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Examining the role of supportive others in substance abuse treatment and child welfare

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EXAMINING THE ROLE OF SUPPORTIVE OTHERS IN SUBSTANCE ABUSE
TREATMENT AND CHILD WELFARE

By

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ABSTRACT

Examining the Role of Supportive Others in Substance Abuse Treatment and Child Welfare

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Child neglect is a prevalent problem and often co-occurs with parental substance abuse. Mothers are most often the perpetrators of child neglect. The currently available treatment programs appear to be failing to meet the needs of these mothers. Most mothers are not completing treatment, putting them at risk of losing custody of their children. The literature suggests that women may have different risk factors associated with their substance use, as compared to men. Social networks appear to play a particularly important role in the maintenance of women's substance abuse problems. The role of social networks may be distinct for different ethnic groups. Certain types of significant others may be more support than others. The present study specifically examined the role of supportive others in the treatment sessions of mothers referred for evidence-based treatment of substance abuse and child neglect. Factor analysis was used to create a scale to reliably assess the relationship between the participation of supportive others in mothers' treatment and the treatment outcomes of mothers. Higher levels of support from others in treatment were associated with less drug use and lower child abuse potential post treatment, particularly among non-Caucasian mothers. Romantic partners were the most common type of significant other, but parents were rated as the most supportive

type of significant other. The generalizability and utility of this measure is discussed in light of these findings. Finally, ideas for future research are recommended.

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DEDICATION

To my family,
thank you for your love and support.

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CHAPTER 1

INTRODUCTION

Child neglect is the most prevalent type of child maltreatment (U.S. Department of Health and Human Services, 2012, 2013), yet it is the least studied (Stoltenborgh, Bakermans-Kranenburg, & van Ijzendoorn, 2013). Child neglect leads to severe negative consequences for children, including cognitive, emotional, and behavioral deficits (Trickett & McBride-Chang, 1995), and in severe circumstances, death (U. S. Department of Health and Human Services, 2011).

Substance abuse is indicated in the majority of child neglect cases (U. S. Department of Health and Human Services, 1999; Young, Gardner, & Dennis, 1998). In addition, substance abusing parents in the child welfare system are more likely to lose custody of their children than parents who do not abuse drugs or alcohol (U. S. Department of Health and Human Services, 1999; 2009). Substance abusing parents are also more likely to fail to complete treatment programs (Choi & Ryan, 2006). Despite a strong relationship between child neglect and substance abuse, only one empirically validated treatment has demonstrated positive outcomes in this population (Donohue et al., in press).

Due to their role as primary caregivers, mothers are most often indicated in the perpetration of child neglect (Sedlak et al., 2010). Women are also less likely to seek substance abuse treatment, and appear to have different risk factors for drug and alcohol abuse (Sun, 2009). Social networks play an important role in the maintenance and treatment of substance abuse in women (Beckman & Amaro, 1986; Beckman, 1994). Indeed, social support is generally associated with greater treatment compliance and

better outcomes (Dore, Doris, & Wright, 1995; Tracy, Munson, Peterson, & Floersch, 2010). Additionally, family-based interventions have been implicated as the best treatment approach for substance abuse (Donohue, Romero, & Hill, 2006; Lam, O'Farrell, & Birchler, 2012). Unfortunately, most families in the child welfare system enter publicly funded rehabilitation programs that are under-funded and do not offer family treatment options (Hannett, 2007).

On the other hand, qualitative research has demonstrated that some types of social support may actually impede treatment (Rockhill, Green, & Newton-Curtis, 2008). For instance, persons who abuse substances often associate with other people who abuse substances, increasing greater availability of, and encouragement for, substance abuse. These persons may also have friends and family members who blame and criticize them, leading to frustration, anger, upset and other emotions that often lead to substance use. Therefore, simply recruiting friends and family to participate in treatment may interfere with substance avoidance strategies. Therefore, developers of substance abuse treatments that employ supportive others should evaluate the extent and method to which social networks influence treatment outcome. However, no investigators have examined participation of supportive others in substance abuse treatment within child welfare. In addition, this is the first study to gather data relevant to social support from someone other than the participant in an effort to eliminate same source bias.

The present study was conducted to examine the role of supportive others in the evidence-based treatment of mothers referred for treatment of child neglect and substance abuse. Specifically, the relationship between social support and treatment outcome was examined in a population of women receiving evidence-supported treatment for

concurrent abuse of illicit drugs and neglect of their children. The treatment outcomes of interest were child abuse potential, drug use frequency, and session attendance. A secondary aim of this study was to psychometrically develop the first questionnaire to reliably assesses participation of supportive others in treatment from the perspective of the treatment providers. The questionnaire was used to gather information regarding methods of assisting the person evidencing substance abuse in treatment, such as assistance in role plays and homework completion.

CHAPTER 2

LITERATURE REVIEW

Child maltreatment continues to be a dangerous problem in the United States. According to Child Protective Services (CPS) reports, over 3.7 million children were the subject of at least one child maltreatment report in 2011, resulting in nearly 700,000 substantiated reports for unique victims (U. S. Department of Health and Human Services, 2012). However, studies that do not exclusively rely on CPS data demonstrate that this may be a substantial underestimate of the true incidence. Data from the recently released Fourth National Incidence Study of Child Abuse and Neglect (NIS-4) suggests that the rate of child maltreatment could be four times as high as what CPS reports, with as many as 3 million, or 1 in 25 children, experiencing maltreatment (Sedlak et al., 2010). NIS reports utilize information from various community professionals and do not solely rely on CPS reports. Other studies utilizing national samples propose that the rate of child maltreatment could be as high as one in eight children (Finkelhor, Ormrod, Turner, & Hamby, 2005; Finkelhor, Turner, Ormrod, & Hamby, 2009). Alarming, nearly half (40%) of maltreated children do not receive follow-up services (Sedlak et al., 2010).

Neglect is by far the most prevalent form of child maltreatment (78.5%), followed by physical abuse (17.6%), sexual abuse (9.1%), and psychological maltreatment (7.6%), with many children experiencing multiple types of maltreatment (U. S. Department of Health and Human Services, 2011, 2012). Child neglect is difficult to define because definitions vary by state. However, the minimum federal standard defines neglect as an act of omission that results in harm to the child or presents an imminent risk of serious

harm (U. S. Department of Health and Human Services, 2012). There are several types of child neglect which include physical, emotional, educational, and medical neglect (U. S. Department of Health and Human Services, 2012). Children are most often neglected by their biological parents, accounting for 92% of child neglect cases (Sedlak et al., 2010). In addition, female caregivers are responsible for child neglect in 86% of cases. This is not surprising given that mothers are typically the primary caregivers of children (Gaunt, 2013).

Physical and sexual abuse of children has shown dramatic declines from 1992 to 2009 (56% and 62%, respectively); conversely, there was only a 10% drop in neglect cases during the same time period (Finkelhor, Jones, & Shattuck, 2011). There is no clear reason why neglect trends have differed so drastically from physical and sexual abuse (Jones, Finkelhor, & Halter, 2006). Some speculate it is a lack of policy attention and public awareness for neglect in comparison to physical and sexual abuse (Finkelhor et al., 2011; Jones et al., 2006). Nearly 30 years ago, Wolock and Horowitz (1984) demonstrated a dearth of attention to neglect in policy and professional journals. A decade later, Dubowitz (1994) argued that there had been little change, citing that less than 2% of federally funded child maltreatment research focused on neglect. A recent meta-analysis revealed that neglect continues to be an overlooked type of maltreatment in scientific research (Stoltenborgh et al., 2013). It is also possible that a broadening of the definition of child neglect in some states, such as the inclusion of prenatally drug exposed infants, could be masking a decline of more traditional forms of child neglect (Finkelhor et al., 2011). Regardless of the reason for the apparent lack of decline in neglect rates,

child neglect persists at an alarming rate and the lack of research attention it receives is appalling.

Effects of Neglect on Children

The most catastrophic consequence of child maltreatment is child fatality. A nationally estimated 1,560 children died from child maltreatment in 2010, of which 32.6% were attributed exclusively to neglect (U. S. Department of Health and Human Services, 2011). Approximately 71% of child fatalities in 2011 experienced neglect, either exclusively or in combination with another type of maltreatment (U. S. Department of Health and Human Services, 2012). Some child fatalities are children who have experienced CPS involvement. Approximately 9% in 2011 and 12% in 2012 of child fatalities were children whose families had family preservation services in the last five years (U. S. Department of Health and Human Services, 2011, 2012), demonstrating the need for better treatment options for these families.

A study of children in foster care demonstrated that neglected children are more likely to experience a decline of parental contact and less likely to be reunified with their families than abused children (Barber & Delfabbro, 2009). There is evidence that child neglect has more severe adverse effects on developmental outcomes than child abuse (Hildyard & Wolfe, 2002; Trickett & McBride-Chang, 1995). In infancy and early childhood, neglect is associated with more severe language delays, lower school readiness, greater declines in Bayley scores, and lower IQ than any other abuse type (Allen & Oliver, 1982; Culp et al., 1991; Egeland, Sroufe, & Erickson, 1983; Egeland, 1991; Hildyard & Wolfe, 2002; Trickett & McBride-Chang, 1995). Pre-schooled-aged neglected children have shown other deficits in cognitive functioning, including

visuospatial processing, memory, and executive functioning (Dore et al., 1995). Egeland and colleagues (1983) found that neglected toddlers performed worse than children with other maltreatment experiences on a battery of problem solving tasks and appeared to lack the self-esteem necessary to cope with environmental stressors. Poor cognitive functioning appears to continue into childhood and adolescence with neglected children demonstrating the lowest school grades and highest teacher ratings of learning problems, grade repeats, and school absences (Eckenrode, Laird, & Doris, 1993; Egeland, 1991; Trickett & McBride-Chang, 1995; Wodarski, Kurtz, Gaudin, & Howing, 1990). Egeland (1991) found that his entire sample of neglected children (n=24) had been referred for special education services. There is also evidence that cognitive deficits persist into adulthood (Gould et al., 2012).

Social, emotional, and behavioral problems including insecure attachment, peer problems, withdrawal, less prosocial behavior, lack of affect, poor resiliency, negative self-representations, and internalizing and externalizing problems are commonly seen in neglected children (Egeland et al., 1983; Hildyard & Wolfe, 2002; Hoffman-Plotkin & Twentyman, 1984; Howes & Eldredge, 1985; Trickett & McBride-Chang, 1995; Wodarski et al., 1990). Early experiences of child neglect may also result in ineffective regulation of emotion (Pollak, 2008). There is evidence that neglected children have difficulty distinguishing between and responding to emotions and that they fail to develop attachment to caregivers (Wisner Fries, Ziegler, Kurian, Jacoris, & Pollak, 2005). Neglect may also be associated with criminal activity and more violent offenses in adulthood (Rivera & Widom, 1990; Trickett & McBride-Chang, 1995; Van Dorn, Volavka, & Johnson, 2012; Widom, 1989a, 1989b). Additional long-term consequences

include substance abuse (Hussey, Chang, & Kotch, 2006), economic problems (Currie & Widom, 2010), greater likelihood of using social services (Yanos, Czaja, & Widom, 2010), risky sexual behavior (Wilson & Widom, 2010), and higher risk for posttraumatic stress disorder (Widom, 1999).

Child neglect may even result in physical deficits. Delays in structural brain development (Tupler & De Bellis, 2006) and long-term regulatory problems of the stress response system (Wisner Fries, Shirtcliff, & Pollak, 2008) have been demonstrated in neglected children. Deficits in height have also been shown (Pears & Fisher, 2005).

Child Neglect and Substance Abuse

Overall, approximately 8.3 million children, 11 % of children in the United States, live in a home in which at least one parent is an alcoholic or in need of substance abuse treatment (U. S. Department of Health and Human Services, 1999). Child protective services has reported that approximately one-third to two-thirds of substantiated reports involve substance use disorders (U. S. Department of Health and Human Services, 1999). It has also been estimated that 40% to 80% of families in the child welfare system have an incident of child maltreatment associated with substance abuse (Young et al., 1998). Substance abuse is also a direct contributing factor to child maltreatment re-reports (Wolock & Magura, 1996). In addition, substance abuse is more often associated with child neglect than child abuse (U. S. Department of Health and Human Services, 1999). Despite the apparent relationship between substance abuse and child maltreatment, there is little information for practitioners about how to concurrently treat child neglect and substance abuse (Donohue et al., 2006; Haack, 1997). It may be difficult to study parents involved with CPS because of the sensitive nature of substance use and child

maltreatment. Sun (2000) found that mothers involved with CPS were very hesitant to be interviewed, which may have biased their sample to be more “successful” CPS cases.

The households of maternal substance abusers are often single parent households with multiple male father figures and other household members who are in and out of the home (Chance & Scannapieco, 2002). These unstable households also tend to be chaotic with frequent conflict between adults, little positive affect and empathy, less openness about feelings, and less involvement in parenting (Connell-Carrick, 2003). Additionally, chronic maternal substance abuse may result in alienation from others due to distrust, forcing mothers to raise their children without the support of family members or friends (Donohue et al., 2006). Indeed, mothers with substance abuse problems typically report having low levels of social support (Harmer, Sanderson, & Mertin, 1999).

Substance use is more generally associated with inefficient parenting practices (Harmer et al., 1999), including faulty expectations regarding child development (Twentyman & Plotkin, 1982), poor maternal affection and failure to supervise children (Corcoran, 2000), spending little time with children and inconsistency with disciplinary practices (Kumpfer, 1987), poor attachment with children (Crittenden, 1988), and difficulties responding to the needs of infants (Gottwald & Thurman, 1994). Therefore, it appears that substance abuse directly contributes to unstable home environments and neglectful parenting, putting children at greater risk for poor developmental outcomes.

Treatment Completion

Approximately 60% of reported victims in the child welfare system received post-response services in 2010 (Children’s Bureau U.S. Department of Health and Human Services, Administration for Children and Families, Administration on Children, Youth

and Families, 2011). Post-response services address the safety and welfare of the child victims and are typically based on an evaluation of the family circumstances, which may include the need for services and individual family strengths. Post-response services include in-home services or foster care services. In-home services are services provided to the family while the children are still living in the home. Examples of in-home services may include counseling, mental health services, and substance abuse services. Foster care services involve the removal of the children from the family and the placement of the children with either relatives or nonrelated foster families in addition to the aforementioned services.

In addition, substance use has been identified as a barrier to treatment completion for families in child maltreatment prevention services (Damashek, Doughty, Ware, & Silovsky, 2011). Evidence of substance abuse has also been identified as a major factor in the decision to place children in foster care and a significant barrier to family reunification (U. S. Department of Health and Human Services, 1999, 2009). Failing to engage in, or complete, substance abuse treatment results in significant delays in family reunification (Besinger, Garland, Litrownik, & Landsverk, 1999). Therefore, children from substance-abusing families are more likely to enter foster care, spend longer periods of time in foster care, and are less likely to achieve family reunification relative to children from non-substance-abusing homes (U. S. Department of Health and Human Services, 1999, 2009).

Consequently, treating parental substance abuse problems in an efficient and timely manner is critical. Ever since the enactment of the Adoption and Safe Families Act of 1997 parents have a limited amount of time to complete treatment plans and

demonstrate that they are safe parents before termination of parental rights proceedings. This law allows only 15 out of the most recent 22 months for parents to complete treatment, which is often not enough time given the high rate of relapse during substance abuse treatment (Larsen, 2000; U. S. Department of Health and Human Services, 1999, 2009; Young et al., 1998) Despite the urgent need for treatment completion, many substance-abusing parents in the child welfare systems do not complete a treatment program. In a sample of 871 child welfare-involved parents receiving alcohol and drug treatment, only 22% were considered to have completed all required levels of treatment (Choi & Ryan, 2006). Importantly, there are greater rates of family reunification for mothers with greater progress in substance abuse treatment (Choi, Huang, & Ryan, 2012; Smith, 2000). Choi, Huang, and Ryan (2012) found that in their sample of 858 child welfare-involved mothers, mothers who achieved substantial or complete progress in substance abuse treatment were over 2 times more likely to regain custody of their children.

Substance Abuse in Women

Results from the 2011 National Survey on Drug Use and Health demonstrate that the rate of illicit drug use among persons aged 12 or older was higher for males (11.1%) than for females (6.5%) (Substance Abuse and Mental Health Services Administration [SAMHSA], 2012). Males (56.8%) were also more likely than females (47.1%) to be current drinkers. Approximately 10.4 percent of males in 2011 had a diagnosis of substance abuse or dependence, while the rate for females was 5.7 percent. In 2011, only 10.8% of people who felt they needed treatment for their illicit drug or alcohol use problem had received treatment in the last year (SAMHSA, 2012), demonstrating that the

majority of substance abusers do not receive treatment even when they self-identify as having a substance abuse problem.

Substance abuse appears to be a more prevalent problem among men; however, substance abuse appears to be a more complex problem for women than it is for men (Wechsberg, Luseno, & Ellerson, 2008). Likely because of their roles as primary caregivers (Gaunt, 2013), substance-abusing mothers are more likely to be reported for child maltreatment than substance-abusing fathers (Locke & Newcomb, 2004). Many women have to maintain their role as family caretaker and cannot leave the family to enter intensive residential treatment. Even attending outpatient treatment services is not an option for mothers who do not have reliable childcare (Sun, 2009).

Both men and women are stigmatized for their drug use; however, women report that they are subjected to a double standard due to their reproductive and caregiver roles (Sanders, 2012; Sun, 2009). Mothers may be more hesitant to admit that they have a substance abuse problem. The belief that others consider them to be “bad mothers” and the fear of losing custody of their children could deter mothers from admitting they have a problem and seeking treatment (Ebener & Kilmer, 2003; Rockhill et al., 2008; Sanders, 2012). Therefore, many women who enroll in treatment are already in poor mental and physical health and may do so only with legal or CPS involvement (Wechsberg et al., 2008).

There is evidence that women have different risk factors than men for developing substance use disorders (Sun, 2009). Women substance abusers are more likely to have dysfunctional family histories and family substance abuse disorders than males (Sanders, 2012; Sun, 2009). Substance use and abuse in women is more likely to be initiated and

maintained by a male sexual partner than vice versa (Sun, 2009). The psychosocial risk factors for women may be due to women being more likely to imitate the behavior of higher status males (Haavio-Mannila, 1991). Riehm, Hser, and Zeller (2000) found that intimate partner variables are strong predictors of motivation to complete substance abuse treatment for women but not men. Having a partner who had been in treatment increased was related to higher treatment motivation for women, and having a partner who uses drugs decreased treatment readiness for women.

Sun's (2007) qualitative research demonstrated that one factor that may be related to relapse in women is their sense of self-worth, which is linked with intimate relationships with men. In this study, women associated their self-worth with being in a relationship, so losing their relationship would have been devastating. Women may have used substances to please their substance-abusing partner and only stop using when their partner stopped using. There is also evidence that women are more likely to use substances to improve negative emotions due to interpersonal conflict (Annis & Graham, 1995). This evidence suggests that gender-specific treatment for substance abuse is necessary.

It appears that social support may play a large role in the development and treatment of substance abuse problems in women. In a sample of 92 female Narcotic Anonymous members 60% to 75% percent reported that they believed others did not understand their drug or alcohol problem (Sanders, 2012). More specifically, these women felt that their families treated them negatively because of their addiction. Additionally, women with substance abuse problems tend to have smaller social support networks (Falkin & Strauss, 2003).

The Role of Social Support in Substance Abuse and Parenting

There is evidence that positive, abstinence-oriented social support may improve substance abuse treatment outcomes for women (Tracy et al., 2010). A study by Suchman, McMahon, Slade, and Luthar (2005) suggests that a perceived lack of social support is an initial risk factor for later substance abuse and depression. They also found that perceived maternal social support was related to family cohesion in drug-dependent mothers, such that greater social support was associated with more family cohesion. Poor intimate partner relationships have also been identified as a barrier to treatment completion of child maltreatment prevention services (Damashek et al., 2011).

Substance abusing mothers who lose custody of their children are more likely to regain custody when they have a supportive partner (Grant et al., 2011). Data from the Project on Human Development in Chicago Neighborhoods showed that for Hispanic families the size of neighborhood social networks was associated with less physical aggression by caregivers (Molnar, Buka, Brennan, Holton, & Earls, 2003). Osborne and Berger (2009) demonstrated that risk for poor child health and behavioral outcomes increases when both parents are substance-abusing compared to having only one parent with a substance abuse problem. This suggests that having social support in the form of a sober parent, or social network, can be protective for children with a substance abusing parent.

Social support has been associated with better parent and child outcomes in other populations. Higher levels of parental social support are related to less ineffective parenting and less child difficulties (McConnell, Breitreuz, & Savage, 2011). Crnic and his colleagues (1983) found that mothers with more social support evidence more

positive parenting attitudes and behaviors. They also demonstrated that social support moderated the effects of stress on maternal life satisfaction. Similarly, Quittner, Glueckauf, and Jackson (1990) found that social support may mediate the relationship between parenting stress and outcomes, such as perceptions of emotional support, depression, and anxiety.

Greater perceived maternal social support has been associated with better social-emotional development in children (Sarche, Croy, Crow, Mitchell, & Spicer, 2009). High levels of social support from extended family members in African American children may be related to better psychosocial adjustment in adolescence; however, this relationship may be mediated by parenting style because this relationship was no longer significant when the effects of authoritative parenting practices were controlled (Taylor, Casten, & Flickinger, 1993). Social support may also be a protective factor for children living in poverty, serving as a mediator between stress and self-esteem (Guest & Biasini, 2001). Parent and school support, but not peer support has been linked with resilience in children exposed to community violence (O'Donnell, Schwab-Stone, & Muyeed, 2002).

Interestingly, social support may protect against genetic risk factors. For instance, a regulatory variant in the serotonin transporter gene (5-HTTLPR) may moderate the development of depression after stress (Kaufman et al., 2004). Social support was shown to moderate the risk for depression associated with a history of child abuse and/or neglect and this genotype.

Women appear to have more barriers to substance abuse treatment associated with their social environments than men (Beckman & Amaro, 1986; Beckman, 1994). Qualitative research has also demonstrated that social support may actually impede

treatment. Beckman and Amaro (1986) found that family and friends are more likely to be opposed to Caucasian women entering alcohol treatment than Caucasian men. This may result in a “social cost” associated with substance abuse treatment for women (Beckman, 1994).

Additionally, substance abusers often associate with other substance abusers. Knight, Logan, and Simpson (2001) found that women in a residential substance abuse treatment program were more likely to complete the program if they had less substance-abusing and deviant peers. Critical friends and family members may actually have a negative influence on treatment outcomes. Therefore, indiscriminately recruiting friends and family to participate in treatment may not provide enough support for change. In a qualitative study by Sun (2000), mothers reported that they avoided seeing potentially positive social influences, such as their parents, because of their shame. Rockhill, Green, and Newton-Curtis (2008) found that interpersonal relationships served as a barrier to treatment in nearly their entire sample. In their sample, the stigma associated with substance abuse was augmented by the shame, guilt, and blame accompanied with being involved in the child welfare system. In some cases, this caused further complications in already strained family relationships. Entering substance abuse treatment has been received with opposition from family, friends, and romantic partners, as well as concern about loneliness and avoidance by peers (Beckman, 1994; Kane-Cavaiola & Rullo-Cooney, 1991; Knight et al., 2001; Riehman et al., 2000; Rockhill et al., 2008; Thom, 1987).

Measuring Social Support in Treatment

Past research on social support in substance abuse treatment has relied on qualitative methods in which participants are asked open-ended questions about their support networks (e.g., Rockhill et al., 2008; Sun, 2000; Tracy et al., 2010). This method provides useful descriptive information, but makes it difficult to draw definitive conclusions. Other studies have utilized semi-structured and structured interviews that quantify responses so that theories may be tested statistically. Questions often include the number of people in the support system and whether their interactions are positive or negative (e.g., Falkin & Strauss, 2003). However, these measures may fail to capture how engaged supportive others are in the treatment and recovery process because questions are not specific to substance abuse treatment behaviors. Furthermore, these studies have relied exclusively on the report of the participant, potentially introducing same source bias. A comprehensive measure of social support in treatment that eliminates same source bias is still needed.

Substance Abuse Treatment and Social Support in Minority Groups

Social support in substance abuse treatment may differentially relate to outcomes for minority ethnic and racial groups. Based on focus groups with substance abusing Latina women, Kail and Elberth (2002) found that the Latina women felt isolated from others which led some to deny that they had a substance abuse problem. In addition, the cultural norm of “sympathia,” which places preference on social interactions characterized by harmony and avoidance of interpersonal conflict, made it unlikely that a Latina was confronted about her substance abuse by friends and family. Instead, family and friends tended to ignore and enable substance abuse problems or completely break contact. Latino families can be both a source of strength and conflict (McNeece &

DiNitto, 2005). Substance abusing Latinos may be isolated from their families due to their shame. Stigmatization of women who abuse substances is very high in Latino culture and can cause rejection by social networks (McNeece & DiNitto, 2005). The concept of “familismo,” or strong family orientation, is prevalent in Latino culture (Barón, 2000; McNeece & DiNitto, 2005; Suarez & Ramirez, 1999). According to this concept, the father is seen as the authority figure and the mother has a self-sacrificing nature (Suarez & Ramirez, 1999). The tendency for interdependence in Latino culture may be reflected in a stronger relationship between social support and outcomes for Latina women.

Family and social networks may also be particularly important for reinforcing sobriety in African Americans (Amaro, Beckman, & Mays, 1987; McNeece & DiNitto, 2005). The extended family networks of African Americans can be a source of emotional support. It has been suggested that enlisting the support of these networks should be a focus in treating African American substance abusers (McNeece & DiNitto, 2005). Amaro, Beckman, and Mays (1987) found that alcoholic African American women had more members of their social network that were supportive of entering substance abuse treatment than the social networks of Caucasian women. African Americans also reported having larger social networks.

The idea that African American women are strong and can endure a great deal of pain is common among African Americans (McNeece & DiNitto, 2005). African American women may need to be taught to focus on their own needs and accept help from others (Reid, 2000). There are several principles of Afrocentric culture that suggest that enlisting the support of social networks would be particularly useful for African

Americans. These principles include communalism, collectivism, cooperation, and interdependence (McNeece & DiNitto, 2005).

The Present Study

The current literature suggests social support may play an important role in the treatment of women who abuse substances. However, general social support, and not treatment specific support, has been investigated in previous studies. The relationship between social support and treatment outcomes is unclear, perhaps because investigators have focused on overly broad conceptualizations of social support. Therefore, studies examining the role of social support specific to treatment are needed. The present study aims to extend research in this area by specifically assessing the participation of supportive others in the therapy sessions of women receiving treatment for substance abuse and child neglect. Previous studies in this literature review have only used qualitative methods or self-report measures of perceived social support in the home or work setting and do not address support specific to treatment. Therefore, this study was conducted to develop a novel method of examining the extent to which support in evidence-based treatment is provided to those who are engaged in family-based substance abuse intervention, and to investigate whether social support differentially impacts the treatment of women from different ethnic groups.

The results of this study have great implications for practitioners in their attempts to optimize social support systems within the context of evidence-supported, family-based interventions within child welfare. It was predicted that higher levels of social support would be associated with better outcomes specific to child abuse potential, drug use, and treatment attendance. It was also predicted that women from ethnic minority

groups would have different levels of social support and that social support may have a different relationship to their treatment outcomes. Specifically, mothers from ethnic minority groups were predicted to have a stronger relationship between social support and outcomes.

The participants of this study were from a larger controlled treatment outcome study investigating the effectiveness of Family Behavior Therapy (FBT; Donohue & Allen, 2011) for treating mothers with concurrent substance abuse and child neglect. Participants were mothers referred for treatment from the Department of Family Services (DFS) due to an incident of child neglect and evidenced illicit substance abuse. Participants were required to have at least one adult significant other willing to assist the participant in therapy sessions. Participants in the controlled outcome study were randomly assigned to an FBT condition or a treatment as usual condition.

Retrospective data from participants in the FBT condition of the larger study were examined in the present study. Specifically their demographic information, and baseline and post-treatment data relevant to child abuse potential, drug use frequency, and treatment attendance. Child abuse potential was measured using the Abuse Scale of the Child Abuse Potential Inventory (Milner, 1986). The Timeline Follow-back was used to assess drug use frequency (Sobell, Sobell, Klajner, Pavan, & Basian, 1986). Treatment attendance was measured by counting the number of treatment sessions each participant attended. The Significant Other Support Scale (SOSS) was developed in this study to assess the participation of supportive others during each participant's treatment from the perspective of the treatment providers after participants discontinued treatment.

The present study used exploratory factor analysis to examine the internal structure of the SOSS. The internal consistency reliability was tested using Cronbach's alpha and inter-rater reliability was inspected using an intra-class correlation. Bivariate correlations and MANOVA's were conducted to determine if any demographic variables were related to the dependent variables (child abuse potential, drug use frequency, and treatment attendance). The dependent variables were examined for inter-relatedness using bivariate correlations to determine the appropriate regression model. Multiple linear regressions were used to determine the relationship between each dependent variable and scores on the SOSS while controlling for baseline scores.

Hypotheses

1. It was hypothesized that the new measure for examining support from others in treatment would demonstrate good reliability and validity, providing evidence that it is a useful measure for assessing support from others in treatment. Specifically, it is hypothesized that the five items of the new measure will load onto one factor, comprising a measure of overall support.

2. It was hypothesized that greater treatment specific support from supportive others, as measured by the SOSS, would be statistically related to better treatment outcomes, specifically less child abuse potential, less drug use, and better treatment attendance.

3. It was hypothesized that the relationship between social support and treatment outcomes will be different for women from ethnic minority groups as compared to Caucasian women. Due to the inter-connectedness more often associated with ethnic minority cultures it was predicted that ethnic minority participants would have higher

social support scores and a stronger relationship between social support and treatment outcomes compared to Caucasian participants.

4. It was predicted that romantic partners will be rated as least supportive by providers because prior research suggests that women's drug use problems are initiated and maintained by a romantic partner.

CHAPTER 3

METHOD

Participants

Participants in this study are mothers ($N = 38$) from a larger study examining the effectiveness of Family Behavior Therapy (FBT; Donohue & Allen, 2011) for treating mothers referred from DFS for substance use and child neglect. Eligibility criteria were the following: (a) mother reported to DFS for child neglect, (b) at least 18 years old, (c) evidence of illicit substance use during the 4 months prior to the pre-treatment assessment, (d) living with the child related to the referral or it was the intention of the Court to return the child home if safe to do so (e) had at least one adult individual willing to participate in the participant's treatment, and (e) referral not primarily for sexual abuse or domestic violence.

Mothers' ages ranged from 18 to 48 years ($M = 30.0$, $SD = 8.13$). The sample was predominantly non-Caucasian (57.9%), including 16 Caucasians (42.1%), 11 Black or African Americans (28.9%), 6 Latinas (15.8%), 3 Asian or Pacific Islanders (7.9%), and 2 Native Americans (5.3%). Only 6 mothers reported that they were married (15.8%), while 15 reported that they were cohabitating with a partner (44.7%), and 15 (39.5%) reported that they were single. The majority of participants were unemployed at pre-treatment assessment ($n = 30$, 78.9%); and a few endorsed part-time ($n = 4$, 10.5%) or full-time ($n = 4$, 10.5%) employment. The mean grade level completed was just below 11th grade ($M = 10.8$, $SD = 2.01$).

Procedure

Recruitment and randomization. The study was approved by the Institutional Review Board for the protection of human participants by the local agency. DFS offices were informed of the study and its inclusionary criteria through email and on site presentations. Referrals were made by DFS caseworkers through telephone or fax. Upon DFS referral, an intake specialist contacted the caseworker, and separately the participant, by telephone to determine if inclusionary criteria were met. Qualifying participants were scheduled to be informed of the study and give consent.

The pre-treatment assessment was utilized to substantiate inclusionary criteria and establish baseline data. Upon completion of the pre-treatment assessment, and confirmation of study inclusionary criteria, participants were assigned to Family Behavior Therapy or treatment as usual. Participants receiving Family Behavior Therapy were assigned a primary and a secondary provider. Only participants in the Family Behavior Therapy condition were included in data analyses for this study. FBT sessions were conducted in the participants' homes at times that were convenient for the participant and her significant other, to avoid complications associated with lack of transportation and child care.

Data collection. Pre- and post-treatment assessments were conducted in the participants' homes by trained assessors. Assessors were not informed of the participants' treatment condition. Participants were compensated for their time with gift cards for use at a local department store; \$50 for the pre-treatment assessment and \$100 for the post-treatment assessment. From the large battery of assessments in the larger study, only a measure of child abuse potential and a measure of drug use frequency were examined in this study. Information relevant to the support of significant others was collected by

contacting both primary and secondary providers after the participants had completed treatment. The providers gave informed consent and completed a significant other support questionnaire. Data from the provider who completed the most sessions for a particular participant were used in the analyses. For cases in which the response from only one provider could be obtained, the responses from that provider were used. If both providers completed the same amount of sessions, the responses from the primary provider were used.

Measures

The Child Abuse Potential Inventory. The Child Abuse Potential Inventory (CAPI; Milner, 1986) is a self-report screening instrument used to assess the potential of parents to neglect and physically abuse their children. It has 160 items and an agree/disagree response format. The CAPI derives several subscales, including the Distress, Rigidity, Unhappiness, Loneliness, Problems from Others, Problems with Child and Self, Problems with Family, Ego Strength, and Abuse Scales. To detect response distortions, the CAPI contains three validity scales: Lie, Random Response, and Inconsistency Scales. Only the Abuse Scale was used for the purposes of this study. Scores on the Abuse Scale range from 0 to 486, with higher scores indicative of greater child abuse potential.

This measure has been well validated and has extensive psychometric support (see Walker & Davies, 2010). More than 100 articles over the past 25 years have studied the psychometric properties of the CAPI. The CAPI demonstrated good cross-cultural validity, differential validity, internal consistency, sensitivity, specificity, and treatment sensitivity in a review of 27 articles (Walker & Davies, 2010).

Timeline Follow-Back. The Timeline Follow-back (TLFB; Sobell, Sobell, Klajner, Pavan, & Basian, 1986) is an interviewer-assisted, calendar-based method that utilizes memory cues (e.g., birthdays, holidays) for participants to recall days of substance use in the previous four months. TLFB data was corroborated by data from an 8-panel urinalysis toxicology screen (marijuana, cocaine, amphetamines, barbiturates, opiates, benzodiazepines, methadone, phencyclidine) using the conventional detection cut-offs. Participants were asked to report their illicit drug use on calendar days.

The TLFB has been well validated for assessing alcohol and drug use (e.g., Donohue et al., 2004; Donohue, Hill, Azrin, Cross, & Strada, 2007; Fals-Stewart, O'Farrell, Freitas, McFarlin, & Rutigliano, 2000). The TLFB is a reliable method of assessing drug use and has consistently demonstrated concurrent validity, predictive validity, inter-rater agreement, face validity, and treatment sensitivity (Carey, 1997; Brad Donohue et al., 2004, 2007; Hjorthøj, Hjorthøj, & Nordentoft, 2012; Vinson, Reidinger, & Wilcosky, 2003).

Attendance. An objective measure of attendance was calculated by counting the number of treatment sessions attended by the participant.

Significant Other Support Scale. The Significant Other Support Scale (SOSS; see Appendix A) was developed for this study to assess information relevant to involvement of significant others in the treatment of the identified clients. The questionnaire was completed by participants' providers. It was developed in a manner consistent with the measurement development guidelines proposed by Holmbeck and Devine (2009).

A review of the literature and clinical experience was used to determine the themes relevant to significant other support in FBT (e.g., Donohue et al., 2009) and substance abuse treatment in general (e.g., Love, Longabaugh, Clifford, Beattie, & Peaslee, 1993). These themes and those relevant to successful completion of a CPS treatment plan (e.g., abstinence from drugs, positive parenting behaviors) were used to devise items during a brainstorming session. From this item pool, only aspects of significant other support in treatment that could be observed by providers were included in test items. The measure was then reviewed by an expert in the substance abuse treatment field.

This process resulted in a measure comprised of five specific items that are hypothesized to assess aspects of support in treatment and one item that assesses overall support. The items assess how supportive the significant other was in encouraging the participant to attend treatment, assisting with homework assignments, encouraging abstinence from drugs and alcohol, encouraging positive parenting behaviors, and assisting in role-plays during therapy sessions. A sixth item assessing overall significant other support was included in the instrument for the purpose of testing validity of the instrument. Providers respond to questions on utilizing a 7-point Likert scale (1- extremely unsupportive, 2-very unsupportive, 3-somewhat unsupportive, 4-neutral, 5-somewhat supportive, 6-very supportive, 7-extremely supportive).

Intervention

Family Behavior Therapy for child welfare (FBT-CW; Donohue et al., in press) is a manualized family-based intervention, which includes up to 20 sessions occurring within 6 months. Treatment sessions last between 60 and 90 minutes. FBT is based on

behavioral theories, similar to the Community Reinforcement Approach to alcohol abuse (Nathan H. Azrin, Sisson, Meyers, & Godley, 1982; Hunt & Azrin, 1973; Sisson & Azrin, 1989), in which substance use is conceptualized as a strong positive reinforcer because it has pleasurable physiological effects, helps relieve physical and emotional pain, and creates a sense of community with other substance users. FBT consists of multiple intervention components that are administered at the provider's discretion, including (a) treatment planning to assist in determining which interventions to emphasize in therapy, (b) dynamic goals and rewards to assist with increasing motivation, (c) stimulus control to encourage spending less time with individuals and situations that have involved substance use and other problem behaviors and more time with positive influences, (d) self-control to decrease urges to use drugs and engage in other impulsive behaviors, (e) communication skills training to increase assertiveness and establish positive social relationships with others, (f) financial management, (g) job-getting training to assist with gaining employment, (h) child management skills training, and (i) emergency prevention and management (Urgelles, Donohue, Wilks, Van Hasselt, & Azrin, 2012) to prescriptively manage emergent conditions that often interfere with treatment implementation. FBT is designed to incorporate the assistance of significant others and community support systems throughout the implementation of behavioral intervention components. Significant others are encouraged to allow natural consequences for undesired behaviors to occur with persons who are targets of intervention, and to positively reinforce their goal-oriented behavior. Supportive others are also encouraged to assist with treatment through modeling skills, driving participants to therapeutic activities, encouraging participation in pro-social activities that do not

involve drug use, and assisting with the completion of therapeutic assignments. FBT has demonstrated success in controlled trials involving adults and adolescents (Azrin et al., 1996, 2001; Azrin, Donohue, Besalel, Kogan, & Acierno, 1994; Azrin, McMahon, et al., 1994; Donohue et al., 1999; Donohue et al., in press).

Statistical Design

Data entry and screening. All assessments were administered and scored by trained graduate students and a post-doctoral fellow. Graduate students and trained research assistants entered the data into an SPSS database. All data were then double checked for accuracy. Lastly, the data were evaluated to ensure they met the assumptions for parametric tests.

Preliminary analyses. Exploratory factor analysis was conducted on the first five items of the SOSS to determine the internal structure of the measure. First, the data was screened to ensure that the assumptions for factor analysis were met and to determine the appropriate extraction method. The finalized SOSS was comprised of items with factor loadings greater than 0.32. The internal consistency reliability of the measure was examined using Cronbach's alpha. Intra-class correlation was calculated between the primary and secondary providers to determine the inter-rater reliability of the scale. A bivariate correlation examined the relationship between the scores on the SOSS and the sixth item of the SOSS, which assesses overall support.

The dependent variables in this study were the CAPI Abuse scale score at post-treatment, drug use measured by the TLFB at post-treatment, and session attendance. Bivariate correlations and MANOVA's were used to determine if any demographic variables are related to the dependent variables so that they could be statistically

controlled for in the primary analyses. Lastly, the dependent variables were examined for inter-relatedness using bivariate correlations to determine the appropriate regression model for the primary analyses.

Primary analyses. Regression analyses were used to test the hypothesis that greater significant other support is associated with less child abuse potential, less drug use, and higher treatment attendance. Results from the preliminary analyses were used to determine which regression analyses were appropriate for the data and potential confounding variables. Baseline scores for drug use and child abuse potential were entered into the regression model as covariates.

The relationship between support scores and ethnicity were examined by comparing the mean support scores of Caucasian and non-Caucasian participants utilizing an independent samples *t* test. In order to test the hypothesis that a different relationship exists between social support and outcomes for ethnic minority groups, the above regression analyses were conducted again, separately for Caucasian and non-Caucasian participants.

Finally, the SOSS scores were compared based on the type of significant other. Due to the small sample size all significant other types could not be compared. This analysis focused on parents and romantic partners because they were most often discussed in the literature and because they were the two largest discrete significant other types. Mean scores on the SOSS were compared for these groups with an independent samples *t* test.

CHAPTER 4

RESULTS

Data Screening

The data were screened for accuracy and to ensure that the assumptions for parametric tests were met.

Accuracy of data file. The frequency, mean, standard deviation, and range statistics were examined for each item of the SOSS in order to ensure there were no duplicate cases or data entry errors. No errors or missing data were present. See Table 1 for the means and standard deviations for each item of the SOSS.

Table 1

Means and Standard Deviations of SOSS Item Responses (N = 38)

Item	M	SD
1. encouraging/assisting the client to attend sessions	3.89	1.91
2. encouraging/assisting the client in homework completion	3.39	1.70
3. encouraging/assisting the client in staying clean from drugs and alcohol	4.03	2.14
4. encouraging/assisting client in positive parenting behaviors	4.37	1.91
5. participation in role-plays and discussions during sessions	4.18	2.05

Outliers. Each participant's score on the items of the SOSS were transformed into z scores in order to test for univariate outliers. Standardized scores larger than an absolute value of 3.29 are considered univariate outliers (Tabachnick & Fidell, 2013). Across all variables, the largest z score was 2.12, demonstrating that no univariate outliers were present.

The data were also examined for multivariate outliers, or cases with an unusual combination of scores on the SOSS. Multivariate outliers have a χ^2 value that corresponds with a Mahalanobis distance of $p < .001$ with degrees of freedom equal to the number of variables (Tabachnick & Fidell, 2013). There are five items on the SOSS, so any case with a χ^2 value greater than 20.52 is a multivariate outlier. The largest value for χ^2 was 12.42, indicating an absence of multivariate outliers.

Normality. Normality was tested by examining skewness and kurtosis statistics. These values and their corresponding z scores can be found in Table 2. Absolute z scores for skewness or kurtosis smaller than 1.96, which corresponds with an alpha level of 0.05, are recommended for small samples sizes ($N < 50$) in order to conclude that a distribution is normal (Kim, 2013). As demonstrated in Table 2, all z scores fell below 1.96, indicating that the distributions were generally normal. Therefore, no transformations were performed to normalize the data.

Linearity. Scatter plots of the items of the SOSS and histograms of the residuals from the regression equations were examined to assess for linearity. These graphs all demonstrated a linear relationship between variables.

Multicollinearity and singularity. Multicollinearity and singularity can occur when variables are too highly correlated. Multicollinearity is present when variables are very highly correlated, $r = 0.90$ or above (Tabachnick & Fidell, 2013). As shown in Table 3, although the items were highly correlated none of the correlations exceeded 0.90, evidence that multicollinearity is not present. However, because the correlations were high, the SMCs (squared multiple correlations) of each item when it serves as the dependent variable with the rest as independent variables in multiple correlation were

examined. As shown in Table 4, SMC were high, suggesting possible multicollinearity, so the Condition Indices for each dimension were examined. A Condition Index of 30 or greater is evidence of multicollinearity (Tabachnick & Fidell, 2013). The largest Condition Index for these data was 22.99, further evidence that multicollinearity is not present. Taken together these analyses support the conclusion that the items were not collinear.

Table 2

Skewness and Kurtosis Values for SOSS Items and Corresponding Z Scores

Item	Skewness	Z_{skewness}	Kurtosis	Z_{kurtosis}
1. encouraging/assisting the client to attend sessions	-0.14	-0.35	-1.17	-1.56
2. encouraging/assisting the client in homework completion	0.24	0.63	-0.91	-1.22
3. encouraging/assisting the client in staying clean from drugs and alcohol	-0.21	-0.55	-1.38	-1.84
4. encouraging/assisting client in positive parenting behaviors	-0.46	-1.21	-1.01	-1.35
5. participation in role-plays and discussions during sessions	-0.36	-0.94	-1.15	-1.53

Singularity is present when items are redundant because one of the items is a combination of two or more of the other items. A SMC value of one indicates the presence of singularity (Tabachnick & Fidell, 2013). As seen in Table 4, all of the SMCs are below one so it was concluded that singularity was not present.

Table 3

Correlations among SOSS Items

Item	1	2	3	4	5
1	1				
2	0.87	1			
3	0.71	0.80	1		
4	0.84	0.76	0.84	1	
5	0.81	0.74	0.66	0.79	1

Table 4

Squared Multiple Correlations (SMC) of SOSS Items

Item	SMC
1. encouraging/assisting the client to attend sessions	0.87
2. encouraging/assisting the client in homework completion	0.84
3. encouraging/assisting the client in staying clean from drugs and alcohol	0.81
4. encouraging/assisting client in positive parenting behaviors	0.86
5. participation in role-plays and discussions during sessions	0.70

Post-treatment assessments were completed by 31 out of the 38 participants in this study (81.6%). Demographic variables and SOSS scores of completers ($M = 20.5$) were statistically similar to those of non-completers ($M = 17.3$). Data from the 31 completers

were thus used to explore the relationship between significant other support and outcome measures.

Preliminary Analyses

Data screening demonstrated that the assumptions for factor analysis were met. Further, responses to SOSS items were normally distributed. Therefore; exploratory factor analysis with maximum likelihood extraction was performed, as it is the preferred extraction method for normally distributed data (Fabrigar, Wegener, MacCallum, & Strahan, 1999). The Kaiser-Meyer-Olkin (KMO) sampling adequacy index suggested that factor analysis of the items was appropriate, $KMO = 0.757$ (Kaiser, 1974). Bartlett's test of sphericity was significant ($\chi^2 (10) = 189.34, p < .001$), which indicated that the correlation matrix was not an identity matrix. One factor emerged with an eigenvalue of 4.13 which explained 82.5% of the variance of the factor. An examination of the scree plot and the pattern of factor loadings was consistent with a one-factor solution. The communalities were all above 0.70, suggesting that each item shared common variance with other items and evidence that the factor analysis was appropriate despite the small sample size (MacCallum, Widaman, Zhang, & Hong, 1999). The factor loadings ranged from 0.84 to 0.93. See Table 5 for the communalities and factor loadings for the one factor solution. Cronbach's alpha was 0.94, indicating that the scale has excellent internal consistency.

Given that all five items loaded on the same factor, the scores for each item were summed for each participant to create one unified score of overall significant other support. Approximately two-thirds ($n = 25$) of the participants had scores from a second provider. These scores were used to test inter-rater reliability. Inter-rater reliability was

good ($ICC = 0.75$). The total score was significantly correlated with the sixth item testing overall significant other support ($r = 0.96, p < 0.001$), supporting the scale's validity. The factor appears to be a measure of overall significant other support.

Table 5

Factor Loadings and Communalities Based for a Maximum Likelihood analysis of the SOSS (N = 38)

Item	Factor Loading	Communality
1. encouraging/assisting the client to attend sessions	.93	.86
2. encouraging/assisting the client in homework completion	.91	.81
3. encouraging/assisting the client in staying clean from drugs and alcohol	.90	.70
4. encouraging/assisting client in positive parenting behaviors	.85	.82
5. participation in role-plays and discussions during sessions	.84	.72

A series of ANOVA's were conducted to examine differences in the dependent variables based on categorical demographic variables, including marital status, ethnicity, and employment status. No significant relationships were found (all p values > 0.05). Bivariate correlations were conducted between the dependent variables and continuous demographic variables, including age and education level. Again, no significant relationships were demonstrated (all p values > 0.05). Therefore, no demographic confounding variables were found.

Interrelatedness between the dependent variables was examined by conducting bivariate correlations. A significant and meaningful relationship was demonstrated because two of the dependent variables. CAPI scores at post assessment were correlated

with the number of days of drug use at post assessment ($r = .39, p < 0.05$), such that more days of drugs use was associated with greater child abuse potential. This relationship has been previously demonstrated in the literature (e.g., Young et al., 1998). No relationship was found between session attendance and the other two dependent variables (p values > 0.05).

Primary Analyses

A significant and meaningful relationship was found between drug use and child abuse potential at post-treatment assessment. Therefore, a multivariate multiple regression was conducted including both drug use and CAPI Abuse Scale scores at the post-treatment assessment as dependent variables and the total score on the SOSS as the independent variable. Drug use and CAPI abuse Scale Scores at the pre-assessment were entered into the model as covariates. The multivariate multiple regression analysis revealed a significant effect for significant other support (Wilks' $\lambda = 0.72, F = 4.96, p < 0.05$) even while controlling for pre-treatment drug use and pre-treatment CAPI Abuse Scale scores. Significant other support scores were a predictor of both post-treatment drug use ($MS = 562.78, F = 4.63, p < 0.05$) and post-treatment CAPI Abuse Scale scores ($MS = 25002.85, F = 7.21, p < 0.05$).

Session attendance was not related to either of the other two dependent variables. There were no covariates to control for in order to determine the relationship between session attendance and significant other support scores; therefore, a simple bivariate correlation analysis was performed between these two variables. No relationship was found between significant other support scores and session attendance ($r = 0.12, p > 0.05$).

Ethnicity. Of the participants who completed a post-treatment assessment, 14 were Caucasian and 17 were non-Caucasian. Significant other support scores for Caucasian participants ($M = 21.21$, $SD = 8.02$) and non-Caucasian participants ($M = 19.82$, $SD = 10.28$) were not statistically different ($t(29) = 0.41$, $p > 0.05$). Two separate multivariate multiple regression analyses were conducted for Caucasians and non-Caucasians including both drug use and CAPI Abuse Scale scores at the post-treatment assessment as dependent variables and the total score on the SOSS as the independent variable. Drug use and CAPI Abuse Scale scores at the pre-assessment were entered into the models as covariates. The multivariate multiple regression analysis for the non-Caucasian group had a significant effect for significant other support (Wilks' $\lambda = 0.575$, $F = 4.433$, $p < 0.05$) even while controlling for pre-assessment drug use and CAPI abuse scale scores. Significant other support scores were a predictor of post-assessment CAPI Abuse Scale scores ($MS = 22592.59$, $F = 9.48$, $p < 0.01$), but not post-assessment drug use ($MS = 51.69$, $F = 1.17$, $p > 0.05$). The model was not significant for Caucasian participants (Wilks' $\lambda = 0.985$, $F = 0.07$, $p > 0.05$).

Type of Significant Other. The majority of significant others were a spouse or intimate partner. See Table 6 for a complete list of significant other types, as well as the means and standard deviations for scores on the SOSS. An examination of the means suggests that parents and adult offspring were more supportive in treatment than romantic partners and other relatives and friends. As proposed, an independent samples t test was performed to compare the mean scores on the SOSS for parent significant and romantic partner significant others. Levene's test for equality of variances was significant, indicating that homogeneity of variances could not be assumed in the present analysis. A

t statistic not assuming homogeneity of variance was computed which revealed that the difference in scores between parents ($M = 27.20$, $SD = 5.07$) and romantic partners ($M = 18.58$, $SD = 9.95$) was statistically significant ($t(11.69) = 2.80$, $p < 0.05$, $d = 1.09$). This demonstrates that, according to provider reports, parents provided more support during treatment than romantic partners.

Table 6

Means and Standard Deviations for Total SOSS scores based on type of Significant Other (N = 38)

Significant Other	<i>n</i>	%	<i>M</i>	<i>SD</i>
Parent	5	13.2	27.20	5.07
Spouse/partner	24	63.2	18.58	9.95
Adult offspring	2	5.3	24.50	.71
Other relative/friend	7	18.4	17.71	4.23

CHAPTER 5

DISCUSSION

Social support appears to play a larger role in the substance abuse problems of women than men (Sun, 2009), and women appear to be more influenced by peers and the type of support they receive during treatment than men. The present study examined the relationship between significant other support in therapy, as measured by providers, and treatment outcomes in a sample of mothers referred for family therapy to treat comorbid substance abuse and child neglect.

A new measure, the SOSS, was developed to assess significant other support from the provider's perspective. The measure included five domains that were designed to assess the extent to which others assist treatment of women, including encouragement for therapy attendance, assisting with homework completion, encouraging abstinence from drugs and alcohol, encouraging positive parenting behaviors, and participation in role-plays during sessions.

A factor analysis revealed that a one factor model appeared to measure overall significant other support. The measure showed evidence of internal consistency, inter-rater reliability, and was associated with an overall measure of support. Scores for each item of the SOSS were summed for each participant to create a total score for significant other support. This score was then used to examine the relationship between significant other support in treatment and treatment outcomes.

Significant Other Support, Drug Use, and Child Abuse Potential

Each participant's drug use over the previous four months was assessed at both pre- and post- treatment assessments utilizing the TLFB. Potential for abusing and

neglecting their children was also assessed at pre- and post-treatment assessments with the Abuse Scale of the CAPI. Drug use and child abuse potential were significantly and positively correlated such that more drug use was associated with greater child abuse potential, a relationship demonstrated in previous research (e. g., Young et al., 1998). Due to this meaningful relationship a multivariate multiple regression was conducted with both drug use and child abuse potential measured at the post-treatment assessment as dependent variables and overall significant other support based on the SOSS as the independent variable. Drug use and child abuse potential measured at the pre-treatment assessment were entered into the model as covariates. This model was significant, with greater overall significant other support during treatment associated with less drug use and lower child abuse potential at the post-treatment assessment.

This finding was consistent with the study hypotheses. Previous research demonstrated that general social support has been associated with better parenting, but the relationship between social support and substance abuse treatment outcomes have been less consistent. Based on earlier research, general social support appears to be related to better substance abuse treatment outcomes, but only when it comes from positive, abstinence-oriented friends or family (Tracy et al., 2010). In addition, there is evidence that suggests that substance abusing women have better outcomes when their friends and family are supportive of their decision to enter substance abuse treatment (Amaro et al., 1987). However, the present study is the first to assess the behavior of supportive others during treatment and its relationship to treatment outcomes. Not surprisingly, participants who had supportive others who provided the highest levels of

overall support, across all five domains, evidenced less drug use and lower child abuse potential at the post-treatment assessment.

This suggests that simply having significant others available to assist with treatment is not enough of a catalyst to precipitate or maintain change in substance abusing mothers involved with child welfare. Having positive, abstinence-oriented significant others who are supportive of the decision to participate in treatment may be the precursor to having supportive significant others in treatment.

To ensure that the results in this study were not due to the significant other simply attending more sessions, which would also be consistent with the previous research, follow-up analyses were performed. While there was a strong correlation between overall significant other support scores on the SOSS and the number of sessions attended by the significant other ($r = 0.49, p < .01$), there was no relationship between significant other session attendance and post-treatment assessment drug use and child abuse potential (Wilks' $\lambda = 0.99, F = 0.13, p > 0.05$). This suggests that the results found in this study were not due to merely having a significant other maintain good attendance during treatment. It appears that it is the support that the significant other provides during the treatment process that is associated with better treatment outcomes. In this case, encouraging attendance, assisting with homework completion, encouraging abstinence from drugs and alcohol, encouraging positive parenting behaviors, and participating in discussions and role-plays during treatment all combined to encapsulate an overall significant other support score that accounted for 20.8% of the variance in drug use at post-treatment assessment and 61.0% of the variance in child abuse potential at post-treatment assessment for this sample.

Significant Other Support and Session Attendance

Previous studies have demonstrated that participants in the child welfare system who attend more sessions tend to show improved outcomes compared to those who attend less sessions (e.g., Choi et al., 2012). There was no such relationship in this study. In addition, significant other overall support was not associated with participant session attendance in this study, which means that participants who had relatively more supportive significant others did not necessarily display better session attendance. This is an important finding because it suggests that the improvement seen in participants with more treatment support was not due to a dosage effect (i.e., attending more sessions than participants with relatively less treatment support). Instead, treatment outcomes were associated with how supportive significant others were in treatment, regardless of the number of sessions attended by the participant or significant other.

Significant Other Support and Ethnicity

Separate multivariate multiple regressions were performed to assess for differences in the relationship between significant other support and outcomes for Caucasian and non-Caucasian groups. The multivariate multiple regression model performed for non-Caucasians was significant, with higher significant other overall support scores associated with lower child abuse potential scores. However, the relationship between overall significant other support and post-treatment assessment drug use was not significant. The model for Caucasians was not significant; therefore, no relationship was found between overall significant other support and the treatment outcomes assessed in this study for Caucasian participants. Due to the small sample sizes (Caucasians, $n = 14$; non-Caucasians, $n = 17$), these results are interpreted with caution.

These results suggest that the relationship between significant other overall support in treatment and treatment outcomes could be less strong, or non-existent for Caucasian participants. The literature supported the hypothesis that non-Caucasian women are less likely to experience resistance or negative judgments for entering substance abuse treatment (Amaro et al., 1987). Non-Caucasian families may also tend to support each other in other areas, such as childcare, transportation, or household responsibilities, which would make it easier for substance abusing women to seek treatment. Family members from non-Caucasian groups may perceive the recovery of one of their own as necessary for the success of the family unit, rather than the responsibility of the individual.

However, previous literature also suggested that some non-Caucasian groups may alienate family members with substance abuse problems due to problems with shame. It is possible these families were initially supportive but then began to withdraw support over time if the family member did not improve. The participants in this study were of child-bearing age or had young children (mean age = 30). It is possible that they were still early enough into their substance abuse problems that their family and friends were still attempting to help in order to protect the family or community from experiencing shame. It may not be until drug problems persist over time that family members and friends withdraw and alienate the drug users, focusing on the rest of the family unit.

It is unclear why the relationship between overall significant other support and drug use outcomes were no longer significant for both Caucasian and non-Caucasian groups when they were examined separately. It is possible that splitting the sample into two groups resulted in a loss of power. Further research with larger samples is needed to

better understand the relationship between significant other support in treatment and outcomes for distinct ethnic groups.

Social Support and Type of Significant Other

This study showed evidence that different types of significant others were not equally supportive during treatment. In this study, parents were more supportive than romantic partners. In previous research, participants have commented that although they believed their parents could be a positive source of support, they avoided their parents due to shame (Sun, 2000). Providers in this study tended to rate parents as more supportive in treatment than other types of significant others, mirroring the comments made by participants in previous studies. It is possible that the structure of FBT, which attempts to engage both the substance user and their significant other, may allow the client to move past their shame and be more accepting of the support parents attempt to provide. Alternatively, communication training, a training module incorporated in FBT, may help teach parents to address their children and their children's drug problems in a more accepting and less accusatory manner, which better facilitates positive change.

Previous studies have shown that men have a large impact on the substance abuse problems of female romantic partners (Tracy et al., 2010). In this study, romantic partners displayed a lower level of support in treatment than parents. Because substance abusers often associate with other substances users, substance abusing women often have partners who also use drugs. A significant other who also uses drugs may have been less supportive of the participant's recovery. If the significant other used drugs in the presence of the participant it would likely make it difficult for the participant to avoid drug use. Anecdotally, there were several participants who commented that it was difficult to resist

drug use when their romantic partner continued to use drugs. There were also participants who were able to stay clean from drugs while their romantic partner was out of the home or incarcerated, but soon relapsed after the significant other returned to the home.

The combined evidence illustrates the importance of having sober, abstinence-oriented significant others participate in treatment with female substance abusers. This may be difficult for substance users who are alienated from positive significant others and the treatment process may require re-building relationships or developing new relationships before the benefits of social support can be utilized.

Generalizability of the SOSS

The SOSS was created using the behavioral theories and treatment goals behind FBT. This study demonstrated the importance of positive, abstinence-oriented social support during the treatment of child welfare-involved mothers with substance abuse problems. The instrument used to measure social support, the SOSS, had items that measured behaviors thought to be indicative of good support based on an FBT treatment model for mothers who have maltreated their children and abuse drugs. It is unlikely that the SOSS will generalize to other treatment populations and modalities.

Social support appears to be an important factor in the treatment of a variety of disorders and treatment populations. Social support has been identified as a key variable in the treatment outcomes of participants with anxiety and depression (Joesch et al., 2013), pathological gambling (Petry & Weiss, 2009), dual diagnoses (Brown, Jun, Min, & Tracy, 2013), military PTSD (Fischer, Sherman, Han, & Owen, 2013), severe mental illness (Chou & Chronister, 2011), diabetes (Latham & Calvillo, 2013), trauma (Callahan, Borja, Herbert, Maxwell, & Ruggero, 2013), HIV and AIDS (Abimanyi-

Ochom, Lorgelly, Hollingsworth, & Inder, 2013), postpartum depression (Ammerman et al., 2013), psychosis (Norman, Windell, Manchanda, Harricharan, & Northcott, 2012), Hematopoietic Stem cell Transplantation (Beattie, Lebel, & Tay, 2013), and eating disorders (Akey & Rintamaki, 2014). The SOSS as it is currently written would clearly not generalize to the majority of these treatment populations, but this does not mean that what has been demonstrated by this study cannot help inform future studies with varied treatment populations.

A generalizable version of the SOSS is needed in order to assess social support for different treatment populations. Each item of the SOSS was created by considering the important aspects of significant other social support for treatment of child neglect and substance abuse from a behavioral framework and FBT model. The measure can be modified to fit different treatment populations. SOSS items need to be observable behaviors that can be measured by providers. Figure 1 illustrates a sample SOSS item that has a blank in the space of the behavior. This blank space can be altered to address important ways significant others provide support in different treatment populations. The blank could be replaced with “healthy eating habits” for patients with diabetes (Latham & Calvillo, 2013), “adhere to medication regimen” for patients with HIV or AIDS (Abimanyi-Ochom et al., 2013), or “engage in positive social interactions” for patients with psychosis (Norman et al., 2012).

Utility of the SOSS

The SOSS was developed as a research instrument to assess significant other support during the treatment of mother who had neglected their children and evidenced substance abuse. The SOSS also shows promise as an intervention tool. Future

researchers and clinicians working with this population can use the SOSS as a measure of social support during treatment. Providers could help their clients to better gauge the supportiveness of their significant others utilizing the SOSS. Modified versions of the SOSS can be used with different treatment populations.

Figure 1

Sample SOSS Test Item

How supportive do you think the significant other was relevant to:

Encouraging/assisting the client to [...]	1-extremely unsupportive
	2-very unsupportive
	3-somewhat unsupportive
	4-neutral
	5-somewhat supportive
	6-very supportive
	7-extremely supportive

The Whole Health Action Management (WHAM) at the SAMHSA-HRSA Center for Integrated Health Solutions (CIHS) SAHMSA recently released the recommendations of a panel of experts which indicated that social support in the form of peer providers could improve substance abuse treatment outcomes (SAMHSA, 2012a). This implies that the SOSS could have great utility for mental health and substance abuse treatment. Peer providers are peers who have had similar life experiences and can serve as support and role models but are not professionals. Treatment providers could use a version of the SOSS to help clients evaluate their peer providers and compare them to other forms of

social support in their lives. Curriculums for peer providers have already been developed and have shown promise (Swarbrick, Murphy, Zechner, Spagnolo, & Gill, 2011).

Study Limitations and Future Directions

This study had a number of limitations, most notably the small sample size. While all the data screening and factor analysis statistics indicated that factor analysis was appropriate for this sample, a larger sample could have produced more precise and stable estimates of population loadings. This study showed that future research with larger samples is warranted. The small sample size also made it particularly difficult to perform side analyses in which the sample was divided into smaller groups. The analyses comparing SOSS for different ethnic groups, as well as the analyses comparing scores for different types of significant others, suggest that these are good areas for future research, but the findings had to be interpreted with caution in this study.

Another limitation of this study is that drug use, child abuse potential, and significant other support were all collected via self-report measures. Self-report measures tend to be less reliable than objective measures because they can introduce variance in the form of bias. Mothers in this study were involved in the child welfare system. They were all in jeopardy of potentially losing custody of their children and/or having their parental rights terminated. The only way they could ensure having their children returned to them was to successfully complete a case plan, which always involved abstaining from drugs and exhibiting positive parenting behaviors. For these reasons, the mothers likely had a strong motivation to minimize their drug use and poor parenting behaviors or attitudes. Indeed, the mean CAPI Lie Scale scores at the pre- ($M = 6.61$, $SD = 3.58$) and post-treatment ($M = 7.34$, $SD = 3.80$) suggest that social desirability may have influenced the

participants' responses during the assessment batteries because they fall just below the recommended cut-off for respondents with less than a high school education (Lie Scale = 8; Milner, 1986). It is likely that participants in this study were engaging in more drug use and less positive parenting behaviors than they reported. Future studies should utilize more objective measures of drug use, such as regular drug testing.

Collecting self-report data from the same source could also result in a Type I error due to same source bias, or overlapping variability. In effort to eliminate same source bias, significant other support scores were collected from FBT providers rather than participants. This could introduce additional variance associated with other variables, such as race, ethnicity, or other psychosocial factors. Despite these concerns, significant results were found that were generally consistent with the study hypotheses. Future studies are still needed in order to substantiate the findings of this study.

Another concern is that the amount of time elapsed between the date the participant discontinued treatment and the date when the provider completed the SOSS was not well regulated. In some cases the SOSS was completed within days of the participant completing treatment. In other cases the measure was completed over one year after the participant completed treatment. This occurred because the measure was added after many participants had already completed treatment. Providers were contacted to complete the measure, despite the large time lapse, in order to achieve the largest sample size possible. The amount of time that elapsed between the participant's last session and the day the provider completed the SOSS was not calculated. Future researchers should standardize when providers are to complete the measure and ensure that providers complete the SOSS in a timely manner. Large time lapses like the ones that

occurred for some of the providers in this study could have resulted in additional variance and a subsequent loss of power due to memory decay.

Providers in this study were asked to report how confident they were about their SOSS ratings using a 7-point Likert scale (1-extremely unconfident, 2-very unconfident, 3-somewhat unconfident, 4-neutral, 5-somewhat confident, 6-very confident, 7-extremely confident). On average confidence ratings were high ($M = 5.79$, $SD = 0.87$) and only two confidence ratings were below “5-somewhat confident.” In addition, confidence ratings were not associated with any of the study variables. These findings suggest that SOSS scores were reliable measures of significant other support during treatment in this study.

Lastly, the significant others in this study sat in during the FBT sessions and were asked to participate in role-plays. This essentially means that they were also receiving the FBT treatment and may have had a better understanding of what was expected from them compared to a naturally occurring client and significant other dyad. The SOSS may only be relevant to treatment populations in which the significant others are engaged in treatment and given clear roles.

Conclusion

The results of this study suggest that social support is an important factor in the treatment of mothers who have neglected their children and have substance abuse problems. Greater social support during treatment was associated with less drug use and lower child abuse potential at the post-treatment assessment, but was not associated with better session attendance. Social support may differentially affect clients based on ethnic group or the type of significant other, but future research is needed in order to corroborate these findings.

In addition, the newly developed SOSS shows promise as a provider-rated measure of social support during treatment. The SOSS created for this study included items specific to child welfare and substance abuse populations. Modified versions of the SOSS may be able to assist with research in other populations and may serve as a useful intervention tool to assist clients in evaluating the supportive others in their lives.

APPENDIX A: SIGNIFICANT OTHER SUPPORT SCALE

Significant Other Support Questionnaire

Instructions:

Given that you were one of ____ providers, we would like to get your impressions of the supportiveness of her primary significant other. Please do not complete this questionnaire unless you are sure you have a vivid memory of the client and the participation of her primary significant other in treatment.

We know she may have had more than one significant other, but for the purposes of this questionnaire, make reference to her most active significant other as indicated in your progress notes. (**Note: Assume the therapist remembers the client and primary significant other before continuing**)

Answer the following questions using the 7-point Likert scale 1 – extremely unsupportive, 2 – very unsupportive, 3 – somewhat unsupportive, 4 – neutral, 5 – somewhat supportive, 6 – very supportive, 7 – extremely supportive.

How supportive do you think the significant other was relevant to:

1. Encouraging/assisting the client to attend sessions?	1 extremely unsupportive	2 very unsupportive	3 somewhat unsupportive	4 neutral	5 somewhat supportive	6 very supportive	7 extremely supportive
2. Encouraging/assisting client in homework completion?	1 extremely unsupportive	2 very unsupportive	3 somewhat unsupportive	4 neutral	5 somewhat supportive	6 very supportive	7 extremely supportive
3. Encouraging/assisting client in staying clean from drugs and alcohol?	1 extremely unsupportive	2 very unsupportive	3 somewhat unsupportive	4 neutral	5 somewhat supportive	6 very supportive	7 extremely supportive
4. Encouraging/assisting client in positive parenting behaviors?	1 extremely unsupportive	2 very unsupportive	3 somewhat unsupportive	4 neutral	5 somewhat supportive	6 very supportive	7 extremely supportive
5. Participation in role-plays and discussions during sessions?	1 extremely unsupportive	2 very unsupportive	3 somewhat unsupportive	4 neutral	5 somewhat supportive	6 very supportive	7 extremely supportive

Overall, how supportive do you think the significant other was during this client's treatment?

1 extremely unsupportive	2 very unsupportive	3 somewhat unsupportive	4 neutral	5 somewhat supportive	6 very supportive	7 extremely supportive
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Overall, how confident are you in these ratings?

1 extremely unconfident	2 very unconfident	3 somewhat unconfident	4 neutral	5 somewhat confident	6 very confident	7 extremely confident
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