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Exploring Evidence-based Intervention Methods in the Juvenile Justice System

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EXPLORING EVIDENCE-BASED INTERVENTION METHODS IN THE JUVENILE JUSTICE SYSTEM

By

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ABSTRACT

A large body of research has been devoted to understanding evidence-based interventions (EBI) and their effectiveness in the juvenile justice system. This systematic review examines three commonly used interventions used to reduce recidivism among adolescents involved in the juvenile justice system: Cognitive-Behavioral Therapy (CBT), Functional Family Therapy (FFT), and Multisystemic Therapy (MST). The systematic review analyzes findings from prior studies evaluating the impact of CBT, FFT, and MST on recidivism among adjudicated youth. The sample includes 23 peer-reviewed studies that utilized samples of adjudicated youth in the United States and were published after 2010. Findings revealed CBT as the most effective intervention, as evidenced by the efficacy demonstrated across all its studies in reducing recidivism rates. Key findings noted that none of the studies included in the analysis demonstrated higher rates of recidivism within the treatment groups compared to control groups. Secondly, a notable trend emerged across the reviewed studies, revealing a statistically significant reduction in recidivism rates among the treated individuals regardless of the EBI.

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INTRODUCTION

The creation of the juvenile justice system can be traced back to the 19th-century movement that led to the establishment of the juvenile court in the United States, originating from educational reform movements in 16th-century Europe (Snyder & Sickmund, 1999). The juvenile justice system is an assemblage of court-based systems at the state and local levels designed to address the needs of youth. The goal of the juvenile justice system is to rehabilitate adjudicated youth involved in the system. Once adjudicated, youth are either placed on probation or sent to a secure, residential program. Rehabilitative initiatives are available to youth, regardless of disposition. Within the system, rehabilitative programs encompass educational programs, mental health services, substance abuse treatment, vocational training, and counseling aimed at addressing underlying issues contributing to juvenile delinquency. Some methods used to achieve their goal are assigning the youth to a probation period or, if deemed to require a more supervised environment, a residential facility.

Juvenile probation is a form of supervision and monitoring that offers programs like skill building, coordinated services, restorative, and counseling programs to youth who have been adjudicated delinquent (OJJDP, 2017). Residential programs are secure facilities where youth live after being adjudicated by the juvenile court. Probation allows the youth to rehabilitate while still going on about their everyday lives, whereas when placed in a residential facility, the youths are separated from their home and in a more structured environment that provides more supervision. It is not often, compared to probation, that youth are placed in a residential facility. As shown in Table 1, data pulled from the OJJDP (2020) demonstrated that in the span of five years, nearly 29% of youth who were adjudicated delinquent were placed in some sort of residential facility, while roughly 71% were given a disposition of probation. Regardless of

percentage, it is important to note that when placed in residential facilities, a youth is still capable of rehabilitation, and that is the goal of the juvenile justice system.

Between the years 2015 and 2020, as shown in Table 1, the population of adjudicated juveniles has been steadily declining. However, although the population of adjudicated juveniles is decreasing, the percentage of juveniles who are placed on probation, compared to residential placement, is slowly decreasing. From 2015-2016, it decreased from 72% to 71%; 2016-2017 had a difference of -0.45%, 2017-2018 difference was -0.02%, 2018-2019 difference was +0.62%, and lastly, 2019-2020 had a difference of -0.42%. Therefore, the rate at which probation versus residential placement is used has remained rather stable across this time.

Table 1 Juvenile Court Statistics, Disposition of Adjudicated Juveniles of 2015-2020

Count	Placed	Probation	Total
2015	66,684	174,969	**241,653**
2016	63,907	159,906	**223,813**
2017	62,910	154,019	**216,930**
2018	58,193	142,354	**200,547**
2019	51,942	130,964	**182,906**
2020	35,919	88,732	**124,651**
Total	**339,555**	**850,944**	**1,190,499**

Note. Data from the OJJDP's Easy Access to Juvenile Court Statistics (EZAJCS 2020)

During their system involvement, many youths will undergo a form of intervention; oftentimes, these programs are evidence-based interventions (EBI) (McKee & Rapp, 2014). EBIs are programs where a particular treatment or action shows enhancements in one or more of its intended outcomes, as determined by scientific research following recognized standards for research excellence (Lee-Easton et al., 2022). Such intervention programs tend to be

rigorously evaluated through experimental and quasi-experimental studies, making them more reliable. Cognitive Behavioral Therapy (CBT), Family Functional Therapy (FFT), and Multisystemic Therapy (MST) are evidence-based intervention methods commonly used throughout the juvenile justice system (Underwood & Washington, 2016). The choice of therapy depends on the specific needs of the individual, the family, and the nature of the issue. All three EBIs aim to address youth's psychological and behavioral needs, reduce recidivism, and promote a positive change in the lives of the youth and their family (Chand et al., 2023; Connell et al., 2016; Sexton & Alexander, 2000). Each EBI also differs in the program's methods of approach, length, delivery settings, and target goals (Table 2). The purpose of this study is to systematically review the literature on the effectiveness of these three interventions (i.e., CBT, FFT, MST) in reducing recidivism. There are two research questions guiding the current study:

1. For youth involved in the juvenile justice system, does the impact of Cognitive-Behavioral Therapy (CBT), Functional Family Therapy (FFT), and Multisystemic Therapy (MST) on recidivism vary by program type?
2. Do existing studies suggest that these programs impact re-offending differently based on disposition (probation or residential program)?

Understanding the differences among these three EBIs is esential, because each can have a different outcome, are used often, and their impact can vary across settings. For example, assuming everything is the same except disposition, adjudicated youths in a residential placement who are receiving FFT might see lower rates of recidivism compared to other male adjudicated youths on probation who are also receiving FFT as a method of intervention. This result might be because the male youth in a residential facility could be more involved in the

treatment, whereas the male on probation might miss sessions due to distractions or inability to make it to the sessions (e.g., due to school or employment obligations). In the next section, each of the three EBIs will be described.

Cognitive Behavioral Therapy

Cognitive Behavioral Therapy (CBT) was created in the 1960s through the combined efforts of Aaron Beck and Albert Ellis (Chand et al., 2023). Beck's patients, who had depression, would often express to him thoughts that held no validity and had characteristics of cognitive distortions. This negative outlook made him view depression in a different stance; rather than focus on depression as a mood disorder, he started to view it as a cognitive disorder. Beck believed that distorted thinking would contribute to the emotional distress of his patients (Beck, 1999). Beck published *Cognitive Therapy for Depression* (Beck et al., 1979) after having published a study that evaluated and demonstrated the efficacy of cognitive therapy. Behavioral therapists were the first to try something new in therapy; they combined a specific treatment guidebook with research on results. This approach was a fresh idea in psychotherapy, especially when dealing with behavioral issues (Chand et al., 2023). Its purpose was to identify irrational beliefs and negative thought patterns. Then, proceed to analyze and become aware of the negative thought patterns. This would allow the patient, in this case, the youth, to emphasize the three aspects of cognition: automatic thoughts, cognitive distortions, and underlying beliefs (Chand et al., 2023). In turn, new focus on redirecting and changing these patterns which is key to its effectiveness.

CBT is administered to a wide variety of populations. It can be administered to a wide age range, from children to adults. CBT can also help those with mental health issues such as anxiety disorders, depression, and post-traumatic stress disorder (Chand et al., 2023). CBT is

an extremely flexible form of therapy that can be widely administered in many different situations. CBT has been extensively researched and has a strong evidence base for treating various mental health concerns (Beck, 2023).

The objective of CBT is to help individuals identify and change both negative thought patterns and cognitive distortions. CBT operates on a few key ideas: first, mental issues can stem from flawed thinking or unproductive behaviors. Second, these issues can be tackled by learning new coping methods, which can ease symptoms and improve one's overall effectiveness in life ("What is cognitive behavioral therapy," 2017). As shown in Figure 1, CBT focuses on changing the negative perspective an individual might have of themselves while focusing on the aspects of thoughts, behaviors, and emotions.

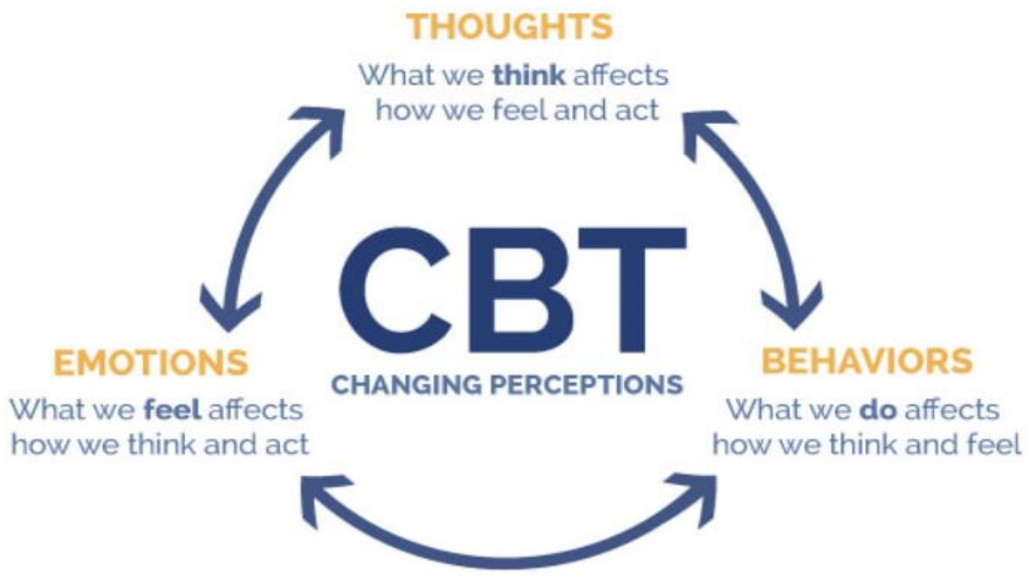


Figure 1 What is Cognitive Behavioral Therapy, A. Ugueto (2019).

CBT also helps patients incorporate behavioral strategies that can strengthen positive emotions while regulating negative emotions. These skills are meant to last a lifetime and are the type that can be used to empower individuals. CBT is typically delivered by licensed mental health professionals (e.g., social workers, therapists, psychologists). As for the setting, it can vary depending on the patient and the resources available to them. Some of these settings are in schools, mental health clinics, detention centers, hospitals, and or community-based programs. CBT includes self-help resources and workbooks that individuals can use independently. Clients are encouraged to keep track of their thoughts, emotions, and behaviors using journals or logs.

The usual structure of CBT is as follows (Chand et al., 2023): the initial step involves assessing the patient and beginning the development of an individualized understanding of their needs. Early in the therapeutic process, the patient and mental health professional identify the specific issues the patient wishes to address and set CBT goals together. A CBT session would, on average, occur once or twice a week, depending on certain factors ranging from availability to the needs of the child. The treatment could last between 12 to 15 weeks in the short-term format, and in the long-term form, CBT could be from a couple of months up to a year (Rothbaum et al., 2000). During the given time frame, therapists will regularly review progress with clients and assess whether they are achieving their therapy goals, and as clients make progress and achieve their therapy goals, therapy may come to a planned conclusion.

A study by Landenberger and Lipsey (2005) reviewed 58 different studies on how cognitive-behavioral therapy (CBT) impacts the repeat offenses of both adult and juvenile offenders. It was discovered that cognitive-behavioral programs were more effective in reducing recidivism than behavioral ones, with a mean recidivism reduction of 30%. This analysis supported earlier discoveries that showed the positive effects of CBT in reducing recidivism.

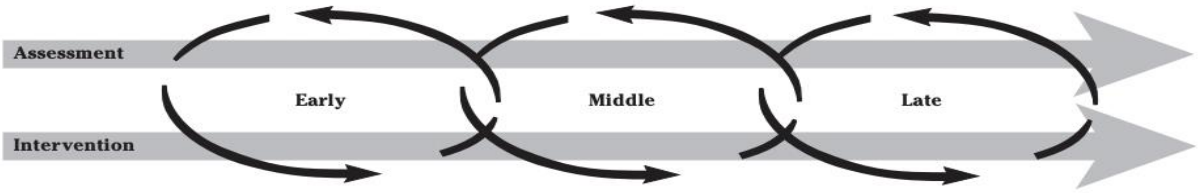
Alleviating the symptoms caused by the associated mental health condition will overall improve the patients' function and prevent re-offending (Beck, 2023).

Functional Family Therapy

Dr. James F. Alexander developed Functional Family Therapy (FFT) around the 1970s. It was first introduced as an intervention for youth involved in the juvenile justice system who also had substance use disorders. Previous treatments were often ineffective for this population (Sexton & Alexander, 2000). Alexander understood that solving the issues required a comprehensive approach that involved family in a broader context; he also incorporated system theory and behavioral principles. System theory is a theoretical approach that analyzes a specific thing as a whole. Behavioral principles suggest that actions are influenced by their outcomes. Rewards tend to reinforce behavior, making it more likely to happen again, while punishment decreases the likelihood of behavior. Extinction happens when a once-rewarded behavior no longer receives the reward, causing it to fade away (Massafra, n.d.). FFT is considered versatile and applicable to many other situations, such as a method of alternative incarceration or an effective program for at-risk youths, diversion, and or probation (Sexton & Alexander, 2000). FFT is designed to serve adolescents with behavioral issues (i.e., aggression, delinquency, oppositional defiance, disruptive behaviors, and or emotional issues), usually from ages 11 to 18 years. For those involved in the juvenile justice system, FFT is expected to reduce recidivism and improve outcomes for juvenile offenders. FFT aids families in crisis due to adolescent behavioral problems and offers adaptability to diverse cultural backgrounds (Littell et al., 2023).

FFT applies a holistic family approach that serves to strengthen the family functioning. The focus is on creating lasting positive changes in the family system and the behavior of the adolescent. FFT is based on the premise that problems experienced by juveniles often come from the family dynamic (Sexton & Alexander, 2000). The primary objective of FFT is to engage the family and build rapport, which involves establishing a trusting relationship between the therapist and the family members. Tools, interviews, and observations are used to gather information about family dynamics, structure, communication patterns, and the adolescent's behavior. As shown in Figure 2, there are three phases in the FFT process: phase one is the engagement and motivation, phase two is the behavior change, and phase three is the generalization. During phase one, a main goal is to reduce negativity and develop a family focus while promoting motivation for change. Phase two is when there is a focus on changing the delinquency behavior and building rational skills. Finally, during phase 3, the goal is to prevent relapse and maintain the newly acquired positive change. Thus, one of its primary objectives is to improve family communication and problem-solving, ultimately creating a more supportive and understanding family environment.

Functional Family Therapy Clinical Model: Intervention Phases Across Time



	Engagement and Motivation	Behavior Change	Generalization
Phase goals	Develop alliances. Reduce negativity, resistance. Improve communication. Minimize hopelessness. Reduce dropout potential. Develop family focus. Increase motivation for change.	Develop and implement individualized change plans. Change presenting delinquency behavior. Build relational skills (e.g., communication and parenting).	Maintain/generalize change. Prevent relapses. Provide community resources necessary to support change.
Risk and protective factors addressed	Negativity and blaming (risk). Hopelessness (risk). Lack of motivation (risk). Credibility (protective). Alliance (protective). Treatment availability (protective).	Poor parenting skills (risk). Negativity and blaming (risk). Poor communication (risk). Positive parenting skills (protective). Supportive communication (protective). Interpersonal needs (depends on context). Parental pathology (depends on context). Developmental level (depends on context).	Poor relationships with school/ community (risk). Low level of social support (risk). Positive relationships with school/community (protective).
Assessment focus	Behavior (e.g., presenting problem and risk and protective factors). Relational problems sequence (e.g., needs/functions). Context (risk and protective factors).	Quality of relational skills (communication, parenting). Compliance with behavior change plan. Relational problem sequence.	Identification of community resources needed. Maintenance of change.
Therapist/ Interventionist skills	Interpersonal skills (validation, positive interpretation, reattribution, reframing, and sequencing). High availability to provide services.	Structure (session focusing). Change plan implementation. Modeling/focusing/directing/ training.	Family case manager. Resource help. Relapse prevention interventions.

Source: Sexton and Alexander, 1999.

Figure 2 Functional Family Therapy Clinical Model: Intervention Phases Across Time, Sexton & Alexander (1999)

The program is usually administered in the home and or the community setting in which the family resides but can also be administered in restricted settings such as residential facilities. This allows the therapist to work with the patients in an environment that is familiar to them and feels more natural. It also helps as the environment in which the therapy takes place is often the same environment in which issues occur. FFT can also be administered in schools, juvenile justice facilities, mental health clinics, and or online platforms. Many times, the setting is

determined by the needs, preferences, and accessibility of families. FFT involves weekly sessions and is typically a shorter-term intervention compared to some other family therapy approaches (Sexton & Alexander,1999). The short-term version involves, on average, 8-10 sessions, one session per week. As for more serious cases, it is spread into a 3-month time frame. FFT is considered effective for addressing a wide range of issues, including delinquency, substance abuse, and behavioral problems in adolescents (Sexton & Turner, 2010).

FFT has proven to be effective as the program reduces recidivism between 25 to 60% more than other programs (Alexander et al., 2000). A recent study found that juveniles who underwent FFT had a re-arrest rate of 25%, contrasting with the 45-70% re- arrest rates observed among those appearing in juvenile court or receiving no treatment or a mix of different approaches (Underwood & Washington, 2016). This was followed by a five- year follow-up, which demonstrated that only 10% of the youth receiving FFT compared to the 60% who didn't were arrested within that time frame. FFT is helpful to the family and the community of the youth as the recidivism rate decreases. The youth will have a better connection with their family and, in turn, be more involved with their community (Littelet al., 2023).

Multisystemic Therapy

Multisystemic Therapy (MST) was developed by Dr. Henggeler at Memphis State University in the 1970s (Henggeler et al., 1986). When working with juvenile offenders from inner-city backgrounds, Henggeler identified a lack of awareness regarding the factors contributing to criminal behavior. Additionally, they observed a lack of service programs that involve families in the treatment process. Employing Bronfenbrenner's Social Ecological Theory, which posits that the development of a person is influenced by many interconnected environmental systems (Guy-Evans, 2023), MST seeks to empower youth and their families and

adopts a comprehensive approach that addresses the youths' behavior as well as the array of risk factors within their immediate environment.

MST is designed to primarily serve adolescents, usually between the ages of 12 to 17 years, who demonstrate serious behavioral issues or are at risk of out-of-home placement (i.e., juvenile detention or residential treatment). Overall, the population of youth served by MST includes juvenile offenders, adolescents who struggle with conduct disorders, have antisocial behaviors, and or youth with substance abuse issues (Tan & Fajardo, 2017). Figure 3, below, image created to demonstrate all aspects of MST.

Figure 3 Multisystemic Therapy, MST Services, Proven Results (2023)

As can be seen in Figure 3, MST is a highly structured and intensive intervention with many services developed with the objective of addressing complex issues in the context of the youth's life. Its purpose is to reduce unhealthy behaviors and keep adolescents away from any trouble with the law. It does so by using a family-based treatment approach that is cost-effective and results in positive outcomes (Le et al., 2017). MST begins with a comprehensive assessment of youth and their family's strengths, weaknesses, and overall needs. Based on this assessment, an individualized treatment plan is developed in collaboration with the youth and their family.

A necessary step to take in this process is to improve the patient's psychosocial functioning of both the patient and the patient's family. In order to do this, the known causes of delinquency must be addressed. Then the real-world functioning of the youth is changed by changing their natural setting in a way in which a better social behavior is promoted and an antisocial behavior is demoted.

MST is predominantly delivered in either the home of the patient, a clinic, a hospital, a school, or within the community. The person administering the MST would work closely with the parents of the patient to help identify the environment in which the issue stems. The administrator of MST is also available 24/7, which allows for crisis intervention at any given phase of the process. It typically lasts for about three to five months, with the aim of producing sustainable positive changes in the youth's behavior and family dynamics. Therapists work intensively with the family, providing multiple weekly sessions to address the identified issues. The effectiveness of MST is demonstrated through reduced recidivism, improved family and peer relations, ongoing outcome evaluation, measuring changes in the youth's behavior, family functioning, and other relevant factors (Connell et al., 2016).

A recent study found that the use of MST produced significant reductions in rearrests and improvements in four areas of functioning measured by the Child and Adolescent Functional Assessment scale at 18 months and six months post-treatment (Timmons-Mitchell et al., 2006). In this study, it was discovered that the group receiving MST showed a lower overall recidivism rate compared to the group receiving treatment as usual (TAU). Juveniles in the TAU group had a 3.2 times higher chance of getting arrested again compared to those in the MST group. It was also found that the group with MST was significantly less likely to be arrested for new crimes. This shows that MST is an effective intervention for youths.

Table 2 compares the characteristics of each of the three EBIs that serve as the focus of the proposed study. As shown in the table, the intervention with the most parties involved in the treatment is MST, whereas the intervention with the least amount of parties involved is CBT. The table below also breaks down and summarizes the target of each intervention to understand each intervention more profoundly. The intervention with the lowest cost per youth is FFT, these comparative factors should be considered when looking at which intervention has the best cost-saving measurements.

Table 2 Comparison of CBT, FFT, and MST in the juvenile justice system

Aspects of Interventions	**Cognitive Behavioral Therapy (CBT)**	**Family Functioning Therapy (FFT)**	**Multisystemic Therapy (MST)**
Parties involved in treatment	Youth	Youth & Family	Youth, Family, and Community
Intervention target	Altering thought patterns	Family environment	Positive support system/environment
Treatment duration	4-5 months	3 months	3-5 months
Treatment intensity	6-20 sessions	8-12 sessions	weekly sessions
Cost per youth	$3,527 (Dopp et al., 2020)	$3,134 (Barnoski, 2009)	$7,076 (Barnoski, 2009)

METHODOLOGY

This section discusses the methodology of the proposed study and how each research study was chosen. The purpose of this study was to assess the effectiveness of three rehabilitation strategies within the juvenile justice system and identify gaps in the literature that need to be addressed to better inform policy and practice. Based on these goals, a systematic review is an ideal research design, given the large body of existing research on each of the EBIs, as well as the structure and comprehensive process of synthesizing existing literature (Khan et al., 2003). Thus, this study involves a systematic review of studies that examine the effectiveness of three EBIs (i.e. CBT, FFT, and MST) in reducing recidivism among adjudicated youth placed in residential facilities and on probation.

Search Strategy

This study began with a search through peer-reviewed articles describing recidivism outcomes for CBT, FFT, and MST among adjudicated youth. To obtain optimal results and create a list of articles for inclusion in the systematic review, two different electronic databases were used to search for studies: ProQuest and Google Scholar. These databases were chosen as they had numerous peer-reviewed articles on the topics of interventions in the juvenile justice system. Terms such as adjudicated youth, youth on probation, youth in residential placement, juvenile recidivism, rehabilitation, evidence-based interventions, Cognitive Behavioral Therapy (CBT), Functional Family Therapy (FFT), and Multisystemic therapy (MST) were used individually or in combination.

Inclusion and Exclusion Criteria

A set of rigorous inclusion criteria guided the selection of studies for this review. Each criterion was chosen to ensure that the studies included were not only relevant but also of high quality, helping build a strong foundation for the systematic review. First and foremost, the research design of this thesis required that the studies have a comparison group. This meant that each study involved a group of subjects who received a particular intervention or treatment (such as Cognitive Behavioral Therapy, Functional Family Therapy, or Multisystemic Therapy) and a control or comparison group that did not receive the intervention. These types of research designs, referred to as true experiment and quasi-experimental, respectively, provided a valuable basis for making meaningful comparisons and drawing conclusions about the effectiveness of these interventions. The primary focus of this research was recidivism. Therefore, all included studies had to use recidivism as a dependent variable. This ensured that the research aligned with our central research question (i.e., differences in recidivism rates across CBT, FFT, and MST) and contributed to a comprehensive understanding of recidivism within the context of the selected interventions.

All studies had to include one or more of the three EBIs studied in the proposed study. Another key aspect of inclusion criteria was the age of the study participants. To be considered for inclusion, the study sample had to consist of adjudicated youth who were under the age of 18. This specificity allowed focus on a well-defined population and ensured that the research directly pertained to the research objectives. Lastly, a temporal boundary for the review was set. To be included, a study had to have been conducted after the year 2010. This temporal restriction was designed to incorporate relatively recent research, reflecting the evolving nature of interventions and our desire to capture the most current insights and developments in the field.

Specific criteria were put in place for excluding certain studies to ensure that the selection process was rigorous and maintained high-quality standards within the systematic review. These exclusions were rooted in practical considerations. First, the current study excluded studies that came from very different cultural contexts or environments. The reason for this was to avoid introducing potential confounding factors. Cultural norms, societal conditions, and environmental differences across countries can significantly impact the outcomes of studies. This helped maintain the credibility of the research, as it recognized the significant influence of cultural variations on human behavior.

Second, studies that did not provide empirical analysis or report new research findings were excluded. The reason behind this was quite straightforward. Empirical analysis involves collecting real-world data and is the backbone of evidence-based research. In this case, a particular interest in understanding recidivism rates was the focus. To accomplish the goal of the thesis and to do that effectively, studies that provided empirical data were needed. Excluding studies without empirical analysis or new findings maintained the quality and rigor of the review, as it ensured that there were measurable outcomes, which were crucial for drawing meaningful conclusions about recidivism. In essence, these exclusion criteria were applied to improve the validity of the systematic review. Being selective about the origin of studies and insisting on empirical analysis for recidivism research allowed the findings to be consistent and backed up by evidence, meaning the findings were based on strong, practical, and relevant foundations.

Comparison across Selected Studies

Across the studies selected, a comparison was conducted to analyze the findings from previously published studies that had examined the impact of CBT, FFT, and MST on recidivism. Table 3 lists each of the measures that were coded and extracted from each of the

included studies. These measures include how recidivism was measured, whether recidivism rates were different across the treatment and comparison groups, which of the three EBIs were delivered in the study (i.e., CBT, FFT, and MST), the disposition status of the sample, the study design, sample demographics (e.g., gender, race, and age), and the location of the study site(s). There was a team of two coders: coder-one coded 100% of the studies, and coder-two coded 50% of the studies to confirm accuracy and consistency in the data collection process.

Table 3 Variable Coding

Intervention Type	**Disposition Status**	**Recidivism Definition**	**Recidivism Time**	**Recidivism Findings**
CBT FFT MST	Probation Residential treatment	Arrest/referral Conviction	≤ 1 year > 1 year	No differences Control group > treatment group Treatment group > control group
Gender	**Race/Ethnicity**	**Age**	**Region**	**Study Design**
Most/all boys Most/all girls Split sample	Mixed gender sample Most/all Minorities Most/all White	12 & under 13-15 16-17 Mixed age sample	Northeast Midwest West Southeast Southwest Not specified	Randomized control trial/true experiment Quasi- experiment

Understanding the definition of recidivism used across all studies was important, as definitions could differ. Some studies might only include convictions as part of their definition, while others might only use arrests or referrals. Along with the definition, it was also important to understand the time frame in which recidivism was measured, as it could vary. Some studies might measure the length for six months, while others might measure it for

18 months. Limiting the differences between the recidivism definitions and time frames allowed the study to be more consistent. Studies focused on gender, race, region, and study design because they anticipated varying outcomes in EBIs within these categories. Recognizing these differences was crucial for tailoring interventions to specific demographics and regions, ensuring more effective approaches in the juvenile justice system. Perhaps a specific EBI, for example CBT, may work better for Hispanic females who are from the western region of the U.S. compared to MST, which works better for a white male in the eastern region of the U.S.

RESULTS

Screening and Selection

The search strategy, using the ProQuest and Google Scholar databases, yielded over 800 publications screened for possible inclusion in the sample. Five hundred were identified through Google Scholar, and 300 were identified through ProQuest. During the search process, 102 were identified as duplicates (i.e., the same article was identified by two or more search terms) and 550 were excluded based on details in the title and or abstract that demonstrated the publication didn't meet inclusion criteria. For example, if the abstract noted that the study sample was not adjudicated youth or consisted of adjudicated youth from outside of the United States (e.g., Netherlands, Switzerland), the study was excluded. This left 148 studies for intensive review, which consisted of reading the methods and result sections and reviewing the tables and figures. Of the 148 studies reviewed, 125 were excluded. Common reasons for exclusion in this phase included dependent variables other than recidivism (e.g., mental health symptomology) and the reliance on nonexperimental research designs. Figure 4 demonstrates the process of exclusion and inclusion.

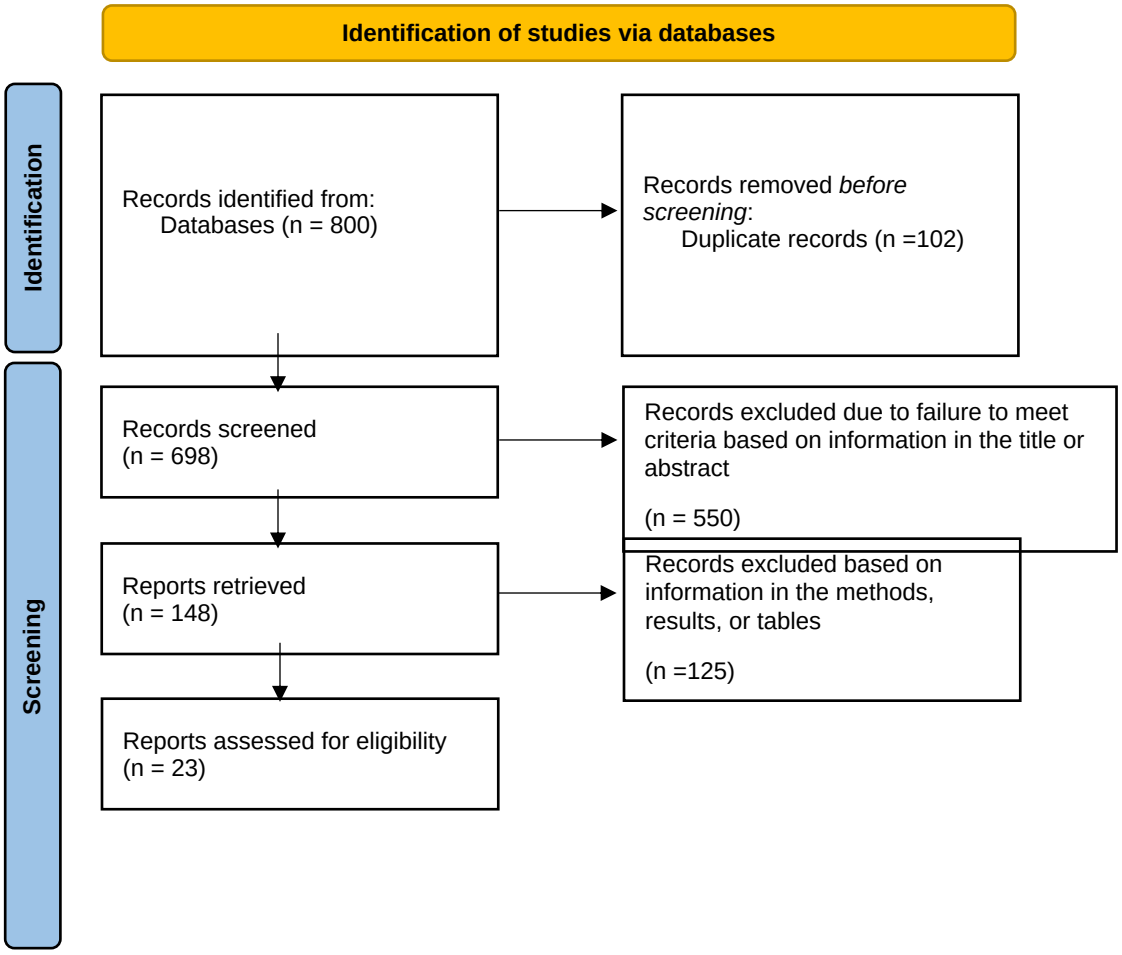


Figure 4 Diagram of the Screening Process

Ultimately the process led to a total of 23 articles that were suitable to be included in the comprehensive review and meta-analysis. Table 4 provides a comprehensive overview of the studies included in the final sample. It encompasses essential details regarding the sample demographics, encompassing age, ethnicity, and gender distributions. Furthermore, the table delineates the research design employed by each study, alongside elucidating the specific intervention strategies employed. A crucial aspect encapsulated within the table pertains to the measurement protocols employed by each study in assessing recidivism rates. Additionally, the table presents the overarching findings of each study, characterized by the comparative analysis between control and treatment groups. Notably, instances of intervention success are discerned

by a reduction in recidivism rates within the treatment group versus the control group, while instances of no significant success are also acknowledged.

Table 4 Description of the Studies Included in the Final Sample (n = 23)

Authors & Publication Year	Sample	Research Design	Intervention	Measure of Recidivism	Overall Findings
Baglivio, M. T., Jackowski, K., Greenwald, M. A., & Wolff, K. T. (2014)	Mixed ages, ethnicity, and gender	Quasi-experiment	FFT & MST	Conviction	No difference between treatment and control group
Barbara A. Lucenko, Lijian He, David Mancuso, Barbara Felver (2011).	Mixed ages, ethnicity. Mostly boys	Quasi-experiment	FFT	Arrest	Control group was higher
Barnes, G. C., Hyatt, J. M., & Sherman, L. W. (2017).	Mixed ages Mostly Black Mostly boys	Randomized Control Trial	CBT	Arrest	Control group was higher
Boxer, P., Docherty, M., Ostermann, M., Kubik, J., & Veysey, B. (2017)	Mixed ages, ethnicity. Mostly boys	Randomized Control Trial	MST	Arrest	No difference between treatment and control group
Burraston, B. O., Cherrington, D. J., & Bahr, S. J. (2012)	Mixed ages, ethnicity. Mostly boys	Randomized Control Trial	CBT	Arrest	Control group was higher
Celinska, K., Furrer, S., & Cheng, C. C. (2013)	Mixed ages, gender Mostly White	Quasi-experiment	FFT	Conviction	Control group was higher
Celinska, K., Sung, H.-E., Kim, C., & Valdimarsdottir, M. (2019)	Mixed ages, gender Mostly White	Quasi-experiment	FFT	Conviction	Control group was higher
Darnell, A. J., & Schuler, M. S. (2015)	Mixed ages Mostly boys Minority sample	Quasi-experiment	FFT	Conviction	Control group was higher
Early, K. W., Chapman, S. F., & Hand, G. A. (2013)	16-17 y/o Mostly boys Mixed ethnicity	Quasi-experiment	FFT	Other	Control group was higher

Fain, T., Greathouse, S. M., Turner, S. F., & Weinberg, H. D. (2014)	Mixed ages, gender. Minority sample	Quasi-experiment	MST	Arrest	Control group was higher
Glisson, C., Schoenwald, S. K., Hemmelgarn, A., Green, P., Dukes, D., Armstrong, K. S., & Chapman, J. E. (2010)	Mixed ages, gender. Mostly White	Randomized Control Trial	MST	Other	Control group was higher
Gottfredson, D. C., Kearley, B., Thornberry, T. P., et al. (2018)	Mixed ages Mostly boys Mostly Black	Randomized Control Trial	FFT	Arrest	Control group was higher
Jeong, S., Fenoff, R., & Martin, J. H. (2017)	Mixed age, ethnicity, gender	Quasi-experiment	CBT	Arrest	Control group was higher
Jewell, J. D., Malone, M. D., Rose, P., Sturgeon, D., & Owens, S. (2015)	Mixed ages, ethnicity, gender	Quasi-experiment	CBT	Arrest	Control group was higher
Lancaster, C., Balkin, R. S., Garcia, R., & Valarezo, A. (2011)	Mixed ages, gender Mostly Hispanic	Quasi-experiment	CBT	Arrest	Control group was higher
Letourneau, E. J., Henggeler, S. W., McCart, M. R., Borduin, C. M., Schewe, P. A., & Armstrong, K. S. (2013)	Mixed ages, ethnicity. Mostly boys	Randomized Control Trial	MST	Arrest	No difference between treatment and control group
Lipsey, M. W., Howell, J. C., Kelly,	Mixed ages, gender, ethnicity	Randomized Control Trial	CBT	Arrest	Control group was higher

M. R., Chapman, G., & Carver, D. (2010)					
Sexton, T., & Turner, C. W. (2010)	Mixed ages Mostly White Mostly boys	Randomized Control Trial	FFT	Conviction	Control group was higher
Sheerin, K. M., Borduin, C. M., Brown, C. E., & Letourneau, E. J. (2021)	Mixed ages, ethnicity. Mostly boys	Randomized Control Trial	MST	Arrest	Control group was higher
Smith-Boydston, J. M., Holtzman, R. J., & Roberts, M. C. (2014)	Mixed ages, gender. Mostly White	Randomized Control Trial	MST	Arrest	No difference between treatment and control group
Thornberry, T. P., Kearley, B., Gottfredson, D. C., Slothower, M. P., Devlin, D. N., & Fader, J. J. (2018)	Mixed ages, gender. Mostly Black	Randomized Control Trial	FFT	Arrest	No difference between treatment and control group
Vidal, S., Steeger, C. M., Caron, C. et al. (2017)	Mixed ages, ethnicity. Mostly boys	Quasi-experiment	MST	Other	Control group was higher

Description of Selected Studies

There was a total of 22 unique studies included; out of those 22, one study examined FFT & MST, separately. As a result, the final sample included in the current study is 23 evaluations assessing recidivism rates among adjudicated offenders in the United States from 2010-2024. Table 5 summarizes these studies.

As can be seen in Table 5, there is a nearly equal distribution of research design in this study; 52.17% of the studies were quasi-experiments and 47.83% of the studies were randomized control trials. Through all the studies, the intervention type most prevalent was FFT with 39.13%, followed by MST with 34.78% and CBT with 26.09%. All of the participants were on probation (100.00%), underscoring the prevalence of community-based interventions in addressing recidivism. Different definitions of recidivism were employed across all studies, with arrest being the most common (60.87%), followed by convictions (26.09%), and other definitions (13.04%).

The study samples predominantly consisted of boys (52.17%), with a smaller representation of girls (0.00%) and mixed-gender samples (47.83%). Regarding race/ethnicity, mixed backgrounds comprising the majority (52.17%), minority were the second largest group (26.09%), lastly white participants were the smallest group (21.74%). Notably, a proportion of participants fell within the 16-17 age range (4.35 %), while a majority represented a mixed age sample ranging from 12-18 (95.65%), indicating a diverse representation across age groups. Studies were also tracked by region of the U.S, the most prominent region being the northeast (26.09%), followed by the Midwest (17.39%), west (17.39%), not specified (17.39%), southeast (13.04%), and lastly southwest (8.70%).

Table 5 Description of the Sample (n=23)

Study Characteristics		Sample Characteristics	
	n (%)		n (%)
Research Design		Sex	
Quasi-experiment	12 (52.17%)	Most/all boys	12 (52.17%)
Randomized control trial	11 (47.83%)	Most/all girls	0 (0.00%)
		Mixed Sample	11 (47.83%)
Intervention Type			
FFT	9 (39.13%)	Race/ethnicity	
CBT	6 (26.09%)	Most/all White	5 (21.74%)
MST	8 (34.78%)	Mixed sample	12 (52.17%)
		Most/all minority sample	6 (26.09%)
Disposition Status			
Probation	22 (95.65%)		
Residential placement	1 (4.35%)		
		Age	
Recidivism Definition		Most/all 12 and under	0 (0.00%)
Arrest	14 (60.87%)	Most/all 13-15	0 (0.00%)
Conviction	6 (26.09%)	Most/all 16-17	1 (4.35%)
Other	3 (13.04%)	Mixed age sample	22 (95.65%)
		Region of the U.S.	
Recidivism Time Frame		Northeast	6 (26.09%)
1 year or less	8 (34.78%)	Southwest	2 (8.70.%)
Over 1 year	15 (65.22%)	West	4 (17.39%)
		Southeast	3 (13.04%)
		Midwest	4 (17.39%)
		Not specified	4 (17.39%)

Recidivism by Program Type

For youth involved in the juvenile justice system, does the impact of Cognitive-Behavioral Therapy (CBT), Functional Family Therapy (FFT), and Multisystemic Therapy (MST) on recidivism vary by program type? To answer this research question, recidivism findings were categorized into three groups: the control group had higher recidivism rates (i.e., treatment was effective), the treatment group had higher recidivism rates (i.e., treatment was not

effective) and no significant differences between the control group and the treatment group. Table 6 presents the results for research question one.

Table 6 Recidivism Differences across Treatment and Control Groups Broken Down by Intervention

	Control Group > Treatment Group ($p < .05$)		No significant Differences (p = ns)		Treatment Group > Control Group ($p < .05$)	
	n	%	n	%	n	%
CBT	6	100.00%	0	0.00%	0	0.00%
FFT	7	77.78%	2	22.22%	0	0.00%
MST	4	50.00%	4	50.00%	0	0.00%
Total	17	73.91%	6	26.09%	0	0.00%

CBT proved to be the most effective intervention method as out of its six studies, all showed higher recidivism rates for the control groups. For example, in a quasi-experiment study conducted in the Midwest, Jewell et al. (2015) hypothesized that graduates of the CBT program would have lower recidivism rates than those who did not participate in the program or dropped out of the program. This hypothesis was proven correct as 41% of the control group and 53% of the dropout group demonstrated recidivism, whereas the treatment group only generated 32% ($p < .05$)). Similarly, Burraston et al. (2010), conducted a randomized controlled trial, in which the results indicated that those who were part of the CBT class had a 51% lower arrest rate than those in the control group. These two studies showed the effectiveness of CBT to reduce recidivism rates among youth who have been adjudicated delinquent. The consistent findings across the six studies highlight the effectiveness of CBT as an intervention method in addressing delinquent behavior. Moreover, the significant reduction in recidivism rates observed among CBT participants underscores its potential to contribute to long-term positive outcomes for individuals involved in the juvenile justice system.

Most FFT studies demonstrated higher recidivism rates among the control group (77.78%). For example, Thornberry et al. (2018) conducted a randomized controlled trial to determine the recidivism rates for youth with high-risk gang involvement and those at low risk. The study discovered that at the 18-month follow-up, high-risk youth who were part of the treatment group (28.00%) exhibited notably reduced recidivism rates compared to those in the control group (43.00%), which received standard treatment. However, one study (22.22%) showed no significant difference between the control and treatment group. In this study, Baglivio et al. (2014) compared FFT and MST and their effectiveness in reducing recidivism by matching study characteristics such as gender, ethnicity, and risk level. Post-matching, no significant differences in recidivism was observed among the FFT group (treatment group = 27% conviction rate, control group = 30% conviction rate).

Recidivism findings from MST studies were split; 50% of studies showed higher recidivism rates among the control group, while the other 50% found no significant differences in recidivism across the groups, Vidal et al. (2017), conducted a study which employed a substantial sample drawn from a statewide dissemination of MST (n=740; 43% female; 14% Black; 29% Hispanic; 49% White). The baseline differences between treatment (n=577) and comparison (n=163) groups were addressed through propensity score matching. The findings demonstrated improved offending rates among youth receiving MST compared to those unable to complete it due to non-clinical or administrative reasons. Results revealed a roughly 40% decrease in rates of recidivism within the treatment group over six years. The study, along with the other three MST studies included in this review (Fain et al., 2014; Glisson et al., 2010; Sheerin et al., 2021), highlights the potential advantages of offering evidence-based programs like MST to enhance youths' well-being.

One important finding to note is that none of the 23 evaluations found that the treatment group had higher recidivism rates. CBT was the most consistently effective intervention method, but FFT also seemed highly effective in reducing recidivism rates. This is a key finding because it suggests that both interventions offer promising approaches for reducing recidivism rates. This demonstrates the importance of considering a range and tailoring of interventions to the specific needs and circumstances of individuals involved in the Juvenile Justice System. MST showed the least consistent recidivism results. To better understand these findings, it is important to consider the characteristics of each study and how differences may impact the findings regarding recidivism.

For example, interesting differences in EBI effectiveness emerged when comparing study findings across EBI and race/ethnicity characteristics of the study samples. CBT studies consisted of mixed samples (66.67%) and mostly minorities (33.33%) and, across all six studies included in the review, showed positive results for the treatment group. The race/ethnicity of the FFT samples was more diverse, consisting of mixed samples (33.33%), mostly minorities (33.33%), and mostly white (33.33%). In the mixed and minority samples (n = 6 studies), the recidivism findings demonstrated that there were no differences in recidivism across groups but the three FFT studies based on "mostly white" samples showed positive effects on recidivism among the treatment group. The findings in the MST intervention were evenly split 50/50 between the control group having a higher recidivism rate and there being no difference between treatment groups. The MST studies consisted of 62.50% of them having a mixed sample, 12.50% of the studies being mostly minority, and 25.00% of the studies having a primarily white sample. No consistent pattern was identified among these studies.

Differences in the measurement of recidivism were also revealed. Out of the 23 evaluations, 15 used the definition of arrest and 80.00% of these studies found that the control

group had higher recidivism rates. Six studies measured recidivism by conviction and 75.00% found that the control group had higher recidivism rates. Overall, minimal differences in recidivism findings across definitions were observed. However, when comparing these findings within EBI subgroup, different patterns emerged.

For example, All CBT studies (n = 6) used arrest as the definition of recidivism and consistently demonstrated the control group has a higher recidivism rate compared to the treatment group. Across the nine FFT studies, both definitions of recidivism were used. Arrest was used in 44.44% of FFT studies (n = 4), whereas conviction was used in 55.56% of the studies (n = 5). When arrest was used as the definition for recidivism, all four FFT studies demonstrated lower recidivism rates for the treatment group. When conviction was used as the definition, 80% of the five studies demonstrated that the control group had higher recidivism rates. MST studies used both arrest (62.50%) and conviction (37.50%) definitions for recidivism. The five studies that used arrest as a definition of recidivism for MST revealed that only two demonstrated results of the control group having higher recidivism rates, and the remaining three had no significant difference between the treatment and control group. Out of the three studies that used conviction as the definition, two of them reported the control group having a higher recidivism rate and one having no significant difference between the treatment and control group.

Recidivism time frames also varied by study and across EBIs. Of the six CBT studies, four (66.67%) had a recidivism time frame of over one year (e.g., Jewell et al., 2015; Lancaster et al., 2011; Burraston et al., 2012). Every study, regardless of the time frame used to measure the effectiveness of CBT, demonstrated positive results. Just over half of FFT studies (55.56%) included a recidivism time frame of over a one-year (e.g., Baglivio et al., 2014; & Barbara et al., 2011) and all demonstrated the control group having a higher recidivism rate. Seventy-five percent of the FFT studies that defined recidivism under one year demonstrated the intervention being

effective, and a single study showed no significant difference between the treatment and control group. MST used both arrest (62.50%) and conviction (37.50%) definitions for recidivism. The five studies that used arrest as a definition of recidivism for MST revealed that only two demonstrated results of the control group having higher recidivism rates, and the remaining three had no significant difference between the treatment and control group. Out of the three studies that used conviction as the definition, two of them reported the control group having a higher recidivism rate and one having no significant difference between the treatment and control group. Among the eight MST studies, sic (75.00%) used a time frame of over one year (e.g., Smith-Boydston et al., 2014; Boxer et al., 2017) and two (25%.00%) used less than one year. Across both measurement time frames, half of studies showed positive results for the treatment group. Like the findings above, while EBI-specific comparisons across recidivism time frames showed varying results, findings across all 23 studies show minimal differences in the recidivism findings across time frames. Eight of the 23 evaluations included in the review used a time frame of less than one year and 75% of these studies showed the control group had a higher recidivism rate. The other 15 studies used a time frame of one year or longer and 80% demonstrated that the control group had higher recidivism rates.

Another important study characteristic that deserves attention is research design. CBT studies had an even split, 50.00%, regarding using a quasi-experiment or a randomized control trial study design. Regardless of design, all studies of CBT demonstrated effectiveness in the treatment group. FFT studies were more predominant in the quasi-experimental design as 66.67% of the studies had this design, and 33.33% had a randomized controlled trial design. Out of the six quasi-experiment designs, only one resulted in no significant difference between the treatment and control groups. However, all three of the randomized controlled trials demonstrated that the control group had higher recidivism rates in comparison to the treatment group. MST had 62.50% of its

studies conducted with a randomized controlled trial, and the remaining 37.50% were quasi-experimental designs. Of the three quasi-experimental designs, two demonstrated the effectiveness of the intervention, and the remaining demonstrated no significant difference. As for the five randomized controlled trials, two proved the intervention to be effective, and the remaining three showed no significant difference between the treatment and control group. Experiments usually show smaller effects due to the design being more rigorous. Quasi-experimental designs are more likely to show positive results because they are less rigorous. This is evident as 83.00% of the quasi-experimental designs reviewed demonstrated the effectiveness of their intervention (i.e., higher recidivism rates among the control group), whereas only 73.00% of the randomized control trials designed studies showed the control group having higher rates of recidivism.

Recidivism Across Disposition Status

Do existing studies suggest that these programs impact re-offending differently based on disposition (probation or residential program)? The second research question sought to determine whether CBT, FFT, and or MST interventions have different effects on reducing recidivism rates depending on whether the youths are placed on probation or in residential programs. In essence, the purpose was to explore whether the effectiveness of these programs varies based on the disposition (i.e., probation or residential placement) of the individuals involved.

Unfortunately, the studies used for this analysis did not contain a meaningful amount of variation across disposition status. Out of the 23 evaluations included in the final sample, only one of them had a sample that was incarcerated at the time of the intervention (i.e., "residential treatment" as the disposition status). This study was conducted by Early et al. (2013) and focused on the FFT intervention with juveniles in residential facilities. This study used a quasi-experimental approach and compared the effectiveness of an FFT intervention to youth that were in a control and treatment group in one county in Indiana. The sample groups were established by

categorizing youths who had been discharged from conventional reentry services against those processed through the intervention. In total, the study encompassed 153 pairs of cases undergoing treatment and comparison within reentry programs, totaling 354 cases under examination. Predominantly, the research sample comprised males (88%) and individuals from non-White backgrounds (54%), aged between 16 and 18 upon release from reentry services. Within this sample, 47% were identified as White, 44% as African American, with slightly under 9% classified as multiracial, and 7% as Hispanic. Over half of the youths in the study (51%) committed felonies as their most severe offense, while misdemeanors accounted for 45%, and less than 5% were confined for non-law violations. Tracking of recidivism encompassed all 354 youths through official records for a 12-month period post-release from either reentry or standard probation aftercare services. Initial analyses were conducted to scrutinize discrepancies in demographics and offense backgrounds between the treatment and control groups. To handle sampling biases, a logistic regression model was deployed, integrating variables assessed at the bivariate level to gauge the likelihood of placement into the intervention program. The study findings dictated that the group that participated in FFT had significantly lower recidivism rates (i.e., treatment group = 29.40%, control group = 34.60%).

DISCUSSION

This systematic review explored the impact of Cognitive-Behavioral Therapy (CBT), Functional Family Therapy (FFT), and Multisystemic Therapy (MST) on recidivism rates among juvenile offenders. The study explores whether CBT, FFT, and MST have different effects on reducing recidivism among youth involved in the juvenile justice system depending on the type of intervention used. It aims to understand if specific intervention methods are more effective than others in helping youth avoid reoffending. This study provides insights into improving intervention strategies and policies to better support the rehabilitation and successful integration of youth in the justice system.

After a 3-stage screening process, the final sample consisted of 23 peer-reviewed studies measuring recidivism rates among adjudicated youth who participated in one of three interventions: CBT, FFT, and MST. Two key findings emerged from this systematic review. First, none of the studies included in the analysis demonstrated higher rates of recidivism within the treatment groups compared to control groups. This absence of elevated recidivism rates within the treatment groups suggests the potential efficacy of EBIs among adjudicated youth. In fact, a notable trend emerged across the reviewed studies, revealing a statistically significant reduction in recidivism rates among most of the treated individuals. Specifically, 78% of the 23 evaluations reviewed found that the control group had a higher recidivism rate compared to the treatment group. This finding highlights the importance of interventions aimed at reducing recidivism, suggesting a promising avenue for addressing the complex issue of repeat offending.

Second, out of the six CBT studies included in the review, 100% showed a positive effect on recidivism (i.e., lower recidivism rates among the treatment group). The studies that focused on the effect of FFT on recidivism demonstrated that roughly 88.89% of them had a positive impact

on the youth that were part of the treatment group, whereas the remaining 11.11% showed no significant difference between the treatment and comparison groups. Lastly, the studies with a focus on the effects MST had on recidivism were split evenly (50%) between treatment groups having lower recidivism rates and there being no significant difference, when compared to the control group. CBT showed the most consistent and positive findings, as evidenced by all studies indicating superior outcomes for the treatment group compared to the control group.

It is noteworthy that comparisons across the three interventions showed important differences in recidivism rates across the treatment and control groups, study sample characteristics (e.g., race/ethnicity), and study methodology (e.g., research design, dependent variable). CBT was the least studied intervention, with only six studies included in the analysis but showed the most consistent (and positive) findings. The equal distribution between quasi-experimental and randomized controlled trial designs highlights the robustness of CBT's effectiveness as the same findings across designs mean rigor did not impact results.

Most of the nine FFT studies included in this review demonstrated that the treatment group had lower recidivism rates than those who did not participate in FFT (i.e., eight of nine studies). These studies were predominantly quasi-experimental. The inherent limitations associated with quasi-experimental designs, including the absence of random assignment and the potential for selection bias, suggest that more FFT studies using random assignment are necessary.

The least performing out of the three interventions was MST, where half of the eight studies showed lower recidivism rates among the treatment group, and the other half showed no significant differences. In contrast to CBT and FFT, randomized controlled trials were more prominent among the MST studies, which might explain the lower success rates among the MST studies. A randomized controlled trial is considered the gold standard in research design for determining the

efficacy of interventions, as they help control confounding variables and biases, thereby providing more reliable evidence of effectiveness. Therefore, the discrepancy in the methodological rigor of studies evaluating MST versus CBT and FFT could contribute to differences in observed outcomes. In addition, as seen in Table 2, while MST offers a comprehensive and systemic approach to addressing juvenile delinquency, its multi-party involvement and systemic focus may result in trade-offs in terms of intervention depth and consistency compared to more focused interventions like CBT and FFT.

Notably, across all 23 evaluations, the definition of recidivism (e.g., arrest or conviction) and the time frame (e.g., under one year, over one year) that recidivism was measured did not significantly alter study findings. Generally, convictions represent more severe outcomes than arrests, which could potentially impact conclusions drawn from studies that rely on diverse recidivism definitions. Convictions indicate that an individual has been found guilty of a crime, often leading to legal consequences such as incarceration, while arrests represent initial involvement with law enforcement and may or may not result in formal charges or convictions. However, regardless of recidivism measures, these robust findings (i.e., 78.26% of studies demonstrating intervention efficacy) suggest that interventions are effective and, therefore, support key findings in the result section.

Meta-analyses were also reviewed to further explore and compare the findings of this study to prior studies. The overlap in findings underscores the need for more randomized controlled trials across interventions to establish clearer guidelines for effective strategies, ensuring evidence-based practices and the need for consistent measurement of key outcomes. Dopp et al. (2015) conducted a meta-analysis reviewing empirical literature on treatments for juvenile sexual offenders. Among six CBT studies of juvenile sex offenders, all showed support for the effect of CBT on recidivism, but five out of six studies were quasi-experiments. In the case of MST, two meta-analyses were

reviewed (Littell et al., 2021; Van der Stouwe et al., 2014). Consistent with the findings from the current study, all showed mixed results based on sample, research design, and recidivism definition. Littel et al. (2023) conducted a meta-analysis FFT, including studies meeting RCT or quasi-experimental criteria. Across the 20 studies reviewed, FFT showed moderate impacts on recidivism, with effects varying across research design and recidivism time frame. For example, regarding FFT's effectiveness in reducing recidivism within a 24-month timeframe, one RCT demonstrated a significant reduction compared to the control group, while one quasi-experimental study found no significant difference. These results parallel our study, as all RCT-designed FFT studies showed effectiveness in reducing recidivism compared to controls.

Regarding race/ethnicity, the characteristics of the samples included in this review were not consistent. CBT studies demonstrated effectiveness irrespective of the ethnic composition of the sample. Compared to CBT study samples, the FFT and MST samples were much more diverse. Notably, FFT studies involving predominantly white youths consistently reported higher recidivism rates among control groups, which was not consistent among mixed race/ethnicity samples or samples of “mostly minority” youth. Understanding these differences is crucial for tailoring interventions to diverse populations, emphasizing the need for further research to explore demographic disparities in treatment outcomes and inform equitable intervention strategies for all youth involved in the juvenile justice system.

Implications

The results of this study provided valuable insights for improving rehabilitation strategies within the juvenile justice system. They also identified gaps in the literature that needed to be addressed to better inform policy and practice. The implications drawn from evaluating these three intervention methods, CBT, FFT, and MST, on youth recidivism,

underscore the importance of having a comprehensive toolkit within jurisdictions. Each of these interventions demonstrates promising impacts on recidivism rates among youth involved in the juvenile justice system. Therefore, it is crucial for jurisdictions to incorporate all three approaches into their arsenal to effectively address the complex needs of youthful offenders. However, agencies and policies should also prioritize efforts to identify which interventions are most suitable for specific populations within their jurisdictions. This tailored approach can ensure that resources are allocated efficiently, and interventions are matched appropriately to the needs of individual youths.

Additionally, future research is essential to further understand the nuances of these interventions and their differential effects on various demographic and clinical profiles. Juvenile justice agencies must strategize to maximize resources by investing in interventions supported by empirical evidence while also exploring innovative approaches to enhance effectiveness and efficiency. With limited resources in juvenile justice systems, understanding which intervention methods yield the best results can ensure efficient resource allocation. Furthermore, a focus on future research publications should prioritize comparisons that align methodologies across studies, facilitating more robust conclusions to make informed decisions.

Study Limitations

The major limitation of the current study is the need for more studies based on samples of youths in residential facilities. As a result, the second research question was not answered. Although some publications were found, eligibility criteria would have had to be altered, such as the age range, year of publication, and or publication being from a different country. Future research should aim to conduct either quasi-experiments or randomized controlled trials of each intervention among youth placed in a residential treatment facility. Identifying the intervention that lowers recidivism among youths in residential treatment is important as it can lead to more

effective rehabilitation programs and reduce the likelihood of future criminal behavior among this population. By addressing this limitation, future researchers can contribute to the development of evidence-based practices tailored to the unique needs of youths in residential facilities. Additionally, identifying effective interventions for reducing recidivism can have broader societal benefits, including cost savings associated with decreased criminal justice system involvement and improved public safety. Therefore, it is crucial for future research to prioritize investigating interventions that specifically target recidivism among youths in residential treatment.

Another limitation of the current study is the restricted scope imposed by criteria such as the year of publication and the country of origin (U.S.) of the available studies. By setting limitations on the publication years (i.e., 2010-2024) and geographic locations, valuable research conducted outside of these parameters may have been overlooked. This restriction resulted in a limited representation of interventions and approaches, hindering the comprehensiveness and applicability of the findings. Expanding beyond these constraints is essential to ensure a comprehensive understanding of interventions for youths in residential facilities. Research conducted in different countries may offer insights into culturally specific approaches or contextual factors influencing intervention effectiveness. Similarly, older studies may provide valuable historical context or reveal long-term outcomes of interventions that newer research may overlook. Therefore, future research efforts should prioritize inclusivity by considering studies from a variety of publication years and geographic locations. This approach ensures a more comprehensive analysis of available evidence and enhances the potential for identifying effective interventions for youths.

These designs allow for better control of confounding variables and facilitate causal inference, thereby enhancing the validity and reliability of study findings. Thirdly, future research should prioritize identifying interventions that effectively reduce recidivism among youths in

residential treatment. Additionally, to overcome the restricted scope imposed by criteria such as publication year and country of origin, future studies should adopt more inclusive criteria. This includes considering studies from a wider range of publication years and geographic locations to ensure a comprehensive analysis of available evidence. Furthermore, considering cultural and contextual factors are important. Research conducted in different countries may offer valuable insights into culturally specific approaches or contextual factors influencing intervention effectiveness. Therefore, future studies should prioritize utilizing rigorous RCT designs to assess the effectiveness of these interventions in reducing recidivism rates and promoting rehabilitation among juvenile offenders. Ensuring consistency in participants' demographic characteristics and offense history across the treatment and control groups to minimize variables. This can enhance the comparability of outcomes between groups and increase the reliability of study results. Implementing regular evaluations throughout the experiment to monitor adherence to intervention protocols, assess participant engagement and satisfaction, and identify any potential barriers or challenges faced during implementation. Conducting follow-up assessments at multiple time points post-intervention to evaluate the long-term impact of interventions on juvenile offenders' behavior, well-being, and reintegration into society. In addition, using a combination of quantitative measures (e.g., recidivism rates, behavior assessments) and qualitative assessments (e.g., participant interviews, case studies) can help capture the multifaceted outcomes of interventions on juvenile offenders and their families. This holistic approach can provide a robust understanding of intervention effectiveness and inform recommendations for policy and practice in juvenile justice systems. By addressing these limitations and adopting a more inclusive and rigorous approach, researchers can contribute to the development of evidence-based practices tailored to the unique needs of a given youth.

CONCLUSION

The purpose of this study was to identify whether the impact of Cognitive-Behavioral Therapy (CBT), Functional Family Therapy (FFT), and Multisystemic Therapy (MST) on recidivism varies by program type among youth involved in the juvenile justice system (JJS). Two key findings emerged from this systematic review. First, regardless of EBI, the treatment group showed lower recidivism rates most of the time. This means that offering EBIs is an effective method of lowering recidivism. In addition, regardless of research design or recidivism definition, the treatment group was likely to have lower recidivism rates. These findings strengthen our understanding of interventions for reducing recidivism among adjudicated youths. These findings also highlight the importance of providing rehabilitative options for youth involved in the juvenile justice system. Future studies aiming to address the limitations of the current research should consider several actions. Firstly, expanding sampling to include more diverse samples of youths in residential facilities is crucial for greater representation and generalizability of findings. Collaborating with multiple facilities across different regions or countries can facilitate this effort. Secondly, utilizing randomized controlled trials of each intervention among youths in residential treatment facilities can provide stronger evidence of intervention effectiveness. In conclusion, this study highlights the positive impact of evidence-based interventions on recidivism among youth involved in the juvenile justice system. Drawn from 23 evaluations of the juvenile justice EBIs, the key finding from this study is that, regardless of EBI, the treatment group showed lower recidivism rates most of the time. This means that offering EBIs is an effective method of lowering recidivism. Additionally, regardless of research design or recidivism definition, the treatment group was more likely to have lower recidivism rates. This means the positive impact of intervention on recidivism was robust. These results strengthen our understanding of interventions for reducing recidivism among adjudicated youths. Future research should include studies from

different times and places to get a better overall picture. It's also crucial for future research to be consistent in definitions, design of studies, and in their samples. By addressing these limitations, future research can make a big contribution to improving programs, which are proven to be effective, for youths in residential facilities, making communities safer, and reducing the costs of dealing with crime.

LIST OF REFERENCES

American Psychological Association. (2017). What is cognitive behavioral therapy? American Psychological Association. https://www.apa.org/ptsd-guideline/patients-and families/cognitivebehavioral#:%7E:text=Numerous%20research%20studies%20suggest%20that,psychological%20therapy%20or%20psychiatric%20medications.

Ashli J. Sheidow PhD & Scott W. Henggeler PhD (2008) Multisystemic Therapy for Alcohol and Other Drug Abuse in Delinquent Adolescents, Alcoholism Treatment Quarterly, 26:1-2, 125-145, DOI: 10.1300/J020v26n01_07

Baglivio, M. T., Jackowski, K., Greenwald, M. A., & Wolff, K. T. (2014). Comparison of multisystemic therapy and functional family therapy effectiveness: A multiyear statewide propensity score matching analysis of juvenile offenders. *Criminal Justice and Behavior, 41*(9), 1033-1056. https://doi.org/10.1177/0093854814543272

Barbara A. Lucenko, Lijian He, David Mancuso, & Barbara Felver (2011). Effects of Functional Family Parole on Re-Arrest and Employment for Youth in Washington State. Retrieved from https://www.dshs.wa.gov/ffa/rda/research-reports/effects-functional-family-parole-re-arrest-and-employment-youth-washington-state

Barnes, G. C., Hyatt, J. M., & Sherman, L. W. (2017). Even a little bit helps: An implementation and experimental evaluation of cognitive-behavioral therapy for high-risk probationers. *Criminal Justice and Behavior, 44*(4), 611-630.

Barnoski, R. (2009). *Providing evidence-based programs with fidelity in Washington State ...* Providing Evidence-Based Programs With Fidelity in Washington State Juvenile Courts: Cost Analysis.https://www.wsipp.wa.gov/ReportFile/1058/Wsipp_Providing-Evidence-Based-Programs-With-Fidelity-in-Washington-State-Juvenile-Courts-Cost-Analysis_Full-Report.pdf

Beck, Aaron. (1999). Prisoners of Hate: The Cognitive Basis of Anger, Hostility, and Violence. New York, N.Y.: HarperCollins Publishers. https://doi.org/10.1176/appi.ajp.159.4.688

Beck, J. S. (2023, October 10). CBT in 2023: Current trends in cognitive behavior therapy. Psychiatric Times.https://www.psychiatrictimes.com/view/cbt-in-2023-current-trends-in-cognitive-behavior-therapy

Boxer, P., Docherty, M., Ostermann, M., Kubik, J., & Veysey, B. (2017, February). Effectiveness of multisystemic therapy for gang-involved youth offenders: One-year follow-up analysis of recidivism outcomes. *ScienceDirect.* https://doi.org/10.1016/j.childyouth.2016.12.008

Burraston, B. O., Cherrington, D. J., & Bahr, S. J. (2012). Reducing juvenile recidivism with cognitive training and a cell phone follow-up: An evaluation of the RealVictory program. *International Journal of Offender Therapy and Comparative Criminology, 56*(1), 61-80.

Celinska, K., Furrer, S., & Cheng, C. C. (2013). An outcome-based evaluation of functional family therapy for youth with behavioral problems. *Journal of Juvenile Justice, 2*(2), 23.

Celinska, K., Sung, H.-E., Kim, C., & Valdimarsdottir, M. (2019). An outcome evaluation of Functional Family Therapy for court-involved youth. *Journal of Family Therapy, 41*, 251-276. https://doi.org/10.1111/1467-6427.12224

Chand, S. P., Kuckel, D. P., & Huecker, M. R. (2023, May 23). Cognitive Behavior Therapy. In StatPearls. StatPearls Publishing. Retrieved from https://www.ncbi.nlm.nih.gov/books/NBK470241

Connell, C. M., Steeger, C. M., Schroeder, J. A., Franks, R. P., & Tebes, J. K. (2016). Child and case influences on recidivism in a statewide dissemination of Multisystemic Therapy for juvenile offenders. Criminal justice and behavior, 43(10), 1330–1346. https://doi.org/10.1177/0093854816641715

Darnell, A. J., & Schuler, M. S. (2015, March). Quasi-experimental study of Functional Family Therapy effectiveness for juvenile justice aftercare in a racially and ethnically diverse community sample. https://doi.org/10.1016/j.childyouth.2015.01.013

Development Services Group, Inc. (2017). Formal, post-adjudication juvenile probation services. Model Programs Guide Literature Review: Formal, Post-Adjudication Juvenile Probation Services | Office of Justice Programs. https://www.ojp.gov/ncjrs/virtual-library/abstracts/model-programs-guide-literature-review-formal-post-adjudication

Dopp, A. R., Mundey, P., Silovsky, J. F., Hunter, M., & Slemaker, A. (2020). Economic value of community-based services for problematic sexual behaviors in youth: A mixed-method cost-effectiveness analysis. *Child Abuse & Neglect*, *105*, 104043. https://doi.org/10.1016/j.chiabu.2019.104043

Early, K. W., Chapman, S. F., & Hand, G. A. (2013). Family-focused juvenile reentry services: A quasi-experimental design evaluation of recidivism outcomes. *Journal of Juvenile Justice, 2* (2), 1-22.

Fain, T., Greathouse, S. M., Turner, S. F., & Weinberg, H. D. (2014). Effectiveness of multisystemic therapy for minority youth: Outcomes over 8 years in Los Angeles County. *Journal of Juvenile Justice*, *3* (2), 24-37. https://www.proquest.com/scholarly-journals/effectiveness-multisystemic-therapy-minority/docview/1681540897/se-2

Glisson, C., Schoenwald, S. K., Hemmelgarn, A., Green, P., Dukes, D., Armstrong, K. S., & Chapman, J. E. (2010). Randomized trial of MST and ARC in a two-level evidence-based treatment implementation strategy. *Journal of consulting and clinical psychology, 78* (4), 537.

Gottfredson, D. C., Kearley, B., Thornberry, T. P., et al. (2018). Scaling-up evidence-based programs using a public funding stream: A randomized trial of Functional Family Therapy for court-involved youth. *Prev Sci*, *19*, 939–953. https://doi.org/10.1007/s11121-018-0936-z

Guy-Evans, O. (2023, October 24). Bronfenbrenner's ecological systems theory. Simply Psychology. https://www.simplypsychology.org/bronfenbrenner.html

Henggeler, S. W., Rodick, J. D., Borduin, C. M., Hanson, C. L., Watson, S. M., & Urey, J. R. (1986). Multisystemic treatment of juvenile offenders: Effects on adolescent behavior and family interaction. Developmental Psychology, 22(1), 132–141. https://doi.org/10.1037/0012-1649.22.1.132

Jeong, S., Fenoff, R., & Martin, J. H. (2017). Evaluating the effectiveness of an evidence-based cognitive restructuring approach: 1-year results from Project ASPECT. *International Journal of Cognitive Therapy, 10* (1), 1-16.

Jewell, J. D., Malone, M. D., Rose, P., Sturgeon, D., & Owens, S. (2015). A multiyear follow-up study examining the effectiveness of a cognitive behavioral group therapy program on the recidivism of juveniles on probation. *International Journal of Offender Therapy and Comparative Criminology, 59* (3), 259-272. https://doi.org/10.1177/0306624X13509065

Khan, K. S., Kunz, R., Kleijnen, J., & Antes, G. (2003). Five steps to conducting a Systematic review. Journal of the Royal Society of Medicine, 96(3), 118-121. https://doi.org/10.1258/jrsm.96.3.118

Landenberger, N.A., Lipsey, M.W. (2005). The positive effects of cognitive–behavioral programs for offenders: A meta-analysis of factors associated with effective treatment. Journal of Experimental Criminology, 1(4), 451–476. https://doi.org/10.1007/s11292-005-3541-

Le, L. K., Barendregt, J. J., Hay, P., Sawyer, S. M., Hughes, E. K., & Mihalopoulos, C. (2017). The modeled cost-effectiveness of family-based and adolescent-focused treatment for anorexia nervosa. *The International journal of eating disorders*, *50*(12), 1356–1366. https://doi.org/10.1002/eat.22786

Lee-Easton, M. J., Magura, S., & Maranda, M. J. (2022). Utilization of Evidence-based

Intervention Criteria in U.S. Federal Grant Funding Announcements for Behavioral Healthcare. *Inquiry: a journal of medical care organization, provision and financing*, *59*, 469580221126295. https://doi.org/10.1177/00469580221126295

Littell, J. H., Pigott, T. D., Nilsen, K. H., Roberts, J., & Labrum, T. K. (2023, July 19). Functional family therapy for families of youth (age 11-18) with behavior problems: A systematic review and meta-analysis. Campbell systematic reviews. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10354626/

Letourneau, E. J., Henggeler, S. W., McCart, M. R., Borduin, C. M., Schewe, P. A., & Armstrong, K. S. (2013). Two-year follow-up of a randomized effectiveness trial evaluating MST for juveniles who sexually offend. *Journal of Family Psychology, 27* (6), 978–985. https://doi.org/10.1037/a0034710

McKee, E. C., & Rapp, L. (2014). The Current Status of Evidence-Based Practice in Juvenile Justice. *Journal of Evidence-Based Social Work, 11*(4), 308-317. https://doi.org/10.1080/10911359.2014.897099

MST Services (2023), Proven Results. Retrieved from https://www.mstservices.com/proven-results

Rothbaum, B. O., Meadows, E. A., Resick, P., & Foy, D. W. (2000). Cognitive-behavioral therapy. In E. B. Foa, T. M. Keane, & M. J. Friedman (Eds.), Effective treatments for PTSD: Practice guidelines from the International Society for Traumatic Stress Studies (pp. 320–325). The Guilford Press. https://psycnet.apa.org/record/2000-02102-015

Sexton, T. L., & Alexander, J. F. (2000, December). Functional family therapy. Office of Juvenile Justice and Delinquency Prevention https://ojjdp.ojp.gov/library/publications/functional-family-therapy

Sexton, T., & Turner, C. W. (2010, June). The effectiveness of functional family therapy for youth with behavioral problems in a community practice setting. Journal of family psychology: JFP: journal

of the Division of Family Psychology of the American Psychological Association (Division43). https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4172308/

Sexton, T., & Turner, C. W. (2010). The effectiveness of Functional Family Therapy for youth with behavioral problems in a community practice setting. *Journal of Family Psychology, 24* (3), 339–348. https://doi.org/10.1037/a0019406

Sheerin, K. M., Borduin, C. M., Brown, C. E., & Letourneau, E. J. (2021). An evaluation of mechanisms of change in multisystemic therapy for juvenile justice-involved youths a decade following treatment. *Journal of Marital and Family Therapy, 47* (1), 208- 219.

Smith-Boydston, J. M., Holtzman, R. J., & Roberts, M. C. (2014). Transportability of multisystemic therapy to community settings: Can a program sustain outcomes without MST services oversight? *Child Youth Care Forum, 43* (5), 593–605. https://doi.org/10.1007/s10566-014-9255-0

Snyder, H. N., & Sickmund, M. (1999, December). Juvenile justice: A century of change. Office of Juvenile Justice and Delinquency Prevention. https://ojjdp.ojp.gov/library/publications/juvenile-justice-century-change

Tan, J. X., & Fajardo, M. L. R. (2017, August 9). Efficacy of multisystemic therapy in youths aged 10-17 with severe antisocial behavior and emotional disorders: Systematic review. London journal of primary care. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5694795/

Thornberry, T. P., Kearley, B., Gottfredson, D. C., Slothower, M. P., Devlin, D. N., & Fader, J. (2018). Reducing crime among youth at risk for gang involvement. *Criminology & Public Policy, 17*, 953-989. https://doi.org/10.1111/1745-9133.12395

Timmons-Mitchell, J., Bender, M. B., Kishna, M. A., & Mitchell, C. C. (2006). An

independent effectiveness trial of multisystemic therapy with Juvenile Justice Youth. Journal of Clinical Child and Adolescent Psychology, 35(2), 227-236. https://pubmed.ncbi.nlm.nih.gov/16597218

Underwood, L. A., & Washington, A. (2016, February 18). Mental illness and juvenile offenders. MDPI. https://www.mdpi.com/1660-4601/13/2/228

Ugueto, A. M. (2019, November 27). What is CBT?. Louis A. Faillace, MD, Department of Psychiatry and Behavioral Sciences. https://med.uth.edu/psychiatry/2019/11/27/what-is-cbt/

Vidal, S., Steeger, C. M., Caron, C., et al. (2017). Placement and delinquency outcomes among system-involved youth referred to multisystemic therapy: A propensity score matching analysis. *Administration and Policy in Mental Health and Mental Health Services Research, 44* (5), 853–866. https://doi.org/10.1007/s10488-017-0797-y