8-1-2020

Examination of the Influence of Consumer Preferences for Cognitive Behavioral Treatment Components and Consumer Effort during Treatment Sessions on Child Welfare Outcomes

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EXAMINATION OF THE INFLUENCE OF CONSUMER PREFERENCES FOR COGNITIVE BEHAVIORAL TREATMENT COMPONENTS AND CONSUMER EFFORT DURING TREATMENT SESSIONS ON CHILD WELFARE OUTCOMES

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A dissertation submitted in partial fulfillment
of the requirements for the

Doctor of Philosophy – Psychology

Department of Psychology
College of Liberal Arts
The Graduate College

University of Nevada, Las Vegas
May 2019

UNLV | GRADUATE COLLEGE

Dissertation Approval

The Graduate College
The University of Nevada, Las Vegas

April 1, 2019

This dissertation prepared by

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entitled

Examination of the Influence of Consumer Preferences for Cognitive Behavioral Treatment Components and Consumer Effort During Treatment Sessions on Child Welfare Outcomes

is approved in partial fulfillment of the requirements for the degree of

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ABSTRACT

Examination of the Influence of Consumer Preferences for Cognitive Behavioral Treatment Components and Consumer Effort during Treatment Sessions on Child Welfare Outcomes

by

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Introduction: The current study is a secondary analysis of one arm of a controlled trial evaluating the efficacy of FBT-CW for mothers identified for concurrent child neglect and substance abuse (see Donohue et al., 2014). FBT-CW is comprised of multiple cognitive behavioral intervention components targeting skill sets that are hypothesized to influence child neglect and/or substance abuse. The primary areas of focus for these interventions include: (a) management of antecedents to substance abuse and/or child neglect, (b) parenting skills training, (c) communication skills training, and (d) job getting and financial management skills. ***Purpose:*** The purpose of this study was to assist clinicians and clinical researchers in understanding the influence of implementation frequency, cognitive behavior therapy treatment preferences and therapeutic participation/engagement of the participants in this study, and the relationship of these factors with intervention outcomes to guide treatment development and dissemination efforts in this population. ***Method:*** Participants were 35 mothers identified by child welfare services for concurrent drug abuse and child neglect. Data was collected from treatment sessions and three assessments at baseline and 6- and 10-month post-baseline. ***Results:*** Repeated measure ANOVAs were conducted to determine (1) whether specific interventions components were

implemented more frequently, (2) whether participants rated certain intervention components as more helpful and (3) whether therapists rated participants as more compliant during the implementation of certain intervention components as compared to others. Participants received the antecedent-based intervention most frequently, followed by the parenting skills interventions and communication and job/financial skills interventions were implemented at a similar frequency. No differences were found in helpfulness and participation/engagement ratings across the intervention components. Partial correlations revealed that participant helpfulness and participation ratings were not related to drug use outcomes, while controlling for baseline scores. However, participant helpfulness was related to child maltreatment outcomes at the 10-month post-baseline assessment, and therapist participation ratings were related to child maltreatment outcomes at both 6- and 10-month post-baseline assessments. Brinley Plots were utilized to determine whether the number of times specific cognitive behavioral intervention components were implemented was related to improvements from baseline to 6 months and baseline to 10 months assessments on drug use and child maltreatment potential measures. Overall, results revealed that participants identified for neglect not related to drug exposure in utero improved at a higher percentage than did participants identified for in utero drug exposure. In addition, receiving the cognitive behavioral interventions components more frequently also seemed to lead to greater percentages of participants improving in both drug use and child maltreatment outcomes following treatment. ***Discussion:*** This study provides support for the acceptability and utility of cognitive behavioral intervention components targeting antecedents to drug use and child neglect, parenting skills, communication skills and job/financial skills in mothers involved with child welfare.

Keywords: child neglect, drug use, intervention, brinley plot, treatment outcome

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CHAPTER 1

LITERATURE REVIEW

Influence of Child Neglect and Substance Abuse within the Context of Child Welfare

Child neglect is broadly defined as the failure of a parent or caregiver to provide for a child's basic needs, including supervision, medical care, nutrition, clothing, housing, safe and sanitary living conditions and in many states, education, which put a child's health, safety or well-being at risk (Child Welfare Information Gateway, 2016). In 2003, the Keeping Families Safe Act was passed resulting in the inclusion of prenatal substance exposure as an additional form of child neglect. The most recent national survey conducted by the U.S. Department of Health and Human Services (DHHS) indicated that 3.4 million children were reported to child protective services (CPS) for child maltreatment in 2015, and approximately 75% of these children experienced some form of neglect (DHHS, 2017). Moreover, 27% were younger than three years old at the time of the report to CPS, with children younger than one being at greatest risk of any age group (DHHS, 2017). The majority of CPS reports occur in child victims that are under the age of five. This is particularly concerning due to the importance of this period in the development of communication, social, emotional regulation and cognitive skills, and can result in physical and psychological problems that can persist into adulthood (Center on the Developing Child, 2010; Stahmer et al., 2009; Teicher & Samson, 2016). Approximately, 92% of children identified by CPS were maltreated by parents, with the vast majority (70%) of perpetrators of child neglect identified as the child's mother (DHHS, 2017).

Although estimates vary widely, 25% to 70% of all reports to CPS involve parental substance abuse (Child Welfare Information Gateway, 2014; Jones, 2004; Traube, 2012). Mothers with substance use disorders are more likely than fathers with substance use disorders to live with their children and care for their children without another adult in the home (Substance

Abuse and Mental Health Services Administration, 2009). Women with substance abuse problems are also at elevated risk for more severe comorbid psychiatric symptomology (Foster et al., 2016; Sherman et al., 2017), poorer reported physical health (Sherman et al., 2017; Wu et al., 2010), incarceration (Phillips et al., 2004) and victimization (Edwards et al., 2017; Logan, Walker, Cole, & Leukefeld, 2002). Children with mothers evidencing substance abuse problems are at elevated risk to experience impaired cognitive, social, behavioral and emotional development (McNichol & Tash, 2001; Nygaard, Slinning, Moe & Walhovd, 2017; Osborne & Berger, 2009; Raitaslo & Holmila, 2017). Children with mothers found to abuse substances are also at significantly elevated risk of experiencing neglect-related behaviors (Kelleher, Chaffin, Hollenberg & Fischer, 1994; Raitasolo et al., 2015; Tonmyr et al., 2011). When child neglect and substance abuse co-occur, child neglect may result from physical and psychological impairments from substance use, reduced capacity of mothers to respond to a child's needs (Hans, Bernstein & Henson, 1999), impulsivity and difficulty in the regulation of arousal and anger (Hien et al., 2010; Chaplin & Sinha, 2013), decreased time and resources allotted to child care rather than drug taking or seeking behavior, incarceration (Phillips et al., 2004), and/or insufficient social support (Brown, Hicks, & Tracy, 2016; Williams et al., 2011). Co-occurring maternal child neglect and substance abuse is associated with increases in the likelihood that reports of neglect are substantiated (Freisthler et al., 2017; Williams et al., 2011), children are placed in out-of-home care (Raitasolo et al., 2015; Tonmyr et al., 2011), and children stay in out-of-home care for longer periods (Akin, Brook & Lloyd, 2015). Maternal substance abuse is also a key risk factor in predicting the future occurrence of CPS reports (Dubowitz et al., 2011), substantiated child neglect and adequacy of the home environment for children (Ondersma, 2002).

The impact of child neglect and substance abuse is not limited to the families in which these problems occur. The impact extends across communities, both direct (i.e. hospitalizations, acute medical treatment, mental health treatment, operation of child welfare system, out-of-home care, and law enforcement), and indirect (i.e. special education services, early intervention services, juvenile delinquency, adult crime perpetrated by victims of child maltreatment, homelessness, emergency housing, and losses in work productivity) costs. The estimated economic cost resulting from child maltreatment alone is estimated between 80 to 124 billion dollars annually (Fang, Brown, Florence & Mercy, 2013; Gelles & Perlman, 2012; Theilen et al., 2016), and the estimated cost of substance abuse in the Unites States is 740 billion including crime, loss of work productivity and health care (National Drug Intelligence Center, 2011). Together these findings elucidate the severity of the effects of child neglect and substance abuse on families, and point to a great societal need for the development and dissemination of intervention services for at-risk families.

Comprehensive Interventions for Child Neglect and Drug Abuse

Despite child maltreatment and substance abuse being recognized as a public health concern, there are a limited number of evidence-based comprehensive treatment programs for child maltreatment and even fewer evaluated to address concurrent substance abuse problems present in parents involved in the child welfare system. Along these lines, a recent meta-analysis of intervention programs for child maltreatment found that most programs that have been examined in randomized controlled trials are relatively ineffective at preventing or reducing the occurrence of child maltreatment (Euser et al., 2015). However, there is evidence to suggest comprehensive skill-based interventions that include cognitive behavioral intervention components may be particularly effective in the amelioration of child maltreatment. For instance,

Multisystemic Therapy for Child Abuse and Neglect (MST-CAN; Swenson et al., 2010), Parent Child Interaction Therapy (PCIT; e.g., Lanier et al, 2014), and Project Safecare (e.g., Gershater-Molko et al., 2003), are among the few that have demonstrated efficacy in randomized controlled trials for the treatment of parents who engage in child maltreatment (for review, Euser et al., 2015; Landers et al., 2017), and all of these interventions include cognitive behavioral intervention components. Similarly, Family Behavior Therapy for Child Welfare (FBT-CW; Donohue et al., 2014), MST-Building Stronger Families (MST-BSF; Schaeffer, Swenson, Tuerk & Henggeler, 2013), and Families Actively Improving Relationships Program (FAIR; Saldana, 2015) have demonstrated greater improvements in treating mothers that have been indicated to neglect their children and abuse illicit drugs concurrently as compared with treatment services as usual (FBT-CW and FAIR were examined utilizing controlled methodology), and these comprehensive interventions include cognitive-behavioral components.

The aforementioned meta-analysis revealed that programs that incorporated parent training and skill-based programming produced medium effect sizes, while programs that included only supportive services showed negligible effects. Similarly, studies that included samples identified for child maltreatment, rather than at-risk samples, produced medium effect sizes, suggesting comprehensive skill-based and family-oriented programs targeting child maltreatment and substance abuse may be more effective than non-comprehensive interventions. However, this finding has been debated (van der Put, Assink, Gubbells & Boekhout van Solinge, 2017).

There is a growing need in the field of child maltreatment to not just develop and disseminate effective treatment programs, but also to begin to evaluate intervention components of successful treatments to determine which components are preferred by clients and contributing

to improvements in child maltreatment outcomes (Euser et al., 2015; van der Put, Assink, Gubbells & Boekhout van Solinge, 2017). By doing so, treatment programs can be modified to emphasize effective components and eliminate ineffective components to enhance outcomes for families and possibly pave the way for new, innovative interventions. For instance, Claudia E. van der Put and colleagues (2017) conducted a meta-analysis focused on identifying effective intervention components of child maltreatment treatment programs. It was found that treatment programs that included parenting skills, personal skill development in parents, family-based approaches, addressed mental health problems of parents, provided social and emotional support, and focused on improving a child's wellbeing produced medium to large effects in child maltreatment outcomes. Together these meta-analytic findings provide valuable information in understanding how certain treatment programs may reduce child maltreatment, and encourage further evaluation of the relative contribution of cognitive behavioral treatment components within evidence supported treatment programs for child maltreatment and drug abuse.

Cognitive-Behavioral Intervention Components Commonly Shared in Evidence-Supported Treatment Programs

Indeed, cognitive-behavioral interventions have been shown to be efficacious in the accomplishment of goals and adapted for use as components of comprehensive treatment programs for substance abuse and/or child maltreatment. For example, contingency management (CM; Petry et al., 2017), employment-specific interventions (Defulio, Donlin, Wong, & Silverman, 2009; Svikis et al., 2012), goal setting (Collins et al., 2015; Spohr & Taxman, 2015), Motivational Enhancement Therapy (MET; Lenz, Rosenbaum & Sheperis, 2016), Motivational Interviewing (MI; Lundahl et al., 2010; Pace et al., 2017), impulse control strategies (Bowen & Marlatt, 2009), problem solving (Espada et al., 2012; Wagner & Austin, 2009), and social skills

training (Espada et al., 2012; Wagner & Austin, 2009) among others have been evaluated alone and as components of larger, comprehensive treatment programs. These interventions have been found to be effective as part of comprehensive substance abuse and child maltreatment treatment programs, and sometimes have demonstrated improvements in target behaviors as stand-alone interventions.

A recent randomized controlled trial involving Family Behavior Therapy for Child Welfare (Donohue et al., 2014) provides an excellent opportunity to examine the relative contribution of various cognitive behavioral interventions to child neglect and drug abuse outcomes while considering the participants' effort and satisfaction with the intervention components. FBT was originally adapted from the Community Reinforcement Approach (Azrin, Sisson, Meyers & Godley, 1982) to treat adolescent substance abuse (Azrin et al., 1994). Since the time of this seminal study FBT has been evaluated favorably to reduce problem behavior in both controlled (Azrin et al., 1996; Azrin et al., 2001, Azrin, McMahon, et al., 1994; Chow et al, 2015, Donohue et al., 2014; Donohue et al., 1998; Donohue et al., 2018), and uncontrolled (e.g. Donohue et al., 2010; Donohue et al., 2015; Galante, Donohue & Gavrilova, in press; Gavrilova, Donohue, Galante, 2017; LaPota, Donohue, Warren, & Allen, 2011; Pitts et al., 2015; Plant & Holland, 2017; Romero, Donohue & Allen, 2010) clinical trials involving a variety of populations. Independent reviews of FBT have also been favorable (e.g., Austin, Macgowan & Wagner, 2005; Bender, Springer & Kim, 2006; Carroll & Onken, 2005; Henggeler, 2015; Landers et al., 2017; National Academies of Sciences, Engineering, and Medicine, 2016).

Although FBT has been adapted to fit the needs of several distinct populations, it has maintained similar core cognitive behavioral intervention components and therapeutic style across its adaptions (Donohue et al., 2009). The primary areas of focus for FBT interventions

include: (a) goal setting and contingency management, (b) parenting skills training, (c) communication skills training, (d) management of environmental antecedents through stimulus control, (e) self-control skills through thought stopping, diaphragmatic breathing, and problem-solving and (f) job getting and financial management skills. The adaption of FBT for child welfare (Donohue et al., 2014), maintains these intervention components, but also expanded to include evidence supported child management parent training to address child compliance. Implementation of the intervention components is standardized, as participants are provided a list with layperson's descriptions of each component. They are prompted to rank each component in its expected effectiveness prior to treatment. The intervention components are consequently implemented for the first time in this ranked order, and successively and cumulatively thereafter. Consumers also rate each intervention component in "helpfulness" and providers rate the extent to which consumers participated in each intervention component immediately after each administration. Therefore, data from the aforementioned randomized controlled trial involving FBT-CW (Donohue et al., 2014) provides a unique opportunity to examine consumer satisfaction and consumer effort for commonly utilized CBT components within the context of concurrent substance abuse and child maltreatment outcomes.

Evaluation of Cognitive Behavioral Intervention Components

Although there are important distinctions among evidence-based treatment programs in child welfare populations, many of the core components of these comprehensive treatment programs, including MST-BSF, PCIT, FAIR, and FBT-CW, share similar intervention components in addressing both child maltreatment and perhaps to a lesser extent substance abuse. For example, many of these interventions include parenting, communication/interpersonal skills training, impulsivity/emotional regulation, environmental management, and contingency

management to target problems that commonly co-occur in child welfare populations. These interventions have been favorably evaluated in the treatment of child maltreatment in general, but the relative contributions of these components have yet to be examined in regards to concurrent substance use and child maltreatment outcomes. Thus, the current study seeks to examine intervention component preferences, therapeutic effort, and treatment outcomes in mothers' identified for concurrent child neglect and substance abuse. Reported preferences will be assessed for intervention components that are similar among evidence-based programs (e.g. parentings skills training, management of antecedents).

Generally, RCTs are the preferred method in the evaluation of individual intervention components alone or in combination with comprehensive treatment programs. This is justified in many ways due to the advantages inherent to RCTs, including controlled manipulation of independent variables and the ability to make causal statements. There is a growing interest in the evaluation of intervention components and "mechanisms of change" for comprehensive treatment programs that have resulted in attempts to evaluate individual components within the context of RCTs by assessing the efficacy of comprehensive treatment programs with and without a particular intervention component. For example, Henggeller and colleagues evaluated the use of contingency management as a component of Multisystemic Therapy (MST) for substance abusing youth, and found that the implementation of contingency management enhanced the efficacy of MST (Henggeler et al., 2008). Similarly, motivational interviewing (MI) has been evaluated as a supplemental component to established, comprehensive cognitive behavioral interventions, and has been shown to enhance outcomes (Westra, Constantino, & Antony, 2016).

However, RCTs are costly, and are infeasible when comparing multiple intervention components. Uncontrolled component analyses are often not methodologically strong, but may lead to valuable insights. For instance, Project SafeCare is an evidence-based, multi-component intervention designed to improve child health care, parenting skills, and safety (Lutzker et al., 1998). This treatment approach was among the first comprehensive interventions for child maltreatment to evaluate its individual treatment components. The developers of Project SafeCare utilized several methods of evaluating intervention components in child welfare populations. Gershater-Molko, Lutzker and Wesch (2003) conducted a pre-post, within subjects study to evaluate the effectiveness of the three major intervention components of Project SafeCare. After administering each component, families were asked to complete questionnaires and behavioral role-plays to determine how well families retained the information provided. They found that there was significant improvement in knowledge and ability specific to child health care, home safety and parent-child interactions from pre- to post-treatment, but only after the respective interventions were implemented, suggesting the utility of each of the three major Project SafeCare intervention components in at-risk families. Taban and Lutzker (2001) utilized parent reports to determine parents' satisfaction and acceptability of the procedures and outcomes of the three main components of Project SafeCare: training parents to utilize health care services appropriately for their children , parenting skills training and home tours to identify and fix home hazards. Following the administration of each of the three components, parents were instructed to complete Likert scale questionnaires related to their satisfaction with each of the components. Parents reported high satisfaction with each of the three components, rated the procedures as appropriate and acceptable, and reported that they felt more confident in their

ability to care for their child and experienced greater enjoyment when spending time with their children.

Together these studies provide a framework for evaluating intervention components of comprehensive treatment programs within child welfare populations, including information relevant to patient preferences, behavioral responses, and consumer satisfaction to individual intervention components. These types of studies may assist development of interventions that are not only efficacious, but also well received by families involved with child welfare, possibly enhancing dissemination efforts.

Client Preferences

In recent years there has been a growing concern for client involvement in decision making processes in therapy as well as specific recommendations in treatment guidelines encouraging the practice (National Collaborating Centre for Mental Health, 2011). Despite this growing interest in client preferences in treatment, there is limited research related to the utility of this approach, in general, but especially in individuals with problematic substance use (Freidrichs, Spies, Harter & Buchholz, 2016) and those involved with child welfare. However, over a variety of health concerns, not including substance abuse and child maltreatment, it has been shown that clients that are matched to treatments that they preferred pre-hoc evidence better adherence to treatment, slight but significant improvements in relevant outcomes, and are less likely to drop-out of treatment (for review, Swift & Callahan, 2009), suggesting an important role of client preference in treatment. Zisman-llani and colleagues (2017) recommended that mental health interventions concerned with increasing client involvement should consider an expanded approach that considers client preferences in not just initial treatment decisions, but also goal setting, and maintains client involvement throughout treatment.

Enhancing client engagement in decision making processes throughout therapy has been shown to produce significant reductions in drug use and psychiatric problems at 3 months follow-up in substance dependent individuals receiving inpatient treatment (Joosten et al., 2009). However, this relationship seems to be substance dependent (Freidrichs, Spies, Harter & Buchholz, 2016). In child welfare populations, patient preferences and engagement in treatment is relatively unexplored. One of only a few studies that addressed this topic was Taban and Lutzker's (2001) study discussed previously. Although this study highlighted the importance of subjective measures of client satisfaction and how they relate to client perceptions of treatment efficacy, there was no data provided to determine the relationship, if any, between client satisfaction ratings for specific intervention components and treatment outcomes. In addition, no studies have been conducted to determine the role of client involvement and preferences in the treatment of concurrent substance abuse and child maltreatment. Thus, the relevance of client engagement and preferences in the evaluation of specific intervention components for child welfare populations is still unclear, and research is needed to understand the role of client preference in the efficacy of treatments for substance abuse and child maltreatment concurrently.

Therapist Feedback on Client Participation/Engagement

Therapist feedback to clients or consumers is an important characteristic of many evidence based programs. This practice is particularly important when providing feedback to client's that are not progressing in treatment and/or may be at-risk to prematurely withdraw from intervention. Indeed, studies have shown that therapist feedback on client progress in treatment is related to improvements in outcomes for at-risk clients in outpatient psychotherapy (Lambert et al., 2001; Shimokawa, Lambert & Smart, 2010), inpatient therapies (Probst et al., 2013) and psychiatric care (Hawkins et al., 2004; Newnham, Hooke & Page, 2010). Therapist feedback also

has been shown to keep at-risk clients in therapy longer (Shimokawa, Lambert & Smart, 2010). Therapist feedback can be used to set clear expectations for participation and engagement during sessions, to shape behavior, and to allow for reciprocal, process oriented discussions with clients. Crits-Christoph and colleagues (2011) conducted a study on the identification of clients at-risk for limited treatment response and/or drop out, and the effects of therapist feedback in a sample of adults seeking outpatient substance abuse treatment. The study showed that progress tracking and therapist feedback was effective in enhancing outcomes of at-risk clients to levels similar to clients that were not identified as at-risk for treatment non-response, suggesting an important role for monitoring and therapist feedback in substance abuse treatment outcomes.

Despite an abundance of evidence to support the importance of therapist feedback to treatment outcomes in mental health treatment, there are no studies in the field of child welfare that evaluate the role of therapist feedback on treatment outcomes. Furthermore, no studies have evaluated the role of therapist feedback on client in-session performance during the implementation of individual intervention components in the context of a comprehensive treatment program. Thus, considering the importance of immediate feedback on subsequent performance, the current study seeks to determine whether providing performance-based, intervention specific feedback to consumers immediately following the implementation of each cognitive behavioral intervention component would enhance treatment outcomes in a population of mothers identified for substance abuse and child maltreatment.

CHAPTER 2

AIMS OF THE STUDY

The current study is a secondary analysis of one arm of a controlled trial evaluating the efficacy FBT-CW for mothers identified for concurrent child neglect and substance abuse (see Donohue et al., 2014). FBT-CW is comprised of multiple, individual intervention components targeting skill sets that are hypothesized to influence child neglect and/or substance abuse. The primary areas of focus for these interventions include: (a) management of antecedents to substance abuse and/or child neglect, (b) parenting skills training, (c) communication skills training, and (d) job getting and financial management skills. A secondary analysis of data from this study was examined to assist clinicians and clinical researchers in understanding cognitive behavior therapy treatment preferences and therapeutic effort of the participants in this study, and the relationship of these factors with intervention outcomes to guide treatment development and dissemination efforts in this population. Data included the number of times intervention components were implemented with each participant, participants' ratings of intervention helpfulness (obtained after each cognitive behavior therapy component was implemented), and the treatment providers' ratings of participant effort during treatment (obtained after each intervention component was implemented). Repeated measure ANOVAs were conducted to determine (1) whether specific interventions components were implemented more frequently, (2) whether participants rated certain intervention components as more helpful and (3) whether therapists rated participants as more compliant during the implementation of certain intervention components as compared to others. Partial correlations were conducted to determine if participant helpfulness and therapist participation/engagement ratings were related to treatment outcomes, while controlling for baseline scores on the respective measures. Brinley Plots were

utilized to determine whether the number of times specific cognitive behavioral intervention components were implemented was related to improvements from baseline to 6 months and baseline to 10 months assessments on drug use and child maltreatment potential measures. Currently, FBT-CW is only one of two comprehensive interventions that have been favorably evaluated in the context of a randomized control trial for mothers identified for concurrent child neglect and substance abuse. Therefore, the results of this study have great implications in guiding future intervention development in this population.

CHAPTER 3

METHOD

Participants

Participants are 35 mothers randomly assigned into the Family Behavior Therapy condition of a randomized control trial evaluating the efficacy of FBT-CW and Treatment Services as Usual. Each of these mothers were assigned to receive FBT-CW (see Donohue et al., 2014). Study inclusion criteria were that the mother: (a) was reported to CPS for child neglect; (b) was living with the child victim who prompted the referral (or it was the intention of the Court to return the child to the mother's home); (c) was identified as using illicit drugs during the 4 months prior to the referral; (d) evidenced symptoms that were consistent with illicit drug abuse or dependence during the baseline assessment utilizing the Structured Clinical Interview for the Diagnostic and Statistical Manual of Mental Health Disorders, fourth edition (SCID-IV; First et al. 1996); (e) had at least one adult individual willing to participate in her treatment; and (f) was not primarily referred due to sexual abuse perpetration or domestic violence.

Procedures

Method of recruitment. DFS offices were informed of the study and its inclusionary criteria through email and onsite 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 obtain informed consent and complete the baseline assessment.

Method of randomization into condition. Participants completed baseline assessment to substantiate inclusionary criteria and establish baseline data. Once the baseline assessment was completed participants were assigned to treatment (either FBT-CW or Treatment as Usual)

utilizing urn randomization to assist in maintaining treatment group equivalence in demographic and primary outcome measures (Waldron, Slesnick, Turner, Turner Brody, & Peterson, 2001).

Method of collecting data. During the course of the larger clinical trial, data was collected related to participants' preferences and responses to individual intervention components. Prior to treatment administration participants were provided with a description of each intervention component and were asked to rank order each intervention in regards to which intervention component was expected to be a priority in treatment. The intervention components were then administered successively and cumulatively based on rankings, such that the intervention component that was expected to be of greatest priority was implemented first, the component that was expected to be of 2nd greatest priority was implemented second and so on. With the exception of orientation, consequence review and treatment planning, all intervention components consisted of an initial and future session protocol. Interventions components could be implemented more than once and certain skills were reviewed using the abbreviated future session protocol repeatedly to ensure skill acquisition. After each intervention component was implemented during each session, participants were asked to rate how helpful they thought the intervention component was on a scale from 1 (extremely unhelpful) to 7 (extremely helpful), and the provider rated the participant's effort (performance/engagement) during the implementation of each intervention component on a scale from 1 (extremely noncompliant) to 7 (extremely compliant). The provider promptly gave feedback based on the participation/engagement rating on behaviors client did particularly well and what to do to improve participation/engagement in the future.

Baseline, 6 months post-baseline, and 10 months post-baseline assessments of treatment outcome measures (see Measures section) were administered in the participants' homes by

trained assessors from a neuropsychology clinic that operated independently from the treatment program. Assessors were not informed of the participants' intervention assignment by study staff. Participants were compensated for their time with a $50 gift card for use at local store for the pretreatment assessment, $100 for the 6 months post-baseline assessment, $100 for the 10 months post-baseline assessment, and $50 bonus if they completed both post-baseline assessments.

Measures

A demographic interview occurred during baseline assessment and the helpfulness and participation/engagement scale ratings were completed following the implementation of each intervention component (including after the abbreviated future session protocols). The Child Abuse Potential inventory (CAPI) and the Time Line Follow Back (TLFB) were completed during the baseline, 6 month post-baseline and 10 month post-baseline assessments.

Demographics Interview. A structured interview was conducted during baseline assessment to obtain demographic and background information from mothers, including mothers age, child's age, marital status, ethnicity, income, and employment and financial status.

Mothers Intervention Helpfulness Ratings Scale. Following the implementation of each FBT intervention component during each session, mothers were asked to rate how "helpful" they thought each intervention component was on a 7-point rating scale (1 = extremely unhelpful; 7 = extremely helpful). Provider's then asked the mothers how they derived their rating and what they thought could be improved about the intervention in the future. The mean helpfulness rating for each intervention component was computed for each mother. No psychometric information is available as this measure was created for the purpose of the larger clinical trial (see Appendix A for helpfulness rating scale).

Therapist Intervention Participation Ratings Scale. After mothers provided their helpfulness ratings for each intervention, the therapist provided a participation/engagement rating based on the consumer's effort and engagement during the implementation of each intervention on a 7-point rating scale (1 = extremely noncompliant; 7 = extremely compliant). The therapist then explained how the rating was derived and provided feedback on how to improve performance in the future. The mean participation/engagement rating for each intervention component was computed for each mother across all completed intervention sessions. (See Appendix B for participation/ participation/engagement rating scale).

Child Abuse Potential Inventory (CAPI). The CAPI (Milner 1990, 1986) is a 160-item self-report measure used for the detection of child maltreatment in parents and caregivers. Higher scores are indicative of a greater likelihood of child maltreatment potential. The Abuse subscale was collected at all three comprehensive assessments during the course of the larger clinical trial. The CAPI has strong psychometric support and is considered among the best measures for assessing child maltreatment potential (for review Walker & Davies, 2010).

Timeline Follow Back (TLFB). The TLFB (Sobell & Sobell, 1992) utilizes a calendar to assess daily patterns of drug use over a specified time period. Holidays and other memorable events are added to the calendar to act as anchor points for recall. The TLFB was used to collect the total number of days drugs were used over the fourth months prior to each of the three comprehensive assessments in the larger clinical trial. The TLFB has consistently shown strong psychometric properties (Donohue et al., 2004; Hjorthoj, Hjorthoj & Nordentoft, 2012; Sobell et al., 2001).

Statistical Plan and Approach

Data was collected from intervention and assessment files of participants in the FBT arm of the clinical trial and input into SPSS statistical software. Data was entered by two independent teams and resulting databases were compared to ensure accuracy in data entry.

The following information will be provided in a table: (a) descriptive statistics (e.g. mean, sd) for the number of times each intervention component was implemented (i.e. frequency of intervention implementation), (b) descriptive statistics for participant helpfulness ratings for each intervention component, and (c) descriptive statistics for therapists' participation ratings for each intervention component. Means were calculated for each group of intervention components (e.g. managing antecedents, parenting skills, communication skills and job/financial skills) by calculating a simple mean of the frequency each intervention component was implemented and helpfulness and participation/engagement ratings across the intervention components included in the respective grouping.

Aim 1. The first aim was to determine the following: (1) whether certain conceptually distinct groups of interventions components were implemented more frequently, (2) whether certain intervention components were rated as more helpful by participants and (3) whether participants were rated as being more involved during the administration of certain intervention components as compared to others. It was predicted that antecedent-based interventions would be implemented more frequently than all other groups of intervention components and parenting skills interventions would be implemented more frequently than communication and job/financial skills interventions as antecedent-based and parenting skills interventions are a primary focus of FBT-CW. Also, it was predicted that parenting and communication skills

training modules would be rated more favorably than other interventions (as indicated by participant helpfulness ratings and therapist participation/engagement ratings).

Three repeated measure ANOVAs were conducted. Partial eta^2 was calculated for effect size and Tukey LSD tests were used for post-hoc comparisons.

Aim 2. The second aim was to provide preliminary data on the relationship between participant helpfulness and therapist participation/engagement ratings on treatment outcomes. It was predicted that higher helpfulness and participation/engagement ratings would be related to decreases in drug use and child maltreatment potential following treatment. Partial correlations were conducted. Partial correlations were utilized to control for the influence of baseline scores on the respective measures and provide more meaningful interpretations of the relationship between helpfulness and participation/engagement ratings and treatment outcomes. Holmes correction was implemented to correct for type 1 error due to multiple comparisons.

Aim 3. The third aim was to provide preliminary, exploratory data on the influence of groups of intervention components (e.g. managing antecedents, parenting skills, communication skills and job/financial skills) on treatment outcomes. Specifically, determining whether administering particular groups of intervention components more frequently was related to improvements in treatment outcomes following treatment. It was predicted that the greater the frequency at which core CBT interventions that have been evaluated in previous FBT trials for substance abuse (e.g. managing antecedents to problem behaviors, communication skills training and job/financial management skills training) were implemented would be related to reductions in substance use following treatment. Previously discussed meta-analytic findings (Euser et al., 2015; van der Put et al., 2017) suggest that family-based treatment programs that include components for parent training, personal skill development in parents, address other comorbid

mental health concerns of parents and focus on child safety and wellbeing were most effective in reducing child maltreatment. Thus, it is predicted that intervention components specific to parent skills training and child safety (e.g. parent skills training and management of antecedents to child neglect) that were implemented more frequently will be related to reductions in child maltreatment potential following treatment.

Brinley Plots are scatter plots that may be used in outcome research to compare each individual's score on a particular measure from baseline to a subsequent point in time, normally following treatment (Blampied, 2017). As can be seen in Figure 2, the plot contains a diagonal line at a 45 degree angle that is surrounded by individual data points representing individual scores on a particular measure. If individuals get worse on a measure across time their data point is represented above the diagonal line. Someone that displays no improvement is represented very close to the line, and someone that shows improvement on a measure is represented below the line. In addition, a Reliable Change Index (RCI) is often added around the diagonal line to assist in differentiating between possible measurement error and reliable change in an individual (indicated by the two lines surrounding the 45 degree diagonal). Brinley Plots provide a way of evaluating treatment outcomes without relying on inferential statistics and null hypothesis testing, and allows for the evaluation of treatment outcomes without relying on aggregated group data (Blampied, 2017). This is particularly advantageous when sample size is low, adequate power cannot be attained for traditional inferential statistics, and understanding change across individuals is preferred over aggregated group data. Some argue that group data can be difficult to apply to individual cases and the group mean may conceal individual nonresponse to treatment despite improvement on average (Busch et al., 2011).

Brinley Plots were used in an exploratory manner to determine whether specific groups of intervention components (e.g. antecedent-based, parenting skills, communication skills and job/financial skills) were related to treatment outcomes, specifically for TLFB days of drug use and the CAPI Abuse subscale. Unique markers were included to differentiate between participants that were initially identified for either exposing their child to drugs in utero or other forms of child neglect (i.e. non-drug exposed) and whether participants received a relatively lower or higher frequency of targeted groups of interventions components (e.g. antecedent-based, parenting skills, communication skills and job/financial skills) using a median split. As in the larger clinical trial this data was derived, a distinction was made between participants that were identified for exposing their child to drugs in utero and those that were identified for other forms of child neglect. This distinction was made because mothers identified for exposing their child to drugs in utero appear to be a unique subgroup of mothers identified for child neglect that are resistant to treatments that are typically effective for mothers identified for other forms of child neglect (Donohue et al., 2014). In addition, a median split was preferred as it effectively separated individuals that were exposed to a lower or higher frequency of particular groups of interventions, and provided the ability to make meaningful interpretations for groups of participants. Brinley Plots were completed for both baseline to 6 month post-baseline (post) and baseline to 10 months post-baseline (follow-up). Figures 1 and 2 are examples of Brinley Plots completed in this study. The data derived from each of the Brinley Plots discussed in the results were placed in tables to assist in interpretation of findings.

CHAPTER FOUR

RESULTS

Descriptive Statistics

Table 1 shows descriptive statistics (means and SDs) for the number of times intervention components were implemented, participants' helpfulness ratings, and therapists' participation ratings for each intervention component. Goal setting/contingency management was implemented most frequently followed by the emergency and environmental management intervention components. This suggests that the management of environmental and internal antecedents to child neglect and substance use were emphasized during treatment.

There was somewhat limited variability among helpfulness and participation ratings with nearly all scores falling on the higher end of the scale, suggesting participants reported each intervention component to be "somewhat helpful" to "extremely helpful." In addition, therapists' scores for participants' participation indicated a relatively high level of therapist perceived participation during intervention component implementation overall.

Aim 1: Repeated Measures ANOVAs

Means and standard deviations for frequency of implementation and helpfulness and participation ratings for each group of interventions are presented in Table 1. The omnibus test for the frequency of implementation of the groups of intervention components was significant, $F(3,32) = 18.638$, $p < .001$, partial $\eta^2 = .636$. Tukey LSD post hoc tests showed that antecedent-based interventions were implemented more frequently than all other groups of intervention components. In addition, parenting skills interventions were implemented more frequently than communication skills and job/financial skills interventions. There was no difference in the frequency of implementation between communication and job/financial skills interventions.

The results also showed that helpfulness ($F(3,19) = 2.20$, $p = .122$, partial $\eta^2 = .258$) and participation/engagement ($F(3,19) = 2.45$, $p = .095$, partial $\eta^2 = .279$) ratings were not significantly different among the intervention component groups, suggesting a similar level of perceived helpfulness and performance across intervention components.

Aim 2: Partial Correlations

Table 2 displays partial correlations for helpfulness and participation ratings and primary outcomes measures (e.g. TLFB days of drug use and CAPI Abuse subscale) at 6 months and 10 months post-baseline assessments, while controlling baseline scores for the respective outcome measures. The results showed that participant helpfulness and therapist performance ratings were not related to drug use at 6- or 10-months assessments (*ps* > .05). However, participant helpfulness ratings were related to child maltreatment potential following treatment at 10-month post-baseline assessment (follow-up). As participant helpfulness ratings increased there was a corresponding decrease in child maltreatment potential following treatment, while controlling for baseline scores. There was no significant relationship between helpfulness ratings and child maltreatment potential at 6-month assessment (post). In addition, therapist ratings of participants' participation during intervention implementation were related to child maltreatment outcomes at post and follow-up assessments, suggesting that as participants were rated as more participatory they saw greater decreases in their risk for child maltreatment at 6- and 10-month assessments.

Aim 3: Brinley Plots

Interventions Targeting Antecedents to Drug Use and Child Neglect. The antecedent based interventions are comprised of intervention components targeting environmental or internal (e.g. impulses, thoughts, negative emotions) antecedents to drug use and child neglect. A

median split was utilized to differentiate between participants that received the antecedent-based interventions more or less frequently. RCI's and cut-off scores could not be calculated for TLFB days of drug use as they are not available for the TLFB measure for the number of days drugs were used over a 4-month period.

Table 3 displays the outcome data for TLFB number of days drug were used from baseline to 6-months post-baseline (post) and from baseline to 10-month post-baseline (follow-up) assessments for the number of days drugs were used over the previous 4-month period as recorded by the TLFB while considering neglect type (e.g. drug exposed, non-drug exposed) and frequency of implementation (e.g. low, high) of antecedent-based intervention components. Antecedent-based interventions were implemented more frequently than other intervention components and comprise a greater number of unique skills, suggesting that the targeting of antecedents to drug use and child neglect is a primary focus of FBT for Child Welfare. Twenty-two percent at 6-month post-baseline and 33% at 10-months post-baseline assessment of participants identified by CPS for in-utero drug exposure and who received antecedent interventions less frequently showed an improvement while 55% at post and 64% at follow-up assessment that received antecedent interventions more frequently showed an improvement in their drug use. This pattern suggests that the implementation of antecedent-based interventions more frequently may have positively influenced drug use outcomes for participants identified for in utero drug exposure at 6- and 10-months post-baseline assessments.

Table 3 also showed that 67% at post and 56% at 10-month post-baseline assessment of participants identified for other forms of child neglect (i.e. non-drug exposed) and who received antecedent based interventions less frequently saw improvements while 100% at post and follow-up assessments that received antecedent-based interventions more frequently saw improvements

in their drug use. Thus, receiving antecedent-based interventions more frequently appeared to be related to improvements in drug use outcomes for participants identified for other forms of child neglect.

Table 4 displays the outcome data for the CAPI Abuse subscale from baseline to post and baseline to follow-up assessments. RCIs are marked by the lines above and below the 45 degree center line and cut-off scores are represented by the dotted lines intersecting the figure. Since RCIs were calculated for the CAPI scores, participants falling below the lower line indicate a reliable improvement beyond potential error in the measurement of child maltreatment potential. Eleven percent at post and 22% at follow-up assessment of participants identified by CPS for in-utero drug exposure and who received antecedent interventions less frequently showed an improvement while 18% at post and 9% percent at follow-up assessments that received antecedent interventions more frequently showed a reliable improvement in their child maltreatment potential. This pattern suggests that the number of times antecedent-based interventions were implemented did not appear to affect child maltreatment outcomes at post or follow-up assessments for participants identified for in utero drug exposure.

Table 4 also showed that 56% at post and 67% at follow-up assessment of participants identified for other forms of child neglect (i.e. non-drug exposed) and who received antecedent-based interventions less frequently saw improvements while 83% at post and follow-up assessments that received antecedent-based interventions more frequently saw improvements in their child maltreatment potential. Thus, receiving antecedent-based interventions more frequently was related to improvements in child maltreatment outcomes for participants identified for other forms of child neglect, but not participants identified for in utero drug exposure.

Parenting Skills Interventions on Drug Use and Child Neglect. The parenting skills interventions are comprised of interventions designed to enhance positive parenting practices and parent/child relationships. Table 5 displays the outcome data for TLFB number of days drug were used from baseline to 6-months post-baseline (post-treatment) and from baseline to 10-month post-baseline (follow-up) assessments for the number of days drugs were used over the previous 4-month period as recorded by the TLFB while considering neglect type (e.g. drug exposed, non-drug exposed) and frequency of implementation (e.g. low, high) of parenting skills interventions. Eleven percent at post and 22% at follow-up assessment of participants identified by CPS for in-utero drug exposure and who received parenting interventions less frequently showed an improvement while 64% at post and 73% at follow-up assessment that received parenting interventions more frequently showed an improvement in their drug use. This pattern suggests that the implementation of parenting skills interventions more frequently may have positively influenced drug use outcomes for participants identified for in utero drug exposure 6- and 10-month post-baseline assessments.

Table 5 also showed that 70% at post and 60% at follow-up assessment of participants identified for other forms of child neglect (i.e. non-drug exposed) and who received parenting skills interventions less frequently saw improvements while 100% at post and follow-up assessments that received parenting skills interventions more frequently saw improvements in their drug use. Receiving parenting interventions more frequently appeared to be related to improvements in drug use outcomes for participants identified for other forms of child neglect and those identified for in utero drug exposure.

Table 6 displays the outcome data for the CAPI Abuse subscale from baseline to post and baseline to follow-up assessments while considering neglect type and frequency of

implementation of parenting skills interventions. Eleven percent at post and 22% at follow-up assessment of participants identified by CPS for in-utero drug exposure and who received parenting interventions less frequently showed an improvement while 18% at post and 46% at follow-up assessments that received parenting interventions more frequently showed a reliable improvement in their child maltreatment potential. There appeared to be a slight improvement in risk for child maltreatment when parenting skills interventions were implemented more frequently for participants identified for in utero drug exposure.

Table 6 also showed that 60% at post and 50% at follow-up assessment of participants identified for other forms of child neglect (i.e. non-drug exposed) and who received parenting skills interventions less frequently saw improvements while 80% at post and follow-up assessments that received parenting interventions more frequently saw reliable improvements in their child maltreatment potential. Thus, receiving parenting skills interventions more frequently was related to reliable improvements in child maltreatment potential outcomes for participants identified for other forms of child neglect and to a lesser degree, in utero drug exposure.

Communication Skills Interventions on Drug Use and Child Neglect. The communication skills interventions are comprised of interventions designed to enhance positive communication among family members and to decrease conflict resulting from problematic communication styles. Table 7 displays the outcome data for TLFB number of days drug were used from baseline to 6-months post-baseline (post-treatment) and from baseline to 10-month postrandomization (follow-up) assessments for the number of days drugs were used over the previous 4-month period as recorded by the TLFB while considering neglect type (e.g. drug exposed, non-drug exposed) and frequency of implementation (e.g. low, high) of communication skills interventions. Twenty-five percent at post and 42% at follow-up assessment of participants

identified by CPS for in-utero drug exposure and who received communication interventions less frequently showed an improvement while 63% at post and follow-up assessments that received communication interventions more frequently showed an improvement in their drug use. Thus, the implementation of communication skills interventions more frequently may have positively influenced drug use outcomes for participants identified for in utero drug exposure immediately following treatment and four months after treatment completion.

Table 7 also showed that 70% at post and 60% at follow-up assessment of participants identified for other forms of child neglect (i.e. non-drug exposed) and who received communication skills interventions less frequently saw improvements while 100% at post and follow-up assessments that received communication skills interventions more frequently saw improvements in their drug use. Receiving communication skills interventions more frequently appeared to be related to improvements in drug use outcomes for participants identified for other forms of child neglect and participants identified for in utero drug exposure.

Table 8 displays the outcome data for the CAPI Abuse subscale from baseline to post and baseline to follow-up assessments while considering neglect type and frequency of implementation of communication skill interventions. Zero percent at post and 8% at follow-up assessment of participants identified by CPS for in-utero drug exposure and who received communication skills interventions less frequently showed an improvement while 38% at post and follow-up assessments that received communication interventions more frequently showed a reliable improvement in their child maltreatment potential. There was an improvement in risk for child maltreatment when communication skills interventions were implemented more frequently for participants identified for in utero drug exposure, but overall participants identified for in utero drug exposure did not respond well to treatment.

Table 8 also showed that 50% at post and 60% at follow-up assessment of participants identified for other forms of child neglect (i.e. non-drug exposed) and who received communication skills interventions less frequently saw improvements while 100% at post and follow-up assessments that received communication interventions more frequently saw reliable improvements in their child maltreatment potential. Receiving communication skills interventions more frequently was related to improvements in child maltreatment potential for participants identified for other forms of child neglect and in utero drug exposure. However, participants identified for other forms of child neglect appeared to respond to treatment better overall than participants identified for in utero drug exposure.

Job/Financial Skills Interventions on Drug Use and Child Neglect. The job/financial skills interventions are comprised of interventions targeting job acquisition and enhancing financial well-being. Table 9 displays the outcome data for TLFB number of days drug were used from baseline to 6-months post-baseline (post-treatment) and from baseline to 10-month postrandomization (follow-up) assessments for the number of days drugs were used over the previous 4-month period as recorded by the TLFB while considering neglect type (e.g. drug exposed, non-drug exposed) and frequency of implementation (e.g. low, high) of job/financial skills interventions. Forty percent at post and 47% at follow-up assessment of participants identified by CPS for in-utero drug exposure and who received job/financial skill interventions less frequently showed an improvement while 40% at post and 60% at follow-up assessment that received job/financial interventions more frequently showed an improvement in their drug use. The implementation of job/financial skills interventions more frequently appeared to be related to slight improvements in drug use outcomes for participants identified for in utero drug exposure at post and follow-up assessments.

Table 9 also showed that 63% at post and follow-up assessments of participants identified for other forms of child neglect (i.e. non-drug exposed) and who received job/financial skills interventions less frequently saw improvements while 100% at post and 86% at follow-up assessment that received job/financial skills interventions more frequently saw improvements in their drug use. Thus, receiving job/financial skills interventions more frequently was related to improvements in drug use outcomes for participants identified for other forms of child neglect and to a lesser extent, participants identified for in utero drug exposure.

Table 10 displays the outcome data for the CAPI Abuse subscale from baseline to post and baseline to follow-up assessments while considering neglect type and frequency of implementation of job/financial skills interventions. Thirteen percent at post and follow-up assessments of participants identified by CPS for in-utero drug exposure and who received job/financial skills interventions less frequently showed an improvement while 20% at post and follow-up assessments that received job/financial interventions more frequently showed a reliable improvement in their child maltreatment potential. There was a slight improvement in risk for child maltreatment when job/financial skills interventions were implemented more frequently for participants identified for in utero drug exposure.

Table 10 also showed that 50% at post and 63% at follow-up assessment of participants identified for other forms of child neglect (i.e. non-drug exposed) and who received job/financial skill interventions less frequently saw improvements while 86% at post and follow-up assessments that received job/financial skill interventions more frequently saw reliable improvements in their child maltreatment potential. The implementation of job/financial skill interventions more frequently was related to improvements in child maltreatment potential for participants identified for other forms of child neglect and in utero drug exposure.

CHAPTER FIVE

DISCUSSION

The current study provides preliminary findings relevant to participants' cognitive behavior therapy preferences and perceived utility; including those shared among evidence-based treatments for child maltreatment and those unique to FBT-CW. FBT-CW is comprised of intervention components targeting antecedents to child neglect and drug abuse, parenting skills, communication skills and job/financial skills. Antecedent-based interventions were implemented more frequently than all other groups of intervention components, followed by parenting skills intervention components, and communication skills and job/financial skills. This structure of implementation is consistent with the goals and proposed foci of FBT-CW, and is consistent with other cognitive behavioral interventions for child welfare populations.

Helpfulness and Participation Ratings for Intervention Components

The targeted groups of intervention components were rated as similarly helpful by participants, which seemed to suggest that participants had an overall favorable view of the administered intervention components. In addition, therapists also perceived that participants were equally engaged across the various intervention components. Thus, it appeared that participants were perceived as being actively participatory and engaged during intervention sessions. Overall, these findings support the acceptability of these cognitive behavioral treatment components in this population. There was not a significant amount of variability among the helpfulness and participation ratings. Reflecting *real-world* practice, it is possible that these higher ratings are indicative of genuine perceptions, but it should be noted that ratings were provided in session and may have been susceptible to response bias as both participants and therapists may have been compelled to respond favorably to maintain a positive working

relationship. Participants were informed of the importance of accurate ratings and that it would not reflect poorly on them if they gave relatively low ratings.

Helpfulness and Participation Ratings and Treatment Outcomes

Interestingly, participant helpfulness and therapist ratings of participants' involvement during sessions were not related to drug use outcomes at 6-month or 10-month post-baseline assessments. When considering child maltreatment potential, helpfulness ratings were related to reductions in child maltreatment potential at 10-month post-baseline assessment, but not at the 6-month post-baseline assessment. Thus, participants' favorable perceptions of the helpfulness of the intervention components was related to enduring improvement in child maltreatment potential, but was not related to improvements immediately following treatment.

More favorable therapist ratings of the participants' involvement during sessions were associated with reductions in child maltreatment potential at both 6-month and 10-month post-baseline assessments. This finding lends support to the importance of therapist perceptions of participants' in-session behavior, particularly when seeking to reduce child maltreatment potential. In addition, it provides preliminary support for the importance of consistent feedback following the administration of each intervention component to improve in-session behavior and may suggest a need for greater emphasis on improving in-session behavior when it is perceived as non-engagement by therapists. This is consistent with studies on therapist feedback in treatment for at-risk clients (Lambert et al., 2001; Shimokawa, Lambert & Smart, 2010).

Frequency of Component Implementation and Treatment Outcomes

As previously discussed, investigators (including the second author in this study) determined that the larger clinical trial from which the data for this study was derived found FBT-CW significantly reduced child maltreatment potential and hard drug use for participants

identified for child neglect not related to in utero drug exposure (as compared with treatment as usual), but did not show meaningful intervention group differences for participants that were identified for in utero drug exposure (Donohue et al., 2014). Donohue et al. (2014) concluded that recommendations for treatment should consider the type of neglect that was evidenced, and found FBT-CW to be most appropriate for participants identified for drug abuse and child neglect not referred due to drug exposure. Consistent with these conclusions, this study revealed that overall a higher percentage of participants identified for child neglect not related to drug-exposure showed improvements in both their drug use and child maltreatment outcomes than mothers identified for exposing their child to drugs in utero. Overall, receiving FBT-CW intervention components more frequently was related to a greater percentage of participants improving following treatment. The frequency of implementation of specific groups of intervention components also appeared to have a greater impact on participants identified for child neglect not related to drug exposure than participants identified for exposing their child to drugs, suggesting that the interventions components may be better suited for neglect not related to drug-exposure.

Interventions Targeting Antecedents to Drug Use and Child Neglect. When interventions targeting antecedents to drug use and child neglect were implemented more often, there appeared to be a greater reduction in drug use and child maltreatment potential following treatment, with the exception of child maltreatment potential for participants identified for drug exposure. All of the participants identified for child neglect not referred due to drug exposure saw an improvement in their drug use and a large majority saw improvements in their child maltreatment potential at both assessments following treatment when they received a higher frequency of antecedent-based interventions. This seems to lend support to the targeting of

antecedents to drug use and child neglect in this population, particularly when participants are identified for neglect not related to drug exposure. This finding is consistent with behavioral theory related to the influence of antecedents on behavior and the inclusion of these intervention components in treatment programs shown to be efficacious in with this population

Parenting Skills Interventions on Drug Use and Child Neglect. As parenting skills interventions were implemented more frequently there appeared to be a greater percentage of participants that were indicated to reduce their drug use and child maltreatment potential following treatment. Interestingly, a notably larger percentage of participants identified for exposing their child to drugs saw reductions in their drug use when they received parenting skills interventions more frequently (change from 11% when received less frequently to 64% when received more frequently), suggesting that the targeting of positive parenting practices more frequently was not only related to improvements in child maltreatment potential as expected, but to a larger degree, drug use outcomes. This suggests that parenting skills interventions may have utility in treatment for participants identified for exposing their child to drugs. This is particularly notable as this subgroup of mothers is frequently non-responsive to treatment. The children of these mothers were generally infants. Therefore, it is likely the parenting interventions increased pleasant interactions with infants, and thus participants may have felt more comfortable and less stressed spending time with them rather than using substances. Investigators will need to determine, using controlled methodology, whether a greater focus on parenting skills training may enhance drug use outcomes in this population.

Communication Skills Interventions on Drug Use and Child Neglect. When communication skills interventions were implemented more frequently, a greater percentage of participants improved on both drug use and child maltreatment outcomes. However, only a few

participants identified for child neglect due to being referred for drug exposure were determined to decrease child maltreatment potential, regardless of the frequency at which communication skills interventions were implemented.

Job/Financial Skills Interventions on Drug Use and Child Neglect. Overall, as job/financial interventions were implemented more frequently a greater percentage of participants improved, with the exception of child maltreatment potential at the 10 month assessment. Participants identified for child neglect due to being referred for non-drug exposure and that received job/financial skills more frequently performed particularly well. This is consistent with research on the role of employment on drug use outcomes (DeFulio, Donlin, Wong, & Silverman, 2009; Goldklang et al., 2003), and provides preliminary support for the use of these interventions in child welfare, although further investigation is warranted.

Study Limitations and Future Directions

Although this study provides important preliminary findings in support of cognitive behavioral intervention components in the treatment of mothers identified for concurrent child neglect and drug abuse, the relatively small sample size and lack of methodological control limits the ability to determine whether specific intervention components may have mediated treatment outcomes across the larger clinical trial, possibly providing greater clarity in understanding mechanisms of change. Future studies should be conducted to better understand the influence of cognitive behavioral intervention components and treatment outcomes using controlled methodology in larger samples. Investigators of future studies should also seek to further understand the role these mothers' perceptions of the helpfulness of intervention components and therapists' perceptions of these mothers participation/engagement during the

administration of cognitive behavioral intervention components for this population regarding treatment outcomes.

The current study is one of the first studies to investigate the influence of cognitive behavioral intervention components in a sample of mothers referred to treatment by CPS. This study provides preliminary findings on the acceptability of these intervention components in this population and the relationship of these intervention components with treatment outcomes. Cognitive behavioral intervention components targeting antecedent-based, parenting skills, communication skills, and job/financial skills were rated helpful by participants and therapists perceived that participants were generally engaged during the administration of these components. It appears that the targeting of these areas in treatment is received well by these mothers and appears to be acceptable for use in this population. In addition, the collection of participant helpfulness and therapist ratings of participant participation/engagement after the administration of intervention components may be useful as a process indicator for treatment progress, particularly when targeting child maltreatment outcomes in treatment. Finally, administering the investigated cognitive behavioral intervention components more frequently appears to be related to a greater percentage of mothers seeing reductions in their drug use and child maltreatment following treatment, lending support for their efficacy in this population of mothers. These findings are consistent with meta-analytic findings of effective intervention components in child welfare populations (Euser et al, 2015; van der Put et al., 2017), and encourage development of engagement interventions. Further investigation into communication skills and job/financial skills training in child welfare populations is also warranted.

Table 1. Descriptive Statistics for Participant and Therapist Intervention Component Ratings (n = 35)

Intervention Components	Frequency of Implementation		Participants' Helpfulness Ratings		Therapists' Participation Ratings	
Managing Antecedents:	Mean	SD	Mean	SD	Mean	SD
Goals/Contingency Management	8.40	5.54	6.20	.73	5.78	.50
Environmental Management	4.77	3.63	6.33	.63	5.78	.67
Self-Control Skill (Impulse Control)	2.60	2.29	6.41	.69	6.05	.74
Arousal Management	1.57	1.46	6.45	.73	5.66	.71
Home Safety and Beautification	1.03	1.01	6.38	.99	6.22	.70
Ensuring Basic Necessities (Emergency Management)	7.29	6.35	6.06	.70	5.80	.66
Antecedent-Based Interventions Combined	4.28	2.86	6.31	.55	5.86	.51
Parent Skills Training:						
Catch My Child Being Good	2.74	2.24	6.59	.43	5.84	.67
Child Compliance Training	2.26	3.16	6.56	.58	6.20	.56
Positive Practice	1.89	1.98	6.36	.77	6.01	.59
Parenting Skill Interventions Combined	2.28	1.98	6.52	.50	5.97	.51
Communication Skills:						
Making Positive Requests	1.71	1.60	6.38	.53	6.08	.71
I have a Great Family (Reciprocity Awareness)	1.34	1.64	6.63	.58	6.30	.63
Communication Skill Interventions Combined	1.53	1.23	6.42	.56	6.10	.66
Employment and Financial Skills:						
Job Club	1.66	1.45	6.56	.64	6.20	.60
Financial Planning	.94	.91	6.34	.84	6.11	.69
Employment and Financial Skill Interventions Combined	1.30	.93	6.38	.75	6.12	.60

Table 2. Partial correlations of Helpfulness and Participation/Engagement Ratings and Primary Outcomes Measures (TLFB Days of Drug Use and CAPI Abuse) at 6 Month and 10 Month Post-Baseline (PB) while Controlling for Baseline Scores on the Respective Outcome Measures.

	TLFB Days of Drug Use		CAPI Abuse Scale	
	6 Month PB	10 Month PB	6 Month PB	10 Month PB
	Partial r	*Partial r*	*Partial r*	*Partial r*
Participant Helpfulness Ratings	-.150	-.234	-.287	-.374*
Therapist Participation Ratings	-.099	-.043	-.360*	-.356*

* = significant at the 0.05 level

Table 3. Percentage of Participants that Saw Improvements, No Change, or Worsening of the Number of Days Drugs were used from Baseline to 6 Month and 10 Month Post Randomization (PR) Assessments for Antecedent-Based Interventions (n = 35)

	TLFB Days of Drug Use					
	6 Month PR Assessment			10 Month PR Assessment		
	Improve	No Change	Worsening	Improve.	No Change	Worsening
Drug-Exposed	40%	45%	15%	50%	30%	20%
Low Frequency	22%	56%	22%	33%	33%	33%
High Frequency	55%	36%	9%	64%	27%	9%
Non-Drug Exposed	80%	20%	0%	73%	20%	7%
Low Frequency	67%	33%	0%	56%	33%	11%
High Frequency	100%	0%	0%	100%	0%	0%

Table 4. Percentage of Participants that Saw Improvements, No Change, or Worsening of Child Maltreatment Potential Outcomes from Baseline to 6 Month and 10 Month Post Randomization (PR) Assessments for Antecedent-Based Interventions (n = 35)

	CAPI Abuse Subscale Scores					
	6 Month PR Assessment			10 Month PR Assessment		
	Reliable Improve	No Change	Reliable Worsening	Reliable Improve.	No Change	Reliable Worsening
Drug-Exposed	15%	70%	15%	15%	60%	15%
Low Frequency	11%	67%	22%	22%	56%	22%
High Frequency	18%	73%	9%	9%	82%	9%
Non-Drug Exposed	67%	33%	0%	73%	27%	0%
Low Frequency	56%	44%	0%	67%	33%	0%
High Frequency	83%	17%	0%	83%	17%	0%

Table 5. Percentage of Participants that Saw Improvements, No Change, or Worsening of the Number of Days Drugs were used from Baseline to 6 Month and 10 Month Post Randomization (PR) Assessments for Parenting Skills Interventions (n = 35)

	TLFB Days of Drug Use					
	6 Month PR Assessment			10 Month PR Assessment		
	Improve	No Change	Worsening	Improve.	No Change	Worsening
Drug-Exposed	40%	45%	15%	50%	30%	20%
Low Frequency	11%	78%	11%	22%	56%	22%
High Frequency	64%	18%	18%	73%	9%	18%
Non-Drug Exposed	80%	20%	0%	73%	20%	7%
Low Frequency	70%	30%	0%	60%	30%	10%
High Frequency	100%	0%	0%	100%	0%	0%

Table 6. Percentage of Participants that Saw Improvements, No Change, or Worsening of Child Maltreatment Potential Outcomes from Baseline to 6 Month and 10 Month Post Randomization (PR) Assessments for Parenting Skills Interventions (n = 35)

	CAPI Abuse Subscale Scores					
	6 Month PR Assessment			10 Month PR Assessment		
	Reliable Improve	No Change	Reliable Worsening	Reliable Improve.	No Change	Reliable Worsening
Drug-Exposed	15%	70%	15%	15%	60%	15%
Low Frequency	11%	67%	22%	22%	44%	33%
High Frequency	18%	73%	9%	46%	27%	27%
Non-Drug Exposed	67%	33%	0%	73%	27%	0%
Low Frequency	60%	40%	0%	50%	30%	20%
High Frequency	80%	20%	0%	80%	0%	20%

Table 7. Percentage of Participants that Saw Improvements, No Change, or Worsening of the Number of Days Drugs were used from Baseline to 6 Month and 10 Month Post Randomization (PR) Assessments for Communication Skills Interventions (n = 35)

	TLFB Days of Drug Use					
	6 Month PR Assessment			10 Month PR Assessment		
	Improve	No Change	Worsening	Improve.	No Change	Worsening
Drug-Exposed	40%	45%	15%	50%	30%	20%
Low Frequency	25%	50%	25%	42%	33%	25%
High Frequency	63%	38%	0%	63%	25%	13%
Non-Drug Exposed	80%	20%	0%	73%	20%	7%
Low Frequency	70%	30%	0%	60%	30%	10%
High Frequency	100%	0%	0%	100%	0%	0%

Table 8. Percentage of Participants that Saw Improvements, No Change, or Worsening of Child Maltreatment Potential Outcomes from Baseline to 6 Month and 10 Month Post Randomization (PR) Assessments for Communication Skills Interventions (n = 35)

	CAPI Abuse Subscale Scores					
	6 Month PR Assessment			10 Month PR Assessment		
	Reliable Improve	No Change	Reliable Worsening	Reliable Improve.	No Change	Reliable Worsening
Drug-Exposed	15%	70%	15%	15%	60%	15%
Low Frequency	0%	83%	17%	8%	75%	17%
High Frequency	38%	50%	13%	38%	50%	13%
Non-Drug Exposed	67%	33%	0%	73%	27%	0%
Low Frequency	50%	50%	0%	60%	40%	0%
High Frequency	100%	0%	0%	100%	0%	0%

Table 9. Percentage of Participants that Saw Improvements, No Change, or Worsening of the Number of Days Drugs were used from Baseline to 6 Month and 10 Month Post Randomization (PR) Assessments for Job/Financial Skills Interventions (n = 35)

	TLFB Days of Drug Use					
	6 Month PR Assessment			10 Month PR Assessment		
	Improve	No Change	Worsening	Improve.	No Change	Worsening
Drug-Exposed	40%	45%	15%	50%	30%	20%
Low Frequency	40%	53%	7%	47%	33%	20%
High Frequency	40%	20%	40%	60%	20%	20%
Non-Drug Exposed	80%	20%	0%	73%	20%	7%
Low Frequency	63%	38%	0%	63%	38%	0%
High Frequency	100%	0%	0%	88%	0%	13%

Table 10. Percentage of Participants that Saw Improvements, No Change, or Worsening of Child Maltreatment Potential Outcomes from Baseline to 6 Month and 10 Month Post Randomization (PR) Assessments for Job/Financial Skills Interventions (n = 35)

	CAPI Abuse Subscale Scores					
	6 Month PR Assessment			10 Month PR Assessment		
	Reliable Improve	No Change	Reliable Worsening	Reliable Improve.	No Change	Reliable Worsening
Drug-Exposed	15%	70%	15%	15%	60%	15%
Low Frequency	13%	73%	13%	13%	80%	7%
High Frequency	20%	60%	20%	20%	40%	40%
Non-Drug Exposed	67%	33%	0%	73%	27%	0%
Low Frequency	50%	50%	0%	63%	38%	0%
High Frequency	86%	14%	0%	86%	14%	0%

Figure 1. Brinley Plot for Days of Drug Use from Baseline to 6 Month and Baseline to 10 Month Postrandomization Assessments for Antecedent-Based Interventions

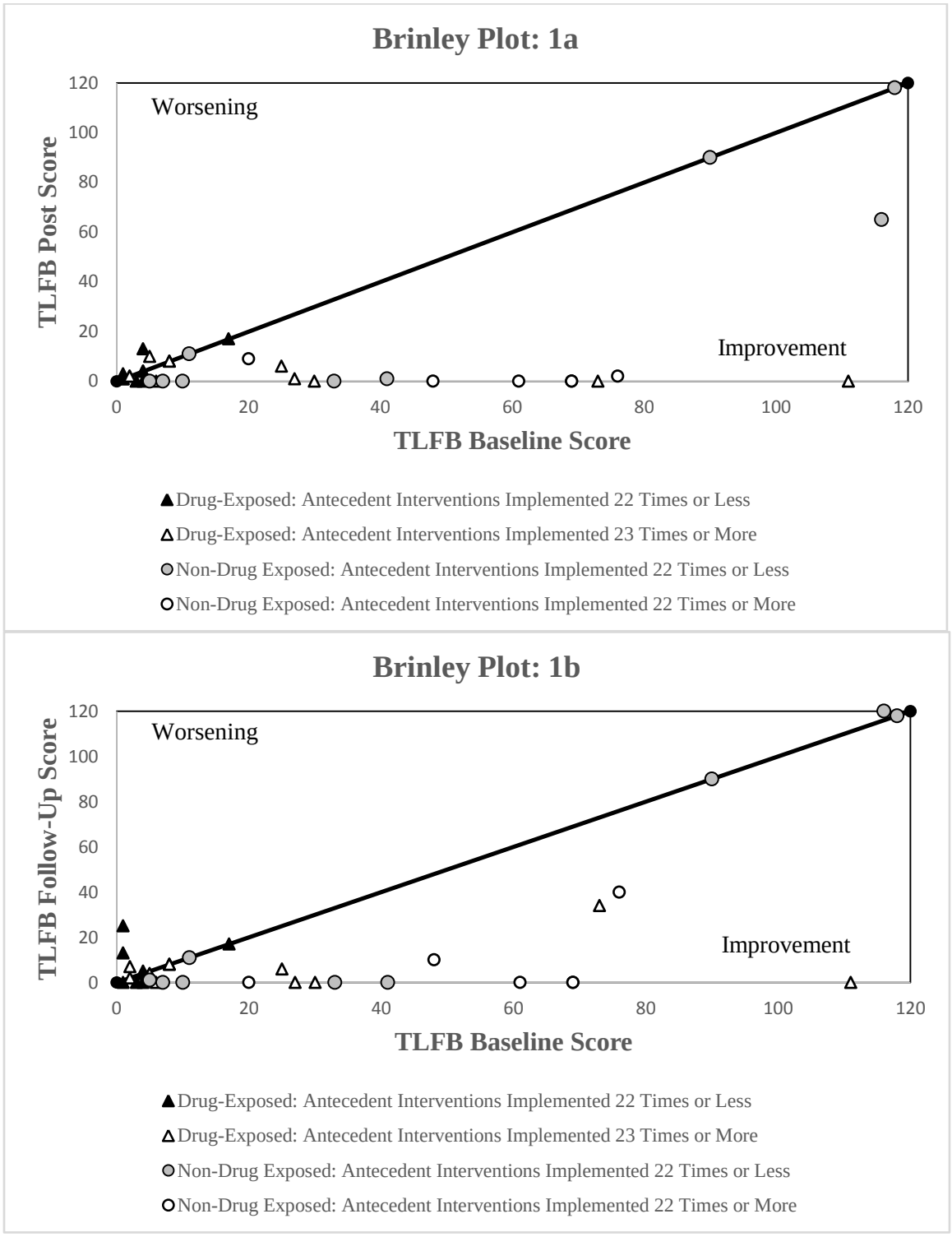
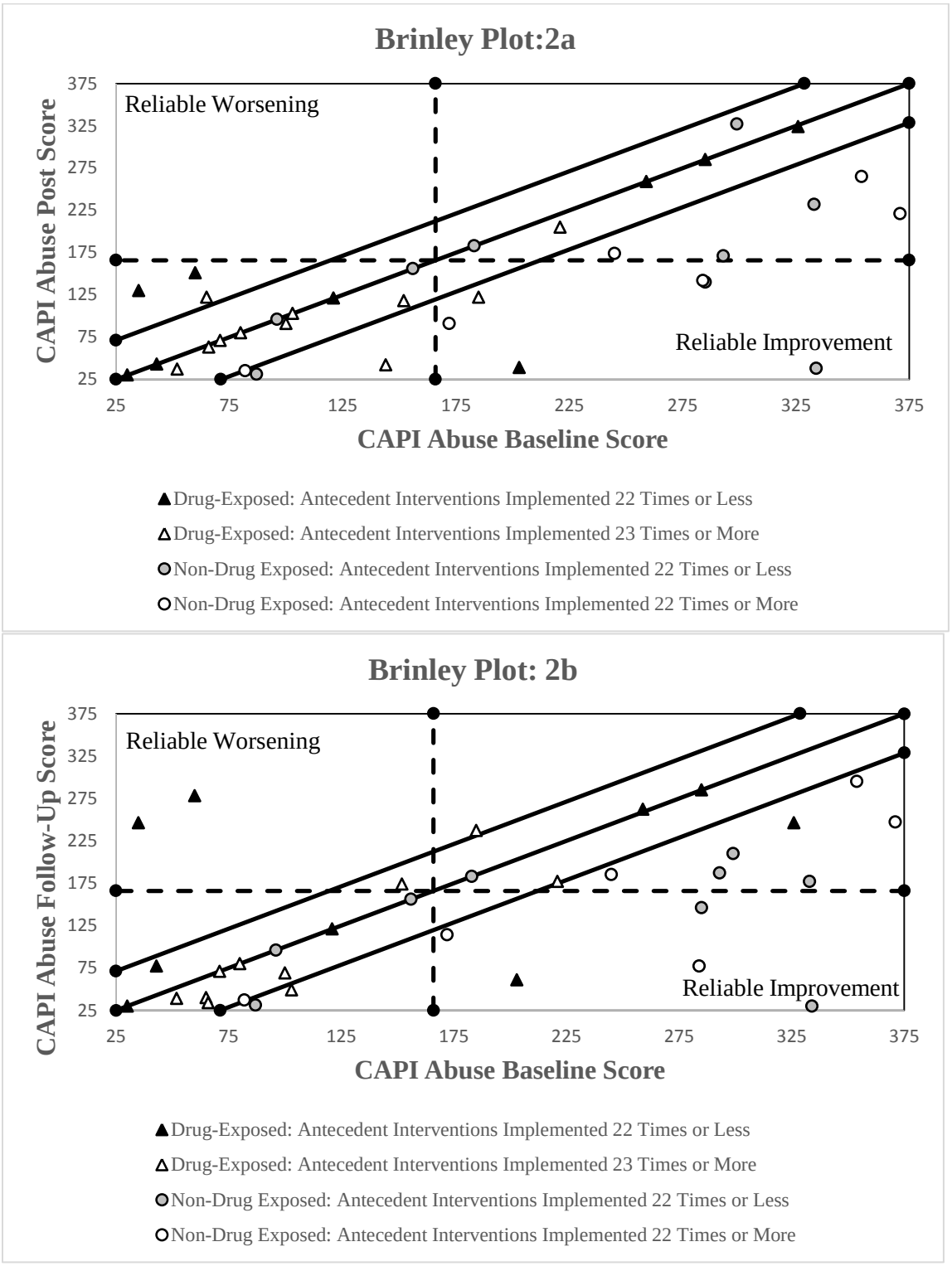


Figure 2. Brinley Plot for Child Maltreatment Potential from Baseline to 6 Month and Baseline to 10 Month Postrandomization Assessments for Antecedent-Based Interventions



APPENDIX A

Intervention Helpfulness and Participation/Compliance Ratings Form

Client's Assessment of Helpfulness of the Intervention

___a. After stating client should not feel obligated to provide high scores, as an honest assessment helps better address client needs, solicit how helpful client thought intervention was using the following 7-point rating scale:

7 = extremely helpful, **6** = very helpful, **5** = somewhat helpful, **4** = not sure,
3 = somewhat unhelpful, **2** = very unhelpful, **1** = extremely unhelpful

- **Record Client's Rating Here:_____**

___b. Solicit how rating was derived, and methods of improving intervention in future.

Provider's Rating of Client's Participation/Engagement with Intervention

___a. Disclose provider's rating of client's compliance using 7-point rating scale:

7 = extremely compliant, **6** = very compliant, **5** = somewhat compliant, **4** = neutral,
3 = somewhat noncompliant, **2** = very noncompliant, **1** = extremely noncompliant

- Factors that contribute to compliance ratings are:
  - Attendance
  - Participation and conduct in session
  - Homework completion
- **Record Provider's Rating of Client's Participation Here:_____**

___b. Disclose client's participation rating.

___c. Explain how rating was derived, and methods of improving performance in future.

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Walker, C. A., & Davies, J. (2010). A critical review of the psychometric evidence base of the Child Abuse Potential Inventory. *Journal of Family Violence, 25*, 215–227.

Westra, H. A., Constantino, M. J., & Antony, M. M. (2016). Integrating motivational interviewing with cognitive-behavioral therapy for severe generalized anxiety disorder: An allegiance-controlled randomized clinical trial. *Journal of Consulting and Clinical Psychology, 84,* 768-782.

Williams, G., Tonmyr, L., Jack, S. M., Fallon, B., & MacMillan, H. L. (2011). Determinants of maltreatment substantiation in a sample of infants involved with the child welfare system. *Children and Youth Services Review, 33*, 1345-1353.

Wu, L.T., Ling, W., Burchett, B., Blazer, D.G., Shostak, J., & Woody, G.E. (2010). Gender and racial/ethnic differences in addiction severity, HIV risk, and quality of life among adults in opioid detoxification: results from the National Drug Abuse Treatment Clinical Trials Network.

Zisman-Ilani, Y., Barnett, E., Harik, J., Pavlo, A., & O'Connell, M. (2017). Expanding the concept of shared decision making for mental health: Systematic search and scoping review of interventions. *Mental Health Review Journal*, *22*, 191-213.

CURRICULM VITAE

Christopher P. Plant
Department of Psychology, University of Nevada, Las Vegas
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Email: Christopher.philip.plant@gmail.com

Education

University of Nevada, Las Vegas — Expected 2020
Department: Psychology
Degree: Clinical Psychology Ph.D (APA-accredited)
Current GPA: 3.9
Advisor: Brad Donohue, Ph.D

Dissertation (Defense completed: 4/1/19): Examination of the influence of consumer preferences for cognitive behavioral treatment components and consumer effort during treatment sessions on child welfare outcomes

California State University, San Bernardino — 2016
Department: Psychology
Degree: Master of Arts, General Experimental Psychology (Emphasis: Biological Psychology)
GPA: 4.0
Advisor: Cynthia A. Crawford, PhD

Thesis: Early nicotine and methylphenidate (Ritalin) chronic pre-exposure on adult cannabinoid receptor agonist (CP 55, 940) place conditioning in rats (NIH: DA 033877)

California State Polytechnic University, Pomona — 2012
Degree: Bachelor of Arts
Major: Psychology
Minor: Philosophy
GPA: 3.8 (Summa cum Laude)
Advisor: Juliana Fuqua, PhD

Scholarships, Grants and Awards

Summer Doctoral Research Fellowship — 2017
Graduate College, University of Nevada, Las Vegas
- $7,000 Research Stipend

Certificate of Recognition — 2016
Outreach Undergraduate Mentoring Program (OUMP)
Department of Psychology, University of Nevada, Las Vegas

Research Initiative for Scientific Enhancement (RISE) Program 2014
(NIH: 1R25GM100829-01A1)

- Full Tuition Waiver
- $8,000 Research Stipend

Lay Summary ("Hot Topic") 2013
43rd Annual Meeting of the Society for Neuroscience, San Diego, CA.

PSI CHI Regional Research Award 2013
93rd *Annual Convention of the Western Psychological Association*, Reno, NV

- $300 Award

Psychology and Sociology Department Scholarship 2012
Award for Outstanding Academic and Professional Achievement
California State Polytechnic University, Pomona

- $1,000 Award

Clinical Training

Pre-Doctoral Intern Start Sept. 2019
Loma Linda University School of Medicine
Supervisor: Carlos Fayard, PhD

Will conduct comprehensive, psycho/educational/diagnostic assessments and conduct evidence-based group and individual therapy for members of the community seeking services through Loma Linda University Hospital. Will conduct these behavioral health services in outpatient and partial hospitalization settings for a variety of presenting concerns.

Pre-Doctoral Practicum Student
Graduate Assistantship March 2018 to Present
Academic Success Center/Disability Resource Center (UNLV)
Supervisor: Michelle Paul, PhD

Conduct comprehensive, psycho/educational/diagnostic assessments for students referred from the Disability Resource Center (DRC) or Academic Success Center at UNLV. Regularly administer, score and interpret the following measures: WAIS-IV, WJ-Cog, WJ-Achievement, WJ-Oral Language, D-KEFS, CVLT-III, WMS-IV, Rey Complex Figure, CPT-3, SCID-5 as well as a variety of other psychometrically validated measures. Worked closely with the DRC staff to facilitate assessment and recommend accommodations for students.

Pre-Doctoral Practicum Student 2018
VA Southern Nevada Healthcare System
Evidence Based Practice (EBP) Rotation
Medical Center – Main Hospital
Supervisor: Robert Mirabella, PhD

Provided diagnostic intake assessments, group and individual therapy for veterans with PTSD, depression, insomnia, and/or chronic pain utilizing VA approved evidence-based protocols. Completed the initial training in Cognitive Processing Therapy for PTSD and was continuously supervised by a VA-approved trainer, Dr. Mirabella, while implementing each of these interventions.

Pre-Doctoral Practicum Student 2017 to 2018
VA Southern Nevada Healthcare System
Addictive Disorder Treatment Program (ADTP)
Medical Center – Main Hospital
Supervisor: Heather L. Manor, Psy.D

Provided diagnostic intake assessments, group and individual psychotherapy for veterans with substance use disorders and/or gambling disorders. Conducted individual and group interventions for addictive behaviors utilizing the evidence-based protocol for Cognitive Behavioral Therapy for Substance Use Disorders (CBT-SUDS). Completed a VA provided workshop in motivational interviewing (MI), and applied these skills regularly with veterans. In addition, co-facilitated CBT for insomnia (CBT-I) and Seeking Safety groups for individuals dually diagnosed with substance use disorders and PTSD. Participated in psychoeducational, motivational enhancement, and gambling groups, and inpatient multi-disciplinary team meetings.

Pre-Doctoral Practicum Student 2016 to 2017
Clark County Juvenile Justice Services
Clinical Division – Court Mandated Outpatient Treatment
Supervisor: Brad Donohue, Ph.D

Provided assessment, group and individual psychotherapy with adolescents and their families mandated into treatment through the local juvenile justice services. Treatment was largely conducted within probation offices across the Las Vegas valley that required close work with probation officers to facilitate behavioral change. This research practicum also included facilitating the dissemination of an evidence-based intervention, Family Behavior Therapy, to providers within the local juvenile justice services. Served as the liaison between the research team and juvenile justice services, and assisted in the development of clinical materials and organizational structure to facilitate the adoption of Family Behavior Therapy across the facility. Additionally, provided staff training workshops and ongoing trainings for Family Behavior Therapy. Worked with administrative staff to develop appropriate assessments for outcome tracking following provider training in the intervention.

Pre-Doctoral Practicum Student 2015 to 2016
The PRACTICE: A UNLV Community Mental Health Training Clinic
University of Nevada, Las Vegas
Supervisor: Andrew Freeman, Ph.D.

Conducted comprehensive, psychodiagnostic assessments and evidence-based cognitive behavioral interventions for a variety of mental health concerns in both children and adults.

Training in Clinical Trials

Family Behavior Therapy Clinician

2016 to 2017

Project Title: Examination of Family Behavior Therapy in Juvenile Justice
Principal Investigator: Brad Donohue, PhD
Location: Clark County Juvenile Justice & University of Nevada, Las Vegas

2015 to 2016

Project Title: Family Behavior Therapy for Substance Abusing Older Adults (Pilot Trial)
Principal Investigator: Jason M. Holland, PhD
Location: Stressful Transitions and Aging Research Lab (UNLV)

Supplementary Training

VA Southern Nevada 2018
Cognitive Processing Therapy (CPT) for PTSD Workshop (16 hours)
Robert F. Mirabella, PhD

VA Southern Nevada 2017
Motivational Interviewing (MI) Workshop (5 hours)
Lynn Asher, PhD

Development of Irritability, Mood and Emotions Lab, Las Vegas, NV 2017
Statistics Workshop (18 hours): Advanced Regression and Diagnostics
Andrew Freeman, PhD, UNLV

Clark County Juvenile Justice Services, Las Vegas, NV 2017
Family Behavior Therapy Workshop (FBT) (28 hours) – Brad Donohue, Ph.D

Neuropsychological Research Program, Las Vegas, NV 2016
Structured Clinical Interview for DSM (SCID) Workshop - (24 hours)
Daniel N. Allen, PhD, UNLV

Didi Hirsch Community Mental Health Center, Culver City, CA 2011-2012
Position: Suicide Prevention Counselor
Certified: Applied Suicide Intervention Skills Training (ASIST Training - 30 hours)

Teaching Experience

University of Nevada, Las Vegas
Fall 2017: Psychology 101: Introduction to Psychology (2 sections)
Spring 2018: Psychology 101: Introduction to Psychology (2 sections)

California State University, San Bernardino
Psychology 390: Abnormal Psychology (co-taught)

California State University, San Bernardino
Psychology 357: History and Systems (co-taught)

Peer Reviewed Publications

Donohue, B., Plant, C.P., Barchard, K.A., Scott, J. & Galante, M. (In press). Influence of child neglect type and court disposition status on assessment of child abuse potential and socially desirable responding. *Child Welfare*.

Holland, J.M., Plant, C.P., Klingspon, K.L., & Neimeyer, R.A. (In press). Bereavement-related regrets and unfinished business with the deceased. *Death Studies*.

Donohue, B., Plant, C.P., Chow, G., Schubert, K., Bradshaw, K., Urgelles, J., & Allen, D.N. (In press). Contribution of caregivers' marijuana and hard drug use to child abuse and neglect potential while considering social desirability. *British Journal of Social Work*.

Donohue, B., Gavrilova, Y., Galante, M., Gavrilova, E., Loughran, T., Scott, J., Chow, G., Plant, C.P. & Allen, D.N. (2018). Controlled evaluation of an optimization approach to mental health and sport performance. *Journal of Clinical Sport Psychology*, 12, 234-267.

Plant, C.P. & Holland, J.M. (2017). Family Behavior Therapy for alcohol and drug problems in later-life. *Clinical Gerontologist*, 41, 508-515.

Donohue, B., Plant, C.P., Lougran, T.A., & Torres, A. (2017). Family assisted contingency management within the context of evidence-supported treatment for child neglect and drug abuse. *Journal of Child and Family Studies*, 26, 2224-2236.

Donohue, B., Plant, C.P., Barchard, K.A., & Gillis, D.J. (2017). Examination of the Extent to which Employment Factors are Associated with Reduced Child Maltreatment Potential and Drug Use. *Journal of Child and Family Studies, 26,* 168-175.

Urgelles, J., Donohue, B., Holland, J., Denby, R., Chow, G., Plant, C.P., & Allen, D.N. (2017). Examination of the relationship between social support and treatment outcomes in mothers referred by child protective services utilizing the Significant Other Support Scale. *Journal of Family Social Work, 20,* 213-232.

Plant, C.P., Donohue, B., & Holland, J.M. (2016). Examination of life satisfaction, child maltreatment potential and substance use in Mothers Referred for treatment by child protective services for child neglect and substance abuse: Implications for intervention planning. *Applied Research in Quality of Life, 11,* 805-816.

Donohue, B., Dowd, A., Phillips, C., Plant, C.P., Loughran, T.A., & Gavrilova, Y. (2016). Controlled evaluation of a method to assist recruitment of participants into treatment outcome research and engage student athletes into substance abuse intervention. *Journal of Clinical Sport Psychology, 10,* 272-288.

Donohue, B., Bradshaw, K., Azrin, N., Fayeghi, J., Wilks, C., Holland, J.M., Cross, C., Plant, C.P., & Allen, D. (2016). Preliminary evaluation of contingent meals and telephone-use to improve session attendance in evidence-supported family therapy with mothers identified by child welfare to abuse drugs. *Journal of Family Social Work, 29,* 462-472.

Donohue, B., Pitts, M., Chow, G., Benning, S., Soto-Nevarez, A., Plant, C.P. & Allen, D.N. (2015). Development and initial psychometric examination of the Home Safety and Beautification Assessment in mothers referred to treatment by child welfare agents. *Psychological Assessment, 28,* 523-538.

Amodeo, L.S., Greenfield, V.Y., Humphrey, D.E., Varela, V., Pipkin, J.A., Eaton, S.E. Johnson, J.D., Plant, C.P., Harmony, Z.R., Wang, L., & Crawford, C.A. (2015). Effects of acute or repeated paroxetine and fluoxetine treatment on affective behavior in male and female adolescent rats. *Psychopharmacology, 232, 3515-3528.*

Pipkin, J., Kaplan, G., Plant, C.P., Eaton, S.E., Gil, S.M., Zavala, A.R., & Crawford, C.A. (2014). Nicotine exposure beginning in adolescence enhances the acquisition of methamphetamine self-administration, but not methamphetamine-primed reinstatement in male rats. *Journal of Drug and Alcohol Dependence, 143,* 341-344.

Conferences, Workshops and Other Presentations

Schellack, K., Fuqua, J., Rogo, P., Plant, C.P., Egbule, P., & Van Noorden, C. (2017). A comparative study of commuting conditions and commuting stress in two countries. Poster presented at *97th Annual Convention of the Western Psychological Association, Sacramento, CA.*

Hussey, J., Donohue, B., Paul, N., Plant, C.P. & Allen, D. (2017). Influence of family relationships on mental health of student athletes. Poster accepted to *125th annual convention for the American Psychological Association, Washington, D.C.*

Donohue, B., Gavrilova, Y., Plant, C.P. & Galante, M. (2016). Managing the environment for adolescents evidenced to abuse drugs utilizing stimulus control strategies within the context of Family Behavior Therapy. Workshop presented at the *50th annual convention for the Association of Behavioral and Cognitive Therapies, New York, NY.*

Plant, C. P., Gavrilova, Y., Pitts, M., Galante, M., Andrewjeski, K., & Donohue, B. (2016). Controlled evaluation of a method of recruiting participants into treatment outcome research. Poster presented at the *50th Annual Meeting of the Association of Behavioral and Cognitive Therapies*, New York, NY.

Plant, C. P., Pitts, M., Gavrilova, Y., Galante, M., Andrewjeski, K., & Donohue, B. (2016). Family supported dynamic goal and contingency management intervention components within the context of evidence-supported treatment for mothers referred by Child Protective Services. Poster presented at the *50th Annual Meeting of the Association of Behavioral and Cognitive Therapies, New York, NY.*

Plant, C. P., Pitts, M., Gavrilova, Y., Galante, M., Millwood, S. & Donohue, B. (2016). Preliminary development of a brief intervention to prevent alcohol misuse and enhance sport performance in collegiate athletes. Poster presented at the *50th Annual Meeting of the Association of Behavioral and Cognitive Therapies, New York, NY.*

Plant, C.P., Scott, J., & Galante, M. (2016). Examination of the effects of child neglect type and case status on self-reporting of child maltreatment potential in substance abusing mothers referred by child protective services. Paper presented at the *96th Annual Meeting of the Western Psychological Association,* Long Beach, California.

Egbule, P., Fuqua, F., Plant, C.P., Flicker, A., Van Noorden, C. & Schellack, K. (2016). Examination of the effects of perceived stress on smoking related behavior. Poster was accepted for presentation at the *96th Annual Meeting of the Western Psychological Association,* Long Beach, California.

Kenny, M.C., Lopez-Griman, A., Donohue, B. & Plant, C.P. (2015). Development and initial evaluation of an innovative online training program to assist professionals in reporting child maltreatment. Poster was presented at the *49th Annual Meeting of the Association for Behavioral and Cognitive Therapies, Chicago, Illinois.*

Holland, J. M., Klingspon, K. L., Beckman, L., Plant, C.P., Rakhkovskaya, L., Rozalski, V., & Williams, C. D. (2015). Family behavior therapy for substance abuse problems in later life. Poster was presented at the *National Veterans Administration Research Week Poster Presentation*, Las Vegas, NV.

Plant, C.P., Gillis, D.J., Leon, D., & Donohue, B. (2015). The relationship between employment and child maltreatment potential in women who have been identified to abuse illicit drugs within child welfare: Implications for treatment. Paper was presented at the *95th Annual Meeting of the Western Psychological Association*, Las Vegas, Nevada.

Plant, C.P., Dowd, A., Pascua, A., Torres, A., Mitchell, R., & Donohue, B. (2015). Examination of life satisfaction and child maltreatment potential in mothers referred for treatment by child protective services: Implications for intervention planning. Poster was presented at the *95th Annual Meeting of the Western Psychological Association*, Las Vegas, Nevada.

Plant, C.P., Torres, A., Dowd, A., Pitts, M., & Donohue, B. (2015). Examination of a family based behavioral goals intervention on child maltreatment in mothers who abuse illicit drugs. Poster was presented at the *95th Annual Meeting of the Western Psychological Association*, Las Vegas, Nevada.

Plant, C.P., Stone, M.J., Hardin, A., Harmony, Z., & Crawford, C.A. (2015). Early methylphenidate (Ritalin) chronic exposure on adult cannabinoid receptor agonist (CP 55,940) place conditioning in rats. Poster was presented at the *95th Annual Meeting of the Western Psychological Association*, Las Vegas, Nevada.

Crawford, C.A., Plant, C.P., Stone, M. (2014) Effects of early methylphenidate exposure on CP-55,940-induced conditioned place preference in young adult male rats (M85). Presented at *53rd Annual Conference of the American College of Neuropsychopharmacology, 39*, S112-S290. doi:10.1038/npp2014.280.

Plant, C.P., Stone, M., Hardin, A., & Harmony, Z (2014). Effects of adolescent nicotine exposure on cannabinoid-induced place preference in young adult rats. Poster was presented at the *44th Annual Meeting of the Society for Neuroscience*, Washington D.C.

Stone, M.J., Plant, C.P., Hardin, A., & Crawford, C.A (2014). Effects of early methylphenidate exposure on cannabinoid-induced conditioned place preference in young adult male rats. Paper was presented at the *9th Annual Drug Abuse Research Symposium hosted by the Charles Drew University of Medicine and Science.*

Plant, C.P., Cortez, S., Eaton, S.E., & Crawford, C.A. (2014). Effects of preweanling methylphenidate exposure on nicotine-induced place preference in young adult rats. Poster was presented at the *94th Annual Meeting of the Western Psychological Association*, Portland, OR.

Plant, C.P. & Fuqua, J. (2014). Associations between commute trip time, external stressors, and stress/mood among men and women. Paper was presented at the *94th Annual Meeting of the Western Psychological Association*, Portland, OR.

Harmony, Z.R., de la Rosa, D., Plant, C.P., Eaton, S.E., & Crawford, C.A. (2014). Effects of repeated paroxetine and fluoxetine treatment on affective behavior in male and female adolescent rats. Poster was presented at the *94th Annual Meeting of the Western Psychological Association*, Portland, OR.

Humphrey, D., Eaton, S.E., Plant, C.P., & Harmony, Z.R. (2014). Effects of repeated fluoxetine and paroxetine exposure on anxiety-like behaviors in Adolescent Rats. Poster was presented at the *29th Annual CSUPERP Biotechnology Symposium*, Santa Clara, CA.

Pipkin, J., Kaplan, G., Plant, C.P., Abdulla, Z., Nora, A., Bain, S., & Crawford, C.A. (2013). Adolescent and adult nicotine exposure on the acquisition of methamphetamine self-administration and the reinstatement of extinguished methamphetamine-seeking in male rats. Poster was presented at the *43rd Annual Meeting of the Society for Neuroscience*, San Diego, CA.

Plant, C., & Fuqua, J. (2013). A study of commuting stress among female college student commuters. Poster was presented at the *93rd Annual Meeting of the Western Psychological Association*, Reno, CA.

Clarke, B., Plant, C., & Fuqua, J. (2013). Association between housing related quality of life, automobile environment, and commuting stress. Poster was presented at the *93rd Annual Meeting of the Western Psychological Association*, Reno, CA.

Plant, C., Fuqua, J., & Kinzle, S. (2012). Associations between perceived commuting stress and perceptions of the commute. Poster was presented at the *92nd Annual Meeting of the Western Psychological Association*, San Francisco, CA.

Fuqua, J., Reyes, A., Dejonghe, E., Cao, T., Plant, C., & Salazar, M. (2011). Are commute time, gender, and being a parent related to commuting stress? Paper presented at the *91st Annual Meeting of Western Psychological Association*, Los Angeles, CA.

Fuqua, J., Reyes, A., Cao, T., & Plant, C. (2010). Examining commuting stress in the Inland Empire: A look at whether commuters with long drives, women, and parents with kids at home experience greater stress than others. Paper presented at the *2010 Provost's Symposium on Faculty Scholarship & Teaching*, Pomona, CA.

Invited Talks

Plant, C. (2017). Biological mechanisms and treatment of substance use disorders in adolescents. Guest speaker at California State Polytechnic University, Pomona: *Psychology and Sociology Department*.

- Travel Stipend Awarded

Plant, C. (2015). Family Behavior Therapy: An evidence-based approach for adolescent substance abuse and associated problems. Guest speaker at University of Nevada, Las Vegas: *Forum for UNLV Child & Family Policy Consortium*.

Plant, C. (2011). Commuting stress. Guest speaker at California State Polytechnic University, Pomona: *Research Methods*, Pomona, CA.

Plant, C. (2010). Physiological effects of stress and the potential health implications of commuting stress. Guest speaker at California State Polytechnic University, Pomona: *Health Psychology*, Pomona, CA.

Peer Review Journals

Editorial Assistant Journal of Child and Adolescent Substance Abuse	2015-2016
Ad Hoc Reviewer *Journal of Child and Adolescent Substance Abuse* *Clinical Case Studies*	2016

Professional Memberships

American Psychological Association	2016 to 2018
Association of Behavioral and Cognitive Therapies	2015 to 2017
Western Psychological Association	2011 to 2017
Psi Chi International Honor Society	2011
Golden Key International Honour Society	2009
Alpha Lambda Delta-Freshmen Honor Society	2009

Campus Involvement

Graduate Mentor Outreach Undergraduate Mentoring Program- A program designed to support students from under-represented groups to pursue graduate studies	2015-2016

Department of Psychology, University of Nevada, Las Vegas

Peer Mentor 2011-2012
Psychology and Sociology Department Peer Mentor Program
California State Polytechnic University, Pomona

References

Brad Donohue, Ph.D. (702) 895-2468
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Department of Psychology
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