

EVALUATING FAMILY PRESERVATION PROGRAMS IN JUVENILE JUSTICE:
A PROPENSITY SCORE MATCHING APPROACH

by

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Mom and Dad: I miss you more than words can express. Wish you were here.

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DISSERTATION

Presented to the Faculty of
The University of Texas at Dallas
in Partial Fulfillment
of the Requirements
for the Degree of

DOCTOR OF PHILOSOPHY IN
CRIMINOLOGY

THE UNIVERSITY OF TEXAS AT DALLAS

May 2019

ACKNOWLEDGMENTS

Many thanks to Dr. Alex Piquero, not just for your wealth of information in Criminology, but especially for your continued support and patience throughout my graduate school experience at The University of Texas at Dallas. I sincerely have appreciated your assistance and feedback on my dissertation, but mostly for believing in me! Thank you also for always being prompt in responding to emails and questions. Much appreciation to my committee members as well: Dr. Nicole L. Piquero, Dr. Robert Taylor and Dr. Andrew Wheeler. You too have all been very supportive, approachable and helpful, the valued attributes of a great dissertation committee. I hope to be as successful a researcher as all of you. Additional thanks to the following: BH & HH: Hope we'll see each other more often (or do I? Kidding!); CHE: you've been a wonderful bro. Thanks for always helping me; DHE, AHE & SSE: Looking forward to much more time together; SM, KM & Usta; NS; GSK, JK & Baby K: Don't forget, I'm now available for road trips... And will continue to stretch, especially for you, NS! AHKE: Thanks for your continued love and support, even after DH left us; Tracey M. and Pam G.: Without your assistance this past year, I would not be at this point in grad school; I cannot thank you enough. SR.: Thank good-ness you hit Bobbi with those gym shorts; otherwise, we probably never would have become great friends! And of course, I've appreciated your continued encouragement. To all my other family members and friends, including the aforementioned, I love you and appreciate your support... grad school took a while to get through, but I couldn't have done it without you!

April 2019

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The University of Texas at Dallas, 2019

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This research project examined the impact of Family Preservation Program (FPP) services with adjudicated juveniles from the State of Texas. Family preservation models, used often in child welfare, aim to keep dysfunctional families together, in lieu of placement. This strategy usually involves an intervention team of case workers and therapists. The team works for a short duration with the family by providing intense services during that time. The juvenile probation recipients who received FPP services were matched with a control group who received probation services as usual, in order to examine whether removal and recidivism differs between the groups. Specifically, analyses were conducted on these youth, within one-year post supervision end date. Propensity score matching (PSM) was performed to match youth on several variables: headquarter county, sex, race, onset age, delinquency prior to first formal adjudication, and offense severity. The overarching research questions were whether FPP youth, compared to a control group of youth, had different rates of removal and recidivism prior to and post-matching on relevant covariates. Removal refers to the youth being removed, via a court order, from the juvenile's respective home, into residential placement (secure or non-secure). Recidivism is defined as a new,

Class B or higher referral, or a subsequent formal court adjudication within one year subsequent to the supervision end date. Findings show that FPP youth had a significantly higher rate of removal, but not recidivism, compared to control youth. A finding that was evident both before and after matching on relevant covariates. Implications, limitations, and directions for future research are noted.

TABLE OF CONTENTS

ACKNOWLEDGMENTS	v
ABSTRACT	vi
CHAPTER 1 INTRODUCTION	1
CHAPTER 2 LITERATURE REVIEW	12
CHAPTER 3 IN-HOME FAMILY SERVICES PROGRAM (IHFSP).....	59
CHAPTER 4 DATA AND METHODOLOGY.....	77
CHAPTER 5 RESULTS	101
CHAPTER 6 DISCUSSION	113
CHAPTER 7 CONCLUSION	117
REFERENCES	118
BIOGRAPHICAL SKETCH	137
CURRICULUM VITAE	

CHAPTER 1

INTRODUCTION

According to data published by the Office of Juvenile Justice Delinquency Prevention (OJJDP), for many crimes, juvenile arrest rates in 2011 were at the lowest levels in more than three decades (Puzzanchera, 2013). In OJJDP's most recent publication on juvenile arrest rates, the report described a decrease of 37 percent in all juvenile arrests (juveniles under the age of 18) between 2003 and 2012 (Puzzanchera, 2014, p. 3). In addition to reduced arrest rates, the rate of court-ordered delinquent youth removed from their homes has also declined in recent years (Hockenberry, 2018). That is, juvenile probation departments and judges have been less likely to recommend and/or order youth into residential placements. For example, 90 percent of states reduced the rate of juvenile offenders in residential placement by 54 percent between 1997, when data collection first began, and 2015 (Hockenberry, 2018). Nevertheless, there is a pressing need to develop prevention and intervention-based strategies to help curb delinquent and criminal behavior, whether a delinquent is removed or not, and to do so as early in the life-course as possible.

One such positive strategy that has emerged over the past dozen years concerns early family/parent training models (Wasserman & Miller, 1999), such as family preservation. In this introduction, a brief explanation is provided about the history and concept of family preservation program (FPP) models. An account of what these programs entail is outlined, including a succinct description of how FPPs operate in general. A brief description of the Texas agency in which this dissertation is based is also provided. Furthermore, this chapter describes the purpose of this

dissertation. To provide a segue into the rest of this proposal, overviews of all chapters are also provided.

History and Concept of Family Preservation Programs (FPPs)

Ultimately, removing a child from his or her home, even a dysfunctional home, can be devastating to children and caregivers (Lawson, 2005). In the 1980s, policies and programs in both juvenile justice and child welfare were written to prevent the removal of children from the custody of their parents (Reed & Kirk, 1998). At the federal level, the *Adoption Assistance and Child Welfare Act of 1980* (Public Law 96-272) became law (Reed & Kirk, 1998). Based on the several mandates established within the *Act*, these decrees have often been referred to as “placement prevention” directives (Reed & Kirk, 1998, p. 41).

History of family welfare programs in the United States. As Wise (2005) explained, although home-based services provided to families gained traction the decade prior to the passage of the *Adoption Assistance and Child Welfare Act of 1980*, different models of family preservation programs grew rapidly following the *Act*. Then, in 1993, with the passage of the *Omnibus Budget Reconciliation Act (OBRA) of 1993* (Public Law 103-66), Congress allocated nearly \$1 billion to states, authorizing new funding for family preservation and family support services (General Accounting Office; GAO), 1995; Hooper-Briar, Broussard, Ronnau & Sallee, 1995). This allowed opportunities to expand the application of family preservation to a full array of services (Lloyd & Sallee, 1994; GAO, 1995), outlined briefly below, under the subsection Concept.

Although the notion of making home visits to families in distress seems to have appeared as a new concept in the 1970s, it actually did not begin in the twentieth century. Instead, Ambrosino, Heffernan, Shuttleworth and Ambrosino (2005, p. 26) described that credit for this

endeavor was started around 1814 by Reverend Thomas Chalmers, a minister in Scotland. Troubled by inefficient and spendthrift tactics that charity (relief) programs were using, Reverend Chalmers divided his parish into districts and assigned a deacon to each. The deacons were required to look into the causes of problems with families. If the deacons found that families were unable to obtain or maintain self-sufficiency, assistance was sought from others, such as family members, neighbors, friends, and well-to-do community members who had the means to assist (Ambrosino et al, 2005).

In the same decade that Chalmers divided his church parish into districts, New York City clergy members, businessmen and physicians sought to find causes of and solutions to prevent poverty. Their goal was for indigent families to become self-sufficient. In an effort to combat the problem, they established the New York Society for the Prevention of Pauperism in 1817 (Leiby, 1978). A year later, the Society published their First Annual Report (1818), mirroring what Chalmers had done in Scotland: separate the city into small districts and send district volunteer “visitors” to meet the less-fortunate families in their homes (Leiby, 1978, p. 44). Unfortunately, because the report also listed several reasons for one’s indigence (e.g., ignorance, laziness, alcoholism, playing the lottery, foolishly spending money, visiting prostitutes), Leiby (1978, p. 45) explained that it didn’t take long for the community to stop being charitable, and the New York Society ceased to exist.

Present-day child welfare programs (where family preservation programs have a history of being established), have roots dating back to the 1800s. Their original intent was to rescue children from poverty, neglect, abuse, and abandonment (Fraser, Nelson & Rivard, 1997). However, in the mid-1800’s, the term “child-saving” (Costin, Karger & Stoesz, 1996, p. 46) evolved into the idea

that the “unworthy poor” children, thought of as the progression of the future (Chambers & Wedel, 2005, p. 223), were to be “saved” by separating them from their negligent parents. Using free foster homes and orphanages, this child-saving (removing children) was done (Costin et al., 1996).

A few decades later, the volunteer visitor concept was restored. Josephine Shaw Lowell, a pioneer in the development of professional social work, published “Duties of Friendly Visitors” in which she urged the visitors, when making home visits, to refrain from meeting only with the wife, but to work with both the husband and wife to discuss their current situation and future goals (Siporin, 1980, p. 12). Mary Richmond, who worked at the Baltimore Charity Organization Society (SOC), first in clerical, and then, by age 30, was promoted to the head of that SOC, told the friendly visitors to call the families “clients”, to make the visitors seem more important (Leiby, 1978, p. 121).

As the field of social welfare progressed and more organizations developed and shared ideas, a family-centered approach was endorsed by the chairman of the National Conference of Charities and Corrections, in 1890. With his philosophy, he expressed that the family must be taken as a unit, or else, the strongest bond will be weakened (Pumphrey & Pumphrey, 1961, p. 220; Wise, 2005, p. 1). Furthermore, contributors, such as Mary Richmond, edited journal articles written to help aid with the exchange of good ideas for new and established COS organizations. In 1909, she began publishing a series of articles aimed at describing how superior charity organizations and workers succeeded. Ms. Richmond also wanted to ensure that the home visitors had been trained well, and, in her published book, *Social Diagnosis* in 1917, she carefully outlined and detailed the steps to assist friendly visitors (Leiby, 1978, p. 122-123).

The first two decades of the 20th century was chock-full of momentous innovations in public policy for children. The first White House Conference on Children, in 1909, asserted that children living in poverty, should not be robbed of a family life simply due to poverty alone (Fraser, et al., 1997, p. 139). Based on decisions and what was recommended by Conference participants, the Conference was the foundation for continual reforms in the policy of child welfare (Costin, 1992, p. 178).

Concept. The concept of “preserving” families, hence family preservation, is most commonly synonymous with “intense” in-home therapy by an intervention team of counselors and others who work with a low-number of families at any given time. This version of the modern “family preservation” has been credited as beginning with the Homebuilders® Model in the 1970s within child welfare (National Family Preservation Network, 2018).

However, with the passage of the OBRA (1993), described previously, the U.S. Congress authorized new funding for family preservation and family support services. Similar to the objectives in the *Adoption Assistance and Child Welfare Act of 1980*, which emphasized preventing placement, or family reunification if placement was inevitable, the objectives and definitions to family preservation services in the OBRA, 1993, held. This included “services intended for children and families designed to help families... at risk or in crisis, including service programs designed to help children, where appropriate, return to families from which they have been removed” (OBRA, 1993, Section 431(a)(1)(A)(i)). Or, as most applicable here, the OBRA (1993) also included preplacement preventive services’ programs, such as intensive family preservation programs, designed to assist children who are at risk of placement into foster care, remain with their families” (OBRA, 1993, Section 431(a)(1)(B)).

In contrast, the *Adoption Assistance and Child Welfare Act of 1980* did not mention *family support services*, per se, nor was there any mention of community-based services in the *Act*. The most likely comparable part in the *Act* defined child welfare services as “preventing the unnecessary separation of children from their families by identifying family problems, assisting families in resolving their problems and preventing breakup of the family where the prevention of child removal is desirable and possible” (*Adoption Assistance and Child Welfare Act of 1980*, Section 425 (a)(1)(A)(B) and (C)). The OBRA’s (1993) definition was specifically written as “Family support services means community-based services to promote the well-being of children and families to increase the strength and stability of families... to increase parents' confidence and competence in their parenting abilities, to afford children a stable and supportive family environment, and otherwise to enhance child development” (OBRA, 1993, Section 431(a)(2)).

The aforementioned explanation highlights and clarifies the two programs within Sections 431(a)(1) and (2) in the OBRA (1993). Otherwise an association may not have necessarily been made with family support services and family preservation, namely as a stand-alone section. Thus, as Ronnau & Sallee (1993) described, this approach to family preservation affords an organization to provide services extending from prevention to intensive, in-home services, based upon the needs and strengths of each family.

An example of a program which could fall under the definition of family support services is the *Families and Schools Together* (FAST), a substance abuse prevention program, founded in Madison, Wisconsin in 1990 (McDonald & Howard, 1998). It uses similar techniques allowed in OBRA (1993; Section 431(a)(2)), in regards to family support services. What is similar between family preservation and FAST is that the entire family is involved, including parents and siblings;

not merely the youth who may have been having school issues, or behavior problems (FAST website, 2019).

According to the FAST website (2019), because of their work with, and presence in schools, the school personnel will notify the FAST workers about the stressed-out, isolated families, or truancy and other student issues. FAST then send parent-professional partners to visit these family's homes. FAST then invites the parents and children to participate in FAST-run school activities. The activities have been carefully detailed to engage the entire family. The activities involve sharing meals, playing games to enhance feelings or communication, singing, peer activities, creating a family flag and allows parents to network. Among each workshop, there are generally between 10 to 15 other families and they meet weekly, who meet eight to 10 sessions.

Overview of FPPs and Texas' In-home family services program (IHFSP). As described in more detail later, intervention team members (which may include therapists, case managers, juvenile probation officers, Child Protection Services' (CPS) workers) operate by meeting at a family's home, often several hours a week, over a short period of time (Bagdasaryan, 2005). The intervention team assists the family when crises arise or recur. Crises may involve the youth threatening to run away, or actually running away. There may be more serious crises, such as a youth being physically violent with one's family member(s) (Roberts & Everly, 2006). Or a crisis may be a parent being physically violent with the youth.

In the State of Texas, per the Texas Juvenile Justice Department (TJJD), several juvenile probation departments use FPPs (TJJD; 2013a). Beginning in the late 1990s, the Texas Juvenile Probation Commission (TJPC; the predecessor of TJJD), was a recipient of an OJJDP grant. This

FPP was called the In-Home Family Services Program (IHFSP). Similar to the goal of child welfare agencies, the focus of the IHFSP was to preserve the family. However, in addition to avoiding placement into foster homes, primarily used by a States' child welfare agencies, IHFSP's intent is to reduce the rate of adjudicated youth placed in secure facilities too. Following the concept of FPPs, the IHFSP also provided an intervention/counseling team to work with each adjudicated youth and his or her family (TJPC, 2004).

Contents

The second chapter of the dissertation is the literature review. It begins with theoretical perspectives that FPPs are based. Following the overview of four common theories in which FPPs are based, the program objectives and requirements of FPP models, in general, are presented. A synopsis of the research literature relating to well-known models in FPP, including studies on Multisystemic Therapy (MST), is presented—in large part because MST is also the foundation in which TJPC's IHFSP is modeled. MST originated as a model to treat juvenile offenders (Stambaugh, Mustillo, Burns, et al., 2007). MST has also focused on youth who habitually recidivate, many for serious offenses (Borduin, 1999). A summation of previous research in relationship to risk factors correlated with chronic offending and offense severity is provided.

The third chapter reviews the requirements of TJPC's IHFSP. The IHFSP was the State of Texas' FPP used with juvenile probationers. Program requirements include the duration (length) and intensity of Texas' IHFSP. The policies for the IHFSP's are outlined in the *Compliance Resource Manual, In-Home Family Services Program, FY 2005* (TJPC, 2004), located in the Appendix. However, sections from it are described in detail.

The fourth chapter contains the study's data and methodology. In it, the source of the data, the sampling frame and design, and a description of the participants is given. The data are secondary and were purchased from TJPC. The Institutional Review Board (IRB) at The University of Texas at Dallas approved the appropriate paperwork. Additional descriptions of these data, including county demographics, are included in the Sampling section. The Methods section explains the research design, procedures, and variable descriptors. A discussion on the analytical steps is also provided. The last two sections in Chapter 4 include research questions and hypotheses. A key feature of the analysis was the use of propensity score matching, which is important because it helps to adjust for group differences (in a non-experimental design). Analyses were conducted on youth who received FPP treatment and the control group youth who did not receive treatment. All youth in this evaluation were adjudicated to juvenile probation.

Chapter 5, Results, provides the findings from this study, based on the research questions and hypotheses. With the exception of the descriptive table (Table 1), all tables and figures in this study, are in Chapter 5. In Chapter 6, Discussion, recaps the findings of Chapter 5, but also delve into the limitations, including the cost of such programs and touches on treatment infidelity. The final chapter, Chapter 7, is the Conclusion. It provides a very brief description of what is lacking in family preservation studies, namely in juvenile justice. Furthermore, it gives a perspective on using PSM, and what the findings may mean to stakeholders.

Purpose of This Study

The purpose of this dissertation is to examine the effectiveness of participation in TJPC's IHFSP, with respect to the rate of removal from the juvenile's home into placement (non-secure

or secure). *Placement* refers to either a non-secure residential home licensed by the state to provide care, or a secure facility, certified by a state agency.¹

Accordingly, this study builds upon the literature in the following ways. First, because this program was funded by government agencies, it is important to examine a program's success to ensure a program is working as designed. Elliott (1998 p. xi; in Alexander, Pugh & Parsons, 1998) explained the importance of justifying expenditures to stakeholders (e.g. taxpayers or other funders) by ensuring programs deliver substantial results. Welsh and Farrington (2005) emphasized evidence-based, systematic reviews since those methods used are very comprehensive. Second, the findings from current research on FPPs, in both child welfare and juvenile justice, have been mixed. Although a majority of the MST programs, several years post-treatment, have shown successful outcomes, including low rates of arrests (Henggeler, 2011), some MST evaluations have not had successful outcomes. Lastly, families without coherent relationships, those with a sufficient amount of chaos which can lead to displacement, may benefit from an FPP where all family members are invited to participate. Families may learn new techniques to improve relationships, including how to deal with their own issues in lieu of relying

¹ According to Chapter 343 of the Texas Administrative Code (TAC), there are different types of secure facilities in Texas. One is a *Secure Juvenile Pre-Adjudication Detention* facility, similar to an adult jail. If a youth is awaiting a court hearing, he or she may be placed in this type of facility. However, a judge may order a youth to be placed in a secure facility, long-term. During this time, the youth resides in the facility (usually 6-12 months). The State of Texas calls these *Post-Adjudication Correctional Facilities*. These two types of facilities may actually be in the same building, under one roof, but per TAC, Pre- and Post-adjudicated juveniles must be housed in separate dorms, per se, attend school in different classrooms, participate in recreational activities at different times or locations, etc., so their paths do not cross (TAC, Chapter 343). At the time these data were collected, the Texas Youth Commission (TYC) essentially was the equivalent of an adult prison (as opposed to a jail). Currently, a former TYC facility is now referred to as TJJD (Texas' Office of the Attorney General (OAG), 2016). Additionally, the State of Texas may certify a juvenile to be charged as an adult. Although the law requires certain offenses for this to occur, a youth may be certified and sentenced to the adult correctional system, the Texas Department of Criminal Justice's (TDCJ) Department of Corrections (TDC; OAG, 2016).

on the state (government) to rescue them. Hence, an evaluation of two Texas FPPs involving delinquent youth may add to the existing literature by assisting in distinguishing how program implementation effects both placement rates and rearrests among treatment youth.

CHAPTER 2

LITERATURE REVIEW

Since gaining popularity in the 1980s, in-home family visits have been used to deliver services to the entire family (Heneghan, Horwitz & Leventhal, 1996). These services can include therapy or referrals to welfare agencies and organizations. They are usually provided by professionals, such as social workers or psychologists. The concept, as previously mentioned, is an effort to keep families unified when at least one child is at risk of being removed (Heneghan et al., 1996).

There are several models of FPPs. Some focus on child welfare, others on juvenile delinquency.² In the case of child welfare, a child's removal may be due to continued abuse and/or neglect by the caretaker, often the parent. In juvenile justice, the youth may be removed due to disobeying probation rules, which includes continuing antisocial behavior and/or other illegal activities.

The first section of this chapter begins by listing the theories associated with family preservation. Because FPPs began in the child welfare field, and not criminology, a very brief overview of these perspectives is provided. A fourth theory is thoroughly detailed, namely based on the similarities it has within those in criminology.

The second section of this chapter describes some general objectives shared among FPP models. Following the objectives, a synopsis of each of the more popular FPP models in child welfare and juvenile justice is provided in the third section. Examples of FPP models include

² Several studies have evaluated the similarities between child welfare youth and juvenile delinquents. For a synopsis on the overlap, see Chiu, Ryan and Herz (2011); Herz, Krinsky and Ryan (2006); or Huang, Ryan and Herz (2012).

Homebuilders, Wraparound, Functional-Family Therapy (FFT) and Multisystemic Therapy (MST). Within each individual model, the requirements specific to each is given. All of these programs have shown both successful and unsuccessful outcomes in relation to the objectives. Studies reflecting both are provided.

Participation in FPP within juvenile justice, as well as detaining and adjudicating to probation in general, is aimed at deterring future crimes (Weiner, 1989). Recognizing what leads to recidivism, not only among juveniles but adults as well, is imperative for the creation of effectual policy (Mbuba, 2005). Therefore, studies relevant to the risk factors leading to criminal behavior are addressed in the fourth section. Specifically, the following risk factors are discussed: onset age, sex, race, gang membership, abuse, previous offending, and severity of offenses. These risk factors have been associated with chronicity and severity among offenders (Farrington & Welsh, 2007; Mulder, Brand, Bullens & van Marle, 2010; Wasserman & Miller, 1999).

Chronicity, according to Loeber, Farrington and Waschbusch (1999, p. 25), has been defined several ways, although most studies have defined it “more than four official offenses”. Wolfgang, Figlio and Sellin (1972) defined chronic offenders as those with five or more police contacts. Loeber and colleagues (1999) explained that some non-US studies on adult offenders have defined chronicity as nine or more offenses, but some have counted as many as 34 offenses. Loeber and colleagues (1999) also stated that researchers seldom use data on violent delinquency from self-reports. Mulder and colleagues (2010) defined severity as the category of new crimes, the rate of offending, and the degree of harm produced. Therefore, it is vital to know which risk factors are associated with chronicity and offense severity.

Theoretical Perspectives in Family Preservation Program Models

The section of this chapter provides an overview of the theories incorporated in family preservation models. FPPs have historically been based on four theories: Crisis Intervention; Ecological; Family Systems and Social Learning (Barth, 1990). Of these, only social learning has an in-depth overview in relation to criminology, and is presented below.

Crisis intervention theory. The premise behind crisis intervention involves assisting families experiencing a crisis, focusing on intensive help for each member of a family to facilitate change (Cheung, Leung & Alpert, 1997). In crisis intervention theory, as in all FPP models, actions are taken to prevent removing the child from the family. Services are provided to preserve the family, such as addressing how to help families learn better skills to cope in crises (Altstein & McRoy, 2000). The crisis intervention model is based on appropriate mediation, occurring within one day of a family being referred. The delivery of services, and the therapists who work with the families, modify their involvement precisely for each family (Altstein & McRoy, 2000).

Kinney, Haapala and Booth (1991) described that when people are in a crisis, they are often willing to discuss their painful issues, often due to feeling more vulnerable. That vulnerability may help them seek professional assistance (Kinney et al., 1991). Using crisis intervention in a timely manner, according to Maluccio (1990), can help facilitate change among those in crisis.

On the other hand, Barth (1990) stated that different versions of crisis theory elude to the idea that intervening with a family in crisis is best when they are not in “full” crisis. However, as Barth (1990) explained, the literature has not been clear regarding timing of assistance and type. Barth (1990) continued to explain that there is no evidence supporting the assumption that a family

having to wait for services (as opposed to an intervention team responding within 24-hours) equates to a reduction in effective services.

Ecological theory. The perspective of ecological theory encompasses pinpointing how one's environment changes individual growth and well-being (Shallcross, 2013). Ecological approaches focus on increasing interconnected partnerships using wide-spread planning for services in a number of areas (Goldstrom, Jaiquan, Henderson, Male & Mandersheid, 2000). An individual's environment includes not just the immediate family and their home environment, but includes both cultural and social aspects which can affect a family, including schools and neighborhoods, as well as the less immediate forces, such as social attitudes, institutions and laws (Garbarino & Abramowitz, 1992, pp. 11-12). Pullmann, Kerbs, Koroloff, Veach-White, Gaylor and Sieler (2006) explained that an ecological perspective is at the center of Wraparound, FFT, and MST. Thus, when intervention models such as these include the youth's "systems" (their community, such as school, their family and friends) *and* they address the multiple factors behind delinquency, the combination has led to a decrease in youth committing criminal activities and in repetitive offending (Pullmann et al., 2006, p. 378).

Family systems theory. Similar to ecological theory, family systems theory focuses attention on the whole family by incorporating strategic therapy and interactional family therapy (Barth, 1988). Instead of focusing only on the individual, the technique aims at changing the family organization (Minuchin, 1974; 2009). Family-systems theory recognizes that a person's circumstance is based on the past, but also includes the present (Minuchin, 1974; 2009). It also includes subsystems within families and, similar to ecological theory, it examines how the family interacts in their community (Nelson & Landsman, 1992).

Because one premise of family systems theory is to aid the family as a whole, intervention teams accomplish this by building strong family structures (Nelson, Landsman & Deutelbaum, 1990). Therefore, even though there may be an individual in the family whose deviant behavior led to the family's involvement in therapy, this individual would not be singled out as the only one in need of treatment (Klein, Alexander & Parsons, 1977).

Although not discussed in this dissertation, Hirschi's (1969) social control theory in criminology is a likely equivalent to family systems theory. Both theories recognize that the family and community can contribute to delinquency and crime.

Social learning theory. In addition to the aforementioned theories, family preservation models incorporate social learning theory (SLT; Barth, 1990). Social behavior is learned through both imitation and direct conditioning and focuses on cognitive processes one learns in their environment, which can then suggest generalizations of cause and effect (Akers, Krohn, Lanza-Kaduce & Radosevich, 1979; Kunkel, Hummert & Dennis, 2006). SLT provides an explanation of the progression of how humans attain their behaviors (Kunkel et al., 2006). Expectations, penalties (punishment/discouragement) and rewards (support; positive reinforcement) are developed through observations and direct experiences (Akers et al., 1979; Altstein & McRoy, 2000; Barth, 1990; Haynie, 2001).

According to Barth (1990), because learning occurs in the same environment families live, having an in-home program therapist or intervention team observe the family's interactions is beneficial. The therapist can observe first-hand how, for example, parents discipline their youth. In doing this, the therapists are able to intervene as necessary and teach family members how to reward each other, enhancing positive changes in behavior (Barth, 1990). To encourage changing

behaviors when working with families using a family preservation model, a reward system with the family may be beneficial (King, 2001). Rewards may include praise (Chen & Vazsonyi, 2010) or giving a child candy (Patterson et al., 1967). Because the goals in FPPs include working with a family to avoid removing a child from his or her chaotic home (King, 2001), SLT helps to achieve goals by examining the cognitive characteristics of harmful actions (Beck, Kovacs, & Weissman, 1979).

In criminology, social learning theory has been applied in reference to any “social behavioristic approach” (Akers & Lee, 1996, p. 318). SLT in criminology has evaluated cognitive behaviors believed to influence peers in delinquent acts, such as cigarette smoking (Akers & Lee, 1996). A great deal of the work in SLT in criminology has been written by or has included Ronald Akers as a co-author (e.g., Akers, 1968; 1973; 1977; 1985; 1990; 1996; 1998; Akers et al., 1979). Akers’ earlier work with Burgess (Burgess & Akers, 1966) reformulated differential association theory, which evolved from the principles of symbolic interactionism (Sellers, Winfree & Akers, 2012).³ The core notion in what Burgess and Akers’ (1966) referred to as differential association-reinforcement theory was that rewards strengthen behavior (positive reinforcement) as does

³ The theory of symbolic interactionism was developed by George Herbert Mead (Bernard, Snipes & Gerould, 2016). In Mead’s theory, ‘meanings’, a cognitive factor, are what determine behavior (Bernard et al., 2016). Sutherland (1947) expanded Mead’s idea regarding meanings by explaining that an essential component in one’s decision to break the law is how that person interprets their own social conditions, and not the actual conditions, per se (Bernard et al., 2016; Sutherland, 1947). Mead contended that people create ‘definitions’ of their circumstances derived from experiences. Thus, Sutherland (1947) took Mead’s interpretation of ‘definitions’ (whatever they may be) and claimed that one may violate the law in terms of how he or she defines their own situation (Bernard et al., 2016). The overall premise of differential association theory, originally devised by Sutherland (1947), is that delinquent behaviors are learned by interacting with others. These ‘others’ provide both favorable and unfavorable differential definitions of crime through symbolic and direct communication (Sellers et al., 2012; Sutherland, 1947). Additionally, differential association theory states that when certain conditions are present (such as being exposed to definitions that violate the law), they overpower conventional definitions, making it easier for one to learn criminal behavior (Sellers et al., 2012; Sutherland, 1947).

avoiding punishment (negative reinforcement). However, behavior is also weakened by positive punishment, which Burgess and Akers (1966) refer to as aversive stimuli. Behavior is also weakened by negative punishment, a reward deficit (Burgess & Akers, 1966).

The aforementioned pattern of the theory has continued throughout Akers' writings on SLT. For example, in 1973, Akers published his first edition of the book *Deviant Behavior: A Social Learning Approach*. In it, he reframed the work of Burgess and Akers (1966) on differential association-reinforcement theory, and presented it as social learning theory (Akers, 1985; 2000; Curran & Renzetti, 2001). It was in this original edition of Akers' 1973 version of the theory that he applied SLT to deviance, delinquency and criminal behaviors in general (Akers, 2000).

Through many modifications of SLT, Akers developed and analyzed SLT's concepts, closely examining and testing the assertions of SLT (Akers, 2000). Other evaluations of the theory, which have tested the variables associated with SLT (differential association, differential reinforcement, definitions and imitation; explained in the next paragraph), include delinquency among peers (e.g., Akers & Lee, 1996; Krohn, Skinner, Massey & Akers, 1985; Haynie, 2002; Thornberry, Krohn, Lizotte & Chard-Wierschem, 1993; Warr & Stafford, 1991) and the role of parents (Warr, 1993). These studies have shown support for the theory.

In 1977, Akers summarized SLT in his second edition book on deviant behavior, which he and his colleagues then tested using data collected while they were research staff at Boys Town in Nebraska (Akers et al., 1979). Akers and colleagues' (1979) direct analyses of the reinforcement hypothesis examined the correlation between five social reinforcement scales and use of illicit substances (use and abuse of marijuana and/or alcohol among teenagers). Their sample contained over 3,000 youth participants of both sexes who completed a self-report survey after parental

permission was obtained. The questionnaire was distributed at the youths' schools. The youths' grade levels were 7th through 12th and the location of the youth were from three Midwestern states in seven communities (Akers et al., 1979). Between two and eight weeks after the initial survey, five percent of the original sample were re-interviewed. The intent of the follow-up was to check for reliability and validity (partial) on original responses and to obtain more descriptive information (Akers et al., 1979).

Akers and colleagues (1979) outlined the process in SLT which specifies and arranges the interrelationships with the other variables in a distinct order. Of the five concepts within the social learning variables tested, Akers and colleagues (1979) began with differential association. Differential association refers to the identity and interaction with different groups (e.g., perceptions of peers and adults whose opinions matter to the individual). It is the individuals in these interrelationships (parents, friends) who provide the social environments needed for one's exposure to definitions (favorable or unfavorable), imitation (modeling of those admired), and differential reinforcement, both socially (independently) and socially/non-socially (combined), for abstinence or use of any illicit substance to occur (Akers et al., 1979).

The test by Akers and colleagues (1979) on the general hypothesis of social learning theory was two-fold. First, the authors wanted to determine if there was a correlation between adolescents' use of alcohol and marijuana with each of the prominent sets of variables. Second, they wanted to know if a correlation existed with all of the variables combined (Akers et al., 1979). As predicted, based on previous research, they found a very strong correlation between differential peer association and alcohol use (.68) and between differential peer association and marijuana (.79). These statistics are presented in their correlation matrices (Akers et al., 1979).

Akers and colleagues (1979) then tested the effects with the different subsets of the variables, then separately. In the full regression equation using all of the independent variables, the model with drinking behavior explained 55 percent of the variance. The model with marijuana behavior explained 68 percent of the variance (Akers et al., 1979). When each variable's effect was tested separately with the dependent variables, alcohol and drug use, differential association explained more variance. As the authors discussed, SLT clearly and powerfully demonstrated whether or not youth abstained from or used either substance. That is, within this sample of youth, their behavior indicated that they do drink alcohol or use drugs to the point that their "behavior has been differentially reinforced through association in primary groups" (Akers et al., 1979, p. 647). Lastly, among the youth whom Akers and colleagues (1979) called abusers, the analyses revealed that alcohol and marijuana abuse was strongly related to the social learning variables, although the proportion of variance was lower in abuse than the explained variance for use (Akers et al., 1979).

In sum, Akers and colleagues' (1979) study showed that the concept of social learning among deviant adolescents in regards to alcohol and drug use were strongly correlated in their sample. As SLT suggests, friends provide social reinforcement or negative consequences (punishment) for abstaining or using (Akers et al., 1979).

In Akers' SLT and social learning in FPPs, both are based on operant conditioning (Akers et al., 1979; Alexander, Waldron, Robbins & Neeb, 2013). Burgess and Akers (1966) explained that operant behavior is based on past environmental situations, as well as present ones. FPP therapists who use the SLT foundation work with families to stress how negativity affects interactions and behaviors amongst each family member (Alexander et al., 2013). Negative

interactions can potentially increase adverse effects, such as their child being placed in foster care (Alexander et al., 2013; Altstein & McRoy, 2000).

Kinney, Haapala, Booth and Leavitt (1990) explained that in FPP therapy, when working with the families, the use of consequences must be established, in addition to direct approaches, delivered in a positive manner. The strategies must encourage behavior that is acceptable while discouraging problematic ones (Kinney et al., 1990). FPP services, namely the Homebuilders' model, emphasize hard work, commitment and tenacity within the family in order to bring coherence (Berry, 1991).

Homebuilders' model, described in length under the description of FPP models, is based on crisis intervention theory, but according to Nelson and colleagues (1990), SLT is the theoretical base for the mediations employed in the Homebuilders' programs most often. Homebuilders' founders contend that "all families deserve a chance to learn to resolve their problems together" (Kinney et al., 1990, p. 35). Past studies have shown that young offenders' (especially status offenders') behaviors have changed after SLT was employed with both the youth and his/her family (Dore, 1991). SLT teaches parents (and others living in the home) intervention techniques for preventing youth recidivism and/or removal (Alexander & Parsons, 1973; Dore, 1991).

Program Objectives

In the realm of FPPs, these home-based programs aim to improve the entire family's functioning and/or deal with a youth's delinquency. And, as previously stated, the most prominent intent of FPPs is to prevent unnecessary placement to residential care (Bagdasaryan, 2005) as long as it is in the best interest of the child and family (Fluke, Corwin, Hollinshead & Maher, 2016).

This section is divided into three subsections. The first defines and explains the role of family functioning, one of the universal objectives in FPPs. The second subsection gives a short overview of the delinquency prevention factor. The third subsection addresses the requirement of avoiding placements by empowering families. Some FPP studies address the successes and failures in regards to family functioning, juvenile delinquency, and placement prevention. These studies are embedded within each objective.

Family functioning. A range of approaches are captured in FPPs. One approach involves producing optimistic changes in how a family functions (Diamond, Morris & Caudill, 2011). Pecora's (1991) examples of family functioning include a family being able to make modifications, maintain consistency (including discipline and establishing household rules), communicating better, resolving family conflict on their own, and offering social support.

Families function on a number of levels. As with any family, their needs incorporate basic needs, both physical and personal. Physical needs pertain to food, water, shelter and clothing. Personal needs can include the convoluted needs of self-actualization (e.g., realizing one's potential). All functioning families must provide basic needs, as well as safety, nurture, and good health (Thomlinson, 2002).

Gauging how a family functions encompasses joint responsibilities, which a family must achieve. Effective tactics require application for implementation. A range of characteristics, including generational, contextual and cultural, may influence what a family must undertake to function as a healthy family (Steca, 2014).

Outcomes in the studies among child welfare and juvenile justice youth involved in FPPs have been divided. In other words, some studies have shown improvements in family functioning.

Other studies found neither or had mixed results. For example, Meezan and McCroskey (1996) reviewed the success of an FPP in Los Angeles County where 240 families had been referred from the Department of Children and Family Service (DCFS). There were 111 families randomly assigned to the treatment group; 129 in the control group. The study's measures, both pre-and post-treatment, looked at children's behavior, mental status of parents, and overall family functioning. Examples of family functioning in this study included a family's financial conditions (management of and financial stress) as well as living conditions (such as the safety of a family's home).

Based on post-evaluation measures, improvements in family functioning were reported by the families and caseworkers in the treatment group. Though small, they were statistically significant. Among the control group, there were not any improvements in family functioning.

In addition to analyzing child behaviors and parents' skills among at-risk families, Duppong-Hurley, Griffith, Ingram, Bolivar, Mason and Troutand (2012) also examined family functioning. Family functioning was measured pre and post program intervention by administering the North Carolina Family Assessment Scale (NCFAS; Kirk and Reed-Ashcraft, 2001). The NCFAS, is an instrument with a reputation for being very reliable in family functioning, and was designed to measure each of the following domains: parental capabilities, family interactions, child well-being, family safety and environmental factors (Duppong-Hurley et al., 2012).

Duppong-Hurley and colleagues (2012) used data from a Boys Town In-Home Family Program serving 44 families referred from the Department of Children and Families. Though the authors compared several components of family functioning, they found the families in the sample reported substantial improvements in the family environment, family interactions, and safety at discharge.

Juvenile delinquency. In hopes of preventing youth from taking a criminal path and/or to reduce the rates and seriousness of delinquency, early prevention is key. Wasserman and Miller (1999), as well as other researchers (e.g., Farrington & Welsh, 2003; Loeber & Farrington, 2000; 2011; Tremblay, Pihl, Vitaro & Dobkin, 1994) have summarized different prevention (and intervention) programs for families with children and youth at risk of delinquency. In their book chapter about preventing violent and serious juvenile offending, Wasserman and Miller (1999) divided their compilation into programs targeting risk factors that are early developmental precursors to offending (violent and serious) and prevention programs that target those same risk factors. For example, they listed and described programs for preschoolers and younger (infants and toddlers), those who are elementary-school aged, and interventions for adolescents (Wasserman & Miller, 1999). Those included by Wasserman and Miller (1999) are FFT, family preservation (Homebuilders) and MST.

In an overview of non-name brand FPPs, in regards to juvenile delinquency, some studies' results do not exhibit a decrease of criminal acts among youth. For example, in their study of 1,360 male juvenile probationers, Diamond and her colleagues (2011) assessed outcomes regarding recidivism rates between two groups: FPP and a sample of non-participants. Slightly over 21 percent of the youth were in the FPP treatment group. The FPP youth had been court-ordered into the program; the control sample had not. Unlike MST program findings, this FPP was not found to have an impact on recidivism rates among the treatment group.

On the other hand, Bank, Marlowe, Reid, Patterson and Weinrott's (1991) study involving chronic male juvenile delinquents, some of whom were randomly assigned to treatment involving parent-training, others were not, the authors found both groups (treatment and control) had reduced

rates of offending. In this study, 55 families were either randomly assigned to a treatment group or a control group. The treatment group participants were involved in a parent-training group. Parents in this group participated in weekly therapy sessions. Generally, their sons participated as well. These treatment-group parents were encouraged to hold their sons responsible for their actions (for example, require receipts for purchases). Parents also learned how to recognize both pro- and antisocial behaviors, along with other risky behaviors. In comparison, the control group families participated weekly in 90-minute therapy sessions (no special parent-training). Additionally, several (over 50 percent) of the control-group boys participated in group counseling for drug treatment. These sessions occurred weekly and averaged two-hours per week (Bank et al., 1991).

The average number of therapy hours between the two groups was comparable (Bank et al., 1991, p. 22). The treatment group received, on average, 44.8 hours; the control group, 50 hours, on average. During their year in treatment, the boys whose parents were in the parent-training treatment group committed fewer serious crimes. In the first year of the three-year follow-up, the control group did equally as well (Bank et al., 1991).

Placement prevention. As some of the research below describes, preventing a youth from being removed from home is a tangible possibility when positive interventions occur with dysfunctional families before the point of removal. The path to rebuilding family relationships takes time and patience. Improving relationships between family members are characteristic to inspiring families, which can be done through empowerment. When problems exist, altering them or changing them is paramount. By assisting families to change, through ability or choice, offers youth and families hope (Paylo, 2005). At the personal level, empowerment centers on methods in

which an individual will develop self-efficacy and have a sense of power (Gutiérrez & Ortega, 1991), likely never felt before among dysfunctional families.

Because empowerment relies on the development of particular, individualistic skills, humans are more adept to influence others. Empowerment also allows one to change the perception of him or herself due to the psychological process it provides (Gutiérrez & Ortega, 1991). Gutiérrez and Ortega (1991, pp. 24-25) further explained that through the empowerment process, there is an increase in being responsible, reducing the feelings of self-blame, developing a sense of group identity, and having greater self-efficacy.

As stated above, both the treatment and control groups in the study published by Bank and colleagues (1991) committed fewer serious criminal acts following their specific course of treatment. However, in relation to placement prevention, the treatment group in comparison to the control group, was found to have actually spent a significantly shorter amount of time in institutional (community supported treatment) settings (Bank et al., 1991). Based on what the treatment-group of parents had done to strengthen family bonds, the results could be a result of the empowerment these families espoused following several months of therapy.

Overview of Family Preservation Program (FPP) Models

Although there are a number of FPPs, only four common ones from child welfare and juvenile justice are described in detail within this study. The better-known models include Homebuilders (Pecora, Fraser, Haapala, & Bartlome, 1987), Wraparound (Northey, Primer & Christensen, 1997), FFT (Alexander & Parsons, 1982), and MST (Henggeler, Melton & Smith, 1992). Each of these models aim to prevent residential placement outside the home. In the context of the criminal justice system, long-term goals also include an absence or reduction of new referrals

(Cunningham, 2002) or a reduction in the severity of criminal act(s) (Mulder et al., 2010). Of the programs designed to work specifically with young offenders, all have shown favorable results.

Below, two models, Wraparound and FFT, each include a study involving juvenile delinquents. MST, for which TJPC's IHFSP model sought to imitate, includes several studies that involved aberrant youth, often adjudicated to juvenile probation. Youth in each of the MST studies were on probation for a variety of offenses, including serious and violent ones (Borduin, Mann, Cone et al., 1995; Henggeler et al., 1992; Schaeffer & Borduin, 2005).

Studies that demonstrated a model's ability to prevent and/or reduce delinquency rates, or to decrease offense severity, are described below. These are embedded within the FPP models described. Lastly, each model has at least one study pertaining to the outcome, placement prevention.

Homebuilders. The foundation for FPPs is Homebuilders (Altstein & McRoy, 2000; Bagdasaryan, 2005; Forsythe, 1992; King, 2001). Forsythe (1992) explained that two novel psychologists who had been working with distraught youth living in residential placements were given the challenge to assist dysfunctional families in their homes. The concept consisted of helping these families learn skills they had previously not used. This also included teaching families other ways to improve handling their problems instead of relying on placing children in foster care (Forsythe, 1992).

According to Altstein and McRoy (2000), Homebuilders was not only the first FPP, it is also the most replicated. The model has a reputation for having an elevated rate of success in preserving families. Miller (2006) reexamined a report she and her colleagues (Aos, Lieb, Mayfield, Miller & Pennucci, 2004) had completed two years prior, at the request of two

Washington State legislators (Miller, 2006). This rigorous evaluation of Intensive Family Preservation Services' (IFPS) programs at the State of Washington's Institute for Public Policy. The programs Miller (2006) included were Homebuilders, IFPS that closely modeled Homebuilders (included because they contained 13 or more components found in Homebuilders) and 10 evaluations that only had five or fewer Homebuilders' components. The studies Miller (2006) used did not list the ages of youth served but did indicate a reduction in out-of-home placements and lower incidents of abuse and neglect. Furthermore, Miller (2006) reported that only the Homebuilder programs produced a net benefit of over \$4,000 when estimating effects of crime, use of drugs and alcohol, high school graduation rates, and other factors.

Dutch researchers, Al, Stams, Bek, Damen, Asscher and van der Laan (2012) completed a meta-analysis on 20 intensive FPPs which included over 31,000 participants. Ten of the studies were described as Homebuilders, but only one indicated work with juveniles (age 13). Although the authors did not separate and analyze the Homebuilders' studies separately, Al and colleagues' (2012) overall findings indicated that intensive FPPs had a positive, though medium effect on family functioning (family interactions and factors on parenting). However, they did not find an effect in preventing out-of-home placement, except among families with a multitude of problems (Al et al., 2012). Furthermore, out-of-home placement rates were moderated by the characteristics of the clients (e.g., parent age, marital status, ethnicity, age, and sex of child); characteristics of each program (e.g., size of caseload); characteristics of the study (e.g., quality and design); and lastly, publication characteristics (e.g., year, type and journal impact factor; Al et al., 2012).

In addition to the program objectives mentioned previously, Homebuilders also has the components that differ from traditional casework services (Forsythe, 1992). In relation to the

typical requirements of FPPs, the models' components include intensive services (meeting as few as five hours per week, but as many as 20 hours). And as with all FPPs, the caseloads of the caseworkers are small (Al et al., 2012; Forsythe, 1992). Additionally, Forsythe (1992) pointed out that in the Homebuilders' model, the range is working with two to three families simultaneously. However, some caseworkers work with six to eight families at time (Bagdasaryan, 2005). Moreover, the services are limited to a short-term timeframe (e.g., no fewer than four weeks, but no more than six; Al et al., 2012). Meeting times are flexible in order to work with family members' schedules (Al et al., 2012; Bagdasaryan, 2005). Additionally, therapist(s)/team members are available 24/7 (in the event a crisis occurs within the family at any time, day or night), and the services range from providing mental health therapy to supplementary funding (Bagdasaryan, 2005; Forsythe, 1992).

In regards to the theoretical perspective, the basis of Homebuilders is from a crisis intervention perspective (families in crisis are open to changes; Caplan, 1964; Dagenais, Brière, Gratton & Dupont, 2009). Additionally, the model uses a systems approach (based on Family Systems Theory, previously discussed), which includes emphasizing the importance of family and community interactions (Bagdasaryan, 2005; Forsythe, 1992). Using a systems approach allows a family to develop structures (boundaries and parental power; Minuchin, 1974). As research has shown, spending time with family has the capability to reduce and eliminate peer influence (Warr, 1993). The reduction of negative peer influence may exist as a result of parents keeping a close eye on their children, which reduces opportunities for the youth to get into trouble (Hirschi, 1969; Warr, 1993). The philosophy of the systems approach includes therapy in the family's home, which allows for a better assessment of the family's situation (Nelson et al., 1990). By being in

the home, the therapist has the opportunity to watch the family's interactions and behaviors and intervene when the family needs positive feedback or directions (Woods, 1988).

Community interactions are necessary, not just for positive family relationships, but for school achievement and positive peer relationships (Stambaugh et al., 2007). Research indicates that communities with a nurturing environment have a role in the lives of youth, helping them become mature, responsible, capable and law-abiding citizens (Howell, 1995). For at-risk youth, community-based police officers may help monitor their behaviors (Howell, 1995).

Homebuilders' programs were established to work with families in crisis and at imminent threat of having one or more children removed from their home (Forsythe, 1992). The program was not initially designed to work directly with youth involved in criminal activity. However, in 1976, Homebuilders expanded beyond child welfare to include a juvenile court project funded by the federal government (National Family Preservation Network, 2018).

Kinney, Madsen, Fleming and Haapala's (1977) study on Homebuilders involved 121 family members among 80 families. Their report did indicate that some of the families had some criminal issues. For example, 27 percent of families indicated there were issues of runaway behavior (occasionally a precursor to more serious crimes), and nearly 31 percent of families reported incorrigibility. Slightly over 17 percent of the families had reported additional physical violence. However, the authors did not specify if this was parent-to-child violence, child-to-parent violence, or both. The preliminary results of Kinney and colleagues' (1977) study showed that it was successful in preventing placement outside the natural home. The results indicated that for 121 of the 134 family members serviced, there was a financial gain that exceeded \$2,300 per client. This is in comparison to the costs projected for a placement. Three months post-treatment, the

level of success remained strong; 97 percent of the initial clients who avoided placement continued to do so (Kinney et al., 1977).

Miller (2006) assessed the costs and benefits of several FPPs. They reviewed evaluations from 14 program sites, including the Homebuilders' model. The studies that Miller (2006) had reviewed all used rigorous experimental designs, either well-controlled quasi-experimental studies or randomized control trials, with each also employing a comparison group. When the authors included all 14 studies, the programs failed to produce a significant effect on out-of-home placements. However, among the four programs with validated fidelity to Homebuilders, Miller (2006) found the program's outcomes included lower abuse rates and fewer placements outside the home. Additionally, Miller (2006) estimated the effects of several items, including crime, high school graduation, disordered use of alcohol and illegal substances, and found a benefit-to-cost ratio of \$2.54 (benefits per dollar of cost) in favor of Homebuilders (but their finding did not hold for other FPPs outside of the State of Washington).

Wraparound services. The ideology behind Wraparound services is strengths-based (Carney & Buttell, 2003). As the National Wraparound Initiative's website described, the phrase *wraparound* was coined in the 1980s (National Wraparound Initiative, 2019). Wraparound encompasses a holistic and intensive approach when engaging with those who have complicated needs, but can continue to live in their own homes, staying in their community (National Wraparound Initiative, 2019). Stambaugh and colleagues (2007) explained that the aim of Wraparound, a system-level intervention, is to "wrap" families around services that exist (in communities). That way, family issues are addressed in a complete, ecological manner.

Unlike Homebuilders and MST, Wraparound is not a brand-name, but instead a generic FPP in which programs differ from site to site. Per the National Wraparound Initiative (2019), Wraparound is not considered a treatment. Carney and Buttell (2003) described it as a process geared at achieving optimistic results, drawing on several other service models. Walker and Bruns (2006) explained that Wraparound is not based on theory, *per se*. In lieu of Wraparound being overseen by one researcher or a developer requiring consistency in its execution, it is modified to fit into the realities and needs of a community (Walker, Bruns, Conlan & La Force, 2011). As a result, however, Farmer, Dorsey and Mustillo (2004) pointed out that because each program employs different strategies and provisions, it is difficult for researchers to conduct systematic evaluations of programs called *Wraparound*.

As with the other types of FPP models, Wraparound uses a team-based approach. This approach occurs at the inception, which includes the planning phase (National Wraparound Initiative, 2019). According to Stambaugh and colleagues (2007), and also in-line with other FPPs, the aim of a Wraparound program is to aid youth involved in child welfare, education, juvenile justice and mental health.

Carney and Buttell's (2003) program evaluation on the Wraparound model included a sample of 141 court-ordered youth. The study used both a pre- and post-tests and included a control group. The youth were deemed delinquent and/or unruly by the identified county. Participants and nonparticipants were randomly selected to receive the wraparound services or juvenile probation services as usual. In addition to the delinquent youth and his or her parent(s), the intervention team for the treatment group were mostly nonprofessionals (church members, neighbors, significant others, other family members). The minimum number of meetings required was only one time per

month. The authors noted that all the teams had met at least three times total. There was no timeframe required for the program either. Youth could drop out when they wanted, e.g., after the problems were solved, when the youth turned 18, or moved out of the county. Each group contained youth arrested for both misdemeanors and felonies. Among the serious felonies, five youth in the study had very serious offenses (one for attempted robbery; one for aggravated assault and three for arson; Carney & Buttell, 2003).

Although the requirements were not as rigid as most FPPs, Carney & Buttell (2003) reported that the youth in the treatment group ran away less, missed school less frequently, were suspended from school less, were not as assaultive and were picked up by the police less frequently than the control group youth. However, the findings were not statistically significant between the two groups regarding number of arrests or incarceration rates while involved in the program. At six, 12 and 18-month follow-ups, this finding held (Carney & Buttell, 2003).

Pullmann and colleagues (2006) also published results from an analysis on delinquent youth involved in a Wraparound program. However, the delinquent participants who received Wraparound services in this study all had mental health problems. In an effort to collaborate with the county mental health department, juvenile justice officials in Clark County, Washington identified that many of the youth detained frequently in the juvenile detention facility had mental health diagnoses, such as emotional and behavioral disorders. Due to a delay in starting the program, 98 youth whose probation terms ended, could not be placed into *Connections*, the juvenile department's wraparound program. These youth served as a historical control group since during their probation term, they had received conventional mental health services. The treatment group had 106 youth enrolled in it (Pullmann et al., 2006).

According to Pullmann and colleagues (2006), the *Connections*' intervention team included four staff: a Mental Health (MH) Professional, a Family Specialist (who was, or had been at one point, the caregiver of a delinquent youth with mental health issues), and two juvenile probation staff. The MH worker and Family Specialist were always available (24/7). The team of staff members had a caseload of 25 families. Similar to the Carney and Buttell (2003) Wraparound study with juveniles, the *Connections*' team was also only required to meet at least once a month with the youth and families (Pullmann et al., 2006).

In order to include as many participants in the study as possible, the follow-up time for both the treatment group (106 participants) and the control group (98 participants), was at least 790 days (Pullmann et al., 2006). Pullmann and colleagues' (2006) findings were deemed successful. The *Connections* youth were significantly less likely to recidivate than the comparison group. Furthermore, the *Connections* youth were also less likely to recidivate with any type of felony (the authors did not define recidivate). Lastly, the youth involved in Wraparound spent less time locked in a detention facility, compared to the control group youth (Pullmann et al., 2006).

Functional-Family Therapy (FFT). Functional-Family Therapy (FFT) places a strong emphasis on behavioral and social learning theory and techniques (Gordon, Arbuthnot, Gustafson & McGreen, 1988). Geared for adolescents, it focuses on, and addresses, factors that have an impact on the environment in which youth live (Alexander et al., 2013). However, it involves the whole family in the treatment process (Chilenski, Bumbarger, Kyler & Greenberg, 2007). FFT's were originally referred to as "behavioral-systems family therapy" (Gordon et al., 1988) or "systems-behavioral" (Alexander & Barton, 1980; Alexander et al., 2013).

According to Alexander and colleagues (2013), FFT provides short-term therapy (averaging 12 sessions with families and youth). The intervention model is rigorous (between three and four months) and has been used with both drug and alcohol-dependent youth, as well as with delinquent juveniles (Alexander et al., 2013).

In Gordon and colleagues' (1988) FFT study involving 16 females and 38 males, all Caucasian juveniles, 27 were placed in a treatment group that participated in an in-home family therapy program for an average of 16 sessions. All treatment youth had been court-referred and were either at-risk of placement or had recently been placed out of the home. Twenty-seven lower-risk juvenile delinquents, adjudicated to probation, served as the control group.

Recidivism rates among the different groups of delinquent youth were compared by Gordon and colleagues (1988). The treatment group participated in a behavioral-systems family therapy group while the control group received regular probation services. Assignment was not random due to judicial orders from juvenile court. Gordon and colleagues (1988) explained that the court clerk who determined which youth went into the treatment group chose youth whom she felt had serious family conflicts. Yet, as Gordon and his colleagues (1988) explained, any bias due to nonrandom assignment would likely favor the group of control subjects.

The treatment participants' modal number of offenses was two; the control groups was one, pre-admission into the group. Both groups had an assortment of offenses: felonies, misdemeanors and status offenses. Among the 15 treatment group males, prior to treatment, 10 had committed status offenses (some more than once), seven had committed misdemeanor offenses (some more than once), and four had committed a felony (some more than once). Among the 12 treatment females, all had committed status offenses prior to treatment (with a total of 18 offenses among

them), but none had committed misdemeanor or felony offenses. The control group had 23 males and four females. Nine status offenses had been committed among these males prior to being adjudicated; 12 had committed misdemeanor offenses and five had committed felony offenses (involving four males). In the female control group, prior to being adjudicated to probation, all four committed at least one status offense. None had committed misdemeanor or felony offenses (Gordon et al., 1988). Amongst the most serious crimes were burglary, criminal trespassing and grand theft (Gordon et al., 1988).

Unlike the Carney and Buttell (2003) study on Wraparound services, previously mentioned, supervision of families in the Gordon and colleagues' (1988) study was done by clinical psychologists or psychology students. The Gordon and colleagues' FFT study also boasted several significant findings. Follow-up extended up to a 2.5-year period, post-group assignment. The treatment group fared very well, with a recidivism rate at 11 percent; the control group's rate was 67 percent. The average number of offenses was also statistically significant (1.29 offenses with the treatment group over an average 12-month period; 10.29 offenses with the control group over an average 12-month period) (Gordon et al., 1988). For example, even after four families prematurely terminated from the treatment group after an average of nine in-home therapy sessions, the rates of recidivism among the treatment males, post-treatment, consisted of zero new status offenses; two misdemeanor offenses by two males, and one new felony offense. In comparison, the control group of males, post-treatment, included one new status offense, 12 new misdemeanor offenses and 11 new felonies (committed by seven of the control-group males). Among the treatment females, none committed additional status offenses, misdemeanors or felony offense. In comparison, the group of four females in the control group evidenced no change: three

of the four committed another status offense, but none committed any misdemeanor or felony offenses. The chi-square analysis indicated that the difference in recidivism rates among the two groups was significant. Follow-up time averaged 27.8 months for the treatment group and 31.5 months for the control group. As explained by the authors, although the follow-up time among the control group was longer, and potentially increased the likelihood for them to recidivate, it did not “appreciably lessen the significance of the difference between the groups” (Gordon et al., 1988, p. 250).

Multisystemic therapy (MST). As with the previous models, MST is intensive and time-limited. Treatment sessions occur in the client’s home, with an emphasis on the entire family (Cox, 2005). TJPC’s IHFSP was modeled after MST, due to the earlier MST models’ focus on juvenile delinquents. The treatment techniques MST therapists use are cognitive-behavioral (Borduin, 1999), but Henggeler and colleagues (1992, p. 954) described that MST is “grounded, in part, on Bronfenbrenner’s (1979) social-ecological model of development”. While working with the family, emphasis is placed on coping skills. Attention is also placed on advancing parenting skills and teaching parents discipline techniques suitable to use among adolescents (Chilenski et al., 2007).

MST evaluations comprise several decades of successful treatment among aberrant youthful offenders. The first evaluation, a quasi-experimental evaluation, was completed by Henggeler and colleagues in 1986. The study included inner-city juvenile delinquents from Memphis, Tennessee who had been arrested an average of 2.1 times and had committed both fairly serious violent and nonviolent crimes (Borduin, 1999). Henggeler and colleagues’ (1986) evaluation included three groups of youth in their sample. The 57-delinquents in the treatment

group participated in MST treatment and were referred by the Memphis-Metro Youth Diversion Project; MMYDP). The second group was an alternative group of 40 youth, also from the MMYDP. They received what most juvenile offenders in Memphis receive, which included staff evaluating them to determine what needs best fit the delinquent youth and his or her family (e.g., individual or family counseling). The last group were the “normal” controls. The normal controls were well-adjusted youth recruited from local high-schools. The families of the normal group had no histories of psychiatric issues nor arrests. Each “normal” youth was matched to the treatment group youth on demographics (Henggeler et al., 1986). When compared to the alternative-MMYDP group of youth, post-treatment, Henggeler and colleagues (1986) found that the MST-treatment group had a reduction in associating with negative peers and had fewer behavior problems.

In 1995, Borduin and colleagues completed a follow-up study evaluating recidivism rates, four years post-treatment, among juvenile probationers involved in the Missouri Delinquency Project. Many of the offenses the probationers had committed were violent and/or serious offenses and prior to treatment, had each averaged four felony arrests (Sawyer & Borduin, 2011). The probationers had been randomly assigned to either an MST treatment group or an individual therapy group. In the MST group, at least one adult family member had agreed and did participate. Furthermore, all the MST group participants, as a whole, received and completed interventions in at least two different systems. The two systems, in addition to the youth, involved the family and school (nearly 34 percent were in this category). Moreover, slightly over 66 percent of the MST youth had received three or more interventions (most frequently with family members, school, and peers). Peer interventions among the MST group aimed to minimize association with the youth’s

current antisocial friends. To do this, the intervention group encouraged youth to become involved in prosocial school activities, youth athletics or church groups (Borduin, 1999).

Unlike the group of MST individuals (treatment), the majority of the participants in the control group, i.e., the individual therapy group, (90.1 percent) were involved in only one system of intervention (which always involved the delinquent juvenile). At follow-up, those who completed MST had an overall recidivism rate of 22.1 percent. This was lower than the overall rate of recidivism for the individual therapy/non-MST recipients, whose recidivism rate was 71.4 percent (Borduin et al., 1995).

Schaeffer and Borduin (2005) completed a 10-year follow-up evaluation on the clinical study published in 1995 by Borduin and his colleagues (described in previous study). The average age of the MST and individual therapy participants was 28.8 at follow-up. Although the arrest rate climbed higher for both groups during this time span, the MST group's rates remained lower than the rate of the individual therapy groups: 50 percent compared to 80 percent, respectively (Schaeffer & Borduin; 2005).

Although MST seemingly has always had significant effects, post-treatment, one published MST evaluation did not fare as well. In a randomized Canadian MST experiment with 409 delinquent youth (nearly 74 percent male), 211 youth were randomly assigned to the MST group and 198 were randomly assigned to the control group (Cunningham, 2002). Cunningham (2002, p. 2) explained that an experimental design was necessary to determine if the treatment (MST) would be more effective in reducing criminal behavior among serious juvenile offenders, compared to the available services offered at the time in the city where the study occurred.

Slightly under two-thirds of the youth (64 percent) were referred to the study by a probation officer. At the time of their referral, 67 percent of the youth had been adjudicated at least once, but the study also included 27 youth under the age of 12 when referred. Due to Canadian law, youth under 12 years old could not be legally adjudicated. Furthermore, 29 percent of the youth over age 12 were at-risk, but did not have any record of being previously adjudicated (Cunningham, 2002).

During treatment, 19 percent of the MST group failed to complete treatment, and over the course of the three-year follow-up, one youth died (Cunningham, 2002). At the three-year follow-up point, 60 percent of the youth were 18 years old or older, hence, legal adults (Cunningham, 2002).

The days spent in custody, number and types of offenses and adjudications/convictions were tracked. These were measured several ways, cross-sectionally and over time at several intervals (six months and then annually for three years). At the six-month interval, nearly 31 percent of the combined group had at least one adjudication (not counting the original adjudications at referral; Cunningham, 2002). At three years post-treatment, 275 youth (67 percent) from both groups had been adjudicated at least one time (Cunningham, 2002).

MST has been recognized as a National Institute for Health (NIH) *Blueprints for Violence* prevention program. *Blueprints for Violence* is a directory of effective programs, all rigorously evaluated (Federal Advisory Committee on Juvenile Justice, FACJJ: Annual Report, 2007). MST is also listed in OJJDP's *Model Programs Guide*, a web-based, online tool (FACJJ: Annual Report, 2007).

This section has provided an overview of the common FPP models. Although all but one model (MST) began as a prevention model in child welfare, each has since involved at-risk or

delinquent youth and their families to prevent out-of-home placements, as well as to prevent or curtail crime. Despite one MST study with poor results, MST has been deemed a successful FPP among juvenile delinquents.

The next section specifically describes risk factors commonly correlated with delinquency. The term recidivism, based on previous research, is defined in the next section, and then as a variable in the Method section. The risk factors described were also part of the data collected from juvenile probation departments participating in IHFSP and are part of the analyses.

Risk Factors

Specific risk factors are associated with recidivism (DeLisi, 2006; Mbuba, 2005; Mennis & Harris, 2011; Ragan & Beaver, 2010). Recidivism implies continued offending (Quinsey, 2006; Sharkey, Furlong, Jimerson & O'Brien, 2003). Carcach and Leverett (1999, p. 2) define recidivism as “subsequent offending by a person who has been convicted of a prior offense”. The amount of harm done, the kind of new crimes committed, or the regularity of offending all describe severity of recidivism (Mulder, Brand, Bullens, & van Marle, 2011).

Over the last several decades, many researchers have documented predictors of recidivism. For example, Auerhahn (1999) reevaluated Greenwood and Abrahamse's (1982) predictors for reoffending, using a representative sample of 2,188 inmates from the California state prison system. Of those applicable to juveniles, Auerhahn (1999) estimated the following predictors: a prior adjudication for any type of offense, an arrest prior to the age of 16, and time spent in a juvenile detention facility.

Criminal conduct and recidivism are correlated with risk factors that are both dynamic and static (Mulder et al., 2011). As Mulder and her colleagues (2011) explained, dynamic risk factors

can change. For example, delinquent peers, one's environment (such as residing in a high-crime area) and using or not using illicit substances are all dynamic factors; the behavior can be altered (Mulder et al., 2011). Static risk factors remain constant; generally, they do not change. Early age of onset of delinquency, early age at initial adjudication and being male are all static risk factors (Mulder et al., 2011, p. 119). Static environmental risk factors also include abuse or neglect by one's caregiver (Mulder et al., 2011).

Detecting these risk factors early in an adolescent's life may be essential to preventing or deterring crime. Through extant research, both types of risk factors associated with delinquency and recidivism have been identified. These include, but are not limited to: onset age, sex, race, maltreatment (abuse and/or neglect), gang involvement, prior involvement in criminal offense referrals, and offense severity. Both dynamic and static risk factors are discussed below. The risk factors described are also variables used in the descriptive statistics and/or the analyses.

Onset age. Common knowledge among students of criminology is that a small portion of individuals commit about half of the crimes known to law enforcement (Farrington, Ohlin & Wilson, 1986; Wolfgang et al., 1972). Among juvenile offenders, Mulder and colleagues (2010) reported that internationally, about five percent of these offenders appear to be responsible for a high number of criminal offenses.

The age in which a youth begins delinquent acts is called onset age. Onset age has been determined to be a risk factor for delinquency. Sweeten, Piquero and Steinberg (2013) stated that age is one of the most vigorous correlates of criminal conduct. According to DeLisi and Piquero (2011), rebellious acts, often committed before a child is 10 years old, lead to continued

illegitimate misbehavior. This category of criminals has been labeled “career criminals” (DeLisi & Piquero, 2011).

Onset age and recidivism. Studies between onset age and persistent offending have been well documented. Among juvenile offenders who spent time in juvenile correctional facilities and were released, then reoffended, Katsiyannis and Archwamety (1997) analyzed the differences between youth who reoffended and were sent back to a secure facility, with youth who did not recidivate. Their study included 294 delinquent males, ages 12 to 18. Half of the youth in the sample (147) had been recommitted to a juvenile correctional facility (recidivists) while the other 147 had not been recommitted (non-recidivists). The researchers defined recidivist as a juvenile who had a second recommitment date into a correctional facility fewer than three years following the first date committed in to a correctional facility. Status offenses while on parole were excluded. Katsiyannis and Archwamety (1997) found that, along with other factors (e.g., number of days at correctional facility during first commitment, academic achievement levels, age at first commitment), age at first offense (onset age) was statistically significant in their sample among the juveniles associated with repetitive offending.

In a similar study, Mulder and her colleagues (2011), using data on delinquents in the Netherlands, ages 12 – 22, looked at the risk factors that predicted overall recidivism and severity of recidivism among a sample of 728 serious delinquents. The sample of offenders had first been adjudicated as youth, under the age of 18. All had previously been convicted of at least one serious offense, spent time in a court-ordered locked facility, then released. By using official reconviction data, the authors were able to compare youth who recidivated with youth who did not recidivate. Mulder and colleagues’ (2011) findings included static risk factors correlated to recidivating, such

as early age at first adjudication, intensity of criminal activity and length of criminal careers. Mulder and colleagues (2011) also found that the violent individuals (labeled violent recidivists) scored higher on certain static risk factors, including young age at first offense.

Onset age and magnitude of offending. Among “active” criminals, Piquero, Farrington and Blumstein (2003) reported that it is common for this group to have had an early onset age of offending. Furthermore, Piquero and colleagues (2003) indicated that these active criminals engage in elevated proportions of criminal acts compared to most other lawbreakers.

For example, in regards to onset age, magnitude of offending (including volume and severity), DeLisi (2006) analyzed criminal histories on 500 habitual offenders whose data he had access to while working as a bond commissioner in Colorado. Among his sample, DeLisi (2006) found that the offenders with the youngest onset age of arrest averaged two times as many arrests than the offenders with later onset ages. Youth arrested at either age fourteen or fifteen were among the most violent defendants, and youth whose first arrest occurred when they were 16 or 17 were the most likely to have felony convictions and be sent to prison (DeLisi, 2006).

Sex. Over thirty years ago, Blumstein, Cohen, Roth and Visher (1986, p. 40), and later Piquero and colleagues (2003, p. 419), noted that the pattern of criminal involvement by males at any age or degree of seriousness, irrespective of the data source, type of crime, participation measure and involvement level of crime, surpasses female involvement. Steffensmeier & Allan (1996, p. 461) also stated that both self-report studies and official data have indicated that males commit more offenses at much higher rates than females, excluding prostitution.

Sex in official data. One source of official data is from the Federal Bureau of Investigation's (FBI) Uniform Crime Reporting (UCR) Program.⁴ From the 2015 UCR report (their most recently published statistics regarding offenses by sex), slightly over 73 percent of adults and juveniles arrested for all crimes tracked in UCR data were male (U.S. Department of Justice (DOJ), 2015, Table 42). Furthermore, compared to females, males of all ages in 2015 were arrested for nearly 80 percent of violent crimes (including murder and non-negligent homicides at the rate of 85.5 percent) and 61.7 percent of property crimes (DOJ, 2015, Table 42).

Among juvenile females, the UCR report in 2015 also showed that 9.3 percent of all female arrests in 2015 were among females under 18 years of age (DOJ, 2015, Table 40). Under 18-year old females also accounted for 9.2 percent of violent crime arrests and 12.6 percent of property crime arrests among arrested females of all ages in 2015 (DOJ, 2015, Table 40).

Combined, males and females under 18 years of age accounted for 10.2 percent of all persons, of all ages, arrested for violent crimes and 14.3 percent of all persons arrested for property crimes in 2015 (DOJ, 2015, Table 40). Juveniles (under 18 years of age) were also arrested for slightly over 19 percent of all total robberies in 2015 (DOJ, 2015, Table 41).

Piquero, Brame and Moffitt (2005) were interested in gender differences with stability and changes in patterns of criminal offending, focusing on the transition from adolescence and adulthood. Using longitudinal data from the 1972 Dunedin, New Zealand birth cohort study, Piquero and his colleagues (2005) patterned a study by Paternoster, Brame and Farrington (2001), who had analyzed longitudinal data from the Cambridge Study in Delinquent Development, a

⁴ The UCR generates information gathered from over 18,000 law enforcement entities, including governments (e.g., cities, counties and federal agencies), tribes, colleges and universities (DOJ, 2018).

sample of 411 males from South London, the majority of whom were born in 1953. Piquero and his colleagues (2005) used conviction as a measure for differences in becoming involved in criminal offending. In a comparison between juveniles of both sexes, juvenile females tended to be less likely to be involved in crime. Among the juvenile males, once they began their path of delinquent acts, the variation in adjudicated activity was greater than that of juvenile females. However, caution to the readers was provided by the authors, because among the sample of 500 females, very few had been convicted (Piquero et al., 2005, p. 240).

Sex by offending and placement rates. Among both sexes, offending rates have decreased substantially in the last decade and beyond (Hockenberry & Puzzanchera, 2017). For instance, among juveniles, from 2005 to 2014, the average annual decrease in the male and female delinquency juvenile court caseloads was very comparable for all offense types. However, although juvenile court case rates decreased for both sexes, the case rate among males was, at a minimum, two times the rate of females during this 10-year span from 2005 to 2014 (Hockenberry & Puzzanchera, 2017). Males comprised 40,750 of this, or, nearly 85 percent

Coinciding with the decrease in the number of offending rates by both males and females, the rates of adjudicated delinquent youth being court-ordered to residential placements has also declined (Hockenberry, 2018). One method the federal government uses to obtain residential placement information nationally from juvenile placements, including juvenile facilities, is the Census of Juveniles in Residential Placements (CJRP; Sickmund, 2010). Sickmund (2010) explained that all juvenile offenders allocated a bed on census date (whether in a private or public facility, including residential, secure and non-secure placements, shelters, short- and long-term detention centers) were required to be counted in the residential placement rate on the CJRP. The

numbers reported on the CJRP are only for youth ages 10 through the state's upper age of original juvenile court jurisdiction in the general population, per 100,000 youth (Sickmund, 2010).

Reporting data from the 2015 CJPR, Hockenberry (2018) explained that between 1997 and 2015, the number of juveniles living in an out-of-home placement decreased from 105,055 juveniles to 48,043. These latest figures are the lowest since data collection on court-ordered placements started (Hockenberry, 2018). Among the juveniles counted in the 2015 CJRP, 31,487 of the youths were in either short-term or long-term juvenile facilities. An additional 16,556 youth were in all other court-ordered placements. Males comprised 40,750 of this, or, nearly 85 percent (Hockenberry, 2018).

In Texas, the OJJDP Fact Sheet indicated that 7,035 male and female juveniles (287 per 100,000) were in residential placement on census day in 2007 (Sickmund, 2010). Fagan (2010) stated the national rate for youth per 100,000 was 263 in 2008. However, it is unknown if the placements were new adjudications only or if court modifications were also included. Modifications may occur after a youth, who was previously adjudicated but still serving time on probation, recidivates.

Using the *Easy Access to Juvenile Court Statistics* (EZAJCS), Sickmund, Sladky and Kang (2017) estimated that 291,300 juvenile delinquency court cases processed nationally in 2014 received an adjudicated probation sentence. Of these, 227,700 (78 percent) were males. Among the males, 62,400 (or 27.4 percent) were adjudicated to placement (Sickmund et al., 2017). Of the female court cases, 13,000 (20.4 percent of the 63,600 females adjudicated to probation) were also adjudicated to placement. In 2014, based on the national estimates from the EZAJCS, the portion of males and females adjudicated to both probation and placement was nearly 26 percent.

Race. Despite the overall decline in both arrest rates and referral rates, described in the previous section, the decline differs by race. According to Puzzanchera & Hockenberry (2017), minority youth accounted for 69 percent of youth in residential placement in 2015. According to The Sentencing Project (2015), youth of color (which includes Black, Hispanic and American Indian) enter residential placement at far greater rates than white youth.

Over several recent decades, there have been comparisons of race prevalence in self-report studies. These race comparison studies separate subgroups of black and white males. Some have found differences, some have not. Hindelang, Hirschi and Weis (1979) stated that self-reports and official data both deliver effective indicators in regards to a delinquents' demographic characteristics. They did note, however, that this finding is dependent on the behavioral domain selected effectively for each method (Hindelang et al., 1979).

Some findings have miniscule rate differences among black and white offenders in regards to minor acts of delinquency (Blumstein et al., 1986). Furthermore, among offenders who self-report serious offenses (separated by black and white males), the estimated ratio of delinquency participation was slightly above 1:1 (Blumstein et al., 1986). As Blumstein and colleagues (1986, p. 41) explained, studies that use official data tend to report associations as stronger between criminal participation and race, and also tend to report higher black to white ratios when the seriousness increases in criminal behavior. For example, using official data (excluding aggregate data such as UCR crime and arrest rates), Visher and Roth (1986, p.216) combined numerous longitudinal studies from court and police records, in an effort to look at the estimates of career criminals' participation. Their primary focus was on studies with specific serious crime participation, such as aggravated assault, burglary or robbery, or categories within official records

which included those crimes. In sum, they reported that the average black/white participation ratio for serious offense (index crimes) by age 18 was 3.2:1, and 1.8:1 with nontraffic-involved offenses (Blumstein et al., 1986, p. 41; Piquero et al., 2003, p. 421; Visher and Roth, 1986, p. 252).

Elliott (1994) analyzed age-specific prevalence rates by gender and race (blacks and whites) for Serious Violent Offending (SVO), using the longitudinal National Youth Survey (NYS) data. According to Elliott (1994), the NYS data were collected using a probability sampling technique. Collection of the data for 1,725 individuals originally began in 1976 with 11-17-year-old youths. By 1993, nine waves of data had been collected, and included official records on parents or caretakers, as well as official and self-reported records on all the individual youths. In the analysis, using waves 1 through 8, Elliott (1994) reported that at the peak age of 17, a quarter of the white (non-Hispanic males) and over one-third of the black males had reported at least one SVO.

In a more recent study, Piquero, Schubert and Brame (2014) compared the validity of criminal data (national offense histories, both juvenile and adult) and survey records (Pathways to Desistance) longitudinally, assessing concordance with the two measures, official and self-report data. Pathways to Desistance is a cluster of longitudinal assessments among serious delinquent youth who, over the course of seven years, completed 10 surveys. Among this sample of 1,354, the majority of youth, ages 14 – 17 at enrollment, had been adjudicated on felony offenses. Seventy-five percent of the sample were minorities and 86 percent male, allowing Piquero and colleagues (2014) to also explore issues of concordance across race/ethnicity and sex. The overall findings indicated that there was a high degree of concordance among the self-report and offense data, with a few exceptions, such as over self-reporting arrest numbers when compared to official

data (e.g., petitions from juvenile files and FBI arrest records; Piquero et al., 2014). Results of subgroup congruence among race/ethnicity and gender, using bivariate analysis, indicated there were no differences. Regression analysis, in regards to race, was not related to the frequency of petitions/arrests with official records, nor was it when self-reported arrests were added.

Mbuba (2005) explained there have been many reports that indicate race is a predictor of recidivism among juvenile offenders, specifically black offenders. Mbuba (2005) also stated that many of these studies indicate that black offenders are significantly more likely to recidivate than white offenders. In his statistical analyses, using data from the Louisiana Department of Public Safety and Corrections, Mbuba (2005) contests that claim. His findings did not display a statistically significant difference in the probability of recidivating between white offenders and black offenders in his sample of 2,810 offenders, one year following their release from either secure short-term or regular confinement, or non-secure treatment facilities.

Nevertheless, minority youth are overrepresented in the formal juvenile justice system relative to their percentage of the overall U.S. population (Smith, 2017, p. 243). Furthermore, Siegel and Welsh (2017) indicated that minorities are overrepresented in detention facilities, and explained that this is more prominent when families are poor, such as those who are recipients of government welfare.

Childhood Maltreatment. There have been many studies linking delinquent behaviors to maltreatment as children (e.g., Smith & Thornberry, 1995; Lansford et al., 2007). For example, Stouthamer-Loeber, Loeber, Homish, and Wei (2001) found a correlation between male youths, neglected and abused as children, and disorderly conduct, which they exhibited into late

adolescence. When compared to non-neglected or non-abused young males, the maltreated boys were more apt to exhibit blatant disorderly conduct, including encounters with authority figures.

To study the risk of illicit behaviors, including drug use, among individuals abused and neglected as children, Widom, Marmorstein and White (2006) used a cohort study that included court-documented abuse and neglect cases, matched with non-abused/non-neglected individuals. The total group included 892 males and females, followed prospectively into adulthood. Widom and her colleagues (2006) found an association among adults who suffered neglect and abuse as children, and the usage of illicit drugs. Specifically, when interviewed in middle adulthood, the abused/neglected group tended to report using illegal drugs, namely marijuana, at a rate of approximately 1.5 times more than the control group, in the preceding year. The abused/neglected individuals also reported having had more problems related to substance-use, in comparison to the control group. Lastly, when Widom and colleagues (2006) analyzed males and females separately, they found that among the two groups of women (abused/neglected and non-abused/non-neglected), the abused/neglected females were significantly more likely to report any illicit substance use during the previous year (Widom et al., 2006).

Regarding studies involving early physical maltreatment and violent acts committed as juveniles, the association is not as clear (Lansford et al., 2007). For example, Hawkins et al. (1998) conducted a thorough assessment of the childhood abuse/violence literature. Across numerous studies, they found that effect sizes varied widely in studies that linked maltreatment to self-reported and official violence in adolescents. But, according to Crooks, Scott, Wolfe, Chiodo and Killip (2007), the varying effect sizes found in meta-analyses and systematic reviews are often due to methodological shortcomings.

In their analysis of data from the Lehigh Longitudinal study which followed children for 15 years from preschool to as old as age 23, and included 457 children, Herrenkohl, Huang, Tajima and Whitney (2003) found an association between child abuse victimization, most notably physical abuse and violent behavior. This effect was found in both youth and adults. In addition to using a prospective longitudinal study, Herrenkohl and colleagues (2003) concluded that the findings were apparent using data collected retrospectively as well.

Some studies have found that when a child has been abused in multiple ways, they are at the greatest risk of violence and delinquency later in life (Baglivio et al., 2016). For example, Crooks and colleagues' (2007) study looked at childhood abuse and the likelihood of being involved in crime as children become older. Their data included 1,897 ninth grade students, slightly over 51 percent female, who attended school in Ontario, Canada. The students completed surveys as part of a larger, randomized control study evaluating a school-based prevention program on violence. Crooks and colleagues (2007) found that youth who reported three or more types of childhood abuse were much more likely to have been involved in violent criminal acts. The odds ratio among those violent delinquents was 11.2 times in comparison to youth who had no history of abuse (Crooks et al., 2007).

Lansford and colleagues (2007) conducted a prospective, longitudinal study with subjects who had been physically abused before the age of five. Among the original group of 574 participants, 69 individuals (12 percent) had been abused. The findings also indicated that among the abused youth, they were statistically more likely to be arrested for status offenses, nonviolent offenses and violent offenses. Their findings were similar to Widom's (1992) study, which indicated that neglected or abused individuals were 53 percent more likely to have been arrested

as teenagers (compared to non-abused individuals). Additionally, those who had been physically abused were more likely to recidivate with a violent crime compared to individuals who had been neglected or sexually abused (Widom, 1992).

When Funk (1999) analyzed child abuse by sex (gender) among a random sample of 500 juvenile delinquents, 388 males and 112 females, all on formal, adjudicated juvenile probation, she found a significant relationship among female offenders, who had suffered childhood abuse, and the likelihood to reoffend. Herrera and McCloskey (2001), as well as Widom and Maxfield (2001), both reported statistical significance among abused females and violence. Each study reported that abused females committed more violent criminal acts as juveniles and as adults, compared to non-abused females.

Sharkey and colleagues (2003) evaluated records of 106 male and 53 female juvenile probationers in California. One goal of the study was to determine if the risk assessments used provided equal predictability among the sexes. Aside from finding that the risk assessment did not provide equal predictability among the high-risk adolescents, Sharkey and her colleagues (2003, p. 480) found that in the sample of males who had been abused by their parents, these individuals were more prone to recidivate compared to males whose parents had effective parental control, and even among parents who lacked effective parental control.

On the other hand, a recent study examined recidivism and adverse childhood experiences (defined partly as emotional abuse, physical abuse, sexual abuse, emotional neglect and physical neglect; Baglivio et al., 2016). Using a sample of nearly 13,000 adjudicated youth, previously adjudicated and sentenced to a Florida juvenile residential program, the researchers did not find a direct correlation between recidivism and adverse childhood experiences. However, what Baglivio

and colleagues (2016) did find statistically significant was that the adverse experiences “exhibited an indirect effect on recidivism through child welfare involvement” (p. 625).

Gang affiliation. Findings from longitudinal youth studies, such as the Seattle Social Development Project, the Denver Youth Survey and The Rochester Youth Development Study, have all concluded consistently that a relationship exists between crime and being a gang member (Decker, 2007). Studies also show a link between gang membership and an increased involvement in crime (Barnes, Beaver & Miller, 2010). A gang member’s level of offending increases during membership when compared to the pre- and post-gang periods of gang-life (Decker, 2007).

In describing several decades of gang research, Thornberry and colleagues (1993) documented that gang members versus non-gang members are not only more prone to committing offenses, but the degree of offense seriousness and the frequency of offenses committed by gang members is more severe (Thornberry et al., 1993).

In two studies described earlier, both found a correlation between gang membership and recidivating. Among misdemeanor juvenile offenders in Diamond and colleagues’ (2011) study on FPP, the authors found that gang affiliation was a significant factor among those who recidivated. Katsiyannis and Archwamety (1997) had also found that recidivists in a state correctional facility were more likely to be gang members (compared with non-recidivists). In Benda and Tollett’s (1999) study on persistent and serious offenders who recidivated, 76.5 percent of the 244 male and female delinquent youth self-reported being in a gang. In addition to other factors, being a gang member increased the likelihood of returning to placement within the Arkansas Department of Youth Services (DYS) by an odds ratio of 2.03 (Benda & Tollett, 1999, p. 119).

Offense referrals. The number of formal offense referrals⁵ has been considered a risk factor in delinquency and has been linked to offense severity (Mulder et al., 2010). For example, Mulder and colleagues (2010) found recidivism more prevalent among the most serious juvenile offenders in their sample of Dutch males, mandated to a juvenile institution for treatment. Being sanctioned to this form of punishment is the most severe one for juveniles in The Netherlands (Mulder et al., 2010). Included in the original sample of 1,154 males were only those who had been released and had been living in the community more than two years. Thus, the final sample included 728 males. These serious offenders started offending at a young age and committed numerous offenses, and a high proportion of them remained on a criminal path even after treatment (Mulder et al., 2010, p. 34). Using the same sample as Mulder and her colleagues did in 2010, Mulder and colleagues' (2011) analyses found one static factor associated with overall recidivism: the high number of past offenses a person accumulates.

Offense severity. The severity of criminal offenses has been associated with recidivism, as incorporated in the review of literature. Studies in criminology have used severity of offenses, such as categorizing an offense type by offense severity, or vice versa (e.g., Savolainen, Nehwadowich, Tejaratchid & Linen-Reed, 2002), or have used the terms interchangeably (e.g., Mulder et al., 2011). The focus in this study includes only offense severity. Chapter 4 describes how offense severity is measured in this study.

⁵ In the State of Texas, per TJPC (2005), a referral (also called a formal referral) occurs when all four of the following conditions exist: (1) Delinquent conduct, conduct indicating a need for supervision or violation of juvenile court order was allegedly committed; (2) The juvenile probation department has jurisdiction and venue; (3) Face-to-face contact occurs with the office or official designated by the department or juvenile board; and (4) The alleged offense has been discussed at the time of the contact.

Depending on the study, offense severity may be broken down by class, such as felony or misdemeanor. For example, as described later (Chapter 3), and in the Texas Penal Code, the State of Texas' most serious crime is a Capital Felony, followed by a First-Degree Felony. Class C Misdemeanors are finable offenses (OAG, 2016, p. 4). The escalation of offenses, based on severity, is briefly included below.

In their study on New York City felons, Savolainen and his colleagues (2002) classified offenses by severity: felony or misdemeanor, and listed which type of offenses were included in each. To simulate an experimental-design study, Savolainen and his colleagues (2002), used propensity score matching (PSM) with their sample, matching defendants on various variables, including by New York City boroughs, that is, control felons prosecuted in the Bronx with treatment felons also prosecuted in the Bronx, Queens with Queens, etc. The control group from Savolainen and colleagues' (2002) study comprised of felony offenders who had been sentenced to incarceration (local jail or state prison), or community supervision (probation). The treatment group, also felony offenders, differed in that they had participated in treatment. Treatment programs were community-based; collectively referred to as alternative-to-incarceration (ATI), and used in lieu of prison or jail. The ATI programs were designed to target offenders who faced a minimum incarceration of six months. Based on the State of New York's laws requiring mandatory sentences of certain offenses, the ATI program generally did not get participants who were charged with A-level felony offenses (the severest criminal offending class in New York State) or defendants with several felony convictions.

Severity and escalation. The results in studies on offenders' criminal escalation (moving from an offense less serious to one that is more serious; Alexander & Britt, 2004) have waivered,

depending on the type of study: self-report or longitudinal (Loeber, Farrington, & Waschbusch, 1999). For example, Loeber and colleagues (1999) described that studies utilizing self-report data on criminal delinquency often do report increases in the severity of offending, namely among offenders who have later become frequent or chronic offenders (e.g., Le Blanc, Côté, & Loeber, 1991). In contrast, Loeber and colleagues (1999) indicated that escalation is not evidenced from analyses of longitudinal studies, which have used official records, such as court or police records (e.g., Weitekamp, Kerner, Schindler, & Schubert, 1995; Wolfgang et al., 1972). However, Alexander and Britt (2004) reported that in general, studies have failed to indicate an association between escalation and recidivism. On a different note, Elliot (1994), Farrington (1996) and others, have reported that analyses of documentation, such as official records and self-reported questionnaires, have indicated that the seriousness of delinquency has inclined with age (Loeber et al., 1999).

As their measure for severity, Mulder and her colleagues (2011) used the most serious offenses (from official records) in their follow-up study of post-incarcerated youth. They divided offenses by categories (e.g., murder, which Mulder and colleagues categorized as a 12; in the United States, this is a felony). They explained that this was done in lieu of counting the number of criminal offenses, which, as time at risk increases, so do offenses. Mulder and colleagues (2011) also explained this method helped with analyses, by accounting for differences in the follow-up period. Additionally, Mulder and colleagues (2011) found that as an individual's number of risk factors increased, new offenses committed were more serious (e.g., violent).

The information in Chapter 2 provided a thorough overview of FPPs, the theories tied to them, the objectives common in FPP models, and risk factors associated with offenders, recidivism

and offense severity. As noted, several of the studies in FPP have been analyzed, not only in child welfare, but also with juvenile delinquents involved in criminal activity, ranging from minor status offenses to severe felonies. Although the duration of treatment in FPPs is relatively short, the outcomes have been favorable, even among stringent evaluations.

In the following chapter, an overview of the State agency which funded IHFSP, is provided. Most importantly, Chapter 3 gives extensive detail about the IHFSP grant, including a description of the grant, definitions specific to the program, and all the other components required.

CHAPTER 3

IN-HOME FAMILY SERVICES PROGRAM (IHFSP)

The state agency in Texas providing support to the juvenile justice system is called the Texas Juvenile Justice Department (TJJD). In the first section of this chapter, a brief description and history are provided about TJJD, and their predecessor, the Texas Juvenile Probation Commission (TJPC). Additionally, what the former agency did, what the current agency continues to do, and whom they serve, is described.

The second and third sections of this chapter provide extensive details about the IHFSP. Section two describes the background of the IHFSP and funding. Funding is divided into two subsections, the source of the funds and the fiscal requirements. The third section of Chapter 3 is broken into elements required of the IHFSP. When applicable, some previously published FPP studies are integrated to compare the similarities and differences in relation to the IHFSP programmatic components.

The final section of this chapter explains the administrative oversight of the IHFSP. In addition to how the program was planned and implemented, a brief description of an evaluation completed on the IHFSP is given. It was conducted at the University of Texas (UT) in the late 1990s. However, the actual evaluation has not been located, despite numerous attempts. These attempts included searching the UT website, specifically the Center for Social Work Research (November, 2017; October, 2018); emailing UT Austin's Steve Hicks School of Social Work, Center for Social Work Research (no one replied; November, 2017) and conducting an internet search (Google) of the author's name (described in the fourth section below; November, 2017; October, 2018).

Overview of TJPC/TJJD

TJJD is the state agency which provides support to the 165 Juvenile Probation Departments in Texas. TJJD also regulates Texas' juvenile detention facilities at both the county and state level. Although there are 254 Texas counties, some juvenile probation departments are part of and overseen by a judicial district (TJPC, 2005). When the IHFSP's were originally funded by OJJDP, TJJD had not yet been created. The data collected for this project were acquired in 2007 from the former agency, TJPC, as mentioned in Chapter 1.

History of TJPC/TJJD. According to the TJPC's *Strategic Plan* (June, 2002), TJPC was created in 1981. Through their many years of existence, Texas' juvenile probation departments and judicial districts (hereafter, departments) were mandated by TJPC to report their department data on delinquent youth. These data, still mandated by TJJD for submission by counties, include referrals, adjudications, and dispositions on juveniles. The mandate was also for special programs, such as the IHFSP. As a result, the data used for this evaluation was collected by, and made available from TJPC. In December, 2011, TJJD was created by the 82nd Texas Legislature. TJPC (as well as the Texas Youth Commission, TYC) were abolished and operations of both former agencies were unified to form TJJD (TJJD website, 2018, *About section*, para 1).

Functions of TJJD/TJPC. TJJD's administrative offices are located in Austin, Texas. Although TJJD has many functions, only some core duties are described. One of TJJD's central roles includes providing general oversight to Texas juvenile justice departments and facilities. This oversight helps ensure youth safety. Included in verifying safety, TJJD's staff investigate allegations of abuse and neglect made by minors involved with juvenile probation departments and the youth locked in their secure facilities (including privately operated secure facilities).

Additionally, the agency monitors state-funded juvenile justice programs in Texas counties and jurisdictions. Monitoring entails announced and unannounced visits to ensure departments and state facilities abide by the Texas Administrative Code⁶ (TAC; TJPC, 2007; TJJD, 2018). TJJD publishes the *Standards and Compliance Resource Manuals* for the State of Texas' juvenile probation departments and detention facilities. The *Standards and Compliance Resource Manuals* are the guides for juvenile probation departments and secure juvenile facilities. They are an extension of the TACs.

Additional functions with TJJD include creating curricula for and providing trainings to county and state juvenile justice staff. Trainings are provided to juvenile probation and parole officers, detention/supervision and correctional officers, as well as to data-entry personnel working at the county level. Lastly, TJJD collects, compiles and publishes county-level data on juvenile probation and facility staff (TJJD, 2018).

In Home Family Services Program (IHFSP)

Background. The IHFSP essentially began as an initiative resulting from the collaboration of two federal agencies, OJJDP and the U.S. Department of Health and Human Services (USDHHS). These federal agencies combined knowledge with an objective to involve families in their quest to prevent future juvenile crime. The initiative combined various parts of each agency's own programs (delinquency and child welfare; Chemers, 1995).

⁶ The TAC, first mentioned in Footnote 1, is an accumulation of all rules for Texas state agencies, each with their own Title. TJJD's TAC falls under Title 37: Public Safety and Corrections, Part 11 (eLaws.us website: Retrieved from <http://txrules.elaws.us/rule>; March 20, 2018).

In the late 1990s and through the first decade of the 2000s, TJPC furnished the IHFSP funding to the county probation departments who received the grant reward for IHFSP (TJPC, 1998). According to TJPC's *Statistical and Other Data on the Juvenile Justice System in Texas for Calendar Year (CY) 1998* (TJPC, 1999a, p. 10), there were 28 Texas Juvenile Probation Departments that reported they had IHFSP available within their department. An additional 90 departments reported some form of FPP services as available outside their department (TJPC, 1999a). In comparison to other states, Morris, Suarez and Reid (1997) indicated that in CY 1997, nationally, child welfare programs in more than 30 states had integrated FPPs. A more recent publication from TJJD (2013) indicated that 61 juvenile probation departments in Texas had FPPs (TJJD: *Community-Based Program Evaluation Series: Overview of Community-Based Juvenile Probation Programs*, 2013).

The following sections are an overview of TJPC's funding requirements for the IHFSP grant recipients. Again, it is important to note that the IHFSP was under the auspices of TJPC, and funding for the IHFSP was a part of that agency.

Funding source. Coinciding with the crime decline in the U.S. (Levitt, 2004), in the summer of 1993, the U.S. Congress passed the OBRA of 1993 (Chemers, 1995), mentioned in the Chapter I. Occurring around this time, two federal agencies, OJJPD and the Children's Bureau, under the Administration for Children, Youth and Families (ACYF)⁷, began working together and planning new initiatives. OJJDP (Chemers, 1995) explained that one goal was to assist local communities and States build a variety of social services aimed at early intervention and

⁷ ACYF is a subsection of the Administration for Children and Families (ACF), which is a division of the U.S. Department of Health and Human Services (USDHHS).

prevention. The federal government also wanted to improve court responses to children's needs and preserve families in the process (Chemers, 1995). As part of the OBRA, Title IV-B of the Social Security Act (P.L. 103-66), a newly added Subpart 2, *Promoting Safe and Stable Families* (Scarcella, Bess, Zielewski, Warner & Green, 2004) was dedicated to Family Preservation and Support Services (Chemers, 1995). Hence, the focus was on the entire family, including aberrant youth involved in the juvenile justice system. Subsequently, OJJDP solicited Requests for Proposals (RFPs) for grant funding via a Juvenile Accountability Block Grant (JABG).

In the latter part of the 1990s, TJPC received this JABG from the Criminal Justice Division (CJD) of the State of Texas' Governor's Office. During that time, OJJDP was the federal department which administered the Catalog of Federal Domestic Assistance (CFDA, #16.523; TJPC, 2004). A percentage of this grant's funding was specifically allotted for IHFSP.

To receive a portion of the grant, Texas counties competed for the grant funding by submitting grant applications to TJPC. In 1998, the following six Texas counties were awarded, up to \$70,000 of the JABG: Harris, Bexar, Travis, El Paso, Denton and Kaufman (TJPC, 1998). In 1999, the same six counties were re-awarded, and an additional four counties were added (TJPC, 1999b). As reported by TJPC (2003), 1,893 adjudicated youth in Texas had received family preservation services in CY 2002.

Funding requirements. This subsection explains TJPC's funding requirements for the IHFSP. It includes the allowable and unallowable expenditures, the financial match requirement and financial reporting.

Per the *IHFSP Compliance Resource Manual, FY 2005* (TJPC, 2004, hereafter *CRM*), grantees were required to follow all applicable federal and state laws for grant funding. Federal

funding laws included the Office of Management and Budget (OMB) Circulars: Cost Principles for State, Local and Indian Tribal Governments and Grants and Cooperative Agreements with State and Local Governments.

The allowable costs included salaries and fringe benefits. The costs could also include traveling, such as mileage, or other reimbursements for travel, such as to and from professional and/or required trainings. Operating costs (supplies and equipment) were acceptable, as was the use of professional and contractual services. These may include contracting with a non-department mental health person to create the required intervention team for the program (TJPC, 2004).

Only the relevant unallowable costs associated with the grant are described here; these include items that conflicted with the intent of the grant (what the grant was trying to prevent). Therefore, departments could not use the funding to place a juvenile into any residential setting.

This included placing a juvenile into a detention facility (secure pre- or post-adjudication, defined in Footnote 1, Chapter 1). Further, it prohibited the funding to be used in drug treatment or rehabilitation centers (TJPC, 2004).

Additional requirements entailed a financial match. At a minimum, the departments had to each provide a cash match of at least 30 percent of the total amount awarded (TJPC, 2004). Lastly, annual and quarterly financial reporting and monitoring were also outlined as requirements in the *CRM* (TJPC, 2004).

The next section is a thorough description of the grant based on the programmatic components of the *CRM* (TJPC, 2004). This includes the formal grant description, performance measures, components of the program, and additional grant requirements.

Grant Requirements

This section of Chapter 3 includes an overview of the *CRM* (TJPC, 2004) contents. Essentially, the *CRM* (TJPC, 2004) outlined terms, policies and procedures to assist grant recipients operate their FPPs. The *CRM* (TJPC, 2004) was written in the following order: the first section included a specific description of the grant (as well as a description of the grant's funding source, described in section 2 of this chapter); the second section contained terms and definitions. The subsequent sections outlined all the grant requirements, including performance measures, program components, number and types of contacts required, and information on the required paperwork. In lieu of listing all of the definitions from the *CRM* (TJPC, 2004), only terms relevant to topics covered are defined.

Grant description. The first section of the *CRM* (TJPC, 2004, p. 1) provides the grant's description: "[t]he In-Home Family Services Program (IHFSP) grant is designed to provide in-home intensive therapeutic intervention to adjudicated juveniles at risk of substance abuse and removal from the home". Although the *CRM* (TJPC, 2004) did not provide a definition for intensive therapeutic intervention, per se, the information under the subsection's *Duration of Services* and *Program Contacts* described the intervention team's rigorous requirements, including the number of weekly contacts required by the intervention team. Intervention team was defined in the *CRM* (TJPC, 2004) as the staff who work directly with the youth and his or her family during their time enrolled in the program. The intervention team members were required to be involved in every part of the case planning⁸ process. The *CRM* (TJPC, 2004) also described the staff who may

⁸ Case plans were described in the *CRM* (TJPC 2004) as a document outlining the goals focused upon during treatment, which extends through the duration of the program. Case plans also summarize the services which are then provided to the family and juvenile when they are first enrolled into the IHFSP (TJPC, 2004).

be part of the intervention team, including juvenile probation officers, case managers or case manager aides. However, it did require a Licensed or Authorized Professional on the intervention team⁹.

Performance measures. The performance measures outlined in the *CRM* (TJPC, 2004) listed the project's goal, the program's objectives and the performance outcomes. Each is described in the subsections below.

Goal. According to the *CRM* (TJPC, 2004), the overall goal of the IHFSP was "to reduce delinquency, increase offender accountability and rehabilitate juvenile offenders through a coordinated, comprehensive, community-based juvenile probation system" (TJPC, 2004, p. 2). This language reflects the OJJDP federal mandate, effective October 1, 2003, which required the following: combat delinquency, have consistent and immediate sanctions (proportionate to offenses) and hold juveniles accountable when they violate the law (Andrews & Marble, 2004).

Articles cited in the preceding chapter have indicated successes with reducing recidivism among juveniles involved in FPPs (e.g., Borduin et al., 1995; Gordon et al., 1988). Since evidence indicates that anti-social acts among youth occur as a result of parents' child rearing practices (Loeber, 1982), it is important that parents hold their children accountable for their misdeeds. Bank and colleagues (1991) described that parents participating in a parent-training group were encouraged to hold their sons accountable for their actions.

⁹ TJPC (2004) defined a Licensed/Authorized Professional as someone approved by a substance abuse provider and/or a mental health provider, or licensed by the State of Texas to assess, evaluate, diagnose or treat any substance abuse or mental health disorder. Among those listed were licensed professional counselor, licensed social worker, licensed chemical dependency counselor, psychologist or psychiatrist (TJPC, 2004).

Part of the IHFSP process required a coordinated, comprehensive, community-based juvenile probation system. Schurer-Coldiron, Bruns and Quick (2017) defined coordinated care as interagency collaboration, being held accountable, ensuring family involvement, and offering an array of services (e.g., social; health). In their comparison between Wraparound and MST, Burns, Schoenwald, Burchard, Faw and Santos (2000) stated that Wraparound relies heavily on coordination, such as utilizing services that already exist. MST, on the other hand, focuses more on teaching parents how to better meet their child's needs but if there are barriers preventing effective parenting (such as drug abuse), the MST team will coordinate to find outside resources (Burns et al., 2000). However, MST is denoted as a community-based model so mediations occur where the issues are, be it in school, neighborhood or at home (Burns et al., 2000).

Objectives. The objectives of the IHFSP included reducing the number of out-of-home placements of adjudicated juveniles and reducing recidivism. These objectives were to be completed by “strengthening families and promoting their use of community support systems” (TJPC, 2004, p. 2). For many reasons, keeping a family in-tact may be beneficial, if the situation is amenable to change (that is, the family is willing to work at it), and it is safe for any children to remain in the residence (Bath, Richey & Haapala, 1992). As reported in Sexton and Alexander's (2000) OJJDP publication, a Multisystemic approach in juvenile justice is favored over placement outside the home. They explained that programs using a multisystemic approach are suited well for treating a broad range of problems that juvenile delinquents possess. Sexton and Alexander (2000) explained that when a delinquent youth is removed from his or her home, it unintentionally makes the problems more difficult to solve later. Based on the extensive and positive independent

reviews on Family Functioning Therapy (FFT), Sexton and Alexander (2000) advocate the use of FFT's in prevention, intervention, and even post-institutional incarceration.

Program outcomes. The last of the three items listed under performance measures is program outcomes. Based on the *CRM* (TJPC, 2004, p. 2), grantees were to adhere to the following measures:

- Families and youth enrolled into the IHFSP must have been referred by the intervention team to at least one outside resource in the community. This could include programs such as marriage counseling, faith-based programs or Alcoholics Anonymous;
- At most, no more than 35 percent of the participants in each county's project could be deemed unsuccessful. That is, 65 percent needed to complete the program successfully.
- Within one year from exiting IHFSP, no more than six percent of the enrolled juveniles shall be placed into residential care, nor shall these juveniles be court ordered into the Texas Youth Commission.

As stated above, IHFSP programs required families to use at least one community resource. The need for outside resources (also referred to as social support) were an early realization in MST, namely because the intense services only last three to five months (Henggeler, Schoenward, Rowland & Cunningham, 2002, p. 139). To assist with this, MST utilizes family resource specialists (FRS). FRSs ideally live in the same neighborhoods where support is provided; therefore, the FRS's are familiar with a family's resource needs (Henggeler et al., 2002). Additionally, due to the limited time-frame FPPs are conducted, Staudt (2001) explained that a family's success and the overall effectiveness of FPPs is dependent on the services available in ones' community.

The second intended outcome required of IHFSP grantees was a success rate of 65 percent or higher. However, the CRM (TJPC, 2004) did not have a definition for “success” but probation officers/others made this determination, and coded it in the database as such (as described in detail in Chapter 4). Among FPP studies, Gordon and colleagues (1988) indicated that in families with adolescents in crisis or in families with serious delinquents, having fewer out-of-home placements and less recidivism were deemed successful. In Ogden and Hagen’s (2006) MST Norway study, therapists considered a goal “successful” when it was accomplished.

In the CRM (TJPC, 2004), the last required program performance outcome focused on placement prevention. That is, among the IHFSP participants, the intended outcome stipulated that at least 94 percent of participants, one-year post completion, would not be sentenced to a placement or TYC. Remaining in the home has been the core outcome of FPPs. In Chapter 2, many of the studies’ outcomes were provided, including thwarting placement. Additionally, although MST studies individually have described their own rates of placement and their other successes, collectively, MST studies boast a reduction by a median of 54 percent in out-of-home placements (MST, 2018).

Although this section pertained to the performance measures, it provided a base for the next section, the components required for each program to meet the goal, objectives and outcomes. Each subsection below details the additional IHFSP requirements.

Programmatic components. Aside from fiscal requirements, already described, this section details the components of the program required for the juvenile, his/her family, the intervention team, and the department. In addition to the list of programmatic requirements, the CRM (TJPC, 2004, p. 2) instructed grant recipients to follow the services they had written in their

grant proposals. Subsections of the CRM (TJPC, 2004) contained the programmatic components and are broken down as such below. This includes the target population and eligibility criteria, service requirements, caseload sizes, program duration, and required documentation. Lastly, the overall administrative requirements for each participating department are included, as are a brief list of other programmatic requirements.

Target population and eligibility. This section explains what clients the IHFSP targeted and why. Additionally, who was eligible to participate is detailed. Explicitly, the CRM (TJPC, 2004, p. 2) stated that “Priority shall be given to minority juveniles”. As part of the Juvenile Justice and Delinquency Prevention (JJDP) Act of 1974, OJJDP mandated certain requirements for states to obey as recipients of federal funds (Hsia, 1999; Menon & Jordan, 1997). One of the concerns addressed in the Act included the overrepresentation of minorities in the juvenile justice system. Therefore, the JJDP Act specified that states adopt ways to reduce the disproportionate number of minority juveniles in confinement (detention and corrections’ facilities). Per the Act, these criteria were applicable if the proportion of minorities confined exceeded the proportion of each group represented in the general population (Hsia, 1999; Menon & Jordan, 1997). Furthermore, a requirement of the Act mandated states to evaluate if minority overrepresentation existed in the juvenile justice system, and if so, report the magnitude of it¹⁰.

¹⁰ According to The Marshall Project (2018), beginning in October, 2018, the oversight historically provided to states, in their attempt to reduce the disproportionate minority contact, will be cut back drastically. For example, what data OJJDP have been collecting from states in relation to the reduction of disproportionate minority contact will be reduced (Hager, 2018). The OJJDP director, Caren Harp, recently told The Marshall Project (2018) that as a result of so little progress being made on racial disparities within juvenile justice, she “can’t put 50 million more dollars into the exact same process” (Hager, 2018, para 7). Furthermore, Harp said too much money and time are spent by states compiling data, with no improved outcomes (Hager, 2018).

According to Menon and Jordan (1997), in Texas, an Advisory Board on Juvenile Justice and Delinquency Prevention, a unit of the Criminal Justice Division, in conjunction with a Minority Youth special subcommittee in the Juvenile Justice System, wrote and published the required JJDP Act assessment, *Balancing the Scales* (1993). Additionally, the committee's report outlined a plan to address the minority overrepresentation found in Texas' juvenile justice system (Menon & Jordan, 1997). The additional criteria under the CRM's (2004) Eligibility and Target Population required that youth in the IHFSP be formally adjudicated and placed on juvenile probation by the juvenile court system, serving his or her sentence in the community (TJPC, 2004, p. 2). In other words, the adjudicated juvenile could not, for example, be in a secure facility or residential placement while in IHFSP. Furthermore, each juvenile enrolled was required to have completed a substance abuse screening and assessment tool approved by the Texas Commission on Alcohol and Drug Abuse (TCADA; now defunct). Other sub-criteria were as follows: the youth had to be at risk of out-of-home placement and at least one adult living in the same residence had to be willing and able to participate in the IHFSP. Otherwise the youth could not be enrolled in the treatment program (TJPC, 2004).

Services. In addition to the required intensive therapeutic services, described previously, the IHFSP's CRM (TJPC, 2004, p. 2 - 3) required at least one additional service in which the family had to adhere. The list of services a family could participate in included substance abuse prevention education, crisis intervention, parenting instruction/education, youth behavior modification or skill development, and/or any other services recommended in the case plan. Case plans, as described in Footnote 8 and below, under treatment plans, were to be developed with

input from both the youth and family. The services offered and provided were designed to amend family conditions.

Caseload Size. Comparable with other FPPs nationwide, the intervention team could not serve fewer than five juveniles, but no more than seven juveniles, at any given time (TJPC, 2004). In general, FPPs typically include therapists maintaining small caseloads (Morris et al., 1997, p. 22). As Tracy and McDonell (1991) explained, smaller caseloads allow case workers to provide thorough flexibility in meeting the needs of families.

Duration. Although FPPs are short-lived (fewer than six months), they involve intensive services during this time (Lawson, 2005; Ryan & Schuerman, 2004). The duration of services allotted in TJPC's IHFSP was at minimum, three months, and at maximum, five months. These timeframes began the day the youth was enrolled into their respective county's FPP (TJPC, 2004).

Contacts. Intensive treatment is a criterion of all FPPs. Intensive services found in most home-based programs include between five and 20 hours of assistance per week (Bagdasaryan, 2005; Lawson, 2005). In TJPC's IHFSP's, per the CRM (TJPC, 2004) the following conditions applied: at least one member of the intervention team was required to meet with the adjudicated juvenile three times a week, at minimum; at least one face-to-face contact in the home for a one-hour session (minimum) was required; thereafter, two additional contacts per week were required¹¹. These additional contacts could occur in the juvenile's home or in the community but required both the juvenile and family member's participation. The CRM (TJPC, 2004) listed the

¹¹ Per the CRM (TJPC, 2004, p. 1), program contacts occurred between the service providers (those authorized to provide services to the juvenile and family through the program), the family and juvenile. The contacts involved two-way communication, which excluded emails, letters, facsimiles or other web-based communication. In addition to being in person, contacts were allowed by telephone (TJPC, 2004, p. 1).

community contacts allowed, which included programs that focused on educating families, attending church functions or involvement with groups participating in skill-building exercises. Per the *CRM* (TJPC, 2004) the program also had strict guidelines in regards to joint contacts. For example, if the juvenile probation officer and the therapist (both part of the intervention team) conducted a home visit simultaneously, they could not consider the joint visit as two separate visits. Lastly, although counseling was allowed to occur at the youth's school, it could not be done during regular school hours. That is, the youth may not be removed from any class to participate in counseling (TJPC, 2004).

Treatment plans. In addition to the aforementioned requirements, each intervention team had to adhere to the legislative mandate from Title 37 of the TAC, Chapter 13, which included requirements for all juvenile probationers in Texas. This included case plans (treatment plans), as previously described and defined. Ten calendar days, post-enrollment into IHFSP, case plans had to be created and signed by all parties (intervention team, juvenile, and family). The case plans had to outline all services offered to the youth and family during their enrollment in the FPP, and indicate what the services were intended to accomplish (TJPC, 2004, p. 3). As previously described, the community resources that the intervention team recommended, based on the needs of each family, were written in the case plan. Lastly, the juvenile and family, as well as the supervising juvenile probation officer, all were required to receive a copy of the case plan (TJPC, 2004). Although not specified in the IHFSP, in MST, individual treatment plans are created based on strength and weakness assessments conducted. These assessments explore more than just the youth's and the family dynamics, but also incorporate the school and peer system. These have

shown great success among delinquent youths in regards to reducing recidivism and preventing placement outside the home (Henggeler et al., 1992).

In addition to the initial case plan, the *CRM* (TJPC, 2004) stated that at a minimum, every 30 calendar days, the case plans were to be reviewed by the intervention team, juvenile, and family. Again, signatures of all participants and copies were required. Any informal community supports were to be integrated into the case plan reviews within 45 calendar days prior to the youth's discharge from the program (TJPC, 2004).

Based on crisis intervention theory, described in Chapter 2, each juvenile was required to have a crisis plan, detailing the actions the juvenile and his/her family could take if a crisis were to occur. Within 72 hours of being admitted into the FPP, the crisis plan was to be developed, listing a person from the intervention team whom they could contact seven days a week at any hour (TJPC, 2004).

Prior to terminating FPP treatment, a written transition plan and an aftercare plan were required. The transition plan needed to outline how the family would transition out of their involvement with FPP. As required in the *CRM* (TJPC, 2004), the transition plan had to include any necessary steps the juvenile and family would take to shift their reliance from the intervention team. This plan also required signatures of all involved parties (TJPC, 2004). As the final step, a written discharge plan (also referred to as an aftercare plan or exit plan) was to be completed by all the involved parties. As required, the aftercare plan had to outline what interventions and goals the juvenile and family were to follow when they exited the program (TJPC, 2004).

Administrative requirements. Administratively, each department was required to have a written manual with all the policies and procedures (P & P) outlining the services and functions of

their FPP, including policies that governed the employees on the intervention team. Each respective intervention team member was required to sign an acknowledgement form indicating receipt of or had access to the P & P (TJPC, 2004). Criminal history background checks were required on all employees, either employed by the county or contracted with the FPP (TJPC, 2004). Each department had to ensure team members maintained current licenses and/or certifications, on employees whose job positions required those (TJPC, 2004).

Additionally, data submissions were required monthly via the FPP's database system (FPS) (TJPC, 2004). Grantees were subjected to on-site monitoring visits, both planned and unannounced (TJPC, 2004).

Many of the same components required in the FPP models, covered in Chapter 2, were reflected in this section. The last section of Chapter 3 is an overview of the IHFSP evaluation. This includes who TJPC contracted with for an evaluation.

Evaluation of TJPC's IHFSP

TJPC contracted with the University of Texas' Center for Social Work Research to conduct an intensive independent evaluation of the effectiveness of each local program (TJPC, 1998 and TJPC 1999). The following description is from the UT *Steve Hicks School of Social Work, Center for Social Work Research* website (2017, para 2):

The [In-Home Services Program] evaluation included both process and outcome components. The process evaluation was a retrospective analysis of the program's planning, development, and implementation. The purpose of this part of the evaluation was generally descriptive, allowing for a fuller understanding of the processes at work in the agencies, which impacted the progress of the clients being served. The evaluation also focused on innovative interventions. It functioned to provide program administration and staff information necessary to modify interventions based on recommendations that emerge from the ongoing evaluation. Outcome measures were identified as follows:

- Parent/guardian ability to effectively address the behavior and needs of the family
- Communication between parent/guardian, siblings, and the juvenile
- Pro-social development
- Youth criminal involvement and anti-social activity
- Emotional warmth and strength among family members

Aside from the reported information above, no formal evaluation was located from UT's *Center for Social Work Research*. Furthermore, the formal evaluation was not located by searching the researcher's name, Darlene Grant, Ph.D. Dr. Grant was, in the late 1990s, awarded the funds to evaluate the program (UT Austin: *Steve Hicks School of Social Work, Center for Social Work Research*, 2017). To this author's knowledge, there have not been any exploratory evaluations of the effectiveness of these programs (though see Eichelberger, 2010).

Chapter 3 delivered a full synopsis of the former and current Texas agencies which have and currently provide oversight to juvenile justice, including its history and recent transition merging the two agencies (TJPC and TYC) into one, TJJD. Furthermore, great detail was provided about the IHFSP, including its funding source and programmatic components. Previous evaluations were mentioned.

Chapter 4 has data and methodology. The sample, methods, analytical plan, and overarching hypotheses are included. Limitations are also described. A table is provided on the demographics of the entire sample within each group: treatment (IHFSP participants) and the control (probation as usual). The demographic table includes onset age, sex, race, involvement in prior delinquency, and offense severity (combined).

CHAPTER 4

DATA AND METHODOLOGY

Chapter 4 contains sections pertaining to data and methodology. The chapter begins by providing details on the sample. The chapter is then divided into four additional sections: methods, analytic plan, and hypotheses. In the section on sampling, a brief overview of the data source is provided with an explanation of the sampling frame and design. These include the overall number of cases in the sample, separated by demographic variables, such as sex, race, and age. The second section of Chapter 4 covers methods, including research design, procedures, and measures. Operational measures are provided for each variable. This includes the dependent, independent, and control variables. The analytical plan is in the third section; it describes the statistical analyses performed. In section four, the research questions and overarching hypotheses are presented.

Sample

Data source. The data for this dissertation were obtained from TJPC in 2007. TJPC was described in Chapter 3. As required by the State of Texas, each juvenile justice department is required to collect data on any youth with a referral (see Footnote 5, Chapter 2). This includes youth court-ordered onto regular probation and youth initially or subsequently court-ordered into the IHFSP, as described in the *CRM* (TJPC, 2004).

Before and during the time of the data collection, the majority of probation departments in Texas used a database called CASEWORKER to enter information on each referred juvenile. When a new case was opened by a department on a referred youth, a personal identification (PID)

number and referral numbers were generated by CASEWORKER; dispositions¹² were tied to those numbers. For example, an initial action (disposition) taken may be deferred prosecution¹³ by the department, prosecutor, or court (as explained in the Footnote 12). However, if the juvenile does not abide by the terms and conditions of deferred prosecution, the youth may be court-ordered to formal probation (OAG, 2016). The CASEWORKER database included criminal arrests/offense histories, intakes, detention history, referrals, dispositions. Personal information for each juvenile (e.g., date of birth, sex, race, address, number of siblings, child abuse history, gang affiliation, school status) was also collected and manually entered by department personnel. Additional information included parental criminal histories, and any programs the juveniles may have been involved in (e.g., but not limited to: counseling, community service, gang prevention/intervention, the FPP). Any time there was a change to a case (for example, a new arrest, an extension or modification of the probation sentence, court-order into placement), updates were completed in CASEWORKER by department personnel (TJPC, 2006). The start and end dates of each transaction (arrest dates, disposition dates; program dates) were put into the system as well.

¹² Dispositions in the State of Texas were handled three ways: department, prosecutor or court. The following were the types of dispositions (1) by the department: dismissed, supervisory caution, deferred prosecution; (2) by the prosecutor: no probable cause/dissmised, refused, non-suited, supervisory caution, deferred prosecution; and (3) by the court: dismissed, not guilty, adjudicated with no disposition, supervisory caution, deferred prosecution, adjudicated to probation, determinate sentence probation, modified/extended probation, indeterminate commitment to TYC, determinate commitment to TYC, certified as an adult, consolidated and disposed in another case or transferred with no disposition (TJPC, 2006).

¹³ Deferred prosecution/deferred adjudication (used interchangeably; sometimes referred to as informal probation) is when a department defers recommending a case, or a prosecutor or judge defers the act of adjudicating an individual for the illegal act(s) the individual committed. The timeframe/term served of this informal probation is usually six months. During this time, if the youth successfully completes this non-formal sentence (i.e., does not commit any new status or criminal offenses/referrals, and follows the rules bestowed upon the individual, the youth will not be formally prosecuted; TJPC, 2006).

The IHFSP grant recipients were also required to use a second database called the Family Preservation System (FPS). This captured the information on each youth and family enrolled in IHFSP (TJPC, 2004). Some variables collected in the FPS overlapped with CASEWORKER, but some did not. FPS contained information such as the number of adults, siblings, and non-siblings living in the household. The adjudicated youth's educational information (grade level, grade point average, number of school discipline referrals, number of absences from school, special education needs) at program onset and at termination of the FPP was also collected and entered into the FPS database. Additionally, information such as the dates, duration of each intervention team meeting (in minutes), meeting attendees (such as the probation officer, case manager, the youth alone, or the youth and family together) was also collected and entered into the FPS. Unfortunately, the FPS database and collection of information began in August, 2002, four years after the IHFSP initially began in Texas. Furthermore, grant recipients inconsistently submitted data into FPS between August and December, 2002. As a result of some of these limitations, some data were missing, as explained later.

Sampling frame and design. The sampling frame for this sample was based on the similarities of the counties from two of the 10 juvenile probation departments, both recipients of the IHFSP grant. In terms of square mileage, they are similar in size. Based on the 2000 U.S. Census, these two counties had similar youth demographics in regards to age, race, and sex (Texas County Information Program's On-line Database, 2018). For example, per the 2000 US Census, the percentage of males and females in the age range of 10 to 17 comprised six percent of each county's total juvenile population. Furthermore, both counties followed the same racial pattern in

their overall population: the majority were White, followed by Hispanic, Blacks and others (Texas County Information Program's On-line Database, 2018).

The two counties each enrolled approximately 15 youth per calendar year (CY) into their respective FPPs. Additionally, each county submitted their data timely and accurately to TJPC. Lastly, personnel from each county were willing and available to cooperate, in the event additional information was needed. Meeting criteria such as these assisted in helping to avoid selection bias.

Because randomization of subjects was not possible, the youth for this study were selected by the probation department staff, as discussed further below, in the Research Design section. The selection of youth was to be based on the youth's imminent risk of removal, which may have stemmed from behaviors and other issues, such as a new referral. The referrals may have been technical violations (failing to attend school; drug use, etc.), new offenses, family problems or a combination of some/all. Therefore, the sampling design is purposive, nonprobability, but methods are used to help compensate for this potential limitation.

Participants. This subsection provides details about the participants, including the size of the sample and their characteristics. Each individual in the data were delinquent youth between the ages of 10 and 17. Seventeen-year-olds are in the sample based on age and length of sentence received when the youth was between the ages of 10 and 16 years-old. Also, a youth's juvenile probation term may have been extended or modified (including at age 17); or the juvenile may have engaged in delinquent conduct or conduct indicating a need for supervision (CINS) before turning age 17 (OAG, 2016, p. 5). For example, the juvenile's arrest may have been postponed due to an ongoing criminal investigation.

All the youth in the sample were ordered a minimum term of six-months' formal probation, serving their time in community supervision (probation). Although a condition of being in the FPP was that all youth participants were serving an adjudicated probation sentence (as were the control group, per the author's request to TJPC), several of the youth in the sample had previously been on deferred prosecution. The youth's sanction of deferred prosecution may have ended, or if a youth committed subsequent/new offense(s) or failed to comply with the rules set initially when placed on deferred prosecution, the youth's original deferred prosecution sentence could have been revoked, leading to the formal adjudication (OAG, 2016).

Data on both FPP recipients and non-FPPP recipients were obtained. Non-recipients served as a comparison group. The comparison (control) group were not enrolled in, nor participants of, the FPP. However, many of them were court-ordered into or involved in other programs offered by their department, such as anger management, intensive supervision program (ISP), or wearing an electronic ankle monitor. After data editing and cleaning, (i.e., removing 29 treatment group cases from the comparison group's data set; placing them into the treatment group's data set; merging numerous original files; etc.), there were a total of 1,298 observations (treatment = 172; control = 1,126). The 172 juveniles in the treatment group included all of the IHFSP youth that each of the two counties had data on since their inception of the program.

The sample does contain each individual's referrals prior to adjudication and prior to enrollment into FPP and/or other programs (as previously mentioned). That is, the entire referral history of the youths in the sample was included. This was quite beneficial considering the initial data request was only for fiscal years 2002 through 2007. The data contain referrals as far back as

the year 1995. This will allow analyses to include onset age compared with subsequent referrals, dispositions, and placement.

Methods

The first subsection under Methods is research design and includes threats to validity based on this design. The measurement section describes the variables used in this study and the operational measures. The concepts for selecting them were explained in the Chapter 2 under risk factors.

Research design. A quasi-experimental design with a non-equivalent control group was used in this study. Adjudicated juvenile probationers are the unit of analysis. The data were analyzed using propensity score matching (PSM). This assisted in reducing the risk of intervening and/or spurious relationships among variables. As described by Gray (2009), a strength in using a quasi-experimental design is that it approximates an experimental design. Furthermore, quasi-experimental designs support causal inferences and work well with retrospective studies (Gray, 2009).

As indicated previously, random assignment could not be completed because the federal grant program essentially prohibited it. Without randomization, there are threats to internal validity. For example, in this program, youth had to be at imminent risk of being removed from home. But because determining imminent risk was decided upon by the juvenile probation department staff, selection bias was possible. Guo and Fraser (2010, p. 276; 278) referred to this as administrative selection; a common bias found in social services. In the case of the FPP, those making recommendations to the judge about ordering the youth and family into the program may

be basing the family's circumstance on need or risk (or worse, the probation officer was tired of dealing with them). As such, service outcomes are confounded with a selection effect.

Another likely form of bias in this study is self-selection. Unfortunately, when participation is prominently based on self-selection, even in situations when a judge, for example, mandates participation, participants resistant or passive towards treatment are apt to be different than the active participants (Guo & Fraser, 2010, p. 277). Heckman and Smith (1995) stated that a family and youth may have decided to enroll in the FPP due to a lack of or dislike of other available options. This can cause nonparticipants to have higher outcomes "than those that participants would have had if they had not participated, implying a negative selection bias term" (Heckman & Smith, 1995, p. 88).

Procedures. The data analyzed for this study were obtained in August, 2007 from TJPC for the author's Master's thesis. Two Texas counties' juvenile delinquency data were chosen based on numerous factors. For the original project, several data were requested from TJPC. However, much of which pertained to the IHFSP (e.g., number and length of counseling sessions; participants in counseling sessions, number of household members, adults living in the home, etc.) were not utilized in this study. Therefore, the eight separate data files that were used are discussed. These data sets were individualized by group, labeled *FPS* and *Comparison*, then further divided as follows: *Children; Program; Supervision; and Referrals*.

Data sets and variables. The two files, labeled *FPS Children* and *Comparison Children*, mirrored each other with the following same variables: headquarter county number, personal identification number, referral number, race, sex, gang, sexual abuse, physical abuse and emotional abuse (as described in the following section).

The files containing *FPS Program* and *Comparison Program* each had these variables: headquarter county number, personal identification number, referral number, program type, program begin date, program end date, and program outcome. *Program types* were divided into the following: ANG-Anger Management/Conflict Resolution; CNS-Counseling Services; ERL-Early Intervention/First Referral; ELM-Electronic Monitoring; EXP-Experiential Education; FAM-Family Preservation; ISP-Intensive Supervision; LIF-Life Skills; MTL-Mental Health; SOF-Sex Offender; SAP-Substance Abuse Prevention/Intervention; SUT-Substance Abuse Treatment; and OTH-Other. The Comparison group's *Program type* mistakenly had 29 FPP youth in that file (labeled *FAM* in the *Comparison Program type* file); hence, those cases were placed correctly into the FPS data file's *Program type*. Because several youths from both the treatment and control groups were often ordered into at least one of these specialized programs, the youth were matched on the more prevalent programs, that is, those where a significant number of youths had been court-ordered into them. These included ISP, ELM, ANG, and LIF. *Program outcome* contained the following labels in the data files: S-Completed; B-Absent without Permission; J-Transferred out of Jurisdiction; U-Unsuitable/Not Eligible; and X-Failure to Comply. TJPC had a label for Deceased, but none of the data contained this.

The *FPS Supervision* and *Comparison Supervision* files also shared the same variables: headquarter county number, personal identification number, referral number, supervision type, supervision begin date, supervision end date, and outcome. *Supervision type* included: PROB-Court Ordered Probation; DEFP-Deferred Prosecution; CREL-Conditional Release from Detention; TEMP-Temporary Pre-Court Monitoring; INDR-Indirect Supervision; PRBI-Interim Probation; PRBP-Permanent Probation (Transferred); and DEFI-Interim Deferred Prosecution.

Supervision outcome had the following variables: S-Completed; A-Transferred to the Adult System; B-Absent without Permission; D-Deceased; J-Transferred out of Jurisdiction; T-TYC Commitment; and X-Failure to Comply.

Lastly, *FPS Referrals* and *Comparison Referrals* also had the three initial variables as the previous categories: headquarter county number, personal identification number, and referral number. Additional variables were referral type, school status, last grade completed, primary alleged offense code, primary disposition offense code (shortened to primary offense), primary disposition-TJPC code, and disposition date. The referral type contained the following descriptors: FM-Formal; PF-Paper Formalized; PA-Paper Complaint; CS-Courtesy Supervision; TR-Interim/Permanent Transfer; CI-Crisis Intervention; CD-Contract Detention; CP-Contract Placement; NJ-Non-Jurisdiction; and IC-Interstate Compact. The school status descriptors were: IS-In Regular School; DO-Dropped Out; SE-Suspended/Expelled; GD-GED; GR-Graduated; HS-Home School; AE-Alternative Education; JJ-Juvenile Justice Alternative Education Program; CS-Charter School; PS-Private School; and UN-Unknown.

DPS disposition offense codes and TJJPC primary codes. The primary disposition offense codes came from the Texas Department of Public Safety's (DPS') Code of Criminal Offenses. For example, the code 24110001 is for Unauthorized Use of a Motor Vehicle (UUMV), a third-degree felony. The primary disposition-TJPC codes included: *Department Actions*: 010-Dismissed or Withdrawn; 020-Supervisory Caution; 030-Deferred Prosecution. *Prosecutor Actions*: 040-No Probable Cause/Dismissed; 050-Refused; 051-Non-Suited; 060-Supervisory Caution; 070-Deferred Prosecution. *Court Actions*: 080-Dismissed; 081-Not Guilty; 082-Adjudicated with no Disposition; 090-Supervisory Caution; 100-Deferred Prosecution; 110-Adjudicated to Probation;

111-Determinate Sentence Probation; 120-Modified/Extended Probation; 130-Indeterminate Commitment to TYC; 140-Determinate Commitment to TYC; 150-Certified as an Adult; 910-Consolidated and Disposed in Another Case; and, 920-Transferred with no Disposition.

Measures. This subsection describes the treatment variable, as well as the dependent and control variables used in the analyses. The operational measures are provided for all variables. Table 1, Descriptive Statistics, is located in Chapter 4 and includes the variables representing the entire sample. It has been divided into two columns: the IHFSP group (Treatment), and the comparison (Control) group.

Based on the program's goal, described in Chapter 3 (rehabilitate offenders through a comprehensive, community-based juvenile probation system; TJPC, 2004), the treatment variable is *group*, a dichotomous variable indicating if a probationer was in an FPP (1) or not (0). The variable *group* was created from the original values labeled FPS (previously mentioned in regards to the databases used by the program), and FAM (described in the previous section under program type). As stated in the aforementioned description about FPPs, it is clear that these programs are both comprehensive and community-based. Thirteen percent of the total sample received FPP services.

If the program's requirements were enacted and followed through by all parties, namely the family and delinquent youth, being ordered into an FPP would have precipitated families to spend more time together. As Warr (1993) found in his study with data from the National Youth Survey, family time impedes the formation of peer groups. And as Haynie (2001) pointed out, the literature clearly indicates that delinquency among adolescents includes involvement between one's own delinquency and friends' delinquent behaviors. Thus, involvement in an FPP had the

potential to meet the program's objectives, reduce recidivism and reduce out-of-home placement among treatment youth (TJPC, 2004).

The two objectives designated as the criterion variables are *recidivated* and *removed*. Recidivated reflects how the Council of Juvenile Correctional Administrators' (CJCA) White Paper (2009), measured official recidivism "in terms of one or more system responses, such as arrest, filing charges, adjudication, incarceration or parole revocation" (p. 9). Interpreted differently, and based on the chance that bias can be in any measure of recidivism (e.g., external factors that influence both arrests and re-arrests: police targeting certain neighborhoods, differing policies among jurisdictions and courtrooms, etc.), the CJCA (2009) said a key factor with their definition is that an official record always involves a youth's alleged behavior/other behavior, and at least one juvenile system official's formal decision.

In this study, the term recidivism followed the CJCA's (2009) definition, and included an additional level of involvement in the juvenile justice system. That is, the dependent variable, *recidivated*, was only applicable to youth who were referred on a subsequent, Class B misdemeanor or higher offense referral, within one year of their supervision end date. A disposition may place the youth back on regular probation, or include sentencing the youth to the Texas Youth Commission (TYC). However, an offense referral may be dismissed, found not-suited, or the youth may be found not guilty. For both groups in the sample, the variable recidivated was coded 1 if the aforementioned occurred; 0 if not. By tracking offenses\ no more than one year helps maintain consistency and assists in reducing heterogeneity in the sample (Savolainen et al., 2002, p. 24).

Referrals may be from law enforcement, schools, probation departments, TYC, and other (such as justice and municipal courts¹⁴; TJPC, 2006). The referrals would have been referred to the prosecutor's office for a disposition (see Footnote 12), and the juvenile was formally charged for the offense referral. Refer back to both Footnotes 5 and 14 for explanations on referrals in the data. The other dependent variable, *removed* indicates a youth was removed and ordered into a placement, post-treatment (explained in Footnote 1). Removed is a dichotomous variable, coded as yes = 1; or no = 0.

The predictor variables historically associated with recidivism among juvenile offenders include onset age, abuse, gang membership, high number of overall referral offenses, and number of court sanctions (Carcach & Leverett, 1999; Cottle, Lee & Heilbrun, 2001; Diamond et al., 2011; Myner, Santman, Cappelletty & Perlmutter, 1998). All of these variables were described in the literature review as risk factors. Additionally, some of these variables were used to match cases in the treatment and non-treatment groups in Stata. A detailed explanation on matching is provided in the third section of this chapter, the Analytic Plan.

The independent (covariate) variables from the sample, described by their measurement, are explained here. *Onset age* is measured at the interval-level and is a continuous variable. It was originally the actual age at which a youth first received a referral. Age was recoded to answer some research questions, and standardized for PSM; it was recoded into three categories: ages 10 to 12

¹⁴ Per the Juvenile Justice Handbook from Texas' Attorney General Office (OAG, 2016, p. 30), municipal court and justice court cases usually include (1) truancy violations. (2) fine-only misdemeanors; (3) traffic offenses; and (4) tobacco and alcohol violations. If the youth has had, at minimum, two prior misdemeanor adjudications (excluding traffic offenses), the case must be transferred to juvenile court. The only exception is if a municipal court or justice court has a juvenile case manager working at that level.

= 1; ages 13 to 14 = 2; and ages 15 to 17 = 3, creating the new variable, *age_c*. Referrals for criminal offenses went to the county juvenile probation department or county prosecutor's office (regardless of whether the youth was formally charged for the offense referred). For example, a youth's first referral in the department's database may include a youth as young as 10 years old, and may be a Class C misdemeanor offense or lower (i.e., a less severe offense), such as failure to attend school. Failing to attend school is usually punishable by a fine only (but refer to Footnote 14 again). In Texas, misdemeanors are the least severe/lowest type of misdemeanor offenses, while a Capital Felony is the most severe type of offense in Texas (OAG, 2016). The youngest *onset age* in the sample is 10; the oldest *onset age* is 16 (as determined by the term *child* in the State of Texas Family Code, §51.02(2); OAG, 2016), unless, as stated, the arrest was conducted when the youth was 17, or the most severe offense was committed, post-previous involvement with a probation department.

The remainder of the risk-factor variables are described in this paragraph, including abuse, gang member, prior offense referral history, and disposition offense severity. In the CASEWORKER database, there were three types of abuse (emotional, physical and sexual). Each type was coded 0 = no; 1 = yes; and 2 = unknown. A large number of cases were coded unknown in each abuse category, as displayed in the descriptive statistics, Table 1. *Gang member* was recoded from four categories (no; yes; suspected; and unknown) to three, because there were only two suspected observations. These were recoded to unknown. Table 1 displays the variable *gang*, coded 0 = no; 1 = yes; and 2 = unknown. The variable for prior criminal referrals, *prioroffense* (referred from here on as prior offense), was coded 0 = no priors; and 1 = yes, youth had at least one prior offense. Prior offense was determined based on the youth having a Class B misdemeanor

or higher, before the initial formal adjudication (formal adjudication is coded either 110 or 111 in the TJPC CASEWORKER database). However, in a few cases, as displayed in Table 1, a youth may have been adjudicated and placed on formal probation based only on a Class C misdemeanor or lower. If the youth had no other offenses, or, one other that was equal in severity, prior to the formal adjudication, those referrals remained and counted as prior offenses. The variable *primary disposition offense* (referred from here forward as only primary offense), was originally a DPS offense number (previously described). Syntax was written to label these by actual offense name (such as burglary), and later, to address the hypotheses, and labeled by their offense severity (such as Class A Misdemeanor). Initially string variables, these were encoded into long variables, and coded as CI = 1 (citation); F1 = 2 (First Degree Felony); F2 = 3 (Second Degree Felony); F3 = 4 (Third Degree Felony); FS = 5 (State Jail Felony); F* = 6 (lesser degree Felony); MA = 7 (Class A Misdemeanor); MB = 8 (Class B Misdemeanor); MC = 9 (Class C Misdemeanor); and M* = 10 (lesser degree Misdemeanor).

The two control variables are *sex* and *race*. *Sex* is a dichotomous, nominal-level variable coded female = 0; male = 1. *Race* is also a nominal-level variable. The original data coded race as: A-Asian; B-African American; H-Hispanic; I-American Indian; O-Other; U-Unknown; and W-White. Because the data only has seven cases labeled as Other, Asian, Native American and unknown, these cases were recoded into White. The recoded variables are: White = 0; Non-White (Black and Hispanic) = 1.

The descriptive statistics are presented below in Table 1. As previously stated, not all the variables were used in the analyses. However, because they are known risk factors (gang member; emotional abuse, sexual abuse, physical abuse) they are referenced in Table 1.

Table 1. Descriptive Statistics

Treatment (n = 172)		Control (n = 1126)			Total (n = 1,298)		
Variables	N (%)	Min	Max	N (%)	Min	Max	N (%)
Treatment Variable:							
Group	172 (13%)	0	1	1126 (87%)	0	1	1,298 (100%)
Outcome Variables:							
<i>Removed</i>		0	1		0	1	
Yes	29 (24%)			91 (76%)			120 (100%)
No	143 (12%)			1035 (88%)			1178 (100%)
<i>Recidivated</i>		0	1		0	1	
Yes	50 (23%)			299 (86%)			349 (27%)
No	122 (13%)			827 (87%)			949 (73%)
Controls & Covariates:							
<i>Sex</i>		0	1		0	1	
Male	113 (11%)			892 (89%)			1005 (100%)
Female	59 (20%)			234 (80%)			293 (100%)
<i>Race</i>		0	1		0	1	
White	94 (14%)			598 (86%)			692 (100%)
Hispanic/Black	78 (13%)			528 (87%)			606 (100%)
<i>Prior Offenses</i>		0	1		0	1	
Yes	112 (16%)			601 (84%)			713 (100%)
No	60 (10%)			525 (90%)			585 (100%)
<i>Headquarter Co.</i>		0	1		0	1	
County A	90 (18%)			411 (82%)			501 (100%)
County B	82 (10%)			715 (90%)			797 (100%)
<i>Primary Offense</i>		0	10		0	10	
Felony 1	1 (.03%)			33 (97%)			34 (100%)
Felony 2	16 (10%)			149 (90%)			165 (100%)
Felony 3	9 (12%)			65 (88%)			74 (100%)
FS or lower	36 (13%)			246 (87%)			282 (100%)
Misd. A	65 (15%)			356 (85%)			421 (100%)
Misd. B	34 (20%)			193 (17%)			(100%)
Misd. C/lower	11 (12%)			84 (88%)			95 (100%)
<i>Gang</i>		0	2		0	2	
Yes	20 (15%)			114 (85%)			134 (100%)
No	4 (16%)			21 (84%)			25 (100%)
Unknown	148 (13%)			991 (87%)			1139 (100%)
<i>Emotional Abuse</i>		0	2		0	2	
Yes	16 (16%)			82 (84%)			98 (100%)
No	94 (14%)			576 (86%)			670 (100%)
Unknown	62 (12%)			468 (88%)			530 (100%)

<i>Sexual Abuse</i>		0	2		0	2	
Yes	12 (14%)			71 (86%)			83 (100%)
No	99 (14%)			597 (86%)			696 (100%)
Unknown	61 (12%)			458 (88%)			519 (100%)
<i>Physical Abuse</i>		0	2		0	2	
Yes	17 (19%)			71 (81%)			88 (100%)
No	94 (14%)			597 (86%)			691 (100%)
Unknown	61 (12%)			458 (88%)			519 (100%)
<i>Age</i>		M	SD		M	SD	
10 - 12	75 (25%)	11.32	.74	225 (75%)	11.32	.76	300 (100%)
13 - 14	77 (15%)	13.49	.50	432 (85%)	13.61	.49	509 (100%)
15 - 17	20 (.04%)	15.4	.50	469 (96%)	15.51	.61	489 (100%)

The next section is the analytic plan and includes data transformation and the specific statistical analyses performed. Pros and cons about PSM are also described.

Analytic Procedure

Prior to any data transformations, several commands in Stata were completed. This included preparing the data for statistical procedures, as explained below in the first section. Stata 12.0 was used for all other statistical analyses. Propensity score matching (PSM) is described fully in the second section. This includes the four PSM steps required, as well as any other statistical procedures that occurred.

Data preparation. In the data preparation phase, the data sets addressed in the previous section were merged based on key variables. Data were also screened before analyses.

Merging. The data sets for the treatment and the comparison groups were merged from the eight aforementioned separate data files mentioned in the Procedures section in this Chapter. Merging was primarily completed using three key variables (headquarter county number (*hdqtco*), personal identification number (*pid*), and referral number (*referralnumber*)). Variables were recoded, collapsed, and/or renamed as described previously.

Screening. The data were screened to check for any missing observations using the *misschk* command in Stata. Because the other TJPC data files (not utilized for this study) contained these values, a search was conducted within those data sets and the values were added as needed. Originally, 43 cases in the entire sample of over 5,550 values were missing a disposition date, disposition (outcome) and supervision end date. However, half of these 43 youths had been adjudicated on these cases prior to the 2007 data collection and were missing at random. The other half were likely pending a disposition, since the data were collected in the late summer of 2007. Because these cases would only have affected the variable recidivated, a manual, visual check was completed and discovered that these missing observations did not affect the total count in the final sample of 1,298 youths. In each case, there had been other post-treatment referrals in which the individuals were adjudicated; therefore, the cases with the missing disposition dates, disposition outcomes and supervision end dates, were not required for the variable, recidivated. Tests for normality (*sktest*) and graphs for univariate outliers were run (*gladder*, *graph box* and *histograms*) on the only continuous variable, age. Mahalanobis Distance scores, using Stata's *normtest* command, checked for multivariate outliers. Based on the critical values of the observations, all values surpassed the critical value; thus, none were eliminated. The Stata command *rvfplot* was conducted to check for heteroskedasticity.

The Stata command *sktest* provided a summary of skewness and kurtosis scores. Due to possibilities of skewedness and kurtosis, the only continuous variable, age, was standardized by using the Stata command *zscore*. After standardizing age, a *t*-test was conducted, using the dependent variable, removed, by the treatment variable.

Stata's multilevel mixed-effects logistic regression command, *xtmelogit* was used due to the binary/binomial responses in this study. Per Stata's (StataCorp, 2011, p. 240) explanation of *xtmelogit*, mixed models contain both random and fixed effects. Random effects are summarized, based on estimated variances (and covariances). Furthermore, and to provide an explanation as to why *xmelogit* was included in the model, the grouping structure of the data used contained two-different levels of nested groups (i.e., two Texas counties; StataCorp, 2011, p. 240). Two Stata options were also included with the command: *or*, which reports the fixed-effects coefficients (as odds ratios); and, *variance*, which provides the random-effects parameter estimates (as variances and covariances; StataCorp, 2011, p. 239).

Lastly, the *predict P, mu* command was executed. This provided the predicted mean, which is later used in the model. Following the aforementioned transformations, the data were ready for PSM analyses. The following section describes the steps involved.

Propensity score matching (PSM). Using a quasi-experimental design when a randomized experimental design is lacking has been a debated topic by criminologists (see Clear, 2010; Sampson, 2010; Weisburd, 2010). However, if a true randomized clinical trial (RCT) cannot be completed, PSM provides a reasonable approximation. Additionally, because there is a possible threat of selection effects in a quasi-experimental design, PSM is often relied upon (Onifade, Wilkins, Campbell & Peterson, 2011). Some additional advantages of using PSM are improving internal validity, providing a better inference, and reducing bias in estimates (Connelly, Sackett & Waters, 2013; Monaghan & Attewell, 2014). Although propensity matching adjusts for selection bias, as Chen and Zieser (2008) explain, it does not completely control it. However, it does estimate the counterfactual effects (Chen & Zieser, 2008).

The counterfactual approach. The development of the counterfactual model (of causal inference), as explained by Monahan and Attewell (2014), was two-fold. It was created when only non-experimental, observational data on outcomes and interventions were available, and it was created to assist in evaluating policy interventions/effects of treatments when random-assignment experiments were unavailable (Monahan & Attewell, 2014).

To address the research goal in this study, a counterfactual approach was used. One goal for using this approach is that among covariates, it might look for a balance, at least in theory (Monaghan & Attewell, 2014). This procedure includes a match between each treated-group participant with at least one of the comparison group individual(s) (untreated). Essentially, all the observed covariates of each of the untreated members are identically matched to the treated participants (Monaghan & Attewell, 2014). Thus, the word “counterfactual” is fitting: each comparison group youth could be viewed as “providing an estimate of what outcome a matched treated subject would have had, if the treated subject had not received the treatment (Monaghan & Attewell, 2014, p. 6; Morgan & Winship, 2007).

Orrick and Morris (2015) explained that when using a counterfactual analysis, the outcome estimates are generated for treated cases (FPP participants) in comparison to a matched group of untreated cases (non-FPP participants). That is, the latter group’s probability of receiving treatment is near-equivalent to the former group who did receive treatment (Guo & Fraser, 2010; Orrick & Morris, 2015). Orrick and Morris (2014) conducted each PSM step separately for each outcome variable. The same was done in this study.

Following Barnes and colleagues (2010), the counterfactual analysis was done using PSM. In the first step of PSM, *t*-tests are computed on each covariate and both outcome variables. This

step determines if there are any statistically significant differences that exist between the FPP group and the non-FPP group.

Additional steps. The second step with PSM includes obtaining propensity score estimates for the treatment effect. This can be accomplished by using the command *psmatch2* in Stata which runs a logistic regression model and produces the probability estimates indicating which participants were or were not treated, prior to being court-ordered into treatment (Orrick & Morris, 2015). Orrick and Morris (2015) explained that when following this step, the treatment variable substitutes where the outcome variable would be used (if this were a traditional logistical regression model). All covariates should be included in the model (those that clearly occurred prior to treatment) and the option *logit* can be used to obtain regression coefficients (Acock, 2012, p. 306; Orrick & Morris, 2015).

Based on similar probabilities, a nearest neighbor matching algorithm (without replacement) is utilized to match FPP youth with non-FPP group. This process is based on the predicted probabilities, mentioned in the previous paragraph. A caliper of .05 was used to align those who received treatment with another probationer, one who was not in the FPP group. The probability of a non-FPP youth receiving the treatment was therefore within .05 of the FPP match. According to Apel and Sweeten (2010), calipers specify how far apart the potential matches can be on the metric for propensity scores, while maintaining its use as a counterfactual. Due to fewer cases being retained as the size of the caliper decreases, Apel and Sweeten (2010) recommended estimating treatment effects by using several different calipers; this will assist in determining the estimates of stability. Additionally, to estimate treatment effects, two common methods, proposed by Apel and Sweeten (2010), include the average treatment effect (ATE), and the average

treatment effect on the treated (ATT). Barnes and colleagues (2010) explain that it is within this second step that any previous variation in the outcome variables, attributable to the covariates, are removed. This warrants that the distributions of the covariates, included in the model, are similar in the two groups (Barnes et al., 2010).

The third step in PSM uses another round of *t-tests* (Barnes et al., 2010; Orrick & Morris, 2015). In Stata, by using the command *pstest* with each covariate, as well as the treatment variable (group), and including the option *both*, the means for the unmatched (obtained in the first set of *t-tests*) and matched treated and control groups are provided. Barnes and colleagues (2010, p. 444) explain “[i]n regards to the covariates, all previously highlighted statistically significant differences should be reduced to non-significance and standardized bias statistics should be reduced below an absolute value of 20.” By using the command *pstest*, the information on the standardized bias statistics, including the percent of reduction in the standardized bias statistic, will be given for each covariate.

The last PSM step involves acquiring an estimation of the final post-matching *t-tests* between the FPP and non-FPP groups. However, in this step, the outcome variables, in lieu of the covariates, are used. Again, by using the command *pstest*, the results from Stata will include means for both treated and untreated groups, unmatched and matched, for the outcome variables (removed and recidivated).

After the PSM is completed, an inverse probability of treatment weighting (IPTW) regression is conducted (also known as a counterfactual analysis; Orrick & Morris, 2015). According to Orrick & Morris (2015), this form of regression helps validate the PSM results. Guo and Fraser (2010) explained it will estimate the “causal effect of a time-dependent treatment when

all relevant confounding factors have been measured” (p. 331). Because the data include probationers not only assigned to different probation officers and different treatment teams, the data are also nested within different counties. This poses a problem for the dependent variables, removed and recidivated; they have the potential of being influenced by those elements. To help control for this, FPP youth were matched first with the comparison group youth from their same county. A multilevel logistic IPTW model was then conducted to produce the IPTW estimates. From these results, the calculation of predicted probabilities of removed and recidivated, between each group of probationers, was completed.

Research Questions and Hypotheses

The two predominant hypotheses for this study are outlined in this section. As previously explained, the State of Texas’ IHFSP was designed to keep families together by providing intense therapy for a short period, while involving family members, conducting sessions within a family’s home. One hypothesis is based on an IHFSP program outcome; the other as a part of the overall IHFSP goal. Additional research questions were also proposed.

Research questions. The percentages of treated youth who were removed and/or recidivated were calculated using the *tabulate group removed, column*; and *tabulate group recidivated, column* functions in Stata to obtain crosstabulations on the variables, including percentages.

Based on previous research studies (Mulder et al., 2010), and how other researchers operationalized the variables, questions involving serious juvenile offenders were addressed:

1. Were age and youth with prior referrals related to placement in the treatment group?

That is, were the youth who received treatment initially:

- a) Younger than the comparison group youth?
- b) More likely to have had a prior offense, pre-treatment (compared to the comparison group)?

2. Additionally, was a youth's onset age a factor in removal for either group?

Similar to the explanation provided above using the crosstabulation and column commands in Stata, these five questions were addressed in Table 2 and Table 3, Chapter 5, Results.

Hypotheses. Similar to the stipulation found under Program Outcomes in Chapter 3, which required that collectively, 94 percent of FPP youth refrain from being removed within one-year, post-treatment, the timeframe for post-adjudicated removal was calculated one-year, post end of supervision. Removal, as previously described, meant that the treated youth could not be ordered into placement, including non-secure residential placements and secure placements, such as a post-adjudicated facility or TYC; described in Footnote 1). Generally, placement is ordered after a youth commits additional offenses, but could be a result of a probationer not following the court-ordered probation rules (OAG, 2016).

Within the overall goal of the IHFSP, reducing delinquency was listed. Therefore, the two primary hypotheses for this study included determining if the rate of recidivism (dependent variable) and removal (dependent variable) between the treatment group youth (FPP) and non-treatment group youth (comparison) was less likely among youth who were in treatment (treatment variable). This comparison rested on the assumption that the two groups were equivalent on relevant covariates: headquarter county, onset age, sex, race, prior offense involvement (before initial adjudication hearing), and offense severity.

Hypothesis 1. Will juveniles who successfully complete an FPP be less likely to recidivate than juveniles in the comparison group who did not participate in FPP?

H₁: Juveniles enrolled in an FPP will be less likely to recidivate than juveniles who were not enrolled in an FPP, within one-year end of probation supervision.

H₀: Juveniles enrolled in an FPP will be no less likely to recidivate than juveniles who were not enrolled in an FPP, within one-year post-supervision end date.

Hypothesis 2. Will the rate of removal between the treatment group youth (FPP) and non-treatment group youth (comparison) be less among youth who were enrolled in an FPP?

H₂: Juveniles enrolled in an FPP will be more likely to remain home (i.e., avoid being removed as a result of subsequent probation violations, including new arrests and technical violations) with their families than juveniles who were not enrolled in an FPP.

H₀: Juveniles enrolled in an FPP are no less likely to remain home with their families than juveniles who were not enrolled in an FPP.

CHAPTER 5

RESULTS

This chapter describes the findings from the research questions and the two hypotheses. The results for the research questions are in the first section. The results for the hypotheses, based on the PSM steps used in the analyses, are provided following the research question results.

Research questions:

Question 1: Did onset age and having a prior offense before a youth's first formal adjudication differ significantly between the two groups in the sample?

The goal of this research question was to determine if onset age *and* having a prior offense differed statistically among the two groups. To answer this, the variable onset age was recoded into three categories. Originally measured at the interval level, onset age was recoded into three categories: ages 10 to 12 = 1; ages 13 to 14 = 2; and ages 15 to 17 = 3. This created the new variable, *age_c*.

Descriptive and chi-square statistics. To determine if having a prior offense differed by the category of ages of youth by groups, a chi-square statistic was run between the variables, prior offense and group, and included the Stata expression, *if, (= = 1; = = 2; or = = 3)* to distinguish the different age categories (e.g., *tab prioroffense group if age_c == 1, ch*). As shown in Table 2, among the control group youth, 11 percent (n = 60) did not have a prior offense, and 28 percent (n = 165) did. Among the FPP group, onset ages 10 through 12, 33 percent (n = 20) of the youth did not have a prior offense, whereas 49 percent (n = 55) did. However, for this youngest group of youths, the results from the chi-square statistic were not statistically significant (chi-square = 0.00; p = 1.00). This indicates that the proportion of the youth in the FPP group (ages 10 to 12 category

who had a prior offense) and the non-FPP group were not significantly different from one another. Among the two group's youths with an onset age of 13 or 14, 34 percent (n = 178) of the comparison group did not have a prior offense, and 42 percent (n = 254) did. Among the treatment groups, 47 percent (n = 28) of the youth did not have a prior offense, whereas 44 percent (n = 49) did. The results of the chi-square statistic for this age group of youths was also not statistically significant (chi-square = 0.64; p = .43). This indicates that the proportion of the youth in the FPP group (onset age either 13 or 14), who had a prior offense, are not significantly different from the proportion of the comparison group youth who had a prior offense.

Table 2. Group (Control and Treatment) Onset Age by Prior Offense

Onset Age	Group					
	Control n (%)		Total N (%)	Treatment n (%)		Total N (%)
	Prior Offense			Prior Offense		
	No	Yes		No	Yes	
10-12	60 (11%)	165 (28%)	225 (20%)	20 (33%)	55 (49%)	75 (44%)
13-14	178 (34%)	254 (42%)	432 (38%)	28 (47%)	49 (44%)	77 (45%)
15-17	287 (55%)	182 (30%)	469 (42%)	12 (20%)	8 (7 %)	20 (12%)
Total	525 (100%)	601 (100%)	1126 (100%)	60 (100%)	112 (100 %)	172 (100%)

10 – 12: chi-square = 00.00; p = 1.00; 13 – 14: chi-square = 00.64; p = 0.43;
 15 – 17: chi-square = 0.015; p = .915

Lastly, among the youth with onset ages 15 to 17, 55 percent (n = 287) of the control group youth did not have a prior offense, and 30 percent (n = 182) did. In comparison, among the FPP group with onset ages 15 to 17, 20 percent (n = 12) of these youth did not have a prior offense while 7 percent (n = 8) of them did. The results of the chi-square statistic for this oldest group of youths was not statistically significant (chi-square = 0.015; p = .915). As with the other two onset age categories, there appears to be no significant association between prior offense and the two groups of youth with onset ages 15, 16 or 17.

Question 1(a): As a follow-up to the overall research question, question *1a* was to determine if onset age differed statistically among the two groups. Based on the chi² value obtained (78.5103) and the p-value (.000), the two groups were statistically significant on onset age.

Question 1(b): The second follow-up question, *1b*, was to determine if youth from the treated group were more likely to have a prior offense (that is, did the two groups differ statistically). Based on the chi² value obtained (8.31) and the p-value (.004), the two groups were significantly different on prior offense.

Question 2: The second research question was to determine if a youth's onset age was a factor in removal for either group. Fisher's exact statics is described in the next paragraph.

Table 3. Group (Control and Treatment) Onset Age by Removed

Onset Age	Group					
	Control n (%)		Total N (%)	Treatment n (%)		Total N (%)
	Removed			Removed		
No	Yes	No	No	Yes		
10-12	193 (19%)	32 (35%)	225 (20%)	60 (42%)	193 (19%)	32 (35%)
13-14	389 (38%)	43 (47%)	432 (38%)	67 (47%)	389 (38%)	43 (47%)
15-17	453 (44%)	16 (18%)	469 (42%)	16 (11%)	453 (44%)	16 (18%)
Total	1035 (100%)	91 (100%)	1126 (100%)	143 (100%)	1035 (100%)	91 (100%)

Fisher's exact = .000

Fisher's exact statistics. The second question examined if onset age played a factor in removal among youth in either group. A chi-square statistic was not conducted based on having fewer than five observations in one cell. Instead, a Fisher's exact was calculated to determine if an association existed between the variable *age_c* (recoded from age, explained previously) and removed. Among the sample of youth, including treated youth (n = 172), and non-treated youth

(n=1,126), the Fisher's exact showed a significance level = .000. A crosstab was conducted, and the results are in Table 3.

Hypotheses: The intention of the two research hypotheses, stated in Chapter 4 and reiterated below, were twofold. First, in comparison to non-treated youths, the first hypothesis was to answer the question about the FPP treatment youths, and if they had a statistically significant lower rate of *recidivism* than the comparison group, post-treatment. The second hypothesis was similar: did the FPP group of youth have a statistically significant lower rate of *removal* than the control group, post-treatment. This comparison rested on the assumption that the two groups were equivalent on relevant covariates: headquarter county, sex, race, onset age, prior criminal history, and offense severity.

As previously explained, prior to using *psmatch2* in Stata (to match the treated and untreated groups), initial *t*-tests were conducted between each covariate and the treatment variable, group. This step was completed to identify if pre-matching differences existed between the treatment group and the comparison group, as recommended by Guo and Fraser (2010, p.139). Similar to an RCT, Bailey (2016, p. 330) explained that control and experimental treatment groups are balanced if the independent variables' mean values are not considerably different for those assigned to the two groups: control and treatment.

The results, under the heading "Unmatched" in Table 4, indicate that all of the covariates' mean values, with the exception of race, were significantly different between the unmatched treatment group and unmatched control group on the variables sex, age, prior offense, primary offense, headquarter county and onset age. These results are apparent in the *t*-values obtained, as outlined in Table 4 under the "Unmatched" *t*-values.

Propensity score matching. The estimates from the logistic regression model, using the treatment variable group with each of the covariates, then separately, the dependent variables, removed and recidivated, were used to match FPP recipients (one-to-one, without replacement) to regular probationers (without treatment). The following syntax was used in Stata:

```
psmatch2 group race sex prioroffense primarydisposition hdqtco z_age,  
outcome(removed) noreplace logit neighbor(1) caliper(.05)common
```

```
psmatch2 group race sex prioroffense primarydisposition hdqtco z_age,  
outcome(recidivated) noreplace logit neighbor(1) caliper(.05)common
```

The pseudo *R*-square from the first model is .0976. This signifies that the model explains nearly 9.8 percent of the variation in the treatment program with the control variable removed. Table 4 also provides the *t*-test statistics for each covariate pre and post-matching, and also displays that pre-matching differences (in covariates) were removed in the process. After matching, the results now show that the groups are balanced (equivalent) in regards to the propensity for probationers placed in FPP, at least among the variables available to be matched.

The same process in Stata to produce the estimates for the variable removed, were then repeated, this time using the outcome variable, recidivated. The pseudo *R*-square from the model is .099. This signifies that the model explains nearly 10 percent of the variation in the treatment program (see Table 4).

For the variable removed, the ATT output demonstrated that there was a treatment effect of .16374269 (on the treated). The interpretation of this is that the removed rate for participants is 16.3 percentage points higher when likened to the control group (among those matched; Becker & Caliendo, 2007, p. 10). The obtained *t*-statistic was 2.16.

For the variable recidivated, although the ATT output showed a treatment effect of .292397661 (on the treated) the obtained t-statistic, -.55 indicates there was no significance. The interpretation of this is that the rate of recidivism for participants was slightly over 29 percentage points higher among the FPP treated, in comparison to the control group.

As a measure of covariance, the standardized bias (SB) statistic for each covariate was completed. In the analyses, the standardized biases were lessened to fewer than 20; a necessity in PSM. Otherwise, per Apel and Sweeten (2010), variables are imbalanced with an $|SB| \geq 20$. With these scores, this supports that the matching procedure was successful between the two groups of probationers: treated and untreated. The SB in all covariates tested were reduced when matching was performed. The largest SB variable, post matching, was prior offense (SB = -9.5).

Following the SB procedure, a sensitively assessment protocol was completed using the *mhbounds* command in Stata, setting gamma at (1 (1) 3). Gamma is, per Becker and Caliendo (2007, p. 10) the “odds of differential assignment” from factors that are not observed. Sensitively assessment protocols are therefore run to see if propensity scores are biased. Biases can occur when unmeasured covariates (one or more) interfere with the model (also known as hidden bias).

Rosenbaum (2002; Orrick & Morris, 2012, p. 11) recommended this procedure; others, such as Guo and Fraser (2010; Orrick & Morris, 2012) have followed suit. In their article using PSM, Orrick and Morris (2012, p. 11) explained that “the approach provides estimates (γ) of the magnitude for which an omitted covariate would need to render the PSM results nonsignificant;

Table 4. Propensity Score Model, and Balance Diagnostics Among FPP and Control Groups (Pre/Post-matching *t*-Tests (Nearest-Neighbor Method)

	Unmatched			Matched			Logit model predicting FPP propensity score
	FPP	Non-FPP	t-value	FPP	Non-FPP	t-value	<i>b</i> (SE)
Race	.45	.47	.38	.45	.45	.11	.14 (.18)
Sex	.66	.79	- 3.97**	.66	.67	- .23	-.76 (.19)
Prior Offense	.65	.53	- .2.89*	.65	.70	- .92	-.07 (.19)
Primary Offense	6.4	6.04	- 2.20*	6.4	6.5	- .43	.11 (.05)
Head Quarter County	.48	.63	- 3.99**	.48	.35	.32	-.51 (.18)
Onset Age	12.77	13.99	8.68**	12.77	12.78	-.07	-.40 (.05)
Removed	.17	.08	-3.7**	.17	.02	4.7	.89(.25)
Recidivated	.29	.26	-.69	.29	.35	-1.27	-.10(.20)

N = 1,298 *Significance at .05; **Significance at .001

the test estimates how powerful an omitted covariate must be to potentially invalidate the results of the analysis". When a gamma value nears 1.0, the insinuation is that the PSM analyses is extremely sensitive to hidden bias. However, the further the value of gamma is from 1.0, the better; the model is less sensitive to influences that are not measured on the treatment probability (Orrick & Morris, 2012).

The results for the outcome variable, removed, using the sensitivity test (mhbounds) (p+ mh; Stata's output), indicated levels of significance, primarily for $\Gamma = 1$ and 3, with 0.002 and 0.241 respectfully. The second p+ mh significance level score was 0.07, but still sufficient. The interpretation therefore is that the results are insensitive to bias, which doubles the odds of exposure to treatment (FPP), yet sensitive to a bias three times the odds (Becker & Caliendo, 2007). Using the variable, recidivated, the sensitivity test fared better; all three (p+ mh;) were significant, $\Gamma = 1, 2,$ and 3, (.5, .006, and .000, respectfully).

As the last step in Stata, an IPTW regression analysis was completed using both dependent variables. Because the sample was nested(that is, the sample came from two different county probation departments within the State of Texas), multilevel logistic models were estimated (Orrick & Morris, 2012). With the differences between FPP recipients and non-treatment youth accounted for, this step is designed to examine the effect of having received FPP services, and its effect on future removal and recidivism. In other words, the predicted probabilities stem from the multilevel IPTWP model. The differences between the two groups are displayed in several figures.

Figures 1 and 2. The first two figures, Figure 1 and Figure 2, are in relation to the outcome variable, removed by group. These figures depict the statistically significant difference in the prevalence of removal between treated and untreated youth, following their probation sentence.

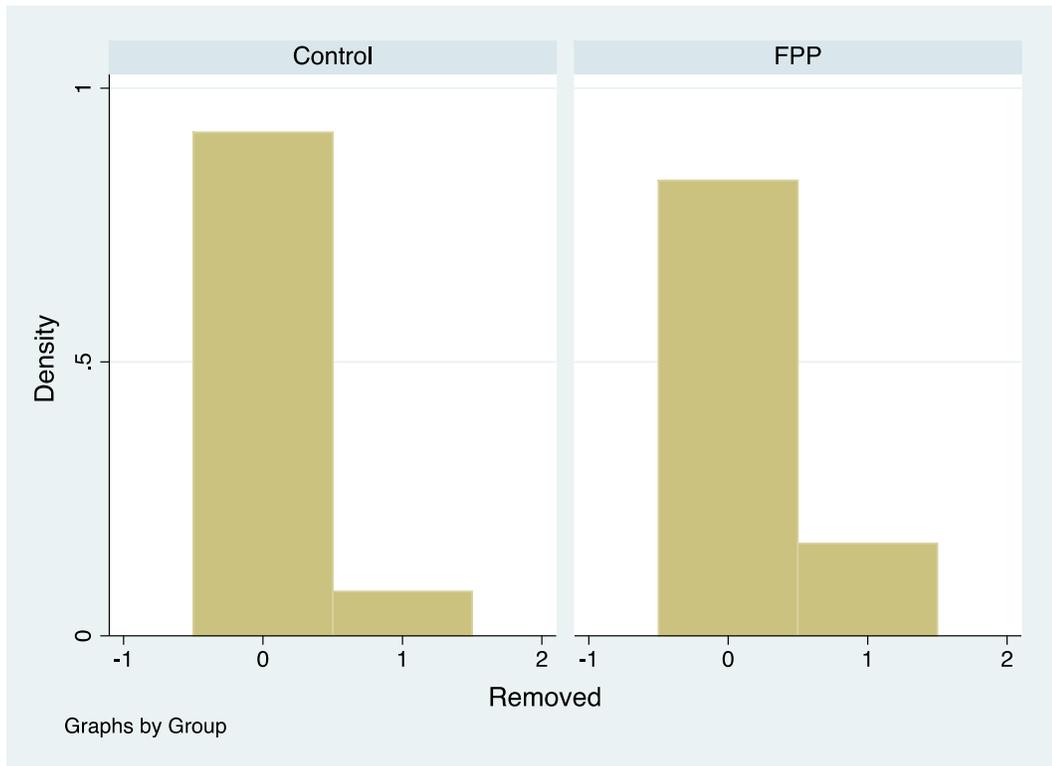


Figure 1. Removed by Group

The numbers listed on the bottom of this graph represent if a youth was removed (1) or was not removed (0). The left portion of the graph represents the control-group youth; the right sided portion represents the FPP-treatment youth. When comparing the bars within the FPP group, the bars for marked with a 1 (removed), has a visibly much higher bar than the Control group youth who are marked with a 1 (see also the bottom rows of Table 4).

Continuing the results with the outcome variable, removed, Figure 2 is the propensity score for treatment status for this outcome variable, removed. Youth in the treated category are colored red (on top of the horizontal line), while the blue represents the control group of probationers (on the bottom of the horizontal line).

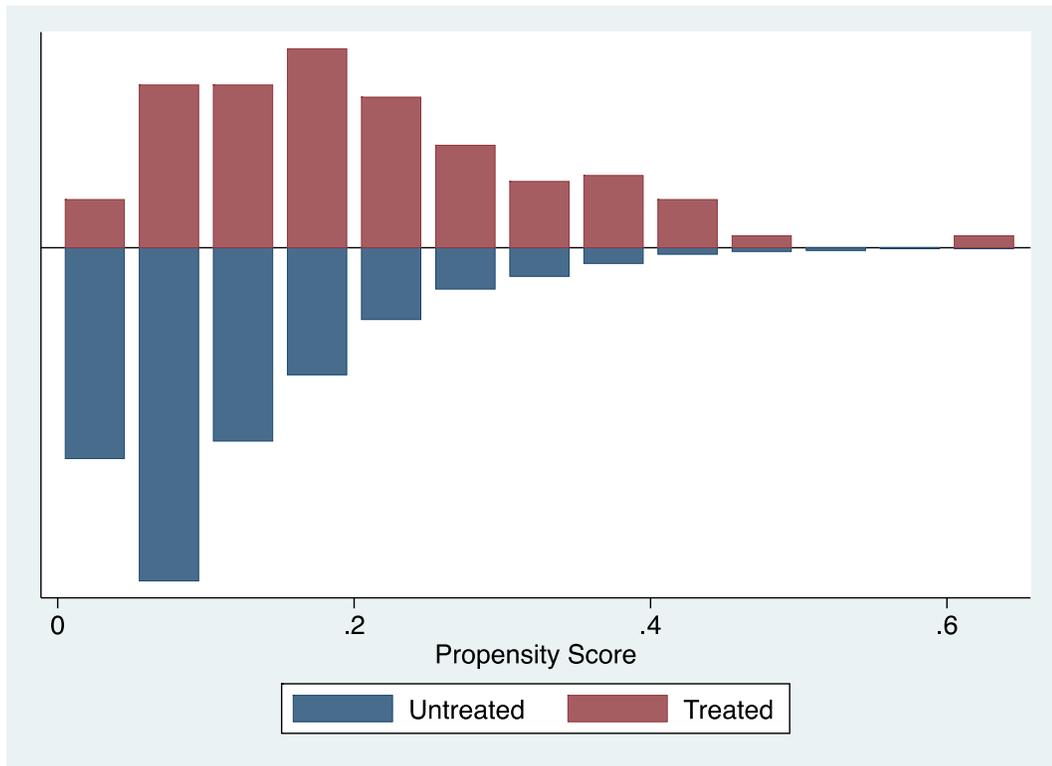


Figure 2. Propensity Score by Treatment Status (Removed)

Figures 3 and 4. The next two figures are in regards to the treated group and the non-treated group and the outcome variable, recidivated. Similar to the previous two figures, the first of these two figures, Figure 3, depicts the difference in the prevalence of recidivating between the two groups. Again, a value of 1 in each portion of the graph represents those youth who recidivated. Comparison of the two bars among those who recidivated by group, are not as clear to the eye as the bar graphs for the previous outcome variable, removed, by the treatment variable, groups. However, based on the previously reported significance, although a larger portion of the treated youth, per the ATT results, showed that a larger portion of them recidivated, the results were not statistically significant.

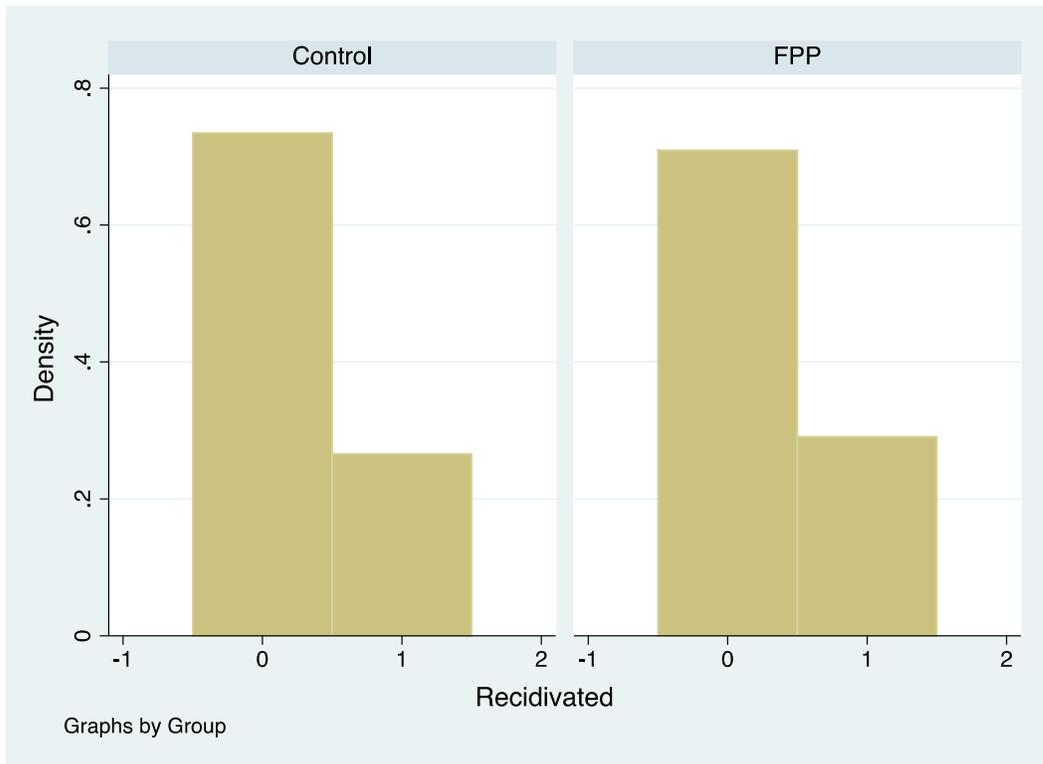


Figure 3. Recidivated by Group

Figure 4 is the propensity score for treatment status for the outcome variable, recidivated. This figure, Figure 4, is based on a counterfactual analysis, and demonstrates that regarding hidden bias, there was robustness. Youth in the treated category are colored red (above the horizontal line), while the blue represents the control group of probationers (below the horizontal line). As described previously, all of the treated cases were matched to nontreated.

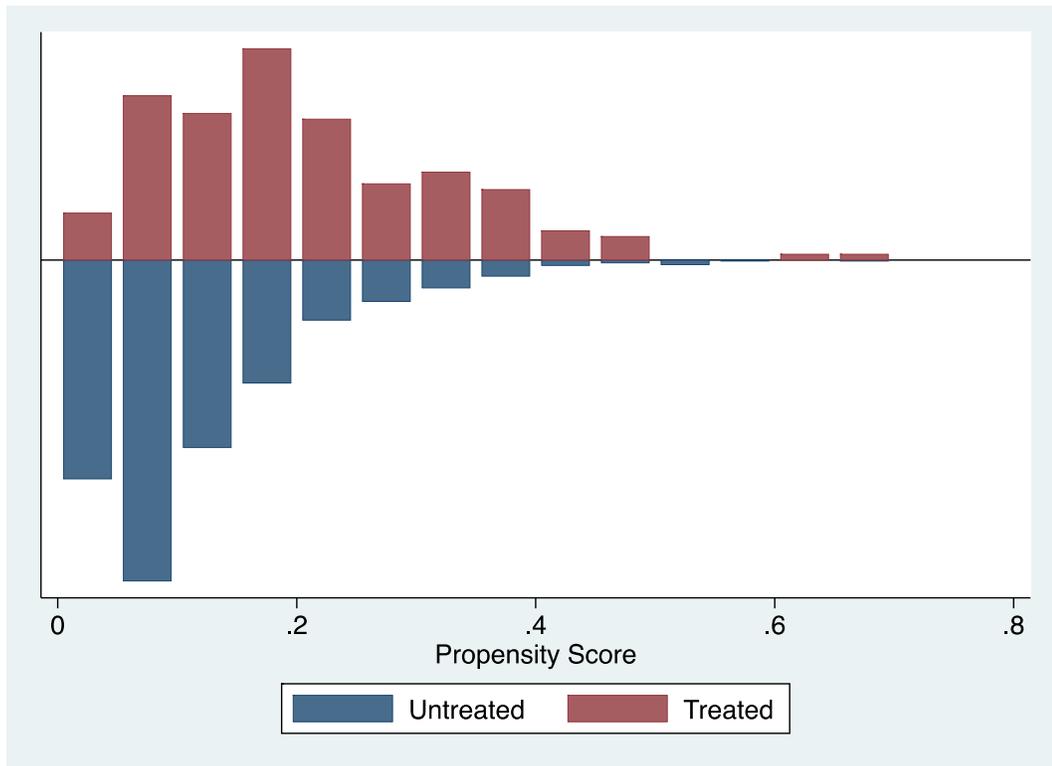


Figure 4. Propensity Score by Treatment Status (Recidivated)

CHAPTER 6

DISCUSSION

As described in the literature review, there are a dearth of empirical research studies on juvenile justice and family preservation programs. Many have been addressed in this study, but several are very dated, most were written nearly 20 to 30 years ago (one exception is Diamond et al., 2012). At the same time, these studies have not been of very strong methodological quality, with potential selection bias unaccounted for. The purpose of this study was to examine, in a methodologically rigorous manner, the extent to which participation in FPP, compared to non-participation in FPP, reduced both removal and recidivism. Key benefits of the current study involved the use of propensity score matching and inverse probability of treatment weighting. The statistical techniques of PSM allow controlling for potential selection bias among the variables available to examine across groups. This occurs before estimating the effect of being placed in a program, such as FPP, and has the added benefit of indicating what the results could be had someone not participated.

Some of the findings that emerged from the analyses deserve attention. Prior to matching, the first logistic regression model indicated that significant differences existed between the probationers receiving FPP treatment and those not enrolled in the program (see Table 4). This can be as interpreted as there being some selection bias present. Prior to treatment, FPP youth differed on all the variables except race. Post-matching, the results indicated that the statistically significant differences between youth who were placed in FPP and those who were not, dissipated, as evidence by the lack of mean-level differences on the covariates subsequent to matching. All six covariates, post-matching, had similar distributions for treated and nontreated probationers.

This indicates that the match that achieved balance on the covariates of interest across the two groups was successful. As PSM is intended, these results can allow for the preliminary assumption that there is equivalency for the matched groups in regards to the propensity for probationers placed in FPP, at least with the variables available for matching. This was made clear from the results of the standardized bias (SB) statistics for every covariate, as each remained or was reduced to below 20.

After PSM, the findings indicated that the two groups differed on the rate of removal but not recidivism. FPP youth were removed at a statistically significant higher rate, but there was no difference between FPP youth and the control youth with respect to recidivism. Unlike other FPP studies, namely those on MST, a program seemingly most comparable to FPP, the results of this study did not fare as well. MST results have shown favorable outcomes among delinquent juveniles who participated in family preservation programs. However, a word of caution is necessary. MST groups are highly stringent, that is, the staff are all trained from the same professions, and all the rules, such as time in treatment are strictly adhered to. Unlike this study, the youth and families enrolled in it had various times in treatment (although not reviewed in this study). Additionally, other family preservation programs have shown favorable outcomes among child welfare cases, such as foster care youth, but some studies have not.

Future research. As a benefit to those interested in conducting evaluation studies on these types of programs, the State of Texas' TJJJ agency collects data which make it possible to do. Although the current federal funding for the IHFSP ceased years ago, county departments continue running their own FPPs. Collecting these types of data and evaluating them would assist in the

understanding of current-day versions of programs involving delinquent juveniles and in-home family therapy.

Another opportunity for future research could be to collect additional data, such as those in this study, but from a larger pool (such as, include all the counties in which federal funding was provided). As a result, analyses among treated females and males could be examined separately, to assist in disentangling the program effects across gender.

Limitations. The very goal of the IHFSP is to keep youth from being removed, and to, at minimum, reduce recidivism. Therefore, several limitations should be noted. While there will likely always be problems with secondary data, the limitations found are related to the data sets obtained. For example, it would have been beneficial if the initial data request had been for a larger number of treatment youth. At the time of the data collection, although every youth who had been enrolled in both county's FPP were included, data from other grant recipient counties should have been requested.

Additional records from both groups of youth would also have been useful. These may have assisted in providing a better overall picture of the youth's juvenile justice involvement (such as the dates and number of times a youth had been locked in a juvenile detention center). Lastly, it would also have been beneficial to know the determining factors which led some youth to be placed in FPP. Field notes would have assisted in this, so having information on the actual risk of removal from home and risk of substance abuse problems, both requirements to be placed in FPP, would have benefited. Also, having additional variables may have resulted in different and/or perhaps better outcomes. And as previously mentioned, with more data, examining the time frame each youth was enrolled in the program would have also been beneficial (see Eichelberger, 2010).

If additional data were collected, and analyzed, comparisons could have been made between youth who did not sustain the entire six-month requirement and those who had, if any. With the current data, this may have reduced the number of cases available, but may have given a clearer picture of the program's performance.

Despite the results in this study, there is evidence that intense programs among high risk individuals have been beneficial. Furthermore, as stated by Diamond and colleagues (2011, p. 342), criminal justice programs that target high-risk individual, do appear to have lower rates of recidivism during follow-up periods (Diamond et al., 2011; Lowenkamp, Latessa & Holsinger, 2006).

A great deal of money is spent when youth are placed outside their home. Per TJJD (2013b, p. 21), the average cost of placement in 2011 was \$120.58 per day. In calendar year 2011, TJJD reported a total of 9,837 residential (out-of-home) placements made during calendar year 2011, which includes placements in both kinds of residential facilities, non-secure and secure (TJJD, 2013b).

Another consideration for the results could be attributed to treatment infidelity (Diamond et al., 2011). Little information was obtained (or possible to obtain) regarding the quality and fidelity of treatment given to the group exposed to FPP. Kirk, Reed-Ashcraft and Pecora (2002) indicated that in order to associate program outcomes with a program, there must be confidence in the workers, that is, that they are following the service model correctly. Further, this includes workers delivering services as expected, following length of treatment requirements and ensuring the recipients are the intended (Kirk et al., 2002).

CHAPTER 7

CONCLUSION

Using family-oriented treatment programs is not a new concept, nor is family preservation. However, the field lacks empirical research on family preservation programs involving juvenile justice youth. Despite the number of FP programs (61) in Texas counties that maintained family preservation programs within juvenile probation departments (TJJD, 2013, p. 3), it is unfortunate that evaluations have not been completed and/or published. With pressures on government entities to become evidence-based, it is hopeful that more evaluations will be completed and published.

While there are advantages to propensity score matching (over other methods which have addressed counterfactual questions), Gibson, Miller, Jennings, Swatt and Gover (2009, p. 640) caution that it is equally important to acknowledge that a method, such as matching, should not be considered final (Gibson et al., 2009, p. 640). Furthermore, and in agreement with what Gibson and colleagues (2009, p. 640-641), adopted from King, Massoglia and MacMillan (2007, p. 58; Gibson et al, 2009, p. 640- 641): “propensity score matching models represent a method, not the method, for assessing treatment effects.” They do not fill in for randomized controlled trials.

Program evaluations are much needed in social sciences and this study has helped contribute to understanding these types of programs and their impacts. As a result, the findings may be useful to policy makers as they consider programs and treatment alternatives for juveniles at high risk of placement. Additionally, the findings may help departments and stakeholders determine whether the benefits outweigh the costs to create and operate these types of programs. Finally, these findings may provide a sense of what has or has not worked in meeting the goals of Family Preservation Programs in juvenile justice.

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BIOGRAPHICAL SKETCH

Rebecca Eichelberger, with her parents and siblings, moved to Houston, Texas in the late 1970s after having lived in various areas of the United States. Rebecca received a Bachelor of Social Work from Sam Houston State University, located in Huntsville, Texas, in 1989. Rebecca's professional work has been with at-risk youth since she began working as a Juvenile Detention Officer in Harris County, Texas. In 1993, Ms. Eichelberger became a Juvenile Probation Officer in Galveston County, Texas. In 2000, Rebecca moved to Austin, Texas to work as a Program Specialist for the now defunct agency, the Texas Juvenile Probation Commission (TJPC). While at TJPC, Rebecca also worked as a Planner and a Federal Program Specialist. Between 2006 and 2007, Ms. Eichelberger worked as an Adjunct Professor at Our Lady of the Lake University in San Antonio, Texas. In the fall of 2007, Ms. Eichelberger became the Assistant Director of a secure juvenile facility in the north Texas area. In 2010, Rebecca moved to Dallas, Texas to work for the federal government, where she remains employed. In 2011, Ms. Eichelberger earned her Master of Science in Justice Policy. Ms. Eichelberger loves traveling and recently purchased a motor home to continue exploring North America.

CURRICULUM VITAE

ACADEMIC BACKGROUND

2019 Doctorate of Philosophy in Criminology, University of Texas-Dallas

2011 Master of Science, Justice Policy
University of Texas-San Antonio, San Antonio, Texas
Thesis: Family Preservation Programs with Adjudicated Youth

1989 Bachelor of Social Work
Sam Houston State University, Huntsville, Texas

ACADEMIC/TEACHING EXPERIENCE

Adjunct Professor

- Our Lady of the Lake University, San Antonio, Texas.
 - Introduction to Criminal Justice, Fall, 2006; Spring, 2007.
- University of Texas, Dallas, Texas
 - Theories of Justice, Spring, 2014
 - Violent Crimes, Spring, 2018 (Online course)

PUBLICATION

Eichelberger, R., & Barnes, J. C. 2015. Biosocial Criminology. *The Encyclopedia of Crime and Punishment*. 1–8.

PROFESSIONAL AFFILIATIONS

Academy of Criminal Justice Sciences
American Society of Criminology

GRANTS

- Co-authored two federal grants: Family Preservation and Substance Abuse. Both approved and funding continued
- Examined grant proposals for the aforementioned programs to determine who should be awarded federal and/or state monies
- Reviewed/provided feedback on grant proposals for the Texas Governor's Office

RESEARCH INTERESTS

Disparities in the criminal justice system; corporate crime; biosocial criminology; corrections; violent crimes; quantitative methods/analysis; juvenile delinquency

EMPLOYMENT HISTORY

Federal Program Specialist

United States Department of Health and Human Services, Dallas, Texas, June, 2010 to current

- Provide technical assistance to recipients of federal grant monies
- Monitor organizations in receipt of federal grants
- Present at regional and national conferences
- Assist in Federal Discretionary Grant Reviews

Assistant Facility Administrator

4M Youth Services, Granbury, Texas, October, 2007 to June, 2010

- Oversaw daily operations of a secure 97-bed juvenile facility
- Supervised and trained new and active employees
- Investigated allegations of abuse and neglect outcry cases within facility

Federal Program Specialist

Texas Juvenile Probation Commission, Austin, Texas, January, 2004 to August, 2006

- Enforced Federal Title IV-E standards by auditing county programs
- Trained county personnel about Title IV-E
- Established policies for two federally funded grant programs, Family Preservation and Substance Abuse
- Researched and disseminated information about the Preparation for Adult Living (PALS) program

Planner II

Texas Juvenile Probation Commission, Austin, Texas, January, 2002 to December, 2004

- Used SPSS for quantitative research, occasionally writing syntax and recoding data
- Posted statistical reports on the agency website, including pie charts, graphs and tables of county referral rates, the breakdown of criminal activities, adjudication rates and disposition activity

- Wrote and edited portions of the Compliance Resource Manuals (CRM)
- Conducted qualitative research, namely for risk and needs' assessments suitable for juvenile offenders

Program Specialist

Texas Juvenile Probation Commission, Austin, Texas, March, 2000 to December, 2002

- Audited county probation departments and detention centers to ensure compliance with state standards
- Gave technical assistance to county departments
- Trained county personnel, including newly hired employees
- Rewrote and edited administrative policies

Residential Care Worker- Part time

Post Country Care, Belton, Texas, September, 2001 to June, 2005

- Supervised daily activities of adjudicated youth in residential care
- Interceded verbal and physical confrontations among youth
- Conducted therapeutic group meetings with youth

Juvenile Probation Officer

Galveston County Juvenile Probation Department, Texas City, Texas, January, 1993 to March, 2000

- Enforced conditions of community supervision and monitored all aspects of casework related to court ordered conditions
- Interviewed youth and families for social history reports
- Documented detailed information for each youth on caseload
- Reported findings to courts by filing appropriate paperwork

Juvenile Detention Officer

Harris County Detention Center, Houston, Texas, November, 1991 to March, 1993

- Monitored living conditions of detained youth by maintaining a safe and healthy environment
- Maintained authority and youth compliance with established procedures
- Transported youth to court hearings, medical appointments, etc. as needed
- Prepared behavior and incident reports