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The Impact of Length of Stay on Therapeutic Effectiveness of Multidimensional Treatment Foster Care

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Walden University
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Abstract

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MA, Argosy University, 2009

BS, San Diego State University, 2005

Dissertation Submitted in Partial Fulfillment

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Abstract

Youth who are placed in the Multidimensional Treatment Foster Care (MTFC) program come from families with multiple risk factors. The MTFC program is based on social learning theory, which posits that youth learn from modeling those in their environment. It is unclear whether motivation for social learning decreases over time. Past research has indicated that there is an efficacious time period for treatment in the MTFC program (6 to 9 months). The purpose of this quantitative study was to examine the behavior effects of remaining in treatment foster care for an extended length of time. This was measured through pre- and posttreatment scores on the Children's Functional Assessment Rating Scale (CFARS) and specific negative behaviors tracked through the Foster Parent Daily Report. Archival data were used for a sample of 34 youth placed in an MTFC program in a northwestern state. The repeated measures ANOVA results demonstrated increased scores on the CFARS from intake to exit date. Regression analysis indicated that the behaviors of arguing and defiance were observed at higher instances for youth in the MTFC program longer than 6 to 9 months. There were no significant findings related to the behavior of destructiveness/vandalism and the length of stay. The implications for social change include social workers being able to move youth out of MTFC sooner. Also, if behaviors are targeted and treated successfully as youth, then there is a decreased likelihood of the youth having negative and criminal behavior as adults.

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Dedication

This is dedicated to all of my family and close friends who have supported me throughout this journey. I would have not had the ability to make it through this process without the love, support, and encouragement of many individuals in my life. I would especially like to dedicate this to several individuals who have been vitally important in my life and this process. This is dedicated to my husband Brian, who has been a constant source of support and encouragement, understanding when I needed to work and not be able to provide my full attention and reciprocal amount of time to him to help with other things in our life. He pushed me to continue pursuing my dream and to finish my dissertation. I would also like to dedicate this to my daughter; who someday will learn that it is possible to accomplish all of your dreams and that you can be whoever you want to. I want to dedicate this to my mom, Mary. I would not be the strong and independent woman I am today without the love and support she provided to me for my entire life. I would not have been able to complete this process without the core values and traits she instilled in me from a young age. Thank you for helping me become the woman I am today. Finally, I want to dedicate this to the memory of my dad, Donald, who was not able to see me begin or end this process, but is always in my heart.

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Chapter 1: Introduction to the Study

Introduction

Every year, more and more children are placed into the child welfare system and foster care homes. According to the most recent Adoption and Foster Care Analysis and Reporting System (AFCARS), there are over 425,000 children in the foster care system in the United States (U.S. Department of Health and Human Services [USDHHS], 2016). The number of children in foster care has increased by 47.6% from 2011 to 2015 (USDHHS, 2016). The number of children entering foster care each year increased from 251,450 in 2011 to 269,509 in 2015 (USDHHS, 2016). These numbers are higher than the number of children who exited foster care every year during that time span. In 2011, 247,543 children exited foster care, while in 2015, 243,060 exited foster care (USDHHS, 2016). There is a much higher rate of children entering foster care than exiting foster care every year. Of the children who are currently in foster care, as of September 30, 2015, 52% are male and 48% are female. The mean age of a child in foster care is 8.6 years (USDHHS, 2016). There are multiple types of foster care placements, including relative placements, group homes, institutions, guardianships, and nonrelative foster family homes. This research study will look at children living in nonrelative foster family homes, which account for 45% of all foster children (USDHHS, 2016). This study specifically is looking at those kids who are placed into a form of treatment foster care which is founded on the tenants of social learning theory.

Children are placed into a foster care home when their parents are unable or unfit to care for them. In some cases, the child may not return to the parent's care and remain

in foster care permanently. However, in other cases, the child is in need of a temporary home until their parents are able to care for them. Foster care is meant to be a temporary living situation for a child (Foster Club, 2016). The goal of foster care is to eventually place the child back with his or her parents. If this cannot happen, then the goal is to place the child in a permanent living situation. This permanent living situation may include a long-term foster placement, adoption, or guardianship (Foster Club, 2016). While a child is in foster care, the foster parents are encouraged to connect with the children on an emotional level (Foster Club, 2016). However, these foster families are not meant to replace the child's biological families.

In addition to foster care placements, at times a child will have to be placed into a therapeutic foster care program. They often have difficulty remaining in foster homes and are moved multiple times prior to coming into the therapeutic foster care program. A child is placed into one of these specialized homes when they exhibit a high number of behavioral and/or emotional issues. Examples of the behaviors these children may exhibit include: withdrawn and depressed mood, not understanding consequences, physical aggression, anger, poor impulse control, property destruction, emotional sensitivity, and sexually acting out (Sample, 2010). It is important to acknowledge that children have a tendency to act out and, when in a new situation, are scared, unsure of what to expect, and also tend to mimic behaviors they may have seen their parents engage in (Sample, 2010).

One form of therapeutic foster care is Multidimensional Treatment Foster Care (MTFC), developed by the Oregon Social Learning Center (OSLC). MTFC has been

shown to be effective in treating children with severe behavioral problems (Alvord & Johnson, 2005; Chamberlain, Leve, & DeGarmo, 2007; Henggeler & Schoenwald, 2011). MTFC is an alternative placement to group or residential treatment, or incarceration for children and adolescents who demonstrate issues with chronic antisocial behaviors and emotional disturbances (National Institute of Justice [NIJ], 2011). Based on social learning theory, MTFC emphasizes the use of clear and consistent boundaries and follow-through of consequences. One of the main tenets of MTFC is that the youth will mimic and learn from the positive behaviors being modeled in the foster home. Additionally, there is a large emphasis on positive reinforcement for appropriate behaviors (NIJ, 2011).

Background

MTFC is also more cost effective than institutionalization or other residential treatment models. It has been demonstrated that both boys and girls benefit from MTFC and show greater improvements in school attendance and decreases in running away and delinquency than children in alternative programs (Leve & Chamberlain, 2007; TFC Consultants, 2013). Westermark, Hansson, and Olsson (2011) found that youth who were considered to be delinquent treated with the MTFC model demonstrated consistent and positive treatment effects.

Although there is much research on the MTFC program and the benefits it has on youth, there is a gap in the literature. There is no research that specifically looks at how an extended length of stay may impact the effectiveness of the program overall. The MTFC program is meant to be a temporary placement for children, typically between 6 and 9 months. However, there are times when youth remain in the placement for time

periods that may exceed 12 months. This may have a detrimental effect on the progress that youth make in the treatment foster care program. The study conducted has the potential to inform policymakers regarding the MTFC program in a northwestern state, as well as in other areas. The present study aimed to demonstrate that there is an efficacious amount of time to remain in the MTFC program. A more detailed review of the problem and the impact it has will be in Chapter 2.

Problem Statement

While MTFC is efficacious, the problem is there is limited research demonstrating the behavioral and psychosocial consequences for youth who remain in treatment beyond the recommended 6-9 months of the MTFC program specifically. Cross, Leavey, Mosley, White, and Andreas (2004) found a curvilinear relationship between length of stay in a specialized foster care (SFC) program and overall improvement of behaviors. It was observed that after a certain point in time (2 years for this specific SFC), there was a decrease in therapeutic progress, an increase or return of negative behaviors, and an impaired ability to maintain social relationships. In a multiple regression analysis, Cross et al. (2004) found that the length of stay appeared to be the most important correlate of improvement. One main difference between the SFC program and the MTFC program is that reunification is not identified as the primary goal for youth in the SFC program studied. When youth are selected and placed into the MTFC program, one criteria is that reunification is the primary goal (Chamberlain et al., 2007). Another difference between the SFC program and MTFC is that within the SFC program, the aim is to achieve permanent placement or movement to a less restrictive placement within one year and if

necessary to have an extended service team (Cross et al., 2004). The MTFC program aims to have youth reunified with their family within 6-9 months and not be extended past a year.

Family-centered and individualized services within the context of a system of care can result in fewer out-of-home placements for youth in the future (Farmer, Mustillo, Burns, & Holden, 2008). The current literature has addressed MTFC as an effective treatment modality for foster youth who demonstrate severe behavioral issues and have a multitude of risk factors in their lives. Hansson and Olsson (2012) found that youth who were involved in the MTFC program had a significantly higher decrease of clinical symptoms during treatment than youth in a control group. Hansson and Olsson (2012) looked at patient and parent self-report measures at baseline, 12 months post-baseline, and 24 months post-baseline. The information from the self-report measures was gathered through interviews with parents and youth involved in the MTFC program. Additionally, an analysis was completed that used gender as a moderating variable to determine if there were any gender differences in treatment between MTFC and treatment as usual (Hansson & Olsson, 2012). They did not find any significant differences based upon gender of the youth. There were significant clinical changes in behavior and during the treatment period of 9-12 months; however, these changes seemed to dissipate at the 24-month follow-up (Hansson & Olsson, 2012). There was also a brief analysis on negative clinical change, which showed that one youth in the MTFC group demonstrated negative clinical change at the 24 month follow-up (Hansson & Olsson, 2012).

From a theoretical perspective, a child who has been in therapeutic foster care for an extended period of time should not face the risk of experiencing negative consequences. The principles of MTFC and social learning theory should have a positive impact on youth no matter how long they are in the MTFC program (Hine & Moore, 2015). The study by Hine and Moore (2015) looked at applying the MTFC principles to treatment foster care in rural areas. Overall results demonstrated increased prosocial behaviors in the youth from the sample, ranging from treatment duration of 15 to 557 days, with the average length of service being just over 5 months (Hine & Moore, 2015). Cross et al. (2004) found results that are in opposition to the expected effects that therapeutic foster care programs should have on the youth placed in them. There should not be an impact on the child's ability to maintain positive behaviors at home and in school. When looking at the basic tenets of social learning theory, there should either be maintenance or continued increase of positive behaviors. The expectation is that due to MTFC's foundation of social learning theory, the child should continue to learn and use the positive behaviors learned in treatment. There is a gap in the literature regarding how an extended length of stay in MTFC can impact the child. Many studies address the general outcomes of MTFC and the positive impact that it has on children and their families. However, it is difficult to find literature that specifically looks at the length of stay, especially if past the 12-month mark. There are studies that look at the changes in clinical symptoms at time periods post-treatment; however they do not look in detail at youth who remain in MTFC at determined points of time after entry into the program. Most of the studies completed look at general outcomes after a youth has left the MTFC

program. Rhoades et al. (2013) examined specific behavior changes of adolescent girls in the MTFC program from pretreatment to 12 months post-baseline. The sample included youth in an MTFC program in England and the United States. One outcome that that was examined was in the domain of violence (Rhoades et al., 2013). In both samples, improvements were seen in the domain of violence, with a decrease in violent behaviors (Rhoades et al., 2013).

Bergstrom and Hojman (2016) found several positive significant outcomes at a three-year follow-up of outcome effects for an MTFC program in Sweden. The researchers assessed youth at baseline, 12 months, and 24 months post-baseline using multiple standardized self-report measures (Bergstrom & Hojman, 2016). The measures included assessments pertaining to health, school, criminality, and leisure/friends. Youth who were in the MTFC program spent fewer days in locked settings and committed fewer violent crimes than youth who were not in MTFC (Bergstrom & Hojman, 2013). Similar to other studies in the literature, this study looked at outcome effects several years post treatment and not at behavioral changes during treatment.

The present study aims to reduce the gap in the literature by looking at the behaviors of youth while they are still in the MTFC program by analyzing the Parent Daily Report (PDR) data. The PDR is an interview conducted daily with foster parents to assess multiple behaviors a foster youth may have and whether or not they were present during the day. Although there is literature pertaining to MTFC, there is nothing that examines whether there are any negative effects that occur when the length of stay is longer than meant to be. Additionally, this study helps to identify significant differences

in post-treatment behavior scores on the CFARS between youth who remain in the MTFC program for different periods of time.

Purpose of the Study

The main purpose of this quantitative study was to identify the efficacious period for the MTFC program and demonstrate that it may be problematic for youth to remain in MTFC longer than the intended time frame. The study partially replicates and expands upon previous research, exploring the negative behaviors seen after the efficacy period. The youth in their study were rated by program workers on a five-point Likert-scale, looking at whether or not behaviors changed in either a negative or positive fashion while in the treatment program (Cross et al., 2004). There are identified problem behaviors that are to be addressed while in the specialized foster care program, which are then tracked throughout the course of treatment (Cross et al., 2004). The data was collected from the beginning to the end of treatment services.

The current study differs from the Cross et al. study in several ways. Cross et al. (2004) used a less restricted sample, using a treatment foster care program that did not turn away referrals or have specific admittance criteria. The MTFC program being analyzed in the present study has specific criteria for the youth admitted into the program and is a more controlled sample. The expectation was that MTFC will be effective for an identifiable amount of time; however, there will be a reemergence of the negative behaviors once past that time. The secondary purpose was to examine whether there were moderating effects of demographic variables on the relationship between length of stay

and treatment efficacy. These demographic variables included gender and age of the youth.

The results of this study will provide specific data that can be used to better serve youth who are being placed in therapeutic foster care. This includes information on time-limited efficacy of the MTFC program. In this study, treatment efficacy was present so long as negative behaviors were not present, once those behaviors reemerged, then treatment efficacy was lost. The measurement of the presence of negative behaviors was measured through the Children's Functional Assessment Rating Scale (CFARS) and the PDR. The CFARS is an instrument that was developed by the Florida Mental Health Institute to evaluate the effectiveness of mental health and substance abuse treatments for children and adults (Ward et al., 2006).

Research Questions and Hypotheses

The research questions addressed in this study and their respective hypotheses are as follows:

RQ1: Is there a difference between youth who are in the MTFC program for 6-9 months, 10-13 months, and greater than 13 months in terms of respective pre- and post-treatment behavioral scores on the CFARS?

H_{o1}: There is no difference between youth who are in the MTFC program for 6-9 months, 10-13 months, and greater than 13 months in terms of scores on the CFARS.

H_{a1}: There is a difference between youth who are in the MTFC program for 6-9 months, 10-13 months, and greater than 13 months in terms of scores on the CFARS.

RQ2: Is there a relationship between length of stay for youth in the MTFC program, age at entry, and gender, and the following negative behaviors: arguing, defiance, and destructiveness/vandalism, as measured by the PDR?

H_{o2}: There is no relationship between length of stay for youth in the MTFC program, age at entry, and gender, and arguing, defiance, and destructiveness/vandalism.

H_{a2}: There is a relationship between length of stay for youth in the MTFC program, age at entry, and gender, and arguing, defiance, and destructiveness/vandalism.

Theoretical Foundation

The theoretical foundation for this study is social learning theory. The development of social learning theory is often attributed to Albert Bandura. This theory is that learning is the primary factor in personality and human development. Social learning theory is based on cognitive, self-regulatory, self-reflective, and social-interactive processes (Salkind, 2008). Bandura specifically argued against the reliance on trial and error learning and emphasized the social context of the learning environment (Salkind, 2008). In his early studies, Bandura was able to show that learning did not require a direct response contingency and could occur through watching another individual being reinforced or punished (Kretchmar, 2008; Salkind, 2008). This method of observational learning within social learning theory is described through four components: attention, retention, motor reproduction, and motivation/reinforcement. Bandura (1997) stated that individuals will have a stronger incentive to act in specific ways when they believe their actions will lead to desired goals. There will be stronger motivation if it is believed that the desired goals can be attained. In the MTFC program, one of the desired goals is for

foster children to return home and leave the foster care program. There is a high level of motivation to perform behaviors that will lead to this result. While in the MTFC program, youth are provided with positive social modeling and reinforcement of prosocial behaviors. As they progress through the MTFC program, they meet smaller goals, and these help to increase motivation to return home. However, if a youth is at the point where they are behaviorally ready to return home, and they are not able to return home, then motivational processes potentially decrease. The youth reach a plateau where the work they are doing to achieve the goal of returning home is not ending in this result. If the youth do not see results, then the motivation to maintain the positive behaviors begins to wane (Cross et al., 2004).

Bandura also argued that human development was too complex to be relegated into discrete stages, such as in Piaget's theory of development. He suggested that instead, it is more helpful to look at how successful an individual believes he or she could be when engaging in particular behaviors (Salkind, 2008). Bandura's early research was focused on aggression; however, it evolved into studying prosocial behaviors. The study of prosocial behaviors helped to provide empirical evidence that children were able to learn how to share and to be empathic just from observing models around them (Salkind, 2008). This form of learning is what provides the groundwork for the MTFC program and the treatment provided to the youth and families involved in MTFC. A more detailed explanation of social learning theory and its relation to children in therapeutic foster care is provided in Chapter 2.

Nature of the Study

A repeated measures analysis of variance (ANOVA) was chosen to analyze the data in this study. An ANOVA is the statistical test of choice when a research study includes two or more groups (Bordens & Abbott, 2008). An ANOVA can be used even if the groups within the study contain an unequal number of subjects (Bordens & Abbott, 2008). If a researcher wanted to address unequal means, an unweighted means analysis can be done to give each group equal weight in the analysis (Bordens & Abbott, 2008). The repeated measures ANOVA, also known as a within-subjects ANOVA, is used when measuring differences in mean scores under three or more different conditions. A repeated measures ANOVA was used to assess the difference between length of stay and pre- and post-treatment behavioral scores on the CFARS. There were three groups that comprised the independent variable: 6-9 months, 10-13 months, and greater than 13 months. This led to the use of a repeated measures ANOVA. The CFARS is described in more detail in Chapter 3.

A regression analysis was used to explore the relationship between length of stay, age at entry, gender, and negative behaviors through data from the PDR. A simple regression analysis is used when there is a single dependent or criterion variable and several predictor variables that may relate to it (Bordens & Abbott, 2008). In this study, there were several behaviors that were measured from the PDR, with a single dependent variable of pre- and post-treatment CFARS scores. The PDR is an interview format assessment given to the foster parents on a daily basis. The interview measures whether or not specific behaviors were present during the 24 hours prior to the interview

(Chamberlain et al., 2006). The PDR is a measure used specifically by the MTFC program to track behaviors of youth in the foster home. A more detailed description of this measure is provided in Chapter 3.

The independent variable in this study was the length of stay a child has in the MTFC program. The dependent variables in this study were the pre- and post-treatment behavioral scores on the CFARS and PDR. The variables of gender and age were used as covariates to determine any impact on CFARS scores and length of stay in the MTFC program. These covariates were included in the regression analysis. The data was taken from an archival data set, which was provided by a community agency. This data set was deidentified and did not include client names. The data was collected by staff working for the MTFC program through structured phone interviews with the foster parents and an assessment completed by trained clinical staff. The data was analyzed through Statistical Package for the Social Sciences (SPSS).

Definitions

At-risk youth: Those children and youth who are at risk of serious life hardships. Examples of youth who would be considered at-risk include those living in poverty, those who experience abuse or neglect, discrimination based on race, language or gender, and trauma (Kitano & Lewis, 2005).

Compensatory factors: These are factors which always have a beneficial consequence on resilience development. Examples of these types of factors include healthy family functioning and high educational aspirations (Kitano & Lewis, 2005)

Foster care: A temporary arrangement in which adults provide care for children whose birthparents are unable to care for them. Foster care can either be informal or formally arranged through the court system. The goal for a child in foster care is typically to reunite with the birth family (National Adoption Center, n.d.).

Maladaptive behaviors: Behaviors that interfere with an individual's daily living activities or ability to adjust to and participate in certain settings (Gray, 2013).

Multidimensional Treatment Foster Care (MTFC): A treatment foster care program developed by the OSLC. The MTFC program uses a treatment model which includes foster parent recruitment and screening, intensive preservice training, ongoing foster parent consultation from professional staff, school consultation, individual youth treatment, family therapy, and after-care services. The program is an approach for working with children and families who are in need of high level supportive services. These needs arise from abuse, neglect, severe mental health and behavioral problems, and problems with juvenile delinquency (Fisher & Gilliam, 2012; Moore, Sprengelmeyer, & Chamberlain; 2001).

Resilience: Being able to successfully adapt despite challenges or threatening circumstances (Clauss-Ehlers, Yang, & Chen, 2006).

Risk factors: The characteristics of a group of persons associated with greater probability of a disorder, problems, or poor adaptation (Minnesota Department of Human Services Mental Health Division, 1997).

Therapeutic foster care: The least restrictive treatment-focused out of home placement for youth (Farmer, Southerland, Mustillo, & Burns, 2009).

Assumptions

This research included several assumptions that were believed to be true but could not be fully demonstrated. One assumption was that all of the necessary data for the study are provided for each participant. The data were gathered as part of a program without the intention of it being used in a study, so missing data could not be captured. A second assumption was that the data were collected by a staff member who was trained in the MTFC program. It was assumed that the staff members involved in collection of all data were adhering to treatment protocols and guidelines. An additional assumption was that the MTFC program was engaging in treatment fidelity and following the certification guidelines set forth by TFC Consultants, the certifying agency. The aforementioned assumptions were necessary in ensuring that the data collected was a true representation of the treatment effects of the MTFC program. In order for the results of this study to have any meaning about or impact on the MTFC program, then efficacy and adherence to all guidelines is imperative and assumed due to the program not losing its accreditation.

Scope and Delimitations

This study focused on three particular behaviors out of 32 individual behaviors reported in the PDR. The choice was made to narrow the individual behaviors studied based on behaviors that have been discussed in previous literature. There is abundant literature on the MTFC program and the positive impact that it has on different behaviors associated with delinquency, including arguing, defiance, and destruction and vandalism (see Chamberlain et al., 2007; Chamberlain & Reid, 1991; Chamberlain & Reid, 1998; Eddy & Chamberlain, 2000; Leve & Chamberlain, 2005; Leve, Chamberlain, & Reid,

2005). Due to there being literature available regarding these behaviors, it was decided they would be the most appropriate to focus on. There is already support regarding how MTFC has a positive impact on these behaviors when treatment is completed within a length of stay of 6-9 months. If there are any negative findings in this study, these results are possible relationships that can be further explored in future studies. Additionally, the choice was made to only use data for the participants which contained all of the data points for each question being analyzed.

The study results have the potential to be generalized to the larger population of youth who are placed in MTFC programs outside of the northwestern state the data was collected rom. The youth researched are in foster care; however, the variables being examined can impact behaviors in general. The behaviors can then have an impact on immediate neighborhoods and individuals living in those neighborhoods, whether they are negative or positive. Youth engaging in negative behaviors may impact the potential crime rate of the larger society. These behaviors can also continue into adulthood and impact choices and consequences made as adults.

Limitations

One possible threat to internal validity is that at times youth are removed from the MTFC program prior to completing it. This may be due to extraneous variables beyond the control of the MTFC program. If this happens, then there is an added variable of moving from foster homes during treatment that can impact the course of the treatment. An additional limitation is that a causal relationship between the dependent and independent variables cannot be assigned due to the potential of alternative variables such

as length of stay affecting treatment progress. The data is archival and thus the variables were not available to the researcher to be controlled.

Significance of the Study

Significance to Theory

Through the lens of social learning theory, one would expect continued progress and maintenance of gains throughout the entirety of time spent in MTFC. However, if looking specifically at the component of motivation within social learning theory, there is a possibility that at a certain point, motivation will decrease. The motivation of a youth to engage in prosocial behaviors relates to the belief that their ultimate goal will be to return home. When this goal does not appear to be accessible, then the motivation to engage in learning positive behaviors from the environment decreases. There is support in the literature regarding social learning theory and the benefits when used in treating children with behavior problems. However, there is no literature that looks specifically at motivation and how it may impact behaviors and progress as time goes on. Additionally, there is limited literature supporting whether there is continued efficacy of MTFC when the child remains in treatment for an extended period of time. This study tested the hypothesis that there are potentially adverse reactions for youth remaining in the MTFC program for longer than it was optimally designed for. With these results, the present study supports that there is an efficacious time period for the MTFC program, and perhaps there is a link between the motivational aspect of social learning theory and positive therapeutic response. It also supports the notion that youth should not remain in the MTFC program for an extended period of time.

Significance to Practice and Policy

The implications for changes to practice and policy are numerous, based upon the results of the study. The results will need to be presented to multiple organizations in order for the actual changes to occur. This study has the potential to provide information that can influence changes affecting multiple people involved with the foster care system in the state in which the data was collected from, from state personnel to actual youth. There is a potential to decrease the amount of funds spent by state departments on having youth in treatment care when it is not needed and potentially harmful.

Case workers are often overworked, with very large client caseloads. Through demonstrating the negative effects of remaining in treatment foster care beyond the recommended time, social workers may have the opportunity to focus on and resolve those problems. The results of this study have the potential to provide a timeline that, if adhered to, will produce better outcomes. Additionally, if youth are in treatment foster care for the recommended amount of time, there is a potential ability to help more youth and provide help to the fullest amount of people possible.

Significance to Social Change

There is a potential for the results of this study to impact neighborhoods and individuals living in those neighborhoods at a national and global level. The study looked at the negative behaviors that children placed in treatment foster care exhibit when placed into care. The behaviors assessed are ones which have an impact on multiple aspects of the lives of individuals living in neighborhoods across the country. A child who has a tendency to behave in an oppositional manner, with aggressive and violent acts, has a

higher likelihood of being involved in the criminal system (Babinski, Hartsough, & Lambert, 1999; Johansson & Andershed, 2005; Kratzer & Hodgins, 1997). Individuals may be more at risk of experiencing potential harm from these youth if the negative behaviors are not addressed and stopped. If the children continue to engage in negative behaviors, that can follow them into adulthood and have a dangerous impact on themselves as well as others. The behaviors and actions taken by these now-adults may increase the crime rate and amount of funds spent in the legal system, as well as harm to others in the individual's life (McCollister, French, & Fang, 2010). The costs that are accrued due to crime impact the victims, the individual committing them, the legal system, and society as a whole (McCollister et al., 2010; Shapiro, 1999). The costs accrued include victim costs, medical costs, property costs, and government costs (McCollister et al., 2010; Shapiro, 1999). In 2007, it was reported that approximately $15 billion was paid by the government to the victims of crime (McCollister et al., 2010). The government also paid out approximately $179 billion for police protection, court costs, legal hearings, and corrections (McCollister et al., 2010). In addition to the tangible costs, there are also what are considered to be intangible costs. These include pain and suffering of the victims as well as family members related to the individual committing the crime, as well as risk of death costs (McCollister et al., 2010). The negative effects that criminal victimization may have on children in the household are also considered in this category. Shapiro (1999) said that many studies found child victims to be at greater risk than children who have not been victimized of having school and delinquency problems. Additionally, the adults engaging in criminal activities may have their own families and

perpetuate the cycle of negative behaviors with their own children. The potential for future children to be placed into the child welfare system increases as does the risk of more delinquency. The results of this study aid in identifying the appropriate amount of time to be spent in the MTFC program. It also identified negative behaviors that may reappear once exceeding the optimal threshold of time in the program.

Summary

This chapter provided a general overview of foster care and treatment foster care. A brief discussion of the youth participating in MTFC specifically was provided. There is a gap in the literature regarding any potential negative effects of youth remaining in MTFC for an extended period of time. The data in this study were provided through an archival data set, with a predetermined set of variables included. The data set was taken from a sample of youth who participated in the MTFC program in a northwestern state. These variables include the youths' age, gender, amount of time spent in the MTFC program, PDR interview data, and entrance and exit scores on the CFARS. Through ANOVA and regression analysis, data were analyzed to determine if and what impact an extended length of stay in the MTFC program has on its therapeutic effectiveness.

In Chapter 2, more detail will be provided about the relevant literature regarding foster care, treatment foster care, at-risk youth, resiliency, and the role of social learning theory. Additionally, the limitations of the current research regarding the MTFC program. Chapter 3 includes a justification for this research and the research methodology being used. A discussion of the hypotheses will be provided, along with the rationale for the analyses chosen to test each hypothesis.

Chapter 2: Literature Review

MTFC is effective in treating youth and adolescents with severe behavioral problems (Alvord & Johnson, 2005; Chamberlain et al, 2007; Chamberlain & Reid, 1998; Henggeler & Schoenwald, 2011). There are many characteristics and attributes associated with these youth, their families, and their environment. A youth who is brought into MTFC typically has a high amount of risk factors and their level of resiliency can be impacted by the amount of time they spend in MTFC. Different traits and characteristics, such as socioeconomic status, parent attention, and risk factors, can often have an impact on the youth's ability to reform an attachment with their parents or primary caregiver. Youth who remain in treatment foster care past the shown efficacy time-frame of 6-9 months may demonstrate a decrease in therapeutic progress, an increase or return of negative behaviors, and an impaired ability to maintain social relationships (Cross et al., 2004). MTFC has been shown to be an effective treatment modality for foster youth who demonstrate severe behavioral issues and have a multitude of risk factors in their lives. Although there is literature pertaining to MTFC, there is nothing specifically that examines whether or not the positive effects continue when the length of stay is longer than meant to be.

This chapter will focus on the literature and research available about MTFC, social learning theory, and youth behavioral issues. First, a description of the strategy used to find current literature will be discussed. Following this, there will be discussion regarding social learning theory, its foundation, and how it relates to the MTFC program. Social learning theory is the basis of the MTFC program model and provides a sound

foundational framework for this study in particular. Resilience and risk factors will be defined and linked to the current study. The foster care system in general will be described and reviewed, going into a description of the MTFC program specifically. This description will include an overview of the program as well as its benefits and potential drawbacks.

Literature Search Strategy

The literature reviewed in this dissertation was collected from multiple electronic databases and printed sources. The following electronic databases were used to gather peer-reviewed articles and books: EBSCOHost, PsychArticles, PsycInfo, Proquest, SAGE Premier, ERIC, and Medscape. The following keywords were used in the database search: *Albert Bandura*, *Robert Sears*, *stage theory*, *social learning theory*, *foster care*, *negative behaviors in foster care*, *learning theory*, *social learning*, *MTFC*, *multidimensional treatment foster care*, *resilience*, *resilience and youth*, *resilience and risk factors*, *risk factors*, *resiliency and foster care*, *length of stay and foster care*, *social learning theory and foster care*, *behavior problems and foster care*, and *behavior problems and social learning theory*. The reference lists provided in the journal articles and books also offered additional journal articles and books to be reviewed; these were then used as a part of the current study. Approximately 60 research articles and books were reviewed, with publication dates ranging between 1971 and 2016. The types of publications reviewed include current peer-reviewed articles, textbooks, original books written by theorists, government documents and reports, internet-based reports, and program manuals.

Theoretical Foundation

Social Learning Theory

The theoretical foundation for this study is social learning theory. Social learning theory combines elements from cognitive learning theory and behavioral learning theory. It can be seen as a stepping stone between two opposing theories of learning: behaviorism and cognitive theories of learning (Kretchmar, 2008). It was initially introduced by Robert Sears in the early 1940s. Sears focused on the psychoanalytic underpinning to social learning theory. He believed that the external world will act upon an individual, and the individual will have an effect on the external world (Grusec, 1992). Albert Bandura based social learning theory on cognition (Grusec, 1992). He believed that modeling and reinforcement were important concepts in social learning theory. His main concern was with looking at how children and adults operated cognitively with their experiences and how these experiences influenced behaviors (Grusec, 1992).

Sears and Bandura were two individuals who had differing approaches to their theories, yet still shared the theoretical label of social learning theory (Grusec, 1992). Bandura's work was influenced by the work of Sears, and was actually a reaction against the original work of Sears and behaviorism (Grusec, 1992; Kretchmar, 2008). The common thread between their works was that they each used a set of learning principles to understand the social development of humans (Grusec, 1992).

Social learning theory is not considered to be a stage theory (Grusec, 1992). A stage theory is based on individuals progressing through learning or development through identifiable stages in a particular order (Davey, 2014). For example, Piaget's theory of

cognitive development is a stage theory. Social learning theory is considered to be more simple and straightforward and not occur in linear stages. It is composed of the following concepts: how the child acquires appropriate responses and actions through learning, the physical maturation of a child, and how those physical changes impact the social expectations of the child (Grusec, 1992). As a child physically matures, there is an impact on how individuals around the child in their social environment expect the maturing child to act and respond to social situations. For example, when a child is very young, it is more accepted for them to cling to a parent. However, as they grow, this form of behavior becomes less desirable.

Robert Sears. Sears' theory of social development is considered to be a stimulus-response theory and today has very little direct influence on the conceptualization of development (Grusec, 1992). Sears provided the initial contributions to social learning theory and a base of information for Bandura to use. The focus Sears gave to socialization processes provided a strong impact on the research completed in social development theory. For example, Sears wanted to understand how children learned to internalize the values, attitudes, and behaviors related to the culture in which they were raised. This provided the groundwork that Bandura later used to base his research and theory on. Sears placed huge importance on the parents regarding their role in fostering internalization. He looked at the behaviors of parents that facilitated or hindered the process of internalization. The behaviors that Sears assessed included parental warmth, parental permissiveness, punishment through the withdrawal of love and assertion of power, and reasoning (Grusec, 1992). Sears believed that a child's reaction to frustration

could be changed through learning. Through the work that Sears completed, Bandura was able to develop his theory of development, which provided the basic underpinnings to social learning theory as it is used today.

The first large scale research on parenting practices and children's social development, based on the premises of social learning theory, was completed in 1957 by Sears, Maccoby, and Levin (see Grusec, 1992). In this study, 379 mothers were interviewed regarding their child rearing practices. Sears and his colleagues interviewed mothers on how they raised their children, the effects their raising had on the children, and what prompted them to choose their particular parenting style (see Grusec, 1992). Some of the reasons that impacted parenting style were level of marital satisfaction, self-esteem, and personal attitudes on parenting techniques (Grusec, 1992). Sears found there was a relationship between a warm mother using withdrawal of love and conscience in the child. When the mother's attention was absent, the child was motivated to imitate and incorporate those behaviors into their own personal moral development (Grusec, 1992). Additionally, Sears also found a correlation between being punished for aggressive behavior and immediate suppression of aggression, as well as later higher levels of aggression. The utilization of physical punishment provided a model of aggression for children as well. This initial research held many design flaws, however, it provided a foundation for future research (Grusec, 1992). It demonstrated the effects that social imitation can have and the learning that happens when children observe their parent's behaviors (Grusec, 1992). The study provided a model for future studies to address the issue of socialization and how parents pass on their values and standards to their children.

The work of Robert Sears set the course of studying personality and social development. He proposed a theory of human development that allowed for it to be measured in an empirical manner (Grusec, 1992). He was among the first to argue that the study of personality and social development needs to acknowledge how both the external world acts upon an individual and how that individual effects the external world.

Albert Bandura. Bandura used the work of Sears to develop his version of social learning theory, which is heavily recognized today. He added the concept of modeling to his theory, leading social learning to evolve into a theory informed by the underpinnings of information-processing theory (Grusec, 1992). Bandura was highly influenced by the concept of operant conditioning and rejected the notion that psychoanalytic theory influenced anything outside of the general content areas (Grusec, 1992).

Albert Bandura is often seen as the creator of social learning theory (Kretchmar, 2008). He began working at Stanford University in 1953, alongside Robert Sears. He believed that learning could take place without prior practice or reinforcement (Kretchmar, 2008). Bandura also emphasized the importance of individual agency in human development. Bandura argued that observational learning could not be fully explained by the concept of operant conditioning. Operant conditioning occurs when voluntary behaviors an individual or animal exhibits are then altered based on the consequences of the behavior (Kretchmar, 2008). For example, reinforcement will increase the frequency of the behavior, while punishment will decrease the frequency of the behavior.

Bandura provided three main criticisms of operant condition, which helped form the base of his social learning theory. Operant conditioning proposes that a behavior must first be engaged in, and then shaped by the resulting reinforcement of punishment. Bandura questioned how this concept explains behaviors that are displayed correctly the first time (Kretchmar, 2008). Secondly, according to behaviorists, the stimulus behavior, response, and reinforcement/punishment happen immediately after one another (Kretchmar, 2008). Bandura brought attention to the fact that often imitation behavior and the ensuing reinforcement/punishment are delayed. This proposes that learning occurs at the time the individual observes a behavior and can occur in the absence of reinforcement/punishment. He did not feel that reinforcement or punishment was an absolute necessity for learning (Kretchmar, 2008). Finally, Bandura posited that individuals often imitate behaviors that they are never reinforced or punished for. Typically, watching others be reinforced or punished for their behaviors can be incentive enough for an individual to exhibit the behaviors themselves (Kretchmar, 2008).

The present application and understanding of social learning theory is based on several key elements, all introduced by Bandura. First, individuals can learn by observing the behaviors of others, as well as from the consequences of the behaviors (Kretchmar, 2008). Second, it is important to note that learning and performance are not the same thing. Individuals can learn a behavior at the time it is observed and then execute them either at a later time or sometimes not at all (Kretchmar, 2008). Additionally, reinforcement and punishment often do play a role in learning, however, neither are a required element of the learning process. Finally, cognitive processes play a necessary

role in learning (Kretchmar, 2008). Bandura purported that when it comes to cognition, individuals are not purely passive recipients of the knowledge in their environment; rather they are actively seeking out the information (Rhodes, Brickman, & Bushman, 2007).

There are four components to observational learning that Bandura identified in the development of social learning theory. He posited that in order for learning to take place, the following four things must happen: attention, retention, reproduction, and motivation (Kretchmar, 2008; Rhodes et al., 2007; Salkind, 2008). Attention is also known as observational and environmental components. This concept refers to the notion that individuals have to attend to and accurately perceive the features of the behavior being modeled to them (Kretchmar, 2008). Retention, or remembering, is considered to be a cognitive component of learning. Individuals must be able to remember what they observed. This is done through two different symbolic systems – visual or verbal (Kretchmar, 2008; Rhodes et al., 2007). The element of reproduction is another cognitive component in learning. An individual must be able to replicate the behavior they observe and must have the motor reproduction skills to perform that behavior (Kretchmar, 2008). Finally, the motivation and reinforcement component implies that individuals do not simply imitate all behaviors learned, they must also be motivated to do them. Individuals will imitate the behaviors that they are motivated to perform. At times, the expectation an individual has of a reward can be just as motivating as the reward itself (Kretchmar, 2008). If the expectation of the reward is removed, then an essential component of social learning theory is missing and the desired behaviors may not be exhibited. When an

individual is motivated, then they have internalized the information and accepted it, creating or reinforcing a belief (Rhodes et al., 2007). It is suggested that all of these concepts must be completed in order for an observed event to have an influence on future behaviors (Rhodes et al., 2007).

There are attributes of models that will lead to a higher likelihood of an individual imitating their behaviors. An individual who is observing a model that is similar to themselves will be more likely to imitate the model's behavior (Kretchmar, 2008). Additionally, when a model is seen as being competent and to have power, they are more likely to be imitated. Young children also have a tendency to imitate others more often, as well as individuals who are uncertain of their actions (Kretchmar, 2008).

When looking at the individual who is being imitated, as well as the one doing the imitating, it is important to recognize that the characteristics and consequences to both play important roles. There are both cognitive and environmental variables in play. For example, in a classroom, when the students become more interactional with each other and invite others to play with them, the teacher may be rewarded through vicarious reinforcement (Kretchmar, 2008). Vicarious reinforcement occurs when an individual's behavior is influenced by expectations. For example, if you observe an individual being rewarded for a certain behavior, then they could reasonably expect to be rewarded for a similar behavior (Kretchmar, 2008). In vicarious reinforcement there are both cognitive and environmental processes at work. The expectation an individual has for a reward is a cognitive process. The expectation influences the learning of the behavior it precedes (Kretchmar, 2008). In order for a future behavior to be influenced by the observation of

others' reinforced behaviors, an individual must be aware of the responses occurring. This, like expectation, is a cognitive function (Kretchmar, 2008).

Bandura stated that people "are agents of experiences rather than simply under goers of experience" (Salkind, 2008, p. 921). As individuals learn what behaviors are appropriate versus inappropriate, through direct and vicarious reinforcement and punishment, they begin the internalization process of their own standards (Kretchmar, 2008). This developing of standards is an example of self-regulation and the individual becoming less reliant on external rewards and punishments. Bandura purported there were three types of human agency (being an active player in one's own development) – personal, proxy, and collective (Salkind, 2008). Self-regulation is an example of personal human agency. Many times an individual must rely on the power, influence, and behaviors of others in order to meet the demands of life. This is considered to be proxy agency – enlisting others to assist in the mediation and control of certain events and surrounding environments (Salkind, 2008). Finally, the collective agency is the social interdependence of a group in order to meet the challenges that life provides (Salkind, 2008). It is the culmination of a group of individuals realizing that some activities will require a group effort in order to be successful (Salkind, 2008).

The interaction of environment, behavior, and person – or reciprocal determinism – is applicable to the learning of pro-social behaviors (Kretchmar, 2008; Salkind, 2008). It has been shown that even a brief exposure to a generous and warm model will have a lasting impact on a child's ability to engage in sharing behaviors (Kretchmar, 2008; Salkind, 2008). A conclusion is that pro-social behaviors are learned best through

observation. The learning of pro-social behaviors is a key component of the MTFC program.

Rationale for Social Learning Theory

The ideals of Bandura's social learning theory are what comprise the framework for the MTFC program. Social learning theory is characterized by the belief that individuals learn from the environment, mental processes, and the interaction of these two things (Kretchmar, 2008). Looking at this belief in the family context, the interactions among family members shape both prosocial and negative patterns of behavior of the youth in the family system. These behaviors are then taken by the youth into their interactions with others outside the family (Grusec, 1992; Kretchmar, 2008). For example, if a child is living in a home where domestic violence is happening and they are witness to it, they are more likely to act out in a physical manner against others outside the home (i.e. at school with their peers). The child does not understand that this is not an appropriate behavior to have, rather they are merely practicing what they are exposed to; if they see the parents engaging in this behavior, then they will as well. On the other hand, when a child lives in a home where they witness respect and warmth between family members, they will be more likely to take these behaviors outside the home. One aspect of the MTFC model is an attempt to change a family's moment-to-moment interactions with one another through using positive reinforcement for developmentally appropriate and socially acceptable behaviors.

The rationale behind social learning theory for this study in particular was based on the premise that MTFC is built on the foundations of social learning theory. It was

expected that because the youth was exposed to the positive modeling in the foster home, as well as through the skills training, that the length of stay in the program should not matter. There should not be a negative impact on progress made. The youth is witnessing the modeling by their foster parent, who is also providing reinforcement or punishment for the behaviors. In accordance with social learning theory, this provides the sufficient and necessary environment for learning opportunities (Grusec, 1992; Kretchmar, 2008). The youth may also be placed in a foster home where there are biological children of the foster parent. The foster youth are then also exposed to vicarious reinforcement through observing the other child in the home be rewarded for prosocial behaviors or punished for negative behaviors. This vicarious learning is another component posited by Bandura that aids in the foster youth developing their internalized standards of behavior (Grusec, 1992; Kretchmar, 2008). The youth should want to continue to receive the positive reinforcements no matter how long they are living in the foster home. The biological family of the youth in foster care also is benefitting from social learning theory while involved in the MTFC program. The biological family (or placement option for the youth) are involved in family therapy with a therapist who is teaching them the basic tenants of MTFC and social learning. The family is utilizing vicarious learning through observing the positive effects of the MTFC program on their child in care. The vicarious reinforcement received encourages the family to engage in more positive and prosocial behaviors themselves. In turn, their child observes this positive behavior during visits and then begins to internalize what they are observing. The overall intention is to have the biological family (or placement option) be the primary model for the child. When the

MTFC program is provided in its full and correct entirety, utilizing all components of social learning theory, then there is a high success rate.

An aspect of social learning theory that may prohibit the expected continuation of progress, and cause a curvilinear relationship between length of time in the MTFC program and improvement, is motivational processes. According to social learning theory there are four components to observational learning to occur: attention, retention, motor reproduction, and motivation/reinforcement (Bandura, 1997; Kretchmar, 2008). The individuals must be motivated to imitate behavior that they learn. In the case of the MTFC program, there are multiple motivational factors, with the reunification back to family being a main one. The youth are aware that the goal of the MTFC program is to reunite them with their family within a certain time-frame. This is highly motivating for youth, especially as they near the end of the expected amount of time in MTFC. However, when this amount of time is exceeded, the motivational processes may decrease and become lost the longer the youth remains in MTFC.

Resilience and Risk Factors

Resilience

It is mainly through family dynamics that children learn to socialize for responsible participation in the larger society around them. It is through these interactions that children will develop (or fail to develop) self-esteem, a sense of belonging, and interpersonal skills. Familial relationships are a main contributor to a child developing a sense of resiliency. To be resilient has been described as being able to successfully adapt despite challenges or threatening circumstances (Clauss-Ehlers et al., 2006). These

circumstances can include many different environmental and personal characteristics. There are also many factors that are considered protective; in that they help lead to a more stable mental health and better capacity to overcome life's challenges. One group of factors that researchers have found to be helpful in the development of resiliency is compensatory factors. Kitano and Lewis (2005) define compensatory factors as always being beneficial (such as healthy family functioning and high educational aspirations). The presence of these factors tend to have a positive effect on a child, regardless if the child is in a high risk environment or not. Family relations and educational aspirations are two factors that researchers agree are important in the development of resiliency. Effective parenting, strong and trusting relationships with family members, secure attachment, and social/family support all contribute to the development of resiliency. Interactions with parents have been found to play an important role in providing a place in which an adolescent can fine-tune and practice the skills necessary to becoming mentally healthy (Ungar, 2004).

Risk Factors

Risk factors, on the other hand, are harmful to the development of resiliency. Examples include physical and/or substance abuse, the loss of a parent, chronic poverty, and serious illness (Carbonell, Reinherz, & Giaconia, 1998; Kitano & Lewis, 2005). Being exposed to only one risk factor does not guarantee maladaptive behavior will develop. Pollard, Hawkins, and Arthur (1999) found that when the number of risk factors for an individual increased, then so did the prevalence of problem behaviors. Adolescents who had the largest increases in problem behaviors also had the highest level of risk

exposure. Results similar to these were found in a study by Forehand, Biggar, and Kotchick (1998). They found that when a combination of four or more risk factors was present, the prevalence of maladjustment was also increased. When there are stressors within a family they can disrupt the healthy adjustment of an adolescent (Forehand, Biggar, & Kotchick, 1998). This does not imply all small stressors in a family will cause harm, but as the number of stressors increase so do the chances of problems with adjustment.

Linking Resilience and Risk Factors

There is often an assumption that children exposed to multiple risk factors will have problems in developing resiliency. However, there are multiple aspects to consider when looking at the development of resiliency. There are numerous factors that have been identified as either contributing to or hindering the development of resiliency. Each factor an individual experiences may interact with other factors differently and may have varying levels of importance in that individual's life. It is this interaction of variables that leads either to developing or not developing resilience (Carbonell et al., 1998; Kitano & Lewis, 2005; Mandleco & Peery, 2000). For example, poverty is one factor considered to be very high risk, but the way in which a child is brought up (i.e., in a supportive family with positive relationships) can decrease the potential for maladjustment and lead to a well-adjusted adolescent (Kitano & Lewis, 2005). Poverty is considered to be a risk factor due to the higher likelihood that parents struggling with poverty are more likely to experience high levels of stress, which can then lead to acting out negatively against the children. Bowlby (1971) discusses that economic factors are often contributors to

physical abuse and neglect. However, if a child living in poverty is brought up by parents who have their own resiliency and ability to cope with stressful situations, the potential for abuse lessens. In addition, Forehand et al. (1998) found that the number or accumulation of stressors, regardless of type, have an effect on whether or not resiliency will be developed. It is not merely the types of factors present in a child's life; it is the way in which he or she incorporates all aspects of the environment that contributes to his or her development.

Through discovering what types of factors allow youth to develop a healthy psychology, there is the opportunity to begin the prevention of maladjustment in youth (and in-turn in later adulthood). Research has consistently shown "that families, communities, and schools can enhance both psychological…resilience by focusing on alterable factors, such as social support, interpersonal skills, educational aspirations, self-efficacy, empathy, problem solving, and coping strategies" (Kitano & Lewis, 2005, p. 205). By acknowledging these factors, prevention programs can be used when a youth is believed to be at-risk. It is with these prevention programs, and the understanding of why/how a child becomes either resilient or non-resilient, that youth can be best helped to develop psychologically healthy and adjusted.

Foster Care

Description of Foster Care

The United States child welfare system is charged with the duty of providing homes for over 425,000 children in foster care (USDHHS, 2016). These numbers have increased from 2011, when there were 398,000 children in foster care homes. Of the

427,000 children currently in foster care, over 269,000 entered into care in the year 2015 (USDHHS, 2016). The majority of the children in foster care homes are placed with caregivers who are non-relatives (Font, 2014; USDHHS, 2016). A non-relative foster care provider is an adult who has been licensed by the state to provide care for children who are dependents of that state (Font, 2014). These homes provide a surrogate parent for those children, while the child welfare system determines what the best permanent placement option is for the child. Adults who provide foster care are compensated by the state in which they reside for each child living in the home (Rittner, Afferonti, Crofford, Coombes, & Schwam-Harris, 2011). Over half of the children placed in foster care have a permanency plan of reunification with their parents (or original caregivers). This is important to note, as these permanency plans are the foundation of those children who are chosen to go into the MTFC program.

When and if a parent is unable to provide a healthy home and adequate care for the child, the child welfare system will step in and provide that care for the child in an alternative home (Bruskas, 2010). Certain procedures must be followed in order for a child to enter into foster care. The process usually begins with a complaint filed to a Child Protective Services (CPS) office (Bruskas, 2010; Gauthier, Fortin, & Jeliu, 2004). After the complaint is filed the CPS office will investigate it and determine whether or not foster care or other social services are needed. Once it has been decided that a child should enter into foster care a judge must order that the child be removed from their parents care and be placed into a temporary home (Bruskas, 2010). The child's case and permanency plan will then be reviewed and followed up by a judge within 30 days and

then every 12 months while the child remains in foster care, as a dependent of the state (Bruskas, 2010). Once a child has entered foster care, their sense of stability is negated and their future often becomes unpredictable and unknown. This can unintentionally have a detrimental impact on their developmental stages of childhood (Bruskas, 2010). Although the child welfare system is designed to protect vulnerable children, there have been findings showing that child welfare is not always held accountable for the outcomes of the children who were placed in their care (Bruskas, 2010). In 1997 the Adoption and Safe Families Act was passed to assist in providing guidelines and a defined approach to permanency planning (Rittner et al., 2011). The Children's Bureau has conducted two reviews, in 2004 and 2010, to assess states adherences to federal child welfare requirements (USDHHS, 2016). There are seven identified outcomes for the children and families who are involved in the child welfare system, which can be categorized under safety, permanency, and family and child well-being (Font, 2014; USDHHS, 2016). The seven outcomes are as follows: 1) children are protected from abuse and neglect; 2) children are safely maintained in their homes whenever possible and appropriate; 3) children have permanency and stability in their living situations; 4) the continuity of family relationships and connections is preserved for families; 5) families have enhanced capacity to provide for their children's needs; 6) children receive appropriate services to meet their educational needs; and 7) children receive adequate services to meet their physical and mental health needs (USDHHS, 2016). The first review of standards in 2004 found that no state was in substantial conformity of all seven outcome areas. Once these findings were dispersed, performance plans were put into place throughout the United

States. A second review was conducted in 2010, and again, no state was found to be in conformity with all seven outcome areas (USDHHS, 2016).

There are many reasons that children are removed from their home and placed into a foster care home. The child's natural family may have been broken up due to the parents going to prison, abandoning the child, divorce, poverty, or abuse of the child. There are a large number of children from homes that are not functioning in a healthy manner who end up in foster care. Typically the children are experiencing a lack of parental control, poverty, and neglect (Bowlby, 1971). When discussing neglect of a child, this includes both physical and emotional neglect. When a child is put into foster care, the home situation is most likely in a bad position. It is at this point that long-term placement plans and/or reunification with the biological family are discussed and decided upon.

Multidimensional treatment Foster Care

Overview of MTFC

The MTFC program was developed by the OSLC as a treatment for youth demonstrating severe behavioral issues (Westermark et al., 2011). It is a community-based treatment that involves multiple systems in the youth's life in the intervention and treatment. The main goal of the MTFC program is to decrease negative (antisocial) behaviors and to increase pro-social behaviors (Westermark et al., 2011). The theoretical underpinnings of MTFC are based on Social Learning Theory. MTFC is based on the belief that the moment-by-moment contingencies within the interactions of family members explain much of the variance in how children develop (Moore et al., 2001).

There are many different people involved in the treatment team for MTFC, including a case manager, an individual therapist, a family therapist, skills trainer, program supervisor, the foster family, and additional external team members. The external team members consist of school staff, the state social worker, birth parents, and any other agency who may be involved in the case.

When the MTFC model was developed one essential need was defined: to separate the youth from his or her parents (Moore et al., 2001). This distinction was made so that concerns could be addressed with the youth separate from any ongoing, conflict-oriented relationships with the biological parents. The separation of the parents and youth result in a disruption of ritualized patterns of family interactions (Moore et al., 2001). This disruption allows for the opportunity to address other areas of the child's life that may be contributing to problem behaviors. The youth involved in MTFC are placed into a foster home that has received specialized training in the MTFC model. This specialized training includes training sessions which go over the theory behind MTFC and the specific techniques to be utilized in the foster home. The foster parents are trained in teaching and reinforcing skills that facilitate healthy and functional parent-child interactions. The foster parents are involved in weekly foster parent meetings, participate in daily phone calls to discuss the youth's behaviors, and utilize either a sticker chart or points and levels chart (depending on the youths age) (Alvord & Johnson, 2005; Chamberlain et al., 2007; Chamberlain & Reid, 1998; Henggeler & Schoenwald, 2011). The foster parents receive a lot of support from the MTFC treatment team in order to ensure they are providing a structured and therapeutic living situation to the youth in their

homes (Westermark et al., 2011). Through the daily phone calls to foster parents the staff are going through a list of 32 behaviors with the foster parent, identifying whether or not the behavior was present and if so how stressful was it. This is done to help ensure the foster parents feel supported and also to monitor the progress of the youth throughout treatment.

While the youth is in the MTFC program he or she is also involved in weekly therapy sessions with an individual therapist. Through these sessions youth are taught pro-social skills and there is a focus on increasing the pro-social skills. The youth are also involved with a skills trainer, who models the pro-social skills being learned in therapy in the community (Westermark et al., 2011). The child is taught on a moment-by-moment basis the skills needed to decrease parent-child conflicts, disruptive child behaviors, and to improve relationships with adults. He or she is also held accountable for his/her behaviors and emotional state and is taught to use functional social behaviors in small steps (Westermark et al., 2011). The duration of the child's participation in the MTFC program includes working on different subsystems within the child's life; including school, home, and community. There is a focus on multiple areas of the child's life and the relationships he or she has with different members of the family and society.

In addition to working with the child a family therapist works with the biological parents (or identified placement option) of the child. The family therapist is working with them on introducing the main concepts used in MTFC. The main goal of the family therapy is to improve parenting skills and how to provide a safe environment for the child. The MTFC model is aimed at looking for positive changes and the use of positive

reinforcements to change internal and external subsystems within the family. Through working on these goals with the youth and the family separately, there is a better chance of having a successful reintegration of the youth back into the home. The intention of MTFC is to reunify the youth back with their family.

The MTFC program is considered to be an evidence based practice (EBP); this has been accomplished through several ways. First, the MTFC model is described in a manual that details the role of each treatment team member (Westermark et al., 2011). It is imperative that the manual is followed explicitly in order to assure fidelity and efficacy of the treatment. When a site is utilizing the MTFC model there is a process to become certified, which requires weekly consultation with the OSLC. This consultation involves phone calls and sending in video recordings of clinical staff meetings and foster parent meetings.

Benefits of MTFC

Current literature shows that youth who are a part of the foster care system tend to have many individual and family risk factors present in their lives (Farmer et al., 2008). There is concern regarding the amount of out-of-home placements and placement disruptions that these youth tend to experience (Farmer et al., 2008). A disrupted placement is when a child is removed from their current placement (whether it is foster care or with relatives) and placed in a new home. Behavior problems have been linked to an increased potentiality of being placed in an out-of-home placement (such as foster care) as well as an increase in disrupted placements (Farmer et al., 2008). Research results have been mixed in demonstrating the effects that gender, age, and race have on

placement disruptions and the impact of different systems-level interventions (Farmer et al., 2008). Farmer et al. (2008) found that of their sample, only 6.5% of youth were placed into a therapeutic foster care program (versus alternative systems-level treatment placements). Due to the small sample of youth in the therapeutic foster care program, there were not significant findings about the program (Farmer et al., 2008). It was recommended by Farmer et al. (2008) that additional research be completed examining youth who are placed in more restrictive out-of-home placements, i.e. therapeutic foster care.

The youth who is typically brought into MTFC tends to have a high amount of risk factors, including substance use and a negative home environment; this can lead to them being considered an at-risk youth (Fisher & Gilliam, 2012). Many of these youth experience child abuse, neglect, and are exposed to substance abuse. In addition to going through the trauma of being removed from their parents' home, many foster children experience multiple placements while in care. These placement moves are separations that the youth must experience multiple times. This will then force the youth to experience multiple temporary relationships, potentially preventing them from developing a secure attachment to a primary caregiver (Bruskas, 2010). It has been shown that approximately 45% of children who enter foster care leave within the first year of being in placement (USDHHS, 2016). The mean amount of time a child spends in foster care is 19 months (USDHHS, 2016). As a youth remains in foster care for a longer amount of time the likelihood of them leaving the foster care system decreases (Klassen, 2000).

When determining what youth are good candidates for the MTFC program, there are several factors to take into account. There are cases in which a youth may meet the behavioral criteria for the MTFC program, however permanent placement options may deter their ability to participate in the program. When there is no plan of reintegration into the family or no identifiable after-treatment placement to work with, then the youth would not meet criteria to be accepted into the program. This is due to the aspect of the family therapy conducted with the biological family or permanent placement. If this resource is not identified, then a large portion of the treatment would not be applicable to the child. There are instances when the permanent placement option for a child ends up not being a viable option for the child. In this case, the child must remain in the treatment foster care home for an extended duration of time while a new placement resource is identified. During this time, the child should continue to display positive treatment effects. It is important to limit the number of placement moves of the child, as it has been shown that the more placement moves a child experiences, the higher the risk for negative behaviors to return.

Summary and Conclusions

This chapter provided an extensive review of social learning theory and how it is a useful tool when working with youth, specifically in the MTFC program. The components that make up the base of social learning theory tie in with the goals and expectations of the MTFC program. Within this review there was a discussion about the evolution of social learning theory, where it started from and what it is presently. Robert Sears and Albert Bandura provided the initial research and theory development into

social learning theory. The concepts that Bandura discussed in the 1940's are still relevant and used in today's research and social programs. The MTFC program is just one type of program that utilizes how children learn through observation to help make positive changes and impacts in society.

This chapter also discussed foster care in general, what it is, and how children end up being placed into specialized foster care programs (such as MTFC). Within this was also a discussion about risk and resiliency, and the part that they play in a child's upbringing. There are a multitude of factors which can impact a child either in a positive or negative way. These factors help a child to develop a level of resiliency, which in turn influences the internalization of the world they experience and observe around them. The interaction of the environment, behaviors of those around them, reinforcement of their own behaviors, and the risk and resiliency factors they have influence the social development of the youth.

Despite the large amount of literature available on the MTFC program, there is a lack of studies that specifically address what, if any, impact there is from a youth remaining in the MTFC program for an extended amount of time. The current study helps to fill that gap through analyzing data related to length of stay and outcomes seen in pre- and post- treatment behavioral assessments of youth in an MTFC program.

Chapter 3: Research Method

Introduction

This study was a secondary quantitative data analysis of archival data relating to youth who have been through the MTFC program. The main purpose of the study was to identify whether or not there was an efficacious time period for youth to remain in the MTFC program. A secondary purpose was to determine if age and gender had an impact on the results found.

This chapter consists of a description of the design for the study, the sample population, the instruments used, and the data analysis for the study. The ethical considerations and purpose of the study will also be discussed. The rationale for the study and the specific design selected will be included. The characteristics and size of the sample chosen will be given. The process used to code and sort through the archival data used will be discussed.

Research Design and Rationale

This study was completed through the use of a dataset provided by a community agency in a northwestern state. The youth included in the data set have been through treatment at the MTFC program at that site. The variables that were included in the dataset include the following: treatment intake and completion date, gender of the youth, age of the youth; pre- and post-treatment CFARS scores, and PDR data. The independent variables in this study was the youth's length of stay in the MTFC program. The dependent variables were the pre- and post-treatment behavioral scores on the CFARS

and the PDR behavioral data. The variables of age and gender were used as covariates to determine any impact or relationship to the treatment and youth's length of stay.

A repeated measures ANOVA and a regression analysis were used to analyze the data collected in this study. The first research question lent itself to an ANOVA. The main question regarded whether or not the length of stay a youth had in the MTFC program had an impact on the treatment outcome, as measured through pre- and post-treatment CFARS scores. The independent variable of the first research question was the length of stay in the MTFC program, which was comprised of three different groups (6-9 months; 10-13 months; and greater than 13 months). The repeated measures ANOVA allowed for these data to be analyzed appropriately.

The second research question looked at whether there was a relationship between length of stay in the MTFC program, age at entry, and gender, and three different negative behaviors (arguing, defiance, and destructiveness/vandalism). The independent variable was the length of stay in the MTFC program. The dependent variable consisted of the three aforementioned negative behaviors, each analyzed in a separate regression analysis. This type of data provided support for using a regression analysis.

There were not any identified time or resource constraints with using an ANOVA or regression analysis in this study. The data that was provided in the dataset was in line with what is required to perform these types of statistical analyses. The research design chosen for this study is consistent with what others have used when conducting research on the MTFC program. Sinclair et al. (2016) used a regression analysis to determine whether or not MTFC had an impact on certain behaviors. They included age, sex, and a

measurement of behavioral functioning as independent variables in their analyses. The outcome measure in their study was the difference between scores on the Children's Global Assessment Scale (CGAS) at baseline and post treatment (Sinclair et al., 2016). Harold et al. (2013) looked at whether MTFC was effective in treating symptoms associated with depression in youth referred to the program. The researchers assessed the youth at multiple time points over roughly 24 months, including baseline, during treatment, and post-treatment. This is similar to the data points that were available for the present study. Additionally, Harold et al. (2013) also included age at baseline as a covariate, which was also done in the present study. Westermark et al. (2011) completed an outcome study of the effects that MTFC had on youth 24 months post-baseline. In their study, an ANOVA was used to analyze differences in treatment based on gender (Westermark et al., 2011). A repeated measures analysis was used to look at the variations within the treatment groups at baseline and post-baseline and whether there was any statistical interaction between the groups (Westermark et al., 2011). This is similar to the analyses that were completed in the present study, except that the times were at baseline and then three different time points of treatment. The present research study used many of the research designs previously discussed in other research related to the MTFC program and its efficacy in general. What was added to the present study is that it looked at the level of efficacy to the MTFC program based on length of time spent in the MTFC program, not merely post-treatment.

Methodology

Population

The population consisted of youth referred to and placed in the MTFC program in a northwestern state. The youth were referred by social workers from the child welfare services department. The youth were referred because of behavioral issues that led them to be removed from their biological parents' homes. The types of behavioral issues included physical aggression, verbally aggressive behavior, property destruction, running away, not attending school, lying, stealing, and juvenile delinquency. The sample included females and males between the ages of 6 and 18 years. Chamberlain et al. (2007) compared delinquency rates between participants assigned to either a group treated through the MTFC program or a group care program. When evaluating the delinquency rates at a 24 month follow-up, the effect size (as measured by Cohen's d) was found to be 0.65 (Chamberlain et al., 2007). Based on this research, an estimated effect size of 0.65, confidence interval of 95%, and an alpha level of .05 was used to calculate the estimated sample size for the current study. A sample size calculator was used to determine an estimated sample size of 23 participants needed for this study.

Sampling and Sampling Procedures

The participants were selected for the following reasons: convenience sample, they were assigned to the specific treatment modality being investigated, they all demonstrated negative behaviors leading to placement in a therapeutic foster care program, and they all exited the program.

The youth in the treatment foster care program had been referred by social workers in the child welfare system in a northwestern state. The youth had been removed from their primary caregivers' homes and placed into foster care due to conduct and delinquency problems, substance use, or being involved with the legal system. The MTFC program was developed as an alternative placement option to group homes or state facilities. All data that was collected was done so prior to the researcher receiving the data. The researcher did not access the participants directly for data and could not influence what any of the participants reported.

Archival Data

The study participants were recruited from a community agency in a northwestern state. The first step in gaining permission to use the data kept on record was to approach the program director. The details of the study were provided to her, along with a rationale for the study. With the approval and support from the program director, a formal meeting was scheduled with the Chief Executive Officer (CEO) of the agency. At the meeting, written documentation was provided demonstrating the importance of the study and the potential beneficial outcomes. The presentation discussed the potential for positive changes to occur within the foster care program and positive working relationships with the child welfare office. The requested database information included the following: daily parent phone call data, demographic information, and entry/exit scores of the CFARS. The information was provided in a data request letter for the CEO to keep and use in discussions with other agency staff and directors.

The CEO provided written consent for the data to be provided and utilized in the current study. A signed data use agreement was provided by the CEO for the data set. The data was provided, in multiple different databases, by the clinical director on a flash drive. The data needed for the study was then coded and combined into one database by the study investigator. The coding was to ensure anonymity of the individuals included in the research study. Any information that could identify the subjects in the study were removed from the data prior to the study investigator receiving it.

Instrumentation and Operationalization of Constructs

Demographics. The demographic data was drawn from the data provided by a community agency in a northwestern state. The demographic variables available in the data set included the age and gender of the youth.

Children's Functional Assessment Rating Scale. The CFARS is a measure designed to assess the functional and psychiatric state of children age 7–18 (Ward et al., 2006). It was called the Functional Assessment Rating Scale (FARS) when initially developed (Mihalcin, 2008; Ward et al., 2006). The purpose of the FARS was to measure the effectiveness of mental health programs in Florida (Mihalcin, 2008; Ward et al., 2006). It has been shown to have an interrater reliability of $r > .5$ (Ward et al., 2006). Children are evaluated across 16 different domains using both descriptive phrases and severity ratings. The domains are as follows: depression; anxiety; hyperactivity; thought process; cognitive performance; medical/physical; traumatic stress; substance use; interpersonal relationships; behavior in home; ADL functioning; socio-legal; work or school; danger to self; danger to others; and security/management needs. For each

domain the rater is tasked with selecting the phrase that best describes the symptoms the child shows, and then to rate the level of severity of the problem. The problem severity scores range from 1 (no problem) to 9 (extreme problem). The concurrent validity of the original FARS has been shown to range from .78 to .92 (Schwartz, 1999). Mihalcin (2008) compared the CFARS to the Child Behavior Checklist (CBCL). This scale is a more established assessment than the CFARS. The CFARS was shown to have a correlation of .614 to .805 with the CBCL (Mihalcin, 2008). The 16 severity rating domains have been shown to be valid through analysis comparing and contrasting the admission ratings at different levels of care (Ward et al., 2006). It was found that a higher mean problem severity rating was associated with more restrictive levels of care (Ward et al., 2006). This would be expected due to the children with more intense care needs having more severe problems.

The CFARS provides information for the following needs: 1) to gather assessment information in regards to domains relevant in treating children, 2) provide information that clinicians and agencies delivering services could use in their treatment programs, and 3) to have information to inform mandated reports completed by the state on the services' outcomes aimed towards children in Florida (Ward et al., 2006). After the development of the CFARS, it was implemented by states outside of Florida to aid in the evaluation of outcomes for state funded behavioral health services as well as to evaluate the improvement of functioning of youth who are receiving government funded residential services (Ward et al., 2006). A CFARS was completed at intake as well as

discharge; the score used in the analysis was the difference between discharge and entrance scores.

Parent Daily Report. The PDR is a 30 item interview completed with caregivers to measure whether or not certain behaviors occurred during the 24 hours prior to the interview (Chamberlain et al., 2006). It has a long history of being used, going back to the 1970's. Patterson (1974) initially suggested that the PDR was useful in measuring the outcomes of behavioral interventions focused on conduct problems. Keil (2007) discussed that the PDR was used in 1979 as a measure of treatment outcome for youth referred for behavioral problems. It was found that the PDR was sensitive to changes that occurred after parents went through a behavioral intervention (Keil, 2007). Patterson (1974) found that a treatment group in a training program for parents of aggressive children showed a significant decline in child problem behaviors. Chamberlain and Reid (1991) used the PDR to measure the treatment outcome of youth who were placed into treatment foster care directly after being discharged from psychiatric hospitals. They administered the PDR at three different times (baseline, 3 months, and 7 months posttreatment), finding significant reduction in behavior problems at posttreatment timeframes (Chamberlain & Reid, 1991). The PDR was similarly used when Chamberlain, Moreland, and Reid (1992) used it to evaluate a foster parent training program. The baseline PDR data was compared to PDR collected 3 months later. It was found that foster parents who had received additional training and support reported greater decline in problematic behaviors than those who had not (Chamberlain et al., 1992). The research conducted by Chamberlain suggests that the PDR is an instrument

that is sensitive to measuring outcomes of interventions that target child behavior problems (Keil, 2007).

The PDR interview is conducted on a daily basis and takes approximately 5-10 minutes to complete. The interviewer asks the following: “Thinking about (youth’s name), during the past 24 hours, did any of the following behaviors occur?” (Chamberlain et al., 2006). The interviewer then goes through each of the 30 behaviors. The caregiver responds yes or no to each behavior, and if yes, whether it was stressful for them. The purpose of the PDR is to collect measures of the youth’s problematic behaviors that can then be coded and used to summarize information over the course of treatment (Chamberlain et al., 2006). Prior research indicates that the emotional state of the caregiver could lead to biased estimates of the behaviors reported (Bower, 1981). The PDR was structured in a way that helps to reduce error (by repeatedly administering daily, and focusing the caregiver on only the past 24 hours). The PDR has been shown to demonstrate concurrent validity with other measures of child functioning. Forgatch and Toobert (1979) demonstrated the PDR to have concurrent validity with live observations of family interactions coded in the home, with a spearman correlation being +.58 (df = 13, p <0.5). Patterson (1974) found in a repeated measures ANOVA, that the PDR was significantly associated (r = .69) with child behavior problems coded by observers. Additionally, Becker, Madsen, Arnold, and Thomas (1976) found a parents’ global rating of child behavior demonstrated concurrent validity with the PDR (as cited in Keil, 2007). Multiple studies have also demonstrated stability and inter-rater reliability of the PDR to be adequate (Chamberlain & Reid, 1991). Chamberlain and Reid (1987) found a

significant correlation (r = .82) between data collected during the first 6 days and the last 6 days of a 4-week study period. Weinrott, Bauske, and Patterson (1979) reported an inter-rater reliability of .98 and test-retest values ranging from .60-.82.

Data Analysis Plan

Analysis

The archival data was analyzed using SPSS version 23. The data was cleaned and streamlined through running descriptive statistics to ensure that the data is accurate. This study utilized a correlational research design using both regression and multiple regression analysis, and a repeated measures ANOVA. The research questions and the hypotheses reflected and dictated these different types of analyses. The first research question pertains to the length of stay within the MTFC program and how it relates to the pre- and post-treatment scores on the CFARS. With the principles of social learning theory, youth should have continued decrease of problem behaviors while in the MTFC program. The longer they are surrounded by positive behaviors being modeled, the more those behaviors should become a part of their repertoire. However, based on the motivational aspect of social learning theory, when the youth remains in MTFC past the ideal timeframe of 6-9 months, a return of negative behaviors may return. The second research question is looking at the specific negative behaviors of arguing, defiance, and destruction/vandalism. These behaviors should be impacted by the tenants of social learning theory within the foster home. These behaviors are often targeted by behavioral change models and there should be a noticeable decrease in them until a given point, due to the MTFC program. The research questions and hypotheses are listed again for review:

RQ1: Is there a difference between youth who are in the MTFC program for 6-9 months, 10-13 months, and greater than 13 months in terms of respective pre- and post-treatment behavioral scores on the CFARS?

H_{o1}: There is no difference between youth who are in the MTFC program for 6-9 months, 10-13 months, and greater than 13 months in terms of scores on the CFARS.

H_{a1}: There is a difference between youth who are in the MTFC program for 6-9 months, 10-13 months, and greater than 13 months in terms of scores on the CFARS.

RQ2: Is there a relationship between length of stay for youth in the MTFC program, age at entry, and gender, and the following negative behaviors: arguing, defiance, and destructiveness/vandalism, as measured by the PDR?

H_{o2}: There is no relationship between length of stay for youth in the MTFC program, age at entry, and gender, and arguing, defiance, and destructiveness/vandalism.

H_{a2}: There is a relationship between length of stay for youth in the MTFC program, age at entry, and gender, and arguing, defiance, and destructiveness/vandalism.

Archival data. The data that was analyzed for research question 1 included the dependent variable being the difference between the pre and post CFARS scores, with the independent variable of length of stay. The length of stay data was grouped into three categorical groups, a) 6-9 months, b) 10-13 months, and c) 13 or more months. When a study includes two or more groups, an ANOVA is an appropriate analysis to use (Bordens & Abbott, 2008). The dependent variable was the difference in pretest and posttest scores and the independent variable consisted of three groups of length of stay: 6-9 months, 10-13 months, and 13 or more months. The alternative hypothesis was that

there will be a difference seen between the three groups of length of stay and their respective pre-post difference scores. A repeated measures ANOVA was appropriate as this examined the differences between the groups. This analysis allows for individual differences in the participants to be eliminated as the source of any significant differences between the groups. The repeated measures design removed this source of error (Grimm & Yarnold, 2000). This analysis provides information as to whether the variation seen among variables is statistically significant. This is otherwise known as computing an *F* ratio (Bordens & Abbott, 2008). The *F* ratio was used to evaluate any significant differences as compared to an alpha level of 0.5. There was an ability to make multiple age groups from the data set in order to compile the different groups.

In exploring research question number 2, a multiple regression analysis was the most appropriate type of analysis. The independent variable was length of stay (comprised of three groups), and the dependent variables were 1) arguing, 2) defiance, and, 3) destructiveness/vandalism. The variables of gender and age at entry were included in the analysis to determine if there was any effect on the variables of arguing, defiance, and destructiveness/vandalism. The hypothesis was that there will be a relationship between the length of stay in the MTFC program, age at entry, and gender, and the presence of the different negative behaviors. A multiple regression analysis is the best statistic to use when multiple predictor (independent) variables may relate to the dependent variable (Bordens& Abbott, 2008; Gravetter & Wallnau, 2009). In this research question the three listed negative behaviors were observed to determine if the length of stay, age at entry, and gender have an effect on them. An *F* ratio was again used

to evaluate the significance of the multiple regression equation (Gravetter & Wallnau, 2009). The *F* ratio helps to determine whether the equation predicts a significant portion of the variance in data. The results of the study were compared to an alpha level of .05.

Threats to Validity

External Validity

External validity is the degree to which the results of a study can be generalized to a larger population. A potential threat to the external validity of this study is the sample used. The sample was taken from a specific geographic area, in a northwestern state. It is difficult to generalize the findings to all populations because of this. The sample is also focused on a very specific target population within the foster care system. The results of this study are only able to be generalized to the population of youth placed in this specific therapeutic foster care program.

Internal Validity

Bordens and Abbott (2008) defined internal validity as the ability of a research design to test the hypotheses that it was designed to test. Threats to internal validity are present in that outside variables may be the cause for changes seen in study results. One potential threat to internal validity in this study is that the data was collected from different times. The groups of clients that went through the treatment program are potentially spread out over the course of several years. There may have been changes in staffing or foster care homes that impacted the treatment provided. A second potential threat is what Bordens and Abbott (2008) termed maturation. The participants in the study are of different ages. The age of the child may have an impact on the treatment

provided. A final possible threat is that of selection bias. There was only a set number of individuals provided for the data analysis. The sample was pre-chosen based on data that was available from the treatment agency. There was an inability to add more individuals to the sample or gain additional information outside what was provided due to using archival data. Although there are several potential threats to internal validity, the benefits of this research study outweigh those minimal risks. This study was conducted with real-world issues and individuals who participated in the treatment due to a high level of need. Bordens and Abbott (2008) state that when working with real-world problems and being able to apply results to the real-world, then it is more important to take steps to increase external validity rather than internal validity. It is necessary to ensure treatment efficacy in real world situations in order to make certain clients are receiving the best evidence-based experience possible.

Ethical Procedures

The population consisted of children aged six to 17 years old and measures were taken to ensure the anonymity of the participants. Permission was obtained by the CEO of the agency who gathered the data, provided through a signed data use agreement. Additionally, the researcher completed and has included the certificate from the required online course regarding use of human research participants. The raw data was provided without identifiable client data, to include their name. The data was stored on an encrypted flash drive, as well as an encrypted zipped file on the researcher's secured password protected laptop. As per Walden requirements, the research data will be kept for no less than 5 years after completion of the dissertation. The data was obtained from

the researcher's previous employment, where there was a potential the researcher may have worked with the clients in the sample. The data being provided is de-identified, the researcher did not know what individual the data belongs to. The principal investigator did not gather any of the actual data being used, administer the CFARS, or conduct the PDR phone calls. However, the investigator may have participated in providing treatment to some of the sample participants. The treatment of all participants was completed prior to the beginning of research. There was no assumption or plan of utilizing this population and their treatment results for any research. This alleviates potential bias as treatment was not provided with the plan of using the results for my own purposes. The researcher obtained IRB approval from Walden University prior to completing this research study. The IRB approval number for this study is 10-19-17-0241483.

Summary

The study conducted was a quantitative analysis of archival data pertaining to youth in an MTFC program. The study was conducted to determine if youth who remain in the MTFC program for an extended length of time experience a decrease of therapeutic effectiveness. Additionally, the study also looked at whether or not age or gender have an impact on the therapeutic effectiveness and length of stay. The study data was procured from a community agency in a northwestern state and had all identifying data removed. The variables included in the data set were: age, gender, entry and exit date for the MTFC program, pre- and post-treatment CFARS scores, and PDR data. The data set was provided once IRB approval was obtained and the study was approved by Walden University. The CEO of the community agency provided authorization to use their

previously collected data through a signed data use agreement. A sample size calculator was used to determine the estimated sample size for this study. The sample size calculator took the following information into account when determining the sample size: estimated effect size of 0.65, confidence interval of 95%, and an alpha level of 0.5. The estimated sample size needed for the study, based on the aforementioned information, was 23 participants (AI-Therapy Statistics, n.d.).

A repeated measures ANOVA and a regression analysis was completed to address the two research questions. The first research question looks at the length of stay through three separate time frames and whether or not there is an impact on the therapeutic effectiveness as measured through the CFARS. The second research question is focused on if there is a relationship between the length of stay, age at entry, and gender, and three specific negative behaviors, as measured through the PDR. An alpha level of 0.5 was chosen to be used in testing for significance. Through both the ANOVA and the multiple regression, an *F* ratio was used to determine the level of significance of the findings.

There were threats to both external and internal validity. The main threat to external validity was in the sample itself. The sample used was very specific to the geographic area it was taken from. It also was focused on a very specific form of therapeutic foster care. However, because the study was looking specifically at MTFC, this latter potential threat to external validity is not high risk. There were also potential threats to internal validity, including maturation and selection bias. There was an inability to add more individuals to the sample or gather any information that was not already included in the data set. In order to mitigate these risks, Bordens and Abbott (2008)

suggest to increase the external validity as much as possible. When assessing the potential threats to internal and external validity in this sample, the risk of threat to external validity is much lower than to internal validity, falling in alignment with the suggestions from multiple researchers (Bordens & Abbott, 2008; Gravetter & Wallnau, 2009). Chapter 4 will provide the detailed findings and results of the data. An interpretation of those findings and implications for social change will be discussed in Chapter 5.

Chapter 4: Results

Introduction

The purpose of this quantitative study was to determine the efficacious period for the MTFC program and demonstrate how it may be problematic for youth to remain in MTFC for longer than the intended time frame. This study first evaluated pre- and post-treatment scores on the CFARS against the amount of time a youth was in the MTFC program. Additionally, this study also evaluated the length of stay in the MTFC program, age at entry, and gender against three different negative behaviors that are measured on a daily basis through the PDR: arguing, defiance, and destructiveness/vandalism. In this chapter, a description of the archival data that was used will be presented, including how the data was collected and prepared for use in the analysis. The demographic characteristics of the sample used will also be presented. Statistical analyses of length of stay and overall therapeutic effectiveness will be presented, as well as the relationship between length of stay and arguing, defiance, and destructiveness/vandalism.

Data Collection

The archival data was gathered from a community agency in a northwestern state. The data was provided over multiple data sets. The variables included client identification numbers, gender, date of birth, date of entry into the MTFC program, date of exit, where the client discharged to, the full CFARS assessment scores, and PDR details for each client on a daily basis. The data that was provided was in alignment with the plan presented and described in Chapter 3. The data was not as organized as anticipated and needed to be sorted through and combined to create the final data set that

was used in the analysis. The PDR data was provided on a daily basis for each of over 30 behaviors for each client. This data was scaled down to the three behaviors that were chosen to be analyzed: arguing, defiance, and destructiveness/vandalism. The three behaviors were then coded into monthly behavior variables, indicating the number of times each behavior occurred over the course of each month. There were clients who had to be not included in the final data set due to having missing data.

The variable of gender was recoded and transformed into a categorical variable in order to be included in the multiple regression analysis. The female gender was coded as 0 and the male gender was coded as 1. The variable of length of stay was initially categorized into three groups: 6-9 months, 10-13 months, and greater than 13 months. Categorical predictor variables cannot be entered directly into a regression model and be interpreted in a meaningful manner (Stockburger, 2016). A categorical variable with multiple levels can be constructed into multiple dichotomous variables that will contain the same information as the single categorical variable (Stockburger, 2016). The process of this restructuring is termed dummy coding (Stockburger, 2016). In order to include the length of stay variable in the multiple regression, the length of stay groups were dummy coded to transform them from a categorical variable into three dichotomous variables, with 0 indicating an individual was not in the particular length of stay group, and 1 indicating the individual was in the particular length of stay group.

Study Results

Characteristics of Participants

The initial data set for client CFARS data was comprised of 160 clients. The initial data set for PDR data was comprised of 72 clients. When combining the two data sets, there were a total of 50 clients who had data entered in both the CFARS and PDR data sets. This was then further scaled down to include only clients who had complete PDR data for the entirety of their stay in the MTFC program. The end result was a useable data set of 34 clients, with both pre- and post-treatment CFARS scores and daily PDR for the entirety of their length of stay in the MTFC program. The 34 clients in the sample were comprised of 19 females and 15 males. This sample size yielded sufficient power for the analyses.

Research Question 1

RQ1: Is there a difference between youth who are in the MTFC program for 6-9 months, 10-13 months, and greater than 13 months in terms of respective pre- and post-treatment behavioral scores on the CFARS?

H_{o1}: There is no difference between youth who are in the MTFC program for 6-9 months, 10-13 months, and greater than 13 months in terms of scores on the CFARS.

H_{a1}: There is a difference between youth who are in the MTFC program for 6-9 months, 10-13 months, and greater than 13 months in terms of scores on the CFARS.

A one-way repeated measures ANOVA was conducted to determine whether there were statistically significant differences between pre- and post-treatment CFARS scores. The first two assumptions were met through the study design. These assumptions

are that the study has a continuous dependent variable and the within-subject factor is categorical with three or more levels (Laerd Statistics, 2015b). There were three different groups defined by three different lengths of stay in the MTFC program: 6-9 months, 10-13 months, and greater than 13 months. The third assumption was that there should be no significant outliers in any level of the within-subjects factor. There were three outliers in the CFARS exit scores data, as assessed by inspection of a boxplot for values greater than 1.5 box-lengths from the edge of the box. The outliers were kept in the data analysis after being inspected and determined to not be mistakes or incorrect data input. The outliers were not extreme and deemed to be appropriate to remain in the data set. The third assumption was deemed to be met. The fourth assumption was that the dependent variable should be approximately normally distributed for each level of the within-subjects factor. The CFARS intake scores were normally distributed at the entry date, as assessed by Shapiro-Wilk's test ($p > .05$). However, the CFARS scores were not normally distributed at the exit date, as assessed by Shapiro-Wilk's test ($p > .05$). A visual inspection of a normality histogram showed an extremely positive skew of the raw data for CFARS exit scores. A transformation was applied to the data due to the non-normal data. It is recommended that when the sample size is smaller, a data transformation should be applied in order to ensure normality of all levels of the dependent variable (Laerd Statistics, 2015c). An inverse transformation was applied to both CFARS exit and entry data. With this transformation, both sets of data were then shown to be normally distributed as assessed by Shapiro-Wilk's test ($p > .05$). The fourth assumption was considered to be met. The fifth assumption was that the variances of the

differences between all combinations of levels of the within-subjects factor must be equal. This is known as sphericity. The assumption of sphericity was not met, as assessed by Mauchly's test of sphericity. Therefore, a Greenhouse-Geisser correction was used ($\varepsilon = 1.000$) to correct the one-way repeated measures ANOVA. The CFARS scores were significantly different at the time points of intake and exit, with $F(1.000, 29.000) = 80.869$, $p < .0001$, and partial $\eta^2 = .736$.

CFARS scores (using the transformed data) increased from intake for the 6–9 month length of stay group ($M = .0166$, $SD = .00320$, N = 7) to exit ($M = .0210$, $SD = .00601$, N = 7). The CFARS scores increased from intake for the 10–13 month length of stay group ($M = .0174$, $SD = .00371$, N = 10) to exit ($M = .0246$, $SD = .00687$, N = 10). The CFARS scores increased from intake for the greater than 13 months length of stay group ($M = .0154$, $SD = .00249$, N = 8) to exit ($M = .0250$, $SD = .00291$, N = 10). Additional data were analyzed for a fourth group, participants in the MTFC program with a length of stay for less than 6 months. The CFARS scores for this group also increased from intake ($M = .0150$, $SD = .00287$, N = 8) to exit ($M = .0181$, $SD = .00555$, N = 8). The mean results of the transformed CFARS scores for each length of stay group can be found in Figure 1.

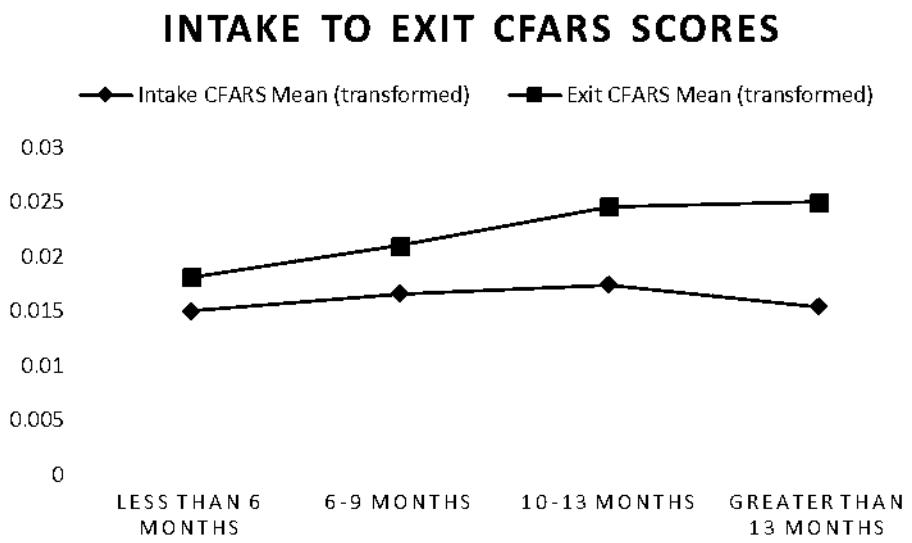

Figure 1. Chart depicting intake to exit CFARS mean scores (transformed).

There is a statistically significant interaction between length of stay group and the intake and exit CFARS scores, F(3, 29) = 4.654, p = .009. There is a statistically significant main effect for the intake and exit CFARS scores, F(1, 29) = 80.869, p < .005. CFARS scores (using transformed data) significantly increased from entry (M = .0162, SD = .00316, N = 33) to exit (M = .0224, SD = .00609, N = 33), a significant mean increase of .006, 95% CI [.005, .007], p < .0005. The increase in CFARS scores indicates an increase in negative behaviors that were observed. There is no significant main effect of the length of stay groups and CFARS scores, F(3, 29) = 6.666E-5, p = .143. Post hoc analysis was completed with a Bonferroni adjustment. The Bonferroni post hoc test is a recommended test for testing all possible pairwise combinations of levels in a within-subjects variable (Laerd Statistics, 2015b). Although the initial ANOVA analysis showed a significant interaction between the length of stay group and the intake and exit CFARS scores, the Bonferroni post hoc analysis did not reveal any significant differences

between the length of stay groups. The significant levels for the length of stay group comparisons were higher than p = .05 (with the lowest being p = .169). Although there was a statistically significant difference between the means of the CFARS scores between entry and exit, there was not a main effect of the length of stay group and the CFARS scores. Therefore the null hypothesis could not be rejected.

Research Question 2

RQ2: Is there a relationship between length of stay for youth in the MTFC program, age at entry, and gender, and the following negative behaviors: arguing, defiance, and destructiveness/vandalism, as measured by the PDR?

H_{o2}: There is no relationship between length of stay for youth in the MTFC program, age at entry, and gender, and arguing, defiance, and destructiveness/vandalism.

H_{a2}: There is a relationship between length of stay for youth in the MTFC program, age at entry, and gender, and arguing, defiance, and destructiveness/vandalism.

Dependent variable of arguing. A multiple regression was run to determine how much the variation in the behavior of arguing can be explained by gender, age, and length of stay in the MTFC program. The first two assumptions were met. There was one dependent variable measured at the continuous level and two or more independent variables that were measured at the continuous or nominal level. The third assumption, independence of residuals (or observations) was initially met. However, when the assumption of homoscedasticity was analyzed, the raw data did not meet this assumption, as assessed by visual inspection of a plot of studentized residuals versus unstandardized predicted values. Therefore a transformation of the variable had to be completed. A

logarithmic transformation of the data was completed, based on the visual observation of the variables being skewed (Statistics Solutions, 2013). The third assumption of independence of residuals was again met, as assessed by a Durbin-Watson statistic of 1.616. The fourth assumption, the assumption of linearity, was met. Linearity was assessed by partial regression plots and a plot of studentized residuals against the predicted values. The fifth assumption of homoscedasticity was met as assessed by visual inspection of a plot of studentized residuals versus unstandardized predicted values. The sixth assumption of multicollinearity was met. There was no evidence of multicollinearity, as assessed by tolerance values all being greater than 0.1 (the lowest was 0.459). The seventh assumption checks to ensure there are no significant outliers, high leverage points, or highly influential points. There were no studentized deleted residuals greater than ±3 standard deviations. The assumption of normality (assumption 8) was met, as assessed by a histogram with superimposed normal curve, and a P-P Plot of the residual data points.

The multiple correlation coefficient demonstrates a strong linear association between the predicted scores from the regression model and the actual values of the dependent variable, R = 0.725. The coefficient of determination, R^2, for the overall model was 52.6% with an adjusted R^2 of 41.3%, a large effect size according to Cohen (Gravetter & Wallnau, 2009). The multiple regression model statistically significantly predicted arguing, $F(5, 21) = 4.658$, $p = .005$. Therefore the null hypothesis was rejected and the alternative hypothesis was accepted in regards to the dependent variable of arguing (see Table 1).

Table 1

Summary of Multiple Regression Analysis - Arguing

Variable	*B*	SE_B	*B*
Constant (intercept)	3.940	6.385	
Gender	-.688	.248	-.512*
Age at entry	-.234	.073	-.605*
Months 6-9**	.667	.361	.355
Months 10-13**	.740	.286	.523*
More than 13 months**	1.545	.338	1.015*

Note. *$p < .05$; *B* = unstandardized regression coefficient; SE_B = Standard error of the coefficient; β = standardized coefficient; **variable was dummy coded

Independent variable of age. The slope coefficient for age at entry was -.234, meaning that an increase in age of one year is associated with a decrease in arguing totals. There is a 95% confidence that the true value of the slope falls between -.386 and -.083. The slope coefficient was found to be statistically significant with $p = .004$. There is a linear relationship in the population.

Independent variable of gender. The slope coefficient for gender was -.688. Males demonstrate lower amounts of arguing overall than females on the PDR on average. With all values of all other independent variables being held constant, females have more instances of arguing on the PDR. There is a 95% confidence that this value falls between -1.203 and -.172. The slope coefficient was found to be statistically significant with $p = .011$.

Length of stay group 6-9 months. The slope coefficient for the 6-9 month length of stay group and arguing was .667. This value is not statistically significant, with $p = .078$.

Length of stay group 10-13 months. The slope coefficient for the 10-13 month length of stay group and arguing was .740. This value is statistically significant, with p = .017. There is a 95% confidence that this value falls between .145 and 1.335. Those in the 10-13 month length of stay group have higher instances of arguing than those in the 6-9 month length of stay group.

Length of stay group greater than 13 months. The slope coefficient for the greater than 13 months length of stay group and arguing was 1.545. This value is statistically significant, with $p < .0005$. There is a 95% confidence that this value falls between .843 and 2.247. Those in the greater than 13 month's length of stay group demonstrate higher instances of arguing than those in other length of stay groups.

Overall, individuals in the greater than 13 months length of stay group demonstrate a higher number of times arguing than any other length of stay group.

Dependent variable of defiance. A multiple regression was run to determine how much the variation in the behavior of defiance can be explained by gender, age, and length of stay in the MTFC program. The first two assumptions were met. There was one dependent variable measured at the continuous level and two or more independent variables that were measured at the continuous or nominal level. The third assumption, independence of residuals (or observations) was initially met. However, when the assumption of homoscedasticity was analyzed, the raw data did not meet this assumption, as assessed by visual inspection of a plot of studentized residuals versus unstandardized predicted values. Therefore a transformation of the variable had to be completed. A logarithmic transformation of the data was completed, based on the visual observation of

the variables being skewed (Statistics Solutions, 2013). When the transformation was completed, the visual inspection of the plot still appeared to indicate a violation of the assumption of homoscedasticity. However, there is a level of subjectivity when using a visual plot to determine whether or not an assumption has been met. The violation of the homoscedasticity assumption must be quite severe in order to present a major problem, due to the robustness of a regression equation (Statistics Solutions, 2013). Based on this information, it was decided to move forward with the regression analysis, using the data as transformed by a logarithmic transformation.

The assumption of independence of residuals was met with the transformed data, as assessed by a Durbin-Watson statistic of 1.562. The assumption of linearity was met. Linearity was assessed by partial regression plots and a plot of studentized residuals against the predicted values. The assumption of multicollinearity was met. There was no evidence of multicollinearity, as assessed by tolerance values all being greater than 0.1 (the lowest was 0.438). The seventh assumption checks to ensure there are no significant outliers, high leverage points, or highly influential points. There were no studentized deleted residuals greater than ±3 standard deviations. The assumption of normality (assumption 8) was met, as assessed by a histogram with superimposed normal curve, and a P-P Plot of the residual data points.

The multiple correlation coefficient demonstrates a moderate linear association between the predicted scores from the regression model and the actual values of the dependent variable, R = 0.575. The coefficient of determination, R^2, for the overall model was 33.1% with an adjusted R^2 of 19.2%, a small effect size according to Cohen

(Gravetter & Wallnau, 2009). The overall multiple regression model was not statistically significant in predicting defiance, $F(5, 24) = 2.374$, $p = .069$. Therefore, the null hypothesis was not rejected in regards to the dependent variable of defiance. Regression coefficients and standard errors can be found in Table 2.

Table 2

Summary of Multiple Regression Analysis - Defiance

Variable	*B*	SE_B	β
Constant (intercept)	2.945	.922	
Gender	-.324	.253	-.254
Age at entry	-.178	.068	-.540*
Months 6-9**	.428	.378	.286
Months 10-13**	.617	.325	.447
More than 13 months**	.848	.352	.593*

Note. *$p < .05$; *B* = unstandardized regression coefficient; SE_B = Standard error of the coefficient; β = standardized coefficient; **variable was dummy coded

Independent variable of age. The slope coefficient for age at entry was -.540, meaning that an increase in age of one year is associated with a decrease in defiance totals. There is a 95% confidence that the true value of the slope falls between -.317 and -.038. The slope coefficient was found to be statistically significant with $p = .015$. There is a linear relationship in the population.

Independent variable of gender. The slope coefficient for gender was -.254. The slope coefficient was not statistically significant, with $p = .211$.

Length of stay group 6-9 months. The slope coefficient for the 6-9 month length of stay group and defiance was .286. This value is not statistically significant, with $p = .268$.

Length of stay group 10-13 months. The slope coefficient for the 10-13 month length of stay group and defiance was .447. This value is not statistically significant, with $p = .070$.

Length of stay group greater than 13 months. The slope coefficient for the greater than 13 month's length of stay group and defiance was .593. This value is statistically significant, with $p = .024$. There is a 95% confidence that this value falls between .121 and 1.575.

Dependent variable of destructiveness/vandalism. A multiple regression was run to determine how much the variation in the behavior of destructiveness/vandalism can be explained by gender, age, and length of stay in the MTFC program. The first two assumptions were met. There was one dependent variable measured at the continuous level and two or more independent variables that were measured at the continuous or nominal level. The third assumption, independence of residuals (or observations) was initially met. However when the assumption of homoscedasticity was analyzed, the raw data did not meet this assumption, as assessed by visual inspection of a plot of studentized residuals versus unstandardized predicted values. Therefore a transformation of the variable had to be completed. A logarithmic transformation of the data was completed, based on the visual observation of the variables being skewed (Statistics Solutions, 2013). When the transformation was completed, the visual inspection of the plot still appeared to indicate a violation of the assumption of homoscedasticity. However, there is a level of subjectivity when using a visual plot to determine whether or not an assumption has been met. The violation of the homoscedasticity assumption must

be quite severe in order to present a major problem, due to the robustness of a regression equation (Statistics Solutions, 2013). Based on this information it was decided to move forward with the regression analysis, using the data as transformed by a logarithmic transformation.

The assumption of independence of residuals was met with the transformed data, as assessed by a Durbin-Watson statistic of 1.809. The assumption of linearity was met. Linearity was assessed by partial regression plots and a plot of studentized residuals against the predicted values. The assumption of multicollinearity was met. There was no evidence of multicollinearity, as assessed by tolerance values all being greater than 0.1 (the lowest was 0.433). The seventh assumption checks to ensure there are no significant outliers, high leverage points, or highly influential points. There were no studentized deleted residuals greater than ±3 standard deviations. The assumption of normality (assumption 8) was met, as assessed by a histogram with superimposed normal curve and a P-P Plot of the residual data points.

The multiple correlation coefficient demonstrates a moderate linear association between the predicted scores from the regression model and the actual values of the dependent variable, R = 0.584. The coefficient of determination, R^2, for the overall model was 34.2% with an adjusted R^2 of 10.6%, a small effect size according to Cohen (Gravetter & Wallnau, 2009). The overall multiple regression model was not statistically significant in predicting defiance, $F(5, 14) = 1.452$, $p = .267$. Therefore the null hypothesis could not be rejected in regards to the variable of destructiveness/vandalism. Regression coefficients and standard errors can be found in Table 3.

Table 3

Summary of Multiple Regression Analysis - Destructiveness/Vandalism

Variable	*B*	SE_B	*B*
Constant (intercept)	.547	1.112	
Gender Coded	.309	.301	.331
Age at entry	-.042	.083	-.147
Months 6-9**	.231	.379	.177
Months 10-13**	.475	.284	.441
More than 13 months**	.400	.336	.393

Note. *$p < .05$; *B* = unstandardized regression coefficient; SE_B = Standard error of the coefficient; β = standardized coefficient; **variable was dummy coded

Independent variable of age. The slope coefficient for age was -.042. The slope coefficient was not statistically significant, with $p = .622$.

Independent variable of gender. The slope coefficient for gender was .309. The slope coefficient was not statistically significant, with $p = .322$.

Length of stay group 6-9 months. The slope coefficient for the 6-9 month length of stay group and destructiveness/vandalism was .231. This value is not statistically significant, with $p = .551$.

Length of stay group 10-13 months. The slope coefficient for the 10-13 month length of stay group and destructiveness/vandalism was .475. This value is not statistically significant, with $p = .116$.

Length of stay group greater than 13 months. The slope coefficient for the greater than 13 month's length of stay group and destructiveness/vandalism was .400. This value is not statistically significant, with $p = .254$.

Summary

In Chapter 4 the results of this study were presented. The results indicated there was an overall increase in the scores on the CFARS from the date of entry to the date of exit from the MTFC program. This increase was shown to be statistically significant. An increase in CFARS scores indicated an increase in problematic behaviors observed and reported. The initial ANOVA analysis showed a statistically significant interaction between the length of stay in the MTFC program and the intake and exit CFARS scores. However, the Bonferroni post-hoc analysis showed there was no significant effect of the specific length of stay. The increase in CFARS scores was seen over all the length of stay groups, with no significant differences among them. This indicates that the null hypothesis could not be rejected for research question 1. The results of the research also revealed that there was a negative relationship between the age of the individual and the total amount of times arguing was documented in the PDR. It was also found that males demonstrated an overall lower number of documented arguing than females in the sample. Overall, it was found that individuals who were in the MTFC program for greater than 13 months demonstrated a higher amount of documented instances of arguing than those in other length of stay groups. Therefore the null hypothesis was rejected and the alternative hypothesis was accepted in regards to the dependent variable of arguing. In regards to the behavior of defiance, the results showed overall that there was not a statistically significant finding of the overall model. The effect size was small, at 19.2%. The null hypothesis was accepted and the alternative hypothesis was rejected in regards to the variable of defiance. There was however, a significant finding in regards to the age

of entry and the occurrences of defiance. It appears that as the age of the participant increases, the occurrences of defiance decrease. Additionally, the participants in the MTFC program for greater than 13 months demonstrated higher incidences of defiance than did any other length of stay group. The behavior of destructiveness/vandalism showed that there was not a statistically significant overall regression model. The null hypothesis was accepted and the alternative hypothesis was rejected in regards to the variable of destructiveness/vandalism. The effect size was small, at 10.6%. There were no significant findings within the independent variables. A summary of the interpretation of statistical findings, limitations of the study, implications for social change, recommendations, and the conclusions will be provided in Chapter 5.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this study was to determine an efficacious time period for the MTFC program. Additionally, the study looked at whether or not it is problematic for youth to remain in the MTFC program for longer than the intended time frame. This study helps to expand upon the current research in the literature. There are multiple studies that look at the effectiveness of the MTFC program, especially when used with youth who have severe behavior issues (see Alvord & Johnson, 2005; Chamberlain et al., 2007; TFC Consultants, 2013). However, there is a gap in literature looking specifically at how different length of stay periods may impact the effectiveness of the MTFC program. Cross et al. (2004) found that there was a curvilinear relationship between a youth's length of stay in therapeutic foster care and their overall improvement. Cross et al. (2004) found that the length of stay of the youth appeared to have the highest relationship with their improvement. This study indicated the need for additional studies to address the potential impact of length of stay on the overall improvement of youth in the MTFC program.

The variables assessed in this study included length of stay in the MTFC program, age of the participant, gender of the participant, entry and exit scores on the CFARS, and measurements of the following behaviors on the PDR: arguing, defiance, and destructiveness/vandalism. Two main research questions were addressed. During analysis, the second research question was broken down into three separate analyses, one for each behavior. The research questions were:

RQ1: Is there a difference between youth who are in the MTFC program for 6-9 months, 10-13 months, and greater than 13 months in terms of respective pre- and post-treatment behavioral scores on the CFARS?

H_{o1}: There is no difference between youth who are in the MTFC program for 6-9 months, 10-13 months, and greater than 13 months in terms of scores on the CFARS.

H_{a1}: There is a difference between youth who are in the MTFC program for 6-9 months, 10-13 months, and greater than 13 months in terms of scores on the CFARS.

RQ2: Is there a relationship between length of stay for youth in the MTFC program, age at entry, and gender, and the following negative behaviors: arguing, defiance, and destructiveness/vandalism, as measured by the PDR?

H_{o2}: There is no relationship between length of stay for youth in the MTFC program, age at entry, and gender, and arguing, defiance, and destructiveness/vandalism.

H_{a2}: There is a relationship between length of stay for youth in the MTFC program, age at entry, and gender, and arguing, defiance, and destructiveness/vandalism.

Interpretation of Findings

The data indicated that there was an increase in the CFARS scores from the intake date to the exit date for all youth in the MTFC program. There were no differences between the youth based on the specific amount of time spent in the MTFC program and the overall CFARS scores that were generated upon intake and exit. The youth were assessed with the CFARS by trained staff at the date of their intake into the MTFC program and the date of their exit from the MTFC program. They were assessed on multiple domains and scored based on the behaviors they demonstrated as they related to

each domain. These domains include: depression; anxiety; hyperactivity; thought process; cognitive performance; medical/physical; traumatic stress; substance use; interpersonal relationships; behavior in home; ADL functioning; socio-legal; work or school; danger to self; danger to others; and security/management needs. The increase seen in the CFARS from entry to exit dates was not large based on the transformed data. However, the increase was found to be statistically significant overall, $F(3, 29) = 4.654$, $p = .009$. It is important to remember that the data used was transformed in order to not violate the assumptions of the ANOVA. Additionally, it was found that there was not a significant effect when looking at the length of stay groups and the difference in CFARS scores from intake to exit date. It does not appear as though the length of stay in the MTFC program had an impact on the overall scores assessed by the CFARS.

The results found in this study seem to be in opposition to results found in previous studies. In other studies many of the outcome measures were self-reported through interviews with youth and parents who were a part of the study. When using a self-report assessment, there may be a higher likelihood of incorrect information, as it can be subjective based on the individual's memory and their perception of their symptoms. For example, Hansson and Olsson (2012) found that youth in the MTFC program demonstrated a higher decrease in clinical symptoms than youth who were in a control group. They also found that one youth in the MTFC group of their study demonstrated an increase in clinical symptoms when assessed at one of the follow-ups (Hansson & Olsson, 2012). They did not go into any detail about this one youth's increase of symptoms. This one result may be an indicator that the MTFC program may not be

effective when treating certain individuals with specific needs or issues. There were similar results found in the present study, with an increase in some of the behaviors assessed. The result of Hansson and Olson may provide support to the results found in the present study. Hansson and Olson (2012) utilized a comparison between treatment and non-treatment youth. In this study, a comparison between youth who all received treatment was done, looking at different time points of their completing treatment. The differences in the research designs may also have an impact on the results that were seen.

When looking at specific behaviors that youth demonstrate, it was found that the presence of some behaviors were impacted by the length of stay in the MTFC program. The behaviors of arguing and defiance were both found to have significant findings when looking at the length of stay in the MTFC program. The youths who were in the MTFC program for either 10-13 months or greater than 13 months demonstrated a higher instance of arguing behaviors than those youth who were in the 6-9 months group. Additionally, the youth in the greater than 13 months group demonstrated a higher amount of predicted times arguing and defiance than any of the other groups. These results fall in line with the premise presented by social learning theory related to motivational processes. It is known that when individuals have an incentive or reward to work towards, they are more highly motivated to engage in and demonstrate behaviors that will lead to that reward (Bandura, 1997). However, when the reward or incentive is not achieved in the time period that is expected, then there is a potential for the motivation to decrease and undesirable behaviors to increase. In this study, it appears as though the youth who remained in the MTFC program for a period of time longer than

the anticipated 6-9 months demonstrated more instances of arguing and defiance. These youth may have begun to experience a decline in motivation to continue demonstrating more positive behaviors related to arguing once the goal of returning home passed the initial time frame discussed during their intake to the MTFC program. This also makes sense when looking at the fact that the youth in the greater than 13 months group demonstrated the most frequent incidences of arguing and defiance.

There was also a significant finding when looking at the age of the youth and the behaviors of arguing and defiance. It was found that an increase in age of one year was associated with a general decrease in the instances of arguing and defiance observed and reported on the PDR. This falls in line with the general principles presented in social learning theory by Bandura (Grusec, 1992). As a child becomes older they acquire more appropriate responses and actions through learning and are better able to repeat those behaviors that are observed (Grusec, 1992). When looking at gender it was found that males demonstrated lower instances of arguing than did females on the PDR. There was no effect of gender on the reported behavior of defiance. When looking at the behavior of destructiveness/vandalism there were no statistically significant findings. The age, gender, or amount of time spent in the MTFC program did not have any relationship to the reported instances of destructiveness/vandalism.

Studies have shown mixed results when looking at the impact that age or gender may have on the outcomes of the MTFC program or on particular behaviors. In a review of the MTFC program Biehal et al. (2012) found that at the intake assessment of behaviors, there were no significant associations between the age at intake and the

behaviors measured. They did find that there was a trend for behaviors associated with social and attention problems to be associated with younger ages, however the findings were not significant (Biehal et al., 2012). Additionally, they found that females demonstrated more internalizing behaviors, while males demonstrated more externalizing behaviors, although again, these findings were not significant (Biehal et al., 2012). A review completed by Reddy and Pfeiffer (1997) found that the largest positive effects of treatment were seen in regards to the social skills of the child and their permanency placement. However, only medium effects were seen in the reduction of behavior problems of the youth (Reddy & Pfeiffer, 1997). Biehal et al., 2012 found that youth who have multiple placements in foster care tend to have poorer outcomes with the MTFC program, although this was not explored in the present study. It appears as though youth who have more consistency in their placements, or who have a successful and stable reunification with their parents will maintain the gains and positive behaviors learned while in the MTFC program. This may be a variable that would be beneficial to look at in future studies and to expand upon the current study completed.

Limitations of the Study

A limitation that was proposed for this study was in regards to the internal validity. Youth may have been removed from the MTFC program prior to fully completing the treatment. This limitation was addressed by the inclusion of only youth who had both intake and exit CFARS scores. However, it was unknown as to what the exit conditions were of the youth – whether they were discharged to their biological family, if they aged out of foster care, or if they ran away prior to treatment concluding.

This would be something important to address in future studies, and to explore in relationship to the results that were found. Another variable that may have had an impact on the treatment outcomes of the youth was that the provided data set did not include the number of placements the youth had while in the MTFC program. The MTFC program has the intent of there only being one foster placement through the duration of the treatment. However, it is unknown as to whether or not there were any placement disruptions of the youth while they were in the MTFC program. Potential placement disruptions could have been due to behaviors of the youth, the foster parents leaving the program, or other variables outside of the control of the MTFC program staff. Previous studies have shown that there is a higher success rate when the youth are able to remain in one treatment foster home for the duration of their treatment (Biehal et al., 2012). Due to the data being archival and provided by an organization, there was an inability to assess this aspect of the youth involved and determine the number of placements throughout their MTFC stay.

A limitation that arose during the data analysis was in regards to the size of the sample utilized. There was a large number of data provided in the archival data set, however there were multiple missing variables. The data that was included in the final analysis had to meet the requirements of answering the research questions. The following data needed to be present for each youth: intake and exit CFARS scores, gender, age, and PDR data for the duration of the MTFC stay, from entry date to exit date. There were multiple youth's data that was removed from the data set due to missing PDR data. Because the PDR data was integral to answering the research questions, it was necessary

to have the data for the duration of each youth's stay in order to be included in the final data set. There is a possibility that the smaller sample size may have not been truly representative of the population that was being researched. A final sample of 34 youth was used in the analysis. This limitation can be addressed by having a larger sample size for future studies. Through having the larger sample size there will be a greater likelihood that the sample being analyzed is truly representative of the population that was being studied.

An additional limitation that may have had an impact on the sample size and the ability to generalize findings is that the data were from only one organization. There are multiple organizations that provide the MTFC treatment, however there was an inability to gather data from more than one place. The data that was able to be obtained pertain to a small sample of youth from a specific geographic location. It would most likely be beneficial to have a larger sample that includes youth from multiple states in order to have a larger sample size that is more able to be generalized to the larger population.

Recommendations for Further Study

Research of the MTFC program is plentiful in the current literature. There is much research that speaks to the positive implications of using the MTFC program with youth who have severe behavioral and emotional issues. However, there continues to be a lacking of research that looks specifically at the implication of the length of stay on the effectiveness of the MTFC program. This study only focused on three individual behaviors – arguing, defiance, and destruction and vandalism. These behaviors were chosen based on previous research that has been completed demonstrating the positive

effect that MTFC has on those behaviors (Chamberlain et al., 2007; Chamberlain & Reid, 1991; Eddy & Chamberlain, 2000; Leve, Chamberlain, & Reid, 2005). The present study found that there were several significant findings related to arguing and defiance, and the length of stay in the MTFC program. These findings were in support of previous studies that demonstrated MTFC having a positive impact on the behaviors of arguing and defiance when treatment was completed in a 6-9 month timeframe. There were no significant findings related to the effect of the length of stay in the MTFC program and the behavior of destruction and vandalism. This result should be explored further in future studies, as it was expected that there should have also been a relationship between length of stay and this behavior as well.

One result that was contraindicated by the review of the literature was an increase in the CFARS scores from entry to exit. It was expected that there would be a decrease in the overall CFARS scores, especially when the youth completed the MTFC program within the 6-9 month time-frame. One possible cause of this inverse result is that there was staff turn-over during the years the data was collected. The staff should have been trained in how to administer and score the CFARS correctly. However, there is a potential that errors were made and interrater reliability was poor. There was not a way to track or ensure that staff received the same trainings and were fully able to perform the assessment, except through what was expected through the program being certified. This was a potential limitation and threat to internal validity that was discussed prior to the study being conducted. The only way to address this would be to ensure all staff complete the exact same training and were provided supervision while learning to administer the

CFARS. Additionally, it would be optimal if the same staff were to perform both the entry and exit CFARS assessments. This was an issue that could not be controlled for in this study, due to using archival data. This is something that could be assessed and ensured that protocols were in place with tracking of staff training in future studies. It is also recommended that a larger sample size be utilized in future studies to reduce the threat to internal validity through selection bias. The sample used was limited and unable to be increased due to the data that was provided. Additionally, through having a larger sample size there is a greater ability to generalize and apply the results of the study to a larger population.

A variable that may have been beneficial to have in the data set is the reason that the youth entered into the MTFC program. It is known that youth who are placed in MTFC have a higher level of behavioral problems than the average youth (Alvord & Johnson, 2005; Chamberlain, Leve, & DeGarmo, 2007). However, it was unknown as to which specific behaviors the youth being analyzed in this study had the most difficulties with. The present study only assessed three specific behaviors – there may be other behaviors that youth had more difficulties with than the three that were chosen. Future studies could examine all of the behaviors on the PDR, as well as looking at how each youth's PDR scores related to their most problem behaviors. Additionally, analyses could be completed that look at the scores on the CFARS as they relate to the scores on the PDR. It is unknown how these two assessments correlate with each other, and that may be something beneficial to study in the future. This would provide assurance that the CFARS and the PDR are gauging the same types of behaviors.

Implications

Social Change

It is known that youth who demonstrate severe negative behaviors such as aggression, violence, and oppositional defiant behaviors have a higher probability of being involved in the criminal system (Babinski et al., 1999; Johansson & Andershed, 2005; Kratzer & Hodgins, 1997). The present study looked at the negative behaviors that youth may demonstrate when placed into a treatment foster care program. The three behaviors chosen - arguing, defiance, and destructiveness and vandalism, have been shown to possibly lead to potential criminal activity (Kratzer & Hodgins, 1997). The study demonstrated a decrease in the behaviors of the youth, more-so when they completed the MTFC program in a 6-9 month period. The only behavior that did not have any impact of the length of stay was destructiveness and vandalism. However there still was a decrease in the instances of this behavior over the course of the MTFC program. It is important to know that behaviors that have been linked to potential criminal activity can be targeted and treated with youth. Through providing appropriate treatments, there is an ability to decrease the potential harm that may happen if these behaviors are not addressed. When youth continue to engage in the aforementioned negative behaviors, they are more likely to continue them and also increase the types of negative behaviors as they grow into adulthood (McCollister et al., 2010). Once reaching adulthood, the impact of these negative behaviors will affect society on a whole through court costs, victim costs, medical costs, etc. (McCollister et al., 2010; Shapiro, 1999). The results from this

study provide additional support to aim interventions at the youth who may grow into criminal adults and attempt to break the cycle before it gets worse.

Clinical Recommendations

The MTFC program is aimed towards having a youth in treatment for 6-9 months. However, there are many times that a youth may remain in the MTFC program for a time period longer than 6-9 months. This study included many youth who were in the MTFC program for longer than 6-9 months, up to greater than 13 months in total. The results provide support for the treatment time in MTFC to be 6-9 months long. It was found that youth who were in MTFC for longer than 6-9 months demonstrated higher instances of arguing and defiance than did youth who completed treatment in 6-9 months. This is important information to relate to organizations who provide the MTFC treatment, as well as the social workers and courts who may order youth to remain in treatment foster care. Often social workers are unable to find permanent placements for the youth once they complete the MTFC program. This can lead to the youth remaining in the MTFC home for longer than they truly need to be. What is not realized by social workers is the potential negative effects of the youth remaining in a high level treatment home. The results from this study need to be provided and used with social workers to encourage the finding of permanent placements and not delaying placing the youth in the permanent placement. If the permanent placement (often biological family) has been working with the MTFC treatment team (as is required for the program to be efficacious), then there should not be issues in returning the youth to that home.

These results will be presented to the organization from whom the data was provided. The CEO of the organization will receive written results, as well as a verbal presentation by the researcher. Additionally, it would be beneficial for the local Department of Social Health Services to allow for a presentation to be given to the administrators in regards to the impact that keeping youth in an MTFC placement has on the youth's behaviors. It is expected that at a very minimum, these results can be provided to individual social workers for youth when they are placed in the MTFC program during the intake process. The information should be given as additional information needed to help social workers remain focused on there being a set time-frame for the MTFC program to be completed and the youth moved out of treatment. The results from this study will also be shared with the parent organization that created the MTFC program – the OSLC. It is hopeful that the results found in this study can provide information that will be beneficial for their research studies. The OSLC is continuously conducting research on the MTFC program and has a large data base of information. They would also have the greatest capability of being able to conduct research based on the limitations and recommendations of the present study. Although there are many studies completed by the OSLC, there still is a gap and lack of research into the specific time frames of treatment and the impact on the effectiveness of the MTFC program. There is hope that the present study's results will help encourage the OSLC to complete analyses and research to further close this literature gap.

Conclusion

There are very few studies in the literature that address the impact that length of stay in the MTFC program has on treatment effectiveness (Cross et al., 2004). Every year, more children are placed into foster care homes, with the most recent number being at over 425,000 children (USDHHS, 2016). The number of youth in foster care increases every year, and along with this increase comes increases in financial costs to the government and emotional costs to the youth and families involved. The youth with more severe behavioral issues may be placed into a treatment foster care program, one of which is MTFC. These foster placements are meant to be temporary homes for the youth, focused on treatment of severe behavioral issues (Foster Club, 2016; Hansson & Olsson, 2012). More often than not, youth remain in treatment foster care home for longer than the 6-9 months treatment time that has been identified by the creators of the MTFC program (Cross et al., 2004). Cross et al. (2004) found that the length of stay in a treatment foster care program was the most important connection to improvement in behavior. The results from the present study indicate that when youth remain in the MTFC program for longer than 6-9 months, they demonstrate an increase in arguing behaviors and defiance. The youth who exited the MTFC program after 6-9 months of treatment demonstrated the most improvement in these behaviors, having lower instances of them recorded. The results are important in prompting further research into the negative impact that remaining in treatment foster care for an extended period of time may have on a youth, their family, and those involved in their lives.

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