (outpt, IOP, residential, etc.)	Comments

Most recent period of sobriety: _____

Longest period of sobriety: _____When? _____

L. Client's Recovery Resources/Supports:

M. Client's Strengths:

N. Client's Goals:

O. Additional Information:

Appendix C

Figure 3. Treatment Outcome Domains Measuring Impact of Issue

RSVP

Level of Care Screen Scoring Criteria

1st Domain- Substance Abuse Refers to the client's and/or collateral contacts' report and/or OEP's observations of client's use of substances.			
Severe 4	**Severe 4**	**Severe 4**	**Severe 4**
• Continued substance use/addictive behavior despite significant medical and/or psychosocial problems. • Unable to recognize significant difficulty in daily functioning related to substance use/abuse. • Evidence of recent substance use in client's home (e.g., empty beer bottles, drug paraphernalia).	• Continued substance use/addictive behavior despite significant medical and/or psychosocial problems. • Unable to recognize significant difficulty in daily functioning related to substance use/abuse. • Evidence of recent substance use in client's home (e.g., empty beer bottles, drug paraphernalia).	• Continued substance use/addictive behavior despite significant medical and/or psychosocial problems. • Unable to recognize significant difficulty in daily functioning related to substance use/abuse. • Evidence of recent substance use in client's home (e.g., empty beer bottles, drug paraphernalia).	• Continued substance use/addictive behavior despite significant medical and/or psychosocial problems. • Unable to recognize significant difficulty in daily functioning related to substance use/abuse. • Evidence of recent substance use in client's home (e.g., empty beer bottles, drug paraphernalia).

2nd Domain – Mental Health/Trauma History Refers to the client's report and/or collateral observations of client's mental health needs and/or trauma history.			
Severe 4	**Moderate 3**	**Mild 2**	**None 1**
• Current suicidal/homicidal ideation. [***Note:*** *If client reports a current suicidality, OEP/RCM to refer for clinical assessment in ED, with Mobile Crisis, or current clinician.]* • History of serious harmful behavior to self or others with current potential for repeating event. • Client reports trauma history, with significant impact on day to day functioning. • Recent Psychiatric hospitalization (< 6 months) or hx of multiple psychiatric hospitalizations and/or significant MH disorder that is currently untreated.	• Client is in mental health tx, but is still experiencing mild to moderate symptoms. • Past hx of suicidal or homicidal ideation, no current ideation or intent. • Client has moderate impairment due to mental health problems and needs a referral to mental health or co- occurring disorder treatment, but may be reluctant to engage in tx. • Client reports trauma history, with moderate impact on day to day functioning. • Hx of psychiatric hospitalization(s) (1+ year ago).	• Client is in mental health treatment/recovery and currently stable. • Client has mild mental health problems with no impairment in day to day functioning. • Client needs a referral to mental health or co- occurring disorder treatment and is willing to engage. • Client reports trauma history, no apparent impact on day to day functioning.	• Client reports no mental health problems; collateral contacts concur.

3rd Domain – Participation in Treatment

Refers to the client's ability to follow through on substance abuse, psychiatric, and/or medical treatment, including accessing emergency services.

Severe 4	**Moderate 3**	**Mild 2**	**None 1**
• Refuses to comply with Project SAFE Referral. • Refuses to participate in treatment. • Denies the need for recommended treatment/Precontemplation. • Significant MH issues which interfere with client's ability to comply with PSreferra and/or engage with treatment	• Reluctant/ambivalent to comply with Project SAFE referral. • Completes PS referral and/or participates in treatment only with assertive outreach i.e., case manager needs to transport and accompany to appointments. • MH issues interfere with client's ability to comply with PS referral and/or attend treatment (e.g., depression)	• Participates in treatment with minimal support. • Willing to comply with Project SAFE referral, but needs some assistance (e.g., transportation/childcare)	• Participates in treatment independently. • Willing to comply with Project SAFE referral and has means to do so independently. • Completed Project SAFE referral, no treatment recommended

4th Domain - Self Care/Activities of Daily Living

Includes activities such as tending to personal hygiene, parenting activities, laundering, clothes, cleaning one's living environment, and the ability to prepare and/or eat foods using reasonably healthy and sanitary methods. Also refers to personal money management, e.g., the ability to budget and pay essential bills, or cooperate with assistance in these areas.

Severe 4	**Moderate 3**	**Mild 2**	**None 1**
• Unable to perform the majority of activities of daily living, e.g., cannot prepare meals, launder clothes, identify/recall medications or when to take them and/or maintain hygiene, unable to budget. • Unable to use public transportation.	• Client is struggling or inconsistent with ADL's, i.e., needs assistance to maintain apartment, hygiene, budget, etc. • Able to use public transportation with prompts/assistance.	• Performs activities of daily living with minimal reminders/assistance, e.g., is able to self-administer medications, manage money and use transportation with minimal supports.	• Is independent with all activities of daily living.

5th Domain - Relationships refers to the client's ability to interact and communicate effectively with others and to get along with household, family, friends, service providers, and community members. Strengths are reflected in the client's ability to actively participate in relationships that support her/his recovery, initiate social contact and to participate in groups, cooperate with others and to be considerate of others. Deficits are reflected in avoidance of interpersonal relationships and social isolation, and/or poor parenting performance.			
Severe 4	**Moderate 3**	**Mild 2**	**None 1**
• Significant isolation (prefers solitary activities but can tolerate social interaction when assisted) • Service provider(s) is primary support • No support network • Family/relations undermine recovery as characterized by enmeshment, enabling, victimization, sabotaging, high emotional reactivity, etc. • No social or leisure activities • Active Domestic Violence issues	• Attends social or recreational activities in unsupervised settings but interacts minimally • With assistance, can form and maintain a limited number of relationships • Family and/or other relationships are not fully supportive of recovery and are intermittently marked by conflict, estrangement, etc. • Recent Domestic Violence precipitating DCF involvement	• Participates in positive social or recreational activities with minimal encouragement • Client generally maintains a satisfactory social network with minimal assistance	• Interacts positively with others • Has positive community and family supports in place
6th Domain - Legal refers to the individual's ability to maintain conduct within the limits of the law.			
Severe 4	**Moderate 3**	**Mild 2**	**None 1**
• History of criminal behavior of a serious nature, and related arrests and incarcerations • Frequent monitoring via probation or parole or isi not keeping appointments with parole/probation officer. • Criminal behavior jeopardizes the safety of others, e.g., assaultive behavior, driving while intoxicated, etc. • Hx of significant destruction of property	• History of criminal behavior of a less serious nature, and related arrests and incarcerations. • Moderate monitoring via probation or parole • Minimally adheres to laws unless confronted with consequences, e.g., does not pay rent until confronted with eviction, ignores probation requirements until threatened with incarceration, etc. • Currently using illicit substances.	• Generally adheres to laws • Consistently complies with probation • History of legal involvement is minimal • Ongoing DCF case with abuse/neglect substantiated and/or DV. • Hx of using illicit substances.	• Adheres to laws • No criminal history

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