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PARTICIPANT CHARACTERISTICS AND CHILD WELFARE OUTCOMES:
FACTORS OF INFLUENCE FOR SUCCESS IN THE VIP-RI PROGRAM

BY

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A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE
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ABSTRACT

The purpose of this study was to identify characteristics associated with success, defined by a closed case with Child Welfare Services and reunification with biological child, in the Vulnerable Infants Program of Rhode Island (VIP-RI). Data utilized for this study came from participants from the first four years of the VIP-RI program including 206 mothers involved in the Rhode Island Family Treatment Drug Court. These mothers met criteria for this program if they used drugs during pregnancy and voluntarily opted to be part of the VIP-RI program. Demographic, service history and psycho-behavioral variables were examined and, of the hypothesized variables thought to influence success in the VIP-RI program, one significant explanatory variable was found. Results indicated that mothers of the VIP-RI program who had previous child removal were most likely to be unsuccessful in the program.

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Chapter 1: Statement of the Problem

Parental substance abuse has been associated with negative consequences for children including physical and mental problems (Howell, Heiser & Harrington, 1998, Lester & Twomey, 2008). Despite efforts of treatment programs that target parents with substance abuse, barriers to success continue to affect intended goals. Substance abuse programs that target families aim to not only treat the participant but the family as well. These objectives are met through the use of mental health and substance abuse treatment programs, parenting classes and interventions for infants and children. Issues such as participant's lack of resources, common use of male-based recovery models which do not take into account family stressors and pregnant/postpartum stressors, and fear of criminal prosecution continue to hinder the success of treatment programs (Ashley, Marsden & Brady, 2003; Lester & Twomey, 2008).

The Family Treatment Drug Court (FTDC) serves parents who display substance abuse issues who are also involved with child welfare services. Evaluations of the Family Treatment Drug Court demonstrate positive outcomes for its target population; however, less than half of participants successfully complete the program (Belenko, 2001; Byran & Havens, 2008, Caldwell & Piner, 2005). In a review of 37 published and unpublished evaluations of drug courts, averages of 47% of participants were identified as successful graduates typically defined by a closed case with Child Welfare Services and reunification with biological child (Belenko, 2001). Evaluations

of the Rhode Island Family Treatment Drug Court yielded similar results with 41% of participants successfully discharged from the program, resulting in a closed case with Child Protective Services and reunification permanency placements (Caldwell & Piner, 2005). Although the definition of a successful graduate varies depending on the states FTDC model, in general reunification with biological mother continues to be considered optimal placement and secondary to that is extended family (Caldwell & Piner, 2005, Harell & Goodman, 1999). Coupled with this is a closed case with CPS, meaning the biological mother has completed all goals and requirements with FTDC and DCYF (Belenko, 2001, Harell & Goodman, 1999).

Given this limited success, more needs to be known about the relationships between drug treatment participant characteristics and positive child welfare outcomes to increase the ability of the Family Treatment Drug Court to implement meaningful services and interventions. By understanding what characteristics are associated with treatment success, the Family Treatment Drug Court may better support those clients lacking said characteristics. This, in turn, may improve the chances of the Family Treatment Drug Court participants and their children to begin healthier lives after treatment completion.

Chapter 2: Justification for and significance of the study

Because rates of parents involved with child welfare services who also display substance abuse issues range from fifty to eighty percent of cases (Curtis & McCullough, 1993, Semiedi, Radel & Nolan, 2001, Young, Boles, & Otero, 2007), addressing substance abuse among parents whose children enter into the child welfare

system is critical (General Accounting Office, 1994; National Center on Addiction and Substance Abuse, 1998). Parents with substance abuse issues are generally at higher risk for impaired judgment, emotional deregulation, and co-occurring psychopathology resulting in higher likelihood of child maltreatment (Ammerman, Koklo, Kirisci, Blackson, & Dawes, 1999; Grella, Needell, She, Hser, 2009; Han, 1999). Substance abusing parents also lack basic knowledge of parenting behaviors and display inappropriate developmental expectations for their children who are also less likely to experience appropriate parental involvement (Ammerman et al., 1999; Kettinger, Nair, & Schuler, 2000). Furthermore, substance abusing parents are less likely to provide adequate shelter, care, and economic stability for their children placing them at high risk for neglect (Bays, 1990, Wolfe & Coulter, 2001).

Parents with substance abuse issues have the lowest probability of successful reunification with their biological children previously removed by child welfare services compared to other parents involved with CWS, resulting in longer stays in foster care for children rather than home placements (Worcel, Furrer, Green, Burrus & Finigan, 2008). Longer out of home placements decrease the likelihood of reunification with the biological parent (Grella et al., 2009).

Substance-exposed infants are at risk for developmental, psychological and behavioral problems (Gruber & Taylor, 2006). Growth deficits and neurodevelopmental problems in the neonatal period have been associated with prenatal drug exposure (Black, Nair, Knight, Wachtel, Roby & Schuler, 1994). Furthermore, these infants are at heightened risk for developmental problems stemming from biological vulnerability and

environmental challenges affecting their early growth and exposure to developmentally appropriate and stimulating parenting (Black et al., 1994).

The Family Treatment Drug Court is designed to work with substance abusing parents possessing an open case with the child welfare system (Worcel et al., 2008). This court differs from the traditional judiciary setting in its distinctive ability to treat the addiction of the participant as well as the effects of substance-abuse on the family system. In the case of the Family Treatment Drug Court, child welfare services are involved and treatment completion typically results in reunification whereas non-compliance may result in consequences such as imprisonment and loss of parental rights. Family Treatment Drug Court addresses these issues under a multidisciplinary team effort ensuring that the parent receives prompt and meaningful treatment. Services available to children generally include initial standardized neurobehavioral assessment and subsequent intervention plans including pediatric care, Early Intervention services, and psychological care (Caldwell & Piner, 2005). A multidisciplinary team of FTDC staff collaborates on each case, assessing the needs of the participant and family members. This team consists of the judge, drug court case manager, project coordinator, Department of Health and Human Services case worker and case manager, local treatment providers, and program evaluators (Belenko, 2001). Each member is responsible for a specific aspect of the treatment program and remains in frequent contact with one another to ensure all goals for that particular client are met.

Participants with an open child welfare case and identified substance abuse issues, based on reviews of intake petitions from Child Welfare Services (CWS)

containing allegations of neglect related to parental drug use as well as cases where the child tested drug positive at birth (Harell & Goodman, 1999), are recruited to the FTDC program through court or hospital based programs and given a choice to be part of the program. Once a participant has made the commitment to participate in FTDC, goals and recommendations are set for both the parent and the children. Treatment begins immediately and continues until all goals are reached including permanency hearings for all children involved. This permanency hearing evaluates whether or not the biological mother has completed all requirements set forth at the initial FTDC session and may therefore regain custody of her children. In cases where placement with the biological mother may not be an option, successful completion of all requirements and program may be achieved coupled with alternative optimal placement for the children. This process, on average, lasts 12-18 months (Belenko, 2001; Harell & Goodman, 1999). Treatment programs for participants generally include substance abuse treatment, mental health treatment, and parenting education services whereas services for children generally include assessment and intervention when needed (Caldwell & Piner, 2005).

Evaluations of the FTDC have confirmed beliefs that this type of court setting has several benefits for families involved (Green, Furrer, Worcel, Burrus & Finigan, 2009). Benefits of the Family Treatment Drug Court include higher reunification rates, shorter time to permanency hearing, treatment completion, and high rate of drug free babies born to mothers within the program (Belenko, 2001, Ferguson, Hornby, Zeller, 2007; Green et al., 2009; & Worcel et al., 2008). For example, an evaluation of the Lewiston Family Treatment Drug Court found higher likelihood for treatment

completion, higher likelihood of reunification and permanency placement, more drug free babies born, and shorter time to permanency hearing for clients within the FTDC program versus traditional judiciary programs (Ferguson et al., 2007).

Other benefits of the FTDC model include faster entry into treatment as well as a greater number of treatment sessions completed which has been associated with a higher likelihood of success (Green et al., 2009; Grella et al., 2009). One study examined 301 families participating in three FTDC programs versus 1220 families involved with Child Welfare Services (CWS). Comparisons between outcomes in FTDC and CWS revealed that mothers of FTDC had more positive treatment outcomes, were more likely to enter substance abuse treatment programs, entered programs more quickly, spent twice as much time in treatment, and were more likely to achieve reunification (Worcel et al., 2008). A similar study looked at 250 families participating in FTDC versus traditional judiciary settings at four different sites. Results from this study indicated that participants in FTDC entered into treatment faster, completed more treatment episodes, and the program was considered to facilitate more positive child welfare outcomes such as higher permanency rates with the biological parent (Green et al., 2009).

Despite these benefits, success rates for Family Treatment Drug Courts typically fall under the 50% mark (Belenko, 2001, Green et al., 2007, Twomey et al., 2005). Furthermore, many programs do not address issues specific to women substance abusers such as child care, prenatal care, and gender specific treatment needs (Ashley et al., 2003). Addressing these issues in future studies may benefit programmatic efforts of the

Family Treatment Drug Court to increase the currently low success rate of participants (Belenko, 2001).

Existing research, based on preliminary statistics, suggests certain factors influence success in FTDC and substance-abuse treatment such as demographic characteristics and other participant characteristics. Household organization such as being married or living with a significant other has been associated with success in substance abuse treatment and FTDC (Butzin, Saum & Scarpitti, 2002; Miller & Shutt, 2001; Twomey et al., 2005; Wickizer, Maynard, Atherly, Frederick, Koepsell, Krupski & Stark, 1994). Holding a higher degree of education (high school completion or GED) and a higher socioeconomic status are understood to foster success in substance abuse treatment and FTDC participation (Butzin et al., 2002; Twomey et al., 2005; Wickizer et al., 1994). High psychiatric severity, usually defined by a higher ASI (Addiction Severity Index ASI: McLellan, Kushner, Metzger, Peters, Smith, Grissom, Pettinati & Argeriou, 1992) composite score, has been associated with lower rates of success in substance abuse treatment and FTDC (Grella et al. 2009; Twomey et al., 2005). Participants who have longer stays in treatment have displayed higher likelihood of successfully completing programs, resulting in reunification with biological children (Grella et al., 2009; Green et al., 2007; Simpson, 1993; Worcel et al., 2008). Participants with fewer prior arrests are more likely to complete treatment requirements (Knight et al., 2001; Twomey et al., 2005). Having fewer children is thought to foster success in substance abuse treatment programs including FTDC (Knight et al., 2001; Twomey et al., 2005). In addition to these factors, participants who are older and who were employed were more likely to complete substance-abuse treatment successfully

(Butzin et al., 2002; Choi & Ryan, 2006; Grella, et al., 2009; Simpson, 1993; Twomey et al., 2005; Wickizer et al., 1994).

To further support the need for identifying relationships between participant characteristics and child welfare outcomes, Family Systems Theory (FST) provides a framework for understanding the effects of stressors such as substance abuse, mental health issues, and everyday barriers for participants on the family system (Kerr & Bowen, 1987). This theory suggests that relational patterns are learned from generation to generation and individual and family dynamics are a result of these patterns (Prest & Protinsky, 1993). This theory more importantly depicts the family as a system of interrelated parts where change in one part affects all other parts (Prest & Protinsky, 1993). Family Treatment Drug Court programs aim to implement change through parenting education services, employment services, and drug and mental health counseling. These programs are designed to change behavior and influence the participant's ability and desire to become a healthy and productive member of society. According to these goals and Family Systems theory, this change will support the healthy functioning of the family through the decrease of stressors and the increase of support. Perceived level of stress, mental health issues, and other individual stressors can impact the functioning of the family as a whole and reduce the likelihood of program success (Prest & Protinsky, 1993). These stressors are also known to have a negative effect on child welfare outcomes for families participating in Family Treatment Drug Court programs (Belenko, 2001; Grella et al. 2009; Worcel et al., 2008). Family Systems Theory explains the reasons for the dysfunction of the family, such as stressors, and further poses answers for the recovery of the family's

functionality, such as support and relief concerning stressors. This theoretical framework can be used to understand the role of the Family Treatment Drug Court's approach to helping families under its care.

The Vulnerable Infants Program of Rhode Island (VIP-RI) was established through Women and Infants Hospital, Brown Medical School and Rhode Island Family Court in May of 2001 and operates as the state's FTDC. VIP-RI operates under the model of substance abuse as a treatable mental health issue. This model is similar to Family Treatment Drug Courts throughout the United States. Similar still are the court operations and requirements experienced by FTDC participants. These similarities include participation in all recommendations from the court team such as mental health counseling, substance abuse treatment, parenting classes, and any recommended intervention therapies for the child. Regular court hearings are scheduled for the purpose of participant drug screening and review of accomplishments and generally end with a permanency hearing at 12 months. VIP-RI is unusual in that services target mothers who use drugs during pregnancy where as other Family Treatment Drug Courts typically recruit participants who display substance abuse issues after pregnancy. VIP-RI provides coordinated care and support for drug-exposed infants, women and their families. Efforts of the VIP-RI Family Treatment Drug Court are intended to benefit the participant, family and society as a whole and are achieved through three interventions including collaboration with local substance abuse treatment programs, court and participant education programs, and services to aid the court in carrying out Adoption and Safe Families Act (ASFA; 1997) guidelines which mandates a 1-year timeline for permanency hearings (retrieved from <http://womenandinfants.org> on

November 24, 2009). Although the VIP program is unique in its target population of mothers who use drugs during pregnancy, it operates under the same laws and goals of FTDC around the nation.

The VIP-RI program and the National Perinatal Information Center (NPIC) worked in conjunction to evaluate if the intended goals of the program had been achieved and is the first outcome study based on VIP-RI (Caldwell & Piner, 2005). This study included a service group repeated measures design, with sub-group analyses when sample size permitted. Also included in the study was a comprehensive evaluation including process and outcome evaluation components. Data were retrieved from the first four years of VIP-RI operations. Participants included 195 mothers and 203 infants. Participants who are considered to have successfully completed the VIP-RI program must have obtained reunification with their biological child at the time of program completion as well as a closed case with Child Protective Services. Characteristics associated with mothers who were considered to have successfully completed the program, included participants who were over the age of 21, completed high school or earned a GED, were more likely to have marijuana as a primary drug problem, less likely to have opiates as a drug of choice, less likely to have a history of arrest, and less likely to have had previous child removal (Twomey, Caldwell, Soave, Andreozzi & Lester, 2005). Furthermore mothers who were considered to have successfully completed the program defined by closed CPS case and reunification with biological mother had an average of three children and were living with a spouse or significant other (Twomey et al, 2005). Mothers who were not considered successful in the program had a higher number of children on average and did not live with a spouse or

significant other (Twomey et al, 2005). No differences were observed based on race. However, these differences were based on descriptive statistics and no statistical significance tests have been conducted.

Despite the widespread use of the Family Treatment Drug Court, not all participants are successful through this program (Belenko, 2001; Twomey et al., 2005). Published research and evaluations do not always discuss participant drop out rates and unsuccessful participants. Instead, successful participants and child welfare outcomes have influenced the majority of the literature. This study further investigated whether participant characteristics influence child welfare outcomes for VIP-RI families by identifying factors significantly associated with success or non-success in the VIP-RI program.

Chapter 3: Methodology

The purpose of this study was to identify characteristics associated with success, defined as reunification with biological child and closed CPS case, or non-success in the VIP-RI Family Treatment Drug Court. Demographic characteristics hypothesized to influence success are participants who are employment versus non-employment (Butzin et al., 2002; Choi & Ryan, 2006; Grella et al., 2009; Simpson, Joe, Rowan-Szal & Greener, 1995; Twomey et al., 2005; Wickizer et al., 1994), completion of high school diploma or GED versus none (Butzin et al., 2002; Twomey et al., 2005; Wickizer et al., 1994), fewer children versus higher number (Knight et al., 2001; Twomey et al., 2005) and living with spouse or significant other versus no partner (Butzin et al., 2002; Knight et al., 2001; Miller & Shutt, 2001; Twomey et al., 2005). Service variables associated

with success include longer stays in treatment (Green et al., 2009; Grella et al., 2009; Simpson, 1993; Worcel et al., 2008)

Characteristics assumed to hinder success include low socioeconomic status versus higher socioeconomic status (Twomey et al., 2005; Wickizer et al., 1994), young age versus older age (Butzin et al., 2002; Choi & Ryan, 2006; Grella et al., 2009; Simpson et al., 1995; Twomey et al., 2005; Wickizer et al., 1994) and more children versus fewer children (Knight et al., 2001; Twomey et al., 2005). Psycho-behavioral markers of non-success include high psychiatric severity and history of arrest (Grella et al., 2009; Twomey et al., 2005). Service history variables include less time within treatment or fewer treatment sessions completed (Green et al., 2009; Grella et al., 2009; Simpson, 1993) and previous child removal (Twomey et al., 2005).

This study utilized data collected from the first four years of VIP-RI operations for the purpose of evaluation. The National Perinatal Information Center (NPIC) acted as the evaluation team. Existing data from the longitudinal study were used for the purpose of this study. Participant characteristics such as demographics, psycho-behavioral history, and service history acted as the independent variables. The dependent variable of interest, program completion, is defined as completion of program requirements or a closed CPS case in conjunction with reunification with biological child. Gaining a better understanding of FTDC participant characteristics associated with treatment success and positive child welfare outcomes may better equip the drug court to continue implementing appropriate and meaningful services to its participants through intake screening measures and subsequent recommendations.

Procedures

Data collected from the first four years of the VIP-RI program were utilized. The Hospital Institutional Review Board at Women and Infants Hospital in Rhode Island previously approved consent for the pilot VIP-RI program as well as the evaluation protocol and consent form. VIP-RI, Child Protective Services and DCYF (Department for Children Youth and Families) and the RI Family Court worked together to target mothers of newborns prenatally exposed to drugs. Pregnant women displaying substance abuse issues and either currently involved with DCYF or with a high probability of becoming involved were also eligible for VIP-RI. VIP-RI staff worked closely with Child Protective Services in identifying potential participants prior to or after birth. Once initial contact is made by the VIP-RI staff at Women and Infants Hospital in Rhode Island, information about the program is delivered to families and their participation is voluntary. Once an individual agreed to participate in VIP-RI, assessments were administered at initial intake, throughout treatment, and after program completion which typically occurred at 12 months. VIP-RI staff administered all measures on Women and Infants Hospital grounds or other Care New England facilities utilized by the VIP-RI program.

Sample

Participants included 206 mothers. As shown in Table 1, participating mothers' ages ranged from 17 to 43 years with a mean age of 28 years. Substance use during pregnancy for the current sample included mothers positive for cocaine (36%), crack cocaine (35%), opiates (other than methadone) (28%), methadone (10%), barbiturates

(4%), marijuana (46%) and alcohol (34%). The majority of the mothers were single, never married (78%) with 7% of mothers having employment. Mothers who have earned a high school diploma/GED or higher represented 60% of the population. The majority of the mothers identified themselves as Caucasian (67%); 29% were African American, 16% Hispanic, and 9% claiming “other.” Number of children was also documented with 52% of mothers having 2-3 children, with a mean of 1.9 (SD=1.6) children. Of the participants, 74% had previous substance abuse treatment and 26% having never been treated for substance abuse.

Table 1
VIP-RI Sample Demographics

Variable	<i>n</i>	%	M (SD)	Range
Marriage	205			
Single, never married	159	77.6%		
Married	21	10.2%		
Separated, widowed, divorced	25	12.2%		
Missing	1	.5%		
Lives w/child’s father or partner	205			
Yes	61	29.8%		
No	144	70.2%		
Missing	1	.5%		
Number of children	206		1.9 (1.6)	0-8
Age	206		28.2 (5.9)	17-43

Employment	206			
Employed	15	7.3%		
Unemployed	191	92.7%		
Ethnicity	206			
Hispanic	34	16.5%		
Non-Hispanic	172	83.5%		
Race	172			
Non-White	56	27.2%		
White	116	56.3%		
Missing	34	16.5%		
Education	206			
High school graduate, GED	124	60.2%		
Less than high school	82	39.8%		
Monthly cash income	161		463.7(616.2)	0 - 6,000
Missing	45	21.8%		
Time in substance abuse treatment (months)	140		5.2 (4.2)	0 -21
Missing	66	32%		
Previous substance abuse treatment	205			
No	54	26.2%		
Yes	151	73.3%		
Missing	1	.5%		
Drug use during pregnancy				
Cocaine	205			
Yes	74	36.1%		
No	131	63.9%		
Missing	1	.5%		
Crack cocaine	205			
Yes	72	35.1%		
No	133	64.9%		
Missing	1	.5%		

Opiates (other than methadone)	206	
Yes	58	28.2%
No	148	71.8%
Methadone	206	
Yes	21	10.2%
No	185	89.8%
Barbiturates	205	
Yes	8	3.9%
No	197	96.1%
Missing	1	.5%
Marijuana	204	
Yes	93	45.6%
No	111	54.4%
Missing	2	1%
Alcohol	204	
Yes	70	34.3%
No	134	65.7%
Missing	2	1%

Measures

Independent variables are participant characteristics such as socioeconomic status, employment, age, education level, partner status, and number of children.

Psycho-behavioral variables utilized for the purpose of this study included psychiatric severity, prior psychiatric illness and prior history of arrest. Service history variables included length of time in treatment and previous child removal. Data for these

variables were collected with the following instruments: the VIP-RI Psycho-Social History, the Brief Symptom Inventory (BSI), and Program Discharge form.

Demographic characteristics:

VIP-RI Psycho-Social History. is a semi-structured interview used to identify demographic information and data within several areas of an individual's life. Data collected from this measure and utilized for the purpose of this study included demographic variables such as marital status, household organization, and level of education, employment, socioeconomic status and participant's age. Variables of interest were represented by the following: maternal age in years, number of children, marital status (single/never married, separated/ widowed or divorced and married), living with child's father or other partner (1=yes, 2=no), level of education (high school/GED=1, less than high school=2), and employment (1=yes, 2=no).

Service History variables:

VIP-RI Psycho-Social History. Specific areas of this measure were initially used for identifying psycho-social issues in the clients past including substance abuse and treatment history and history of previous child removal through child services (CPS). Service history variables taken from the VIP-RI Psycho-Social History form are previous child removal (1=yes, 2=no), length of time in treatment in months, and drug abuse treatment history (1=yes, 2=no).

Psycho-behavioral variable:

Brief Symptom Inventory (BSI: Derogatis 1993). This measure is a 53 item; 5 point measuring scale measure used to provide identifiers of psychosocial symptom patterns including 3 global score the Global Severity Index (which will be utilized for the purpose of this study and is an indicator of symptom severity), Positive Symptom Total, and Positive Symptom and Distress Index. Participants with a score of 63 or greater (T-score for GSI) are considered to need further evaluation concerning the possibility of mental health counseling. For the purpose of this study, these participants are considered to have high psychiatric severity as compared to those with low psychiatric severity (scores under 63). The BSI displays limited convergent validity however, has high internal consistency contributing to its reliability (Boulet & Boss, 1991). Other psycho-behavioral variables include history of arrest (1=yes, 2=no) and prior psychiatric illness (1=yes, 2=no).

Dependent Variable:

The dependent variable measuring success in the VIP-RI program includes participant's closed case with CPS and reunification with biological child. Meeting both of these goals, reunification with biological child and a closed case with CPS, categorizes the participant as successful and leads to discharge from the VIP-RI FTDC program. In order to achieve these components of success, participants must comply with each goal and recommendation set for them by the judge and court team. Data from the Program Discharge form utilized for this study included information on final placement of child and status of the mother's case with child welfare services, both of

which are necessary to be considered successfully discharged from the VIP-RI FTDC program. This form is completed by VIP-RI staff as a summary of client records.

Analyses

Data were processed and analyzed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics were computed to display frequencies and distributions for all measures including means and standard deviations, as well as the ranges for possible scores in order to identify variability amongst variables and to check for missing data.

Bivariate analyses, or t-tests and crosstabulations, were used to identify differences between successful and non-successful participants in VIP-RI. Variables hypothesized to influence success in the program were used in the initial bivariate analysis. Once predictor variables were identified, logistical regression analysis was conducted in order to further identify significant predictors of child welfare outcomes. Logistical regression fits this sample based on its dichotomous dependent variable and was used to identify participant characteristics associated with success in the VIP-RI program. This type of analysis allows for the grouping of several potential predictor variables, and tests the strength of influence of said variables in relation to the outcome variable, or success versus non-success in the VIP-RI program.

Chapter 4: Results

As noted earlier, mothers who participated in the VIP-RI program represented a diverse group of participants. The sample consisted of 206 mothers with past substance

abuse history and an open case with CPS (see Table 1). The majority of the mothers in VIP-RI had previous substance abuse treatment (74%) and minority (26%) reported never being in treatment for substance abuse.

As shown in Table 2, demographic variables, thought to influence success in the VIP-RI program included age, education level, partner status and number of children. Mother's education was the only demographic variable found to be statistically significant. Mothers in the VIP-RI program who had less than a high school education were less likely to successfully complete the program ($p < .05$) than mothers holding a high school diploma/ GED or higher. Mother's age did not significantly explain success or non-success in the VIP-RI program. Neither partner status nor number of children achieved statistical significance in relation to success for mothers in the VIP-RI program.

Table 2
Bivariate comparisons of successful versus non-successful mothers in the VIP-RI program by demographic variables

Independent Variable	Success % (n)	Non Success % (n)	χ^2/t
Marital Status			2.44
Single	72.5 (66)	81.6 (93)	
Married	27.5 (25)	18.4 (21)	
Lives With Child's Father/Partner			.005
Yes	30 (27)	29.6 (34)	
No	70 (63)	70.4 (81)	
Education			4.29*
Less than HS/GED	31.9 (29)	46.1 (53)	
High School/GED	68.1 (62)	53.9 (62)	
Employment			1.64
Yes	9.9 (9)	5.2 (6)	
No	90.1 (82)	94.8 (109)	
<i>m</i> Age (SD)	28.5 (6)	28 (6)	.633

<i>m</i> Number of Children (SD)	1.8 (1.6)	2 (1.6)	-1.4
<i>m</i> Income	469.5 (413.9)	459.1 (740.3)	.106
Ethnicity			.148
Hispanic	41.2 (14)	58.8 (20)	
Non-Hispanic	44.8 (77)	55.2 (95)	
Race			.001
White	44.8 (52)	55.2 (64)	
Non-White	44.6 (25)	55.4 (31)	

p*<.05, *p*<.01, ****p*<.001

Of the service history variables, neither participants' drug treatment history nor length of time in treatment had an effect on success or non-success in the VIP-RI program (see Table 3). Having a history of previous child removal did predict non-success for participants in VIP-RI (*p*<.001), as displayed in Table 3. This means that, in general, participants who had previous children removed by child services were less likely to complete the VIP-RI program successfully versus participants without a history of previous child removal.

Table 3

Bivariate comparisons of successful versus non-successful mothers in the VIP-RI program by service history variables

Source	Success % (n)	Non Success % (n)	χ^2/t
Prior Child Removal			10.53***
Yes	25.3 (23)	47.4 (54)	
No	74.7 (68)	52.6 (60)	
<i>m</i> Length of Treatment (SD)	9.5 (19)	8.9 (23)	.177
Treatment History			1.35
Yes	74.7 (68)	72.8 (83)	
No	25.3 (23)	27.2 (31)	

p*<.05, *p*<.01, ****p*<.001

Psycho-behavioral variables such as psychiatric severity and prior psychiatric illness were not found to be significant predictors of success or non-success in the VIP-

RI program as displayed in Table 4. History of criminal conviction, however, explained non-success in the VIP-RI program ($p < .10$) although this did not reach significance. Thus, participants in the VIP-RI program who had a history of criminal conviction were less likely to successfully complete the program versus participants who did not have a history of criminal conviction.

*Table 4
Bivariate comparisons of successful versus non-successful mothers in the VIP-RI program by psycho-behavioral variables*

Source	Success % (n)	Non Success % (n)	χ^2/t
High Psychiatric Severity(GSI)			.868
Yes	36.6 (30)	43.2 (48)	
No	63.4 (52)	56.8 (63)	
Prior Psychiatric Illness			.129
Yes	47.3 (43)	44.7 (51)	
No	52.7 (48)	55.3 (63)	
Prior Criminal Conviction			3.15
Yes	27.8 (25)	39.8 (43)	
No	72.2 (65)	60.2 (65)	

** $p < .05$, ** $p < .01$, *** $p < .001$*

Logistic regression analysis conducted on the three strongest variables associated with success or non-success in the VIP-RI program revealed only one significant predictor ($p < .05$) as seen in Table 5. Mothers who have a history of prior child removal ($AOR 2.5$, 95% CI 1.35-4.69), as compared to those mothers without a history of previous child removal, had significantly higher odds of being unsuccessful in the VIP-RI program. Participants who had previous criminal conviction ($AOR 1.4$, 95% CI .76-2.68), compared to those who had no previous criminal conviction, were less likely to be successful in the VIP-RI program, however this did not reach

significance. Having less than a high school diploma did not explain the likelihood of success for mothers as compared to participants holding a high school diploma or higher (AOR 1.6, 95% CI .89-3.0).

Table 5

Logistic Regression Analysis Predicting Non-Success in VIP-RI

Source	β	SE	Adjusted OR	95% CI	<i>p</i>
Prior Children Removed	.92	.32	2.51	1.35-4.69**	.004
Prior Criminal Conviction	.36	.32	1.43	.76-2.68	.264
Education	.5	.3	1.64	.89-3.00	.109

***p*<.01

Discussion

Current evaluations of the Family Treatment Drug Court demonstrate positive outcomes for its target population; however, less than half of participants successfully complete the program (Belenko, 2001, Byran & Havens, 2008, Caldwell & Piner, 2005). Similar results were found for the VIP-RI program participants with just fewer than 50% of participants successfully completing the program as defined as reunification with biological child and a closed case with CPS (Caldwell & Piner, 2005).

The purpose of this study was to identify characteristics associated with success or non-success in the VIP-RI Family Treatment Drug Court program. Although recent attention to Family Treatment Drug Court programs and their efficacy has resulted in an influx in available research, further understanding of barriers to success for participants

is needed. For this reason, this study aimed to identify participant characteristics associated with success or non-success in the VIP-RI program. Characteristics thought to influence success were identified through current FTDC literature and further explored. Relationships were then tested through initial bivariate analysis which then guided regression analysis. Results from this type of analysis may benefit participants and programs in the future as an increase in participant stressors and mental issues has risen and success has decreased in conjunction (Caldwell & Piner, 2005).

In the bivariate analysis, three variables were found to influence success. Only one demographic characteristic, level of mother's education, was found to significantly influence success in the VIP-RI program. Mirroring what is understood in current FTDC research, participants in this sample who held less than a high school diploma or GED compared to participants who have earned a high school diploma or GED or higher, was found to be less likely to successfully complete the program (Butzin et al., 2002; Twomey et al., 2005; Wickizer et al., 1994). One psycho-behavioral variable, mother's prior history of arrest, was also found to influence success. In other words, mothers in the VIP-RI program who had a history of prior arrest were less likely to successfully complete the program which reflects current literature (Knight et al., 2001; Twomey et al., 2005). The service history variable identified through this study to be of significant influence on one's success in the VIP-RI program was mother's history of prior child removal. This was also reflected in the literature where mothers who have had previous children removed through CPS were less likely to successfully complete FTDC programs (Twomey, Caldwell, Soave, Andreozzi & Lester, 2005). In the logistic regression analysis however, only history of previous child removal was significant, and

therefore overshadows other possible predictor variables in the analysis of maternal education and mother's history of arrest. Specifically, for this sample, having previous children removed through CPS, was found to have the strongest effect on hindering success in the VIP-RI program. Although this variable is reported by other studies to be a strong predictor, it is unique in this study as it is the only definitive predictor variable of non-success in the VIP-RI sample (Twomey, Caldwell, Soave, Andreozzi & Lester, 2005).

Although there were several other variables of interest identified through FTDC literature which were thought to influence success and non-success, this was not the case for this study's particular sample. Much of the literature reviewed for the purpose of this study involved slightly different populations. Differences such as sample size, diversity and location of sample participants may explain why this study yielded some differences in the results. The VIP-RI sample, indigenous to the small state of Rhode Island, also has the unique characteristic of consisting of mothers who use drugs during pregnancy. This is not the case for the greater part of the FTDC literature where the majority of programs target mothers who use drugs in general and not limited to use during pregnancy. This may be one reason not all hypothesized variables resulted in significant influence over success and non-success in the VIP-RI data.

Limitations

Some design limitations should be noted before interpreting and applying these results. First, the sample utilized for the purpose of this study consisted of a small population residing in the state of Rhode Island and any conclusions stemming from

this sample may only be applicable to populations similar to the VIP-RI one. Further restricting the generalizability to other populations within the FTDC systems, this study looks at a population of mothers who specifically display drug use during pregnancy, representing a small proportion of participants in similar programs. The definition of success for the VIP-RI program further limits the ability to apply results from this study to all FTDC populations as success may not always be defined as reunification with biological mother and closed case with CPS. Also, data for this study were previously collected and does not include every demographic, service, and psycho-social variable current literature indicates may be influential in successful or non-successful completions of these programs.

Future studies may build on the findings in this study by repeating its design on larger, more diverse populations within the FTDC programs. In doing so, some of the variables which literature suggests are predictive of success or non-success in FTDC programs, but for this sample were found to not be significant predictors of success or non-success for this population, may be tested and examined in larger more diverse populations of similar programs. Separating the dependent variable into single components may also lead to further understanding of the characteristics associated with these variables such as achieving a permanency placement with a family member other than biological mother. Furthermore, exploring any bias associated with having prior child removal and the effect it may have on FTDC staff may explain the variable as a barrier to success.

Chapter 5: Conclusion

Prenatal substance abuse has been linked with harmful consequences for children including physical and mental problems (Howell, Heiser & Harrington, 1998, Lester & Twomey, 2008). Treatment programs for mothers who use drugs during pregnancy continue to display barriers to success of their participants, affecting their intended goals. For these mothers, less than 50% successfully complete the programs, with the majority unsuccessfully completing resulting in loss of parental rights and other penalties (Twomey et al., 2005, Belenko, 2001, Green et al., 2007).

Implications concluded from this analysis may enable FTDC staff to specifically target participants in need of more support based on initial screenings. This study is one of the first of its kind, specifically aiming to isolate predictive factors and then testing their strength through logistical regression whereas most similar studies end with bivariate comparisons. This further analysis allows the results from this study to be utilized in aiding FTDC programs with similar populations to increase their success rates.

Findings presented in this study may be utilized to better understand the needs of specific participants in the FTDC programs. In initially identifying characteristics which are known to hinder success in FTDC, staff may use this knowledge to better support participants who display these characteristics and therefore enhance their possibility of successfully completing the programs. This in turn, may enhance the overall goals of the FTDC programs such as reunification with biological child, by better supporting those mothers with characteristics known to hinder success.

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