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Reshaping Counselor Education: The Identification of Influential Factors on Multisystemic Therapy

T'Airra C. Belcher
Old Dominion University

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RESHAPING COUNSELOR EDUCATION: THE IDENTIFICATION OF INFLUENTIAL
FACTORS ON MULTISYSTEMIC THERAPY

by

T'Airra C. Belcher
B.A., James Madison University, 2012
M.S.Ed., Old Dominion University, 2014

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Approved by:

Nina Brown (Chair)

Corrin Richels (Methodologist)

Narketta Sparkman-Key (Member)

ABSTRACT

RESHAPING COUNSELOR EDUCATION: THE IDENTIFICATION OF INFLUENTIAL FACTORS ON MULTISYSTEMIC THERAPY

T' Airra C. Belcher
Old Dominion University, 2019
Chair: Dr. Nina Brown

Multisystemic therapy (MST) is a form of behavioral health treatment for adolescents which has been identified as one of the leading effective forms of treatment for children and adolescents with severe behavioral and mental health disorders. Since its creation, there have been countless studies exploring if this form of treatment works with a different population in a variety of locations. Additionally, there have been studies which determined that MST is just as effective as or even less effective than other treatment modalities. This dissertation explored the specific aspects of MST and what leads to its effectiveness. A meta-analysis and case study were conducted as the methodology for this study. Bronfenbrenner's Ecological Systems Theory was the theoretical guidelines for this study and addressed the research questions: Does MST show better outcomes than usual treatment paradigms? Which factors influence the outcomes of MST for youth? The meta-analysis produced outcome data on four variables and identified that MST does produce better outcomes than usual treatment paradigms. The meta-analysis indicated that treatment fidelity was a factor that influenced MST outcomes, additionally, the case study provided support to the meta-analysis with seven codes, one including treatment fidelity which indicates an influence of MST outcomes. The answers to these research questions provide recommendations for the future of MST overall, the future direction in counselor education, as well as with clinical practice.

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This dissertation is dedicated to my mother Wendy Warner Belcher, my father Terry Belcher, and my brother Dr. Xavier Belcher who always believed in me more than I could ever believe in myself and encouraged me to never give up.

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Chapter 1

Introduction of the Study

Chapter one sets the foundation for the study by introducing the background of the problem for Multisystemic Therapy (MST) and the purpose statement which establishes a grounding for the necessity of this study. The extent of the problem associated with working with juvenile delinquents and their families, along with the behaviors and diagnoses associated with this level of care will be discussed within chapter one. The research questions and design will explain the procedure of the study. Lastly, definitions of pertinent terminology to this study will conclude the chapter.

The Problem

In 2014, Medicaid reported that there were nearly 3.2 million people who received home and/or community-based services (Watts & Musumeci, 2018). Of the 3.2 million Medicaid waivers provided during the 2014 survey, 655,429 people received intellectual or developmental based services (Watts, & Musumeci, 2018). This number only represents those that qualified for services. There are still several individuals that may have needed services but did not meet Medicaid's specific requirements for the Medicaid waiver. Watts and Musumeci (2018) continued by identifying that the need for services increased by 5% between 2013 and 2014 alone. The programs included in this survey are programs targeted to juvenile delinquents at home and in the community. The United States Department of Justice in the United States Attorney's Manual (USAM) defined juvenile as "a person who has not attained his eighteenth birthday" and juvenile delinquency is a juvenile that breaks a law within the United States (US) "prior to their eighteenth birthday which would have been a crime if committed by an adult" (USAM, 1997). The issues that precipitate a juvenile becoming a delinquent vary; however, there are some similarities in the cases.

The Office of Juvenile Justice and Delinquency Prevention (OJJDP) reported in their most recent data that there were approximately 884,900 delinquency cases reported in 2015; and of these cases 28% involved crimes against people, such as simple assault, 25% were classified as public order offenses, obstruction of justice and 34% were property violations such as larceny and theft (Sickmund, Sladky, & Kang, 2018). These offenses are closely related to the symptoms of mental health disorders – conduct disorder, depression, disruptive mood disorder, and antisocial disorder – that juvenile delinquents frequently receive (Smith-Boydston, Holtzman & Roberts, 2014). According to the Diagnostic and Statistical Manual of Mental Disorders (5th edition; American Psychiatric Association [APA], 2013) symptoms of conduct disorder include aggression to people and animals, destruction of property, deceitfulness or theft, and serious violations of the rules. This means that 87% of the 884,900 cases reported in 2015 (Sickmund et al., 2018) could potentially qualify for these services based off the symptoms and typical cases that received services in the past (APA, 2013; Asscher et al., 2014; Borduin et al., 1995; Curtis, Ronan, Heiblum, & Crellin, 2009; Giles, 2003; Manders, Dekovic, Asscher, van der Laan, & Prins, 2013; Swenson, Schaeffer, Henggeler, Faldowski, & Mayhew, 2010; Wilkie, Cicero, & Mueller, 2017). This study focuses on juvenile delinquents that have utilized intensive home-based counseling services such as MST with diagnoses of conduct disorder, depression, disruptive mood disorder, and antisocial disorder.

Intensive Home-Based Mental Health Treatment

Currently, there are multiple therapeutic approaches—home-based therapy, therapeutic day treatment, and mentor programs—which aim to keep juvenile delinquents in the community to address their mental and behavioral health needs (Substance Abuse and Mental Health Services Administration [SAMHSA], 2017). There are three known approaches which include

Intensive In-Home Therapy (IIH) (Evans et al., 2003; Leitz, 2009), Wraparound Service (Burns, Burchard, & Yoe, 1995), and Multisystemic therapy (MST) (Barth et al., 2007a; Barth et al., 2007b). Intensive In-Home Therapy is a form of family preservation provided by agencies that conduct a brief and intensive treatment which assist with decreasing the risk of child maltreatment (Evans et al., 2003; Leitz, 2009). Wraparound Services identify and connect families with agencies specific to their needs (Burns et al., 1995). Lastly, MST is “a comprehensive, short-term, home- and community-based intervention for troubled youth and their families” (Barth et al., p. 989, 2007a). These three approaches all have the same purpose of retaining juvenile delinquents in the lowest level of care by addressing their needs in the home (Barth et al., 2007b). For the purposes of this study, MST will be the focal point with consideration to other forms of service approaches which have the same underlying goal.

Multisystemic Therapy

Multisystemic therapy (MST) is a form of treatment, which engages juvenile delinquents in the community, specifically within their home to address their mental health and behavioral diagnoses (Henggeler, Melton, & Smith, 1992; Henggeler & Schaeffer, 2016; Sheidow et al., 2004). MST explores the systemic reasons associated to the negative behavior of juvenile delinquents, which mirrors Urie Bronfenbrenner’s Ecological Systems Theory (Bronfenbrenner, 1977; Brofenbrenner, 2005; Leschied & Cunningham, 1998; Schoenwald, Ward, Henggeler, & Rowland, 2000). MST was developed at the Medical University of South Carolina (MUSC) in the 1970s to address the need to provide a more cost-effective form of treatment, while also adequately addressing the needs of the community (MST Treatment Model, 1998). The MST Treatment Model (1998) indicates that “The multisystemic approach views individuals as being nested within a complex network of interconnected systems that encompass individual, family,

and extrafamilial (peer, school, neighborhood) factors” which further depicts the connection between MST and the Ecological Systems Theory (p.1). MST was created to address the needs of families as it related to the juvenile justice system (Asscher et al., 2014; Baglivio, Jackowski, Greenwald & Wolff, 2014; Borduin et al., 1995; Borduin, Schaeffer, & Heiblum, 2009; Bright, Hurley & Barth, 2014; Brown, Henggeler, Schoenwald, Brondino & Pickrel, 1999; MST Treatment Model, 1998). These juveniles were frequently diagnosed with conduct disorder, depression, disruptive mood disorder, and antisocial disorder, thus MST has proven to be effective with delinquent juveniles (Asscher et al., 2014; Borduin et al., 1995; Curtis et al., 2009; Giles, 2003; Manders et al., 2013; Swenson et al., 2010; Wilkie et al., 2017).

Overall, MST has been deemed effective in general as well as in comparison to other treatment modalities for working with delinquent juveniles. Schoenwald et al. (2000) identified that MST ($M = 3.78$ days) decreased the number of days in hospitalization in comparison to a control group which received no treatment ($M = 6.06$ days). Residential treatment, another form of treatment for delinquent juveniles, reported less than favorable results, although not statistically significant, in comparison to MST (Barth et al., 2007b). Borduin, Henggeler, Blaske, and Stein (1990) determined that juvenile delinquents that received individual therapy (IT) recidivated more ($M = 1.62$) than those that received MST ($M = .12$). Henggeler, Clingempeel, Brondino, and Pickrel (2002) identified that MST recipients had a 75% reduction in aggressive crimes resulting in ($M = 0.61$, $SD = 0.90$) for MST juveniles and ($M = 1.36$, $SD = 2.21$) for those that received usual community services. Additionally, Henggeler et al. (2002) found that there were higher rates of abstinence in substance use for MST participants in comparison to the usual treatment group (group therapy, inpatient, and residential treatment as needed) (MST 55% vs.

Usual Treatment 28%). These studies assist in confirming the effectiveness of MST as a form of treatment for juvenile delinquents.

Background of the Problem

On average, juvenile delinquents engaged in MST showed a 50% lower recidivism rate than those not engaged in this level of care (Henggeler et al., 1992). In regard to other violent behaviors, it was determined that there was a 75% decrease in these behaviors due to the implementation of MST (Henggeler et al., 2002). Additionally, MST has been found to be effective in both the US as well as internationally (Henggeler et al., 1992; Porter & Nuntavist, 2016). The concern pertaining to MST arises when studies produce less than effective results, or inconclusive results, in comparison to other therapeutic approaches such as outpatient or residential treatment. Some studies indicate that MST is not more effective or that it is equivalent in effectiveness to other forms of treatment (Barth et al., 2007a; Barth et al., 2007b; Fonagy et al., 2018).

Barth et al. (2007b) compared the outcomes of intensive home-based services with residential treatment and found that both treatment approaches resulted in effective outcomes when treating juvenile delinquents. Home-based services only had a slightly greater outcome of keeping juvenile delinquent in the home and at a lower level of care than residential treatment (Barth et al., 2007b). This is a drastically different perspective on MST and its usefulness for treating children and adolescents. This discrepancy, however, creates a gap in the literature, specifically as it pertains to what aspects of MST lead its effectiveness and positive outcomes. When the focus switches from the macro level to micro level and we examine what each provider is doing to produce change, this form of treatment becomes less favorable (Barth et al., 2007a; Cox, Baker & Wong, 2010).

The last meta-analysis for MST was completed in 2016. Lux (2016) compiled a large sample of data but focused on the efficacy of MST. This study encourages the expansion of MST so that it may continue to be an effective form of treatment, especially as the founder of the theory is decreasing his involvement in research and practice of MST (Lux, 2016). Lux (2016) reviewed 44 articles ranging from 1987-2014 creating a span of nearly 30 years of research, the effect sizes and explanation of studies differ greatly resulting in discrepancies in reporting the results, and thus MST's overall effectiveness. Other studies, similarly, to Lux (2016), have all focused on the efficacy of MST. These studies have neglected to address what even the founder of MST expressed as a need for future research—to focus on what aspects are creating the change within MST (Henggeler et al., 1992).

Furthermore, the past limitations pertain to the methodology of MST effectiveness studies, creating a greater need for newer research. Research has shown limitations concerning follow-up, evaluation of process, and the lack of controls (Bright et al., 2014; Fain, Greathouse, Turner, & Weinberg, 2014). Researchers identify the need to incorporate follow-up with participants; however, there are issues surrounding the execution of the follow-up procedures. The period between the end of research and follow-up range from six months to 8.9 years, and there is a lack of response from former participants (Barth et al., 2007a; Barth et al., 2007b; Baruch, Hickey, & Fonagy, 2011; Borduin, & Dopp, 2015; Brown et al., 1999; Vermeulen, Jansen, Knorth, Buskens & Reijneveld, 2017). With consideration of the variety of outcomes in these studies, there is an even greater need to determine the most effective treatment techniques which create change in MST.

Purpose of the Study

The purpose of this study is to identify best practices of MST which increase effectiveness. Henggeler et al. (1992) indicated that there was a need for exploration of the process of MST; however, there has been little research published. There have been additional studies echoing the same sentiment for a need to explore and determine what is truly creating the effectiveness of MST (Barth et al., 2007a; Bright et al., 2014) and what, if any, is the role of the therapist in the success of MST as it relates to treatment fidelity (Henggeler et al., 2002; Huey, Henggeler, Brodino & Pickrel, 2000). This study addresses these gaps and identifies the key aspects which promote changed behavior for juvenile delinquents through the execution of MST.

Significance of the Study

This study has implications for MST research, counselor education and clinical practice. MST and similar programs work with a large percentage of client's especially with the de-institutionalization of individuals with mental illness and the desire to treat at the lowest level of care (Leit, 2009). There is constantly new research on MST and its effectiveness; however, there is limited research on therapeutic techniques within MST, which promote changed behavior in juvenile delinquents.

This study can lend itself to the continuation of this strong therapeutic approach. There are other names for similar therapeutic approaches to MST such as, Intensive In-Home therapy (IIH), which has the same purpose (Barth et al., 2007b). MST is present in the literature to a greater degree than IIH, and in some cases, both MST and IIH are interchangeable within the literature (Barth et al., 2007b). This study provides support for the execution of intensive home and community-based services overall, with a direct focus on MST to maintain efficacy for all programs.

Research Questions

The primary goal of this study is to identify which therapeutic techniques produce the strongest levels of efficacy within MST treatment. The following questions will address the goal of this study.

Question One

Does MST show better outcomes than usual treatment paradigms?

Question Two

Which factors influence outcomes of MST for youth?

Research Design

A quantitative, non-experimental, meta-analysis research design will be used to answer the research questions. Specifically, the Hunter-Schmidt model of meta-analysis will be conducted (Borenstein, Hedges, Higgins, & Rothstein, 2009). The researcher identified all articles, published and unpublished, between 2000 and 2018 on the topic of MST effectiveness. CINHAL Plus, PsycINFO, PubMed and Monarch One were utilized to identify published literature and the ProQuest database was used to explore unpublished literature. This process formed the initial inclusion criteria. Once the articles were determined, additional inclusion criteria were identified. The effect sizes from the identified studies were compiled along with the individual weights of each effect size. Then the credibility interval was established, and the meta-analysis was completed.

Theoretical Framework

The ecological systems theory was the theoretical framework which guided this study. The key difference between MST and other therapeutic approaches (outpatient, residential and inpatient) is that treatment comes from an ecological systems theory perspective (MST

Treatment Model, 1998). The ecological systems theory created by Urie Bronfenbrenner guides the exploration of MST from a macrosystems perspective (Bronfenbrenner, 1979). This theory shows the significance of the impact of overlapping experiences on the client. The application of Bronfenbrenner's model will ensure best practices are tending to the needs of the whole client.

Limitations and Assumptions

There is limited current research on the therapeutic interventions used within MST. The current trend in MST research has been on identifying any differences in efficacy based on gender and ethnicity. Considering this aspect, there will possibly be added limitations around establishing a diverse sample size. There are many assumptions about the execution of MST and home-based therapy as the research has worked in home-based intensive therapy treatment. The researcher is knowledgeable of the assumptions and has address them throughout the study.

Terminology

This study utilizes terms specific to working with children and families in community-based agencies, these terms include the following:

1. **Multisystemic Therapy (MST):** is an intensive family- and community-based treatment that addresses the multiple determinants of serious antisocial behavior in juvenile offenders (MST Treatment Model, 1998).
2. **Intensive In-Home (IIH):** is a time-sensitive form of intensive family and community-based treatment to address maladaptive behaviors and prevent out of home placement through teaching essential skills (Evans et al., 2003)
3. **Therapeutic approach:** is a form of therapy application such as MST, IIH, Outpatient, Inpatient, or Residential treatment, to provide mental health care for this population.

4. **Treatment as usual/Usual treatment:** any treatment that the community typically provides including outpatient, hospitalization, residential treatment and traditional family counseling (Dekovic et al., 2012; Fain et al., 2014; Sundell et al., 2008).
5. **Ecological Systems Theory:** a developmental model that includes five stages which look at the interconnectedness of people to address change (Bronfenbrenner, 1979).
6. **Treatment Fidelity:** the monitoring of a process to ensure accuracy in execution (Henggeler et al., 2002; Huey et al., 2000; Ogden and Halliday-Boykins, 2004).

Conclusion

This chapter presented the current study. It started with a brief overview of the problem followed by the purpose of this current study. The research questions, design, and theoretical framework were explored. The chapter ended by identifying the limitations of the current study and a breakdown of terminology pertinent to the study. The following chapter will provide a more in-depth literature review followed by the methodology. Lastly, the results are discussed along with the implications of the findings of this study.

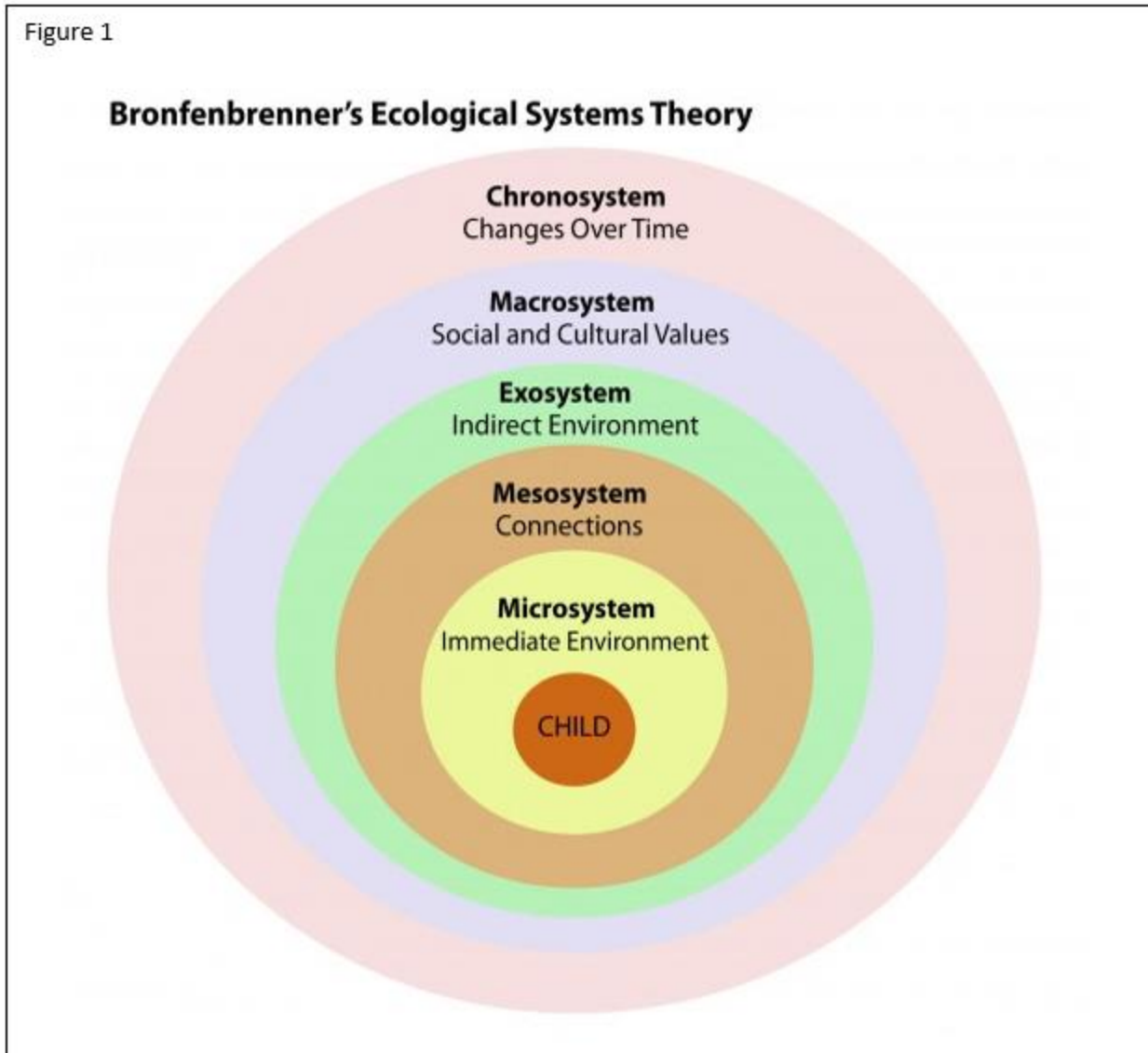
Chapter 2

This chapter establishes an overview of pertinent literature related to treating juvenile delinquents from a systems perspective with Multisystemic Therapy (MST). The Ecological Systems Theory (EST) starts this chapter as it sets the framework for working with juvenile delinquents. Each section of this theory will be connected to the work of addressing the needs of juvenile delinquents. The chapter concludes with an exploration of the history of MST and other intensive home-based therapies.

Ecological Systems Theory

Bronfenbrenner's (1979) EST focuses on the incorporation of the entirety of a person's experience into how they are viewed. EST has been depicted as concentric circles, charts and "Russian Dolls;" highlighting that there is variation in the interactions between each level and the next while simultaneously indicating that they are all connected, as seen in Figure 1 (Bronfenbrenner, 1979; McWhirter, McWhirter, McWhirter, & McWhirter, 2017). This perspective was designed to work with the concept of development and has been applied to several interventions for working with families (Bronfenbrenner, 1979; Cox et al., 2010; McWhirter et al., 2017). EST focuses on the variety of interactions a person has with parents and family members to systemic dynamics such as macroaggressions and social norms (McWhirter et al., 2017). There are five levels to EST including the microsystem, mesosystem, exosystem, macrosystem and chronosystem (Bronfenbrenner, 1977; Bronfenbrenner, 1979; Bronfenbrenner, 1986; Bronfenbrenner, 2005). These five levels provide structure to the understanding of MST. MST was created with EST as its foundation (Henggeler et al., 1992; Porter & Nuntavist, 2016; Weiss et al., 2013). MST with its foundation in EST provides a holistic perspective which creates an all-encompassing treatment modality for working with juvenile delinquents. The theory has

been applied to various human interactions in addition to the research of working with juveniles and counseling (McWhirter et al., 2017). Each level of EST promotes the necessity of individualized treatment for juvenile delinquents, which MST provides (Henggeler et al., 1992; Porter & Nuntavist, 2016; Weiss et al., 2013). At the core of EST, there is the individual who is being impacted by all the surrounding external layers (Bronfenbrenner, 1994; Bronfenbrenner, 2005). The first level of EST which begins to impact the individual is the Microsystem.



(Bronfenbrenner, 1979).

Microsystem

Microsystem sets the groundwork for the EST and essentially the work of MST and home-based services. The microsystem incorporates all the immediate influences on a juvenile such as family, school, religion, and friends (Bronfenbrenner, 2005; McWhirter et al., 2017). This constitutes the foundation of MST as the work focuses on those involved in the daily lives of juveniles (MST Treatment Model, 1998). The dynamics that exist between the various microsystems lead to the creation of the mesosystem.

Mesosystem

Each entity that operates directly with the juvenile constitutes another microsystem. As mentioned, typical microsystems consist of family, school, religion, and friends. All four of these send a variety of messages and impact the juvenile differently, the interaction of numerous microsystems develops the mesosystem (Bronfenbrenner, 1979). The sense of interconnectedness is a strength of this model (Bronfenbrenner, 2005). Through open communication—which is established in the mesosystem—MST has the capacity to incorporate a clear conceptualization of the juvenile’s behaviors which leads to significant improvements (MST Treatment Model, 1998; Stagman & Cooper, 201; Tyuse et al., 2010). An example of this may include parents engaging in active communication with the school which, in turn, provides more individualized treatment. As juveniles continue to engage with the microsystem and the interconnectedness grows in the mesosystem, there are influences which will become present in the exosystem.

Exosystem

The micro and mesosystems describe entities which directly engage with the juvenile; however, the exosystem is the first of five systems which begins to incorporate factors which

indirectly effect the juvenile (Bronfenbrenner, 2005). At this level, the individual is not an active participant in the factors that may have an impact on their life (Bronfenbrenner, 1979). A key example that Bronfenbrenner (2005) explores is how a change in the minimum wage resulted in women having to quit their jobs as they could no longer afford child care. This is an aspect of the exosystem as it directly impacts family dynamics and the mesosystems of the child while not being an entity that any individual knows. This would directly impact a child, especially one in need of MST as the daily dynamics in the home may change. Bronfenbrenner (2005) found that there were links to resentment between mother and child from the previous example. Resentment of the child by the mother can increase tension and hostility within the home (Bronfenbrenner, 2005). As this image of mothers being forced out of their work to tend to a child grows, a greater understanding can be attained through the incorporation of the macrosystem.

Macrosystem

Macrosystem is best defined as “generalized patterns” which encompasses interconnected entities from the previous levels (micro-, meso-, exo-) all interacting simultaneously (Bronfenbrenner, 2005, p.54). The combination of microsystems, mesosystems, and exosystems creates the macrosystem (Bronfenbrenner, 2005). As each system experiences intra-connections and interconnections, the communication manifest into the youth’s development. These connections include both social and cultural perspectives (McWhirter et al., 2017). This takes us to the last and final system of this model, the chronosystem.

Chronosystem

Development and growth continue throughout the entirety of life. The impact of time on life as it relates to the development of people is considered in the final system of EST (McWhirter et al., 2017). Bronfenbrenner (1986) stated that the chronosystem is “a model that

makes possible examining the influence on the person's development of changes (and continues) over time in which the person is living." Additionally, McWhirter et al. (2017) described the chronosystem as the continued influences provided by all systems within the macrosystem over a lifespan. These five systems combined create Bronfenbrenner's Ecological Systems Theory (Bronfenbrenner, 1979; Bronfenbrenner, 2005; Bronfenbrenner, 1986; McWhirter et al., 2017).

The Problem: Juvenile Delinquent Behaviors

According to the United States Census Bureau (USCB), as of April 2017, there were 308,758,105 people living in the United States (US). The USCB (2017) continued by indicating that 22.6% of the current population are juveniles—persons under the age of 18—residing in the US. This equates to approximately 69,779,331 juveniles in the US as of April 2017 which accounts for the highest reported number to date (USCB, 2017). One in five juveniles has a diagnosable mental health disorder (Stagman & Cooper, 2010). If the number has not fluctuated over the past eight years, this would account for 13,955,866 juveniles in the US having a diagnosable mental health disorder. A total of 27.4% of youth in 2010 utilized counseling services in the community, school or hospital settings (Stagman & Cooper, 2010). Even with this number of juvenile's receiving assistance, there are several others who do not have access to mental health treatment (Stagman & Cooper, 2010). Juvenile delinquency and mental health treatment accessibility are serious concerns in the US (Asscher et al., 2014; Mathys, 2017; Stagman & Cooper, 2010). This concern drives the need for continued research into how to best help juveniles (Asscher et al., 2014; Barth et al., 2007a; Bright et al., 2014; Butler et al., 2011; Letourneau et al., 2009; Stagman & Cooper, 2010).

Every juvenile has a possibility of needing mental/behavioral health services (McWhirter et al., 2017). Although all children are susceptible to needing these services, research has

indicated that individuals, who identify as an ethnic minority within a lower socioeconomic status or within the LGBT* communities, have a higher likelihood of needing support as a result of not having adequate resources to support them in comparison to those outside of the identified categories (McWhirter et al., 2017; Stagman & Cooper, 2010). The National Center for Children in Poverty (NCCP) stated that “one in 10 youth has a serious mental health problem that are severe enough to impair how they function at home, in school, or in the community” (Stagman & Cooper, 2010). Severe behaviors often result in legal issues including recidivism, peer relationship concerns, externalizing behaviors, and substance misuse. These four main behaviors are depicted in the literature as being associated with a need for services and will be explored in depth in the following sections.

Externalizing Behaviors

Externalizing behaviors can be defined as violence, delinquency and substance misuse (McWhirter et al., 2017; Tung, Noroña, & Lee, 2018). There are several reasons that a juvenile may begin to exhibit these behaviors some include exposure to traumatic experiences such as growing up in extreme poverty as well as being a survivor of abuse and/or growing up within an abusive home (McWhirter et al., 2017). Research shows that juveniles that experience these conditions while growing up may be at greater risk of exhibiting externalizing behaviors (McWhirter et al., 2017; Porter & Nuntavist, 2016). Externalizing behaviors have been reported using the Child Behavior Checklist (Verhulst, Koot, Akkerhuis, & Veerman, 1990), DSM symptom scales (Oosterlaan et al. 2000), Youth Self Report (Achenbach 1991; Verhulst and Van der Ende, 1992) in past and current literature (Barth et al., 2007a; Henggeler et al., 2002; Porter & Nuntavist, 2016; Robinson et al., 2015; Yorgason et al., 2005).

Peer Relationships. Peer Relationships encompasses both health and unhealthy dynamics between individuals. Juveniles, specifically in the ages typically associated with middle school, frequently hold the opinions of their peers at a higher regard than their families (McWhirter et al., 2017). While seeking a place of belonging, there is a higher likelihood of juveniles engaging with deviant peers instead of prosocial peers. Prosocial peers would promote and support healthy communication and behaviors, such as engaging in organized sports and clubs (Asscher et al., 2012; Huey et al., 2000; McWhirter et al., 2017). Deviant peers support and encouraged unhealthy communication and behaviors, such as associating with gangs and gang activities, dropping out of school, and using drugs (Asscher et al., 2012; Huey et al., 2000; McWhirter et al., 2017; Porter & Nuntavist, 2016). For the purpose of this discussion, attention was given to negative, or as the research defines them, deviant peer relationships involving antisocial behaviors (Asscher et al., 2012; McWhirter et al., 2017). Antisocial behaviors include any behavior which directly contests with social norms (McWhirter et al., 2017, p.200). To assess for peer relationships the Revised Behavior Problem Checklist (Peterson, 1961; Quay, 1977; Quay & Peterson, 1979), Self-Report Delinquency scale (SRD) (Elliott, Ageton, Huizinga, Knowles, & Canter, 1983), Pittsburgh Youth Study (PYS) (Keenan, Loeber, Zhang, Stouthamer-Lober, & van Kammen, 1995), and Social Competence with Peers Questionnaire (SCPQ) (Spence, 1995) have been utilized in past and current literature (Barth et al., 2007a; Sundell et al., 2008).

Recidivism. Recidivism is the process of obtaining an additional arrest or violation after prior legal infraction within a three-year period of release (NIJ, 2012b; Robst, 2017). Juvenile recidivism is the act of committing an additional crime after a previous arrest while being under the age of 18 (Robst, 2017). The Office of Juvenile Justice and Delinquency Prevention (OJJDP)

reported that there were approximately 884,900 delinquency cases in 2015 (NCJJ, 2015). The reported 884,900 delinquency cases include 28% crimes against people, (e.g. simple assault), 25% public order offenses, (e.g. obstruction of justice), and 34% were property violations (e.g. larceny and theft) (OJJDP, 2015; Sickmund et al., 2018). These offenses are closely related to the symptoms of mental health disorders—conduct disorder, depression, disruptive mood disorder, and antisocial disorder— that juvenile delinquents commonly receive (Smith-Boydston et al., 2014). In fact, Stagman and Cooper (2010) determined that 69% of juveniles involved in the court’s system have a mental health diagnosis. According to the Diagnostic and Statistical Manual of Mental Disorders [DSM] (APA, 2013), symptoms of conduct disorder include aggression to people and animals, destruction of property, deceitfulness or theft, and serious violations of the rule. This means that 87% of the 884,900 cases reported in 2015 (Sickmund et al., 2018) could potentially qualify for these services based off the symptoms and typical cases that received services in the past (APA, 2013; Asscher et al., 2014; Borduin et al., 1995; Curtis et al., 2009; Giles, 2003; Manders et al., 2013; Swenson et al., 2010; Wilkie et al., 2017).

Juvenile recidivism data varies across state lines as there is not a centralized reporting standard or method for the entire country (National Criminal Justice Reference Service [NCJRS], 2016). The Juvenile Offenders and Victims: National Report of 2014 states that “Each state’s juvenile justice system differs in organization, administration, and data capacity. These differences influence how states define, measure, and report recidivism rates. This also makes it challenging to compare recidivism rates across states,” which highlights the difficulty surrounding truly identifying how this epidemic is impacting the country (p.112). Considering that there is not a national reporting measure, several states utilize jurisdiction-based measures to report or state judicial system records (Asscher et al., 2014). In many studies, there is also a self

or parental reporting system. In these cases, recidivism is categorized into violent and non-violent crimes.

Substance Misuse. The DSM 5 revised the term substance abuse to substance use with a diagnostic code for each substance (APA, 2013). This change altered the connotation of having a problem with managing drug usage. Substance use has been identified as a precursor to delinquent behaviors (Bright et al., 2014). As of 2012, the National Institute of Justice (NIJ) reported that approximately 23.9 million juveniles over the age of 12 reported using an illicit drug within the last 30 days (NIJ, 2012a). Illicit drugs include marijuana, cocaine, heroin, hallucinogens, inhalants, and prescription drugs (APA, 2013; NIJ, 2012a). The misuse of substances includes the ingestion of substances as well as the behaviors that are exhibited to obtain the substances (NIJ, 2012a). Currently, there are nearly 100 programs affiliated with the NIJ alone, which indicate that they provide treatment for juvenile substance misuse; and of these programs, only 18% have been deemed effective (NIJ, 2012a). Studies utilize a variety of assessments and measures to account for substance use/misuse. Alcohol Use Disorder Identification Test (AUDIT) (Babor, de la Fuente, Saunders, & Grant, 1992) and Drug Use Disorder Identification Test (DUDIT) (Berman, Bergman, Palmstierna, & Schlyter, 2005) are a couple of the assessments and measures used in past and current literature (Barth et al., 2007a; Henggeler et al., 2002).

Summary of the Problem

Despite the research indicating that juveniles in the US have a variety of mental/behavioral health concerns, resources are still not readily available for all that are in need (Stagman & Cooper, 2010). Mental health is the primary factor identified in countless cases within the juvenile delinquency research (Bright et al., 2014; Dekovic et al., 2012; Sundell et al.,

2008). With the need of assistance evident, there is a push for an increase in the usage of effective programming to address the needs of juveniles and juvenile delinquents (Barth et al., 2007a; Bright et al., 2014; Butler et al., 2011; Letourneau et al., 2009). Recidivism, peer relationships, externalizing behaviors, and substance use/misuse are concerns that are best addressed in the juveniles' natural environment (Asscher et al., 2012). Working within the natural environment allows providers access to address multiple areas of concern within a finite amount of time (Zajack, Randall, & Swenson, 2015). The need to address these concerns and behaviors in the home tend to lead to one specific type of counseling service, home-based family counseling.

Home-Based Family Counseling

Home-based family counseling stems from the field of social work as a means to address concerns within the home and community (Hammond & Czyszczonek, 2014). This modality gained attention after the US passed a new law, the Adoption Assistance and Child Welfare Act of 1980 (P.L. 96-272), which encouraged providing treatment to children and families within their individual homes (Cortes, 2004; Christensen, 1995; Scarborough, Taylor, & Tuttle, 2013; Snyder & McCollum, 1999). All programs which aim to satisfy the Adoption Assistance and Child Welfare Act of 1980 (P.L. 96-272), are brief, typically averaging around 10 hours of services per family a week with evaluations of progress in 3-month increments (Hurley, 2008; Porter & Nuntavist, 2016).

Hammond and Czyszczonek (2014) indicated that the term home-based family counseling has been found in the literature and is interchangeable with intensive in-home and MST. According to SAMHSA (2017), there is currently a plethora of treatment options for juvenile delinquents within the community. The three primary researched forms of treatment include

Intensive In-Home, Wraparound Service, and MST. These three treatments do not stand alone; however, they have been deemed as empirically based therapeutic interventions (Coldiron, Bruns, & Quick, 2017; Henggeler et al., 1992, Henggeler et al., 2006; Scarborough et al., 2013). Despite research dating back to the 1970s (Burns et al., 1995; Henggeler et al., 1986), home-based treatment has only recently become a widely acceptable form of treatment (Hammond & Czyszczon, 2014). As a result of the recently and arguably delayed acceptance of this treatment modality, there has been a push to conduct strong empirical based research (Barth et al., 2007a; Hammond & Czyszczon, 2014; Scarborough et al., 2013). Home-based treatment modalities receive clients from a referral-based system from a higher level of care—such as residential treatment, inpatient, department of social services or the justice system into one of the three treatment approaches (Burns et al., 1995; Cortes, 2004; Leitz, 2009). This level of care indicates that the clients are representative of the more severe cases (Scarborough et al., 2013). There is considerable overlap between these services focused at addressing the needs of juvenile delinquents which drives the necessity to determine which treatment is the most effective (Eeren, Goossens, Scholte, Busschbach, van der Rijken, 2018).

Intensive In-Home and Wraparound Services

The primary focus of intensive in-home treatment is family preservation by decreasing the risk of child maltreatment (Evans et al., 2003; Leitz, 2009). Wraparound Services are a frequently implemented comprehensive program for providing individualized care with severely mentally ill juveniles (Burns et al., 1995; Walker, Pullman, Moser, & Burns, 2012). These two services have a focus of attending to the needs of families in the community by providing individualized support and 24/7 crisis interventions (Bright et al., 2014).

Multisystemic Therapy

MST is an evidenced-based treatment modality, which focuses on intensive community-based interventions for juveniles and juvenile delinquents along with their families (Barth et al., 2007a; Borduin et al., 1995; Eeren et al., 2018; Henggeler et al., 1992; Henggeler et al., 2006; Henggeler & Schaeffer, 2016; Porter & Nuntavist, 2016; Sheidow et al., 2004; Weiss et al., 2013). MST was developed by Dr. Henggeler, Dr. Schoenwald and Dr. Rowland (Henggeler, Schoenwald, & Rowland, 2017). In 1986 they published the first article on MST work with delinquent juveniles (Henggeler et al., 1986, Paradisopoulos, Pote, Fox, & Kaur, 2015). Henggeler and the research team identified a need in the community and sought out a means to rectify the problem. They addressed the gap in services impacting juvenile offenders (Curtis, Ronan, & Borduin, 2004; Henggeler et al., 1986; MST Treatment Model, 1998). Cognitive behavioral, behavioral, and pragmatic family therapies set the foundation of this approach from an intervention perspective. These therapies were purposefully incorporated based on their individual evidenced based status (MST Treatment Model, 1998). The MST Treatment Model (1998) indicated the following:

A central feature of the MST treatment model is its integration of empirically-based treatment approaches, which have historically focused on a limited aspect of the youth's social ecology (e.g., the individual youth, the family), into a broad-based ecological framework that addresses a range of pertinent factors across family, peer, school, and community contexts. (p.8)

MST aims to address the concerns of families which manifest into the behaviors and decisions of juveniles by decreasing the rate of recidivism through interventions (Butler et al., 2011). One of the most reported treatments for juvenile conduct concerns, including recidivism, is MST (Weiss et al., 2013).

MST Client Profile. The MST Treatment Model (1998) manual identifies the program targets as “chronic, violent or substance abusing juvenile offenders at high risk of out-of-home placement and their families” (p.1). The target population regarding age ranges from 12-17 (MST Treatment Model, 1998); although, there have been studies completed with significant results of MST for juveniles under the age of 12 (Barth et al., 2007a; Bright et al., 2014; Cox et al., 2010; Schoenwald et al., 2000; Weiss et al., 2013). MST has been explored including minority statuses to ensure its effectiveness as a treatment modality, which include, but are not limited to, gender (Asscher, Dekovic, Manders, van de Laan, & Prins, 2012; Milette-Winfrey & Mueller, 2018; Ogden & Hagen, 2006; van der Stouwe, Asscher, Stams, Dekovick, & van der Lann, 2014), and ethnicity (Asscher et al., 2012; Barth et al., 2007a; Barth et al., 2007b; Boxer, 2011). MST and all services with this structure are ideal for clients that are resistant to treatment as it is not a traditional form of treatment with the client’s home becoming the office, which combats the power dynamics at play within the traditional outpatient setting (Cortes, 2004).

MST Service Financing. Watts & Musumeci, (2018) stated that often, home-based programs are financed through the federal government. Programs such as Medicaid pay for home and community-based services (Watts & Musumeci, 2018). In a survey of the home-based services, it was reported that there were nearly 3.2 million people who received services in 2014. Of the 3.2 million waivers provided during the 2014 survey, 655,429 people received intellectual or developmental based services (Watts, & Musumeci, 2018). This number only represents those that qualified for services. There are still several individuals that may have needed services but did not meet Medicaid’s specific requirements for the waiver. Watts and Musumeci (2018) continued by identifying that the need for services increased by 5% between 2013 and 2014

alone. The increase of need suggests that MST services are only increasing in importance for juveniles and the community.

MST and Treatment Fidelity. Treatment fidelity is the monitoring of a modality to ensure accuracy in execution and accordance with protocol, which is viewed as a key concern when integrating evidenced-based practices in community-based mental health (Boxer, 2011; Ellis et al., 2010; Fox & Ashmore, 2015; Henggeler et al., 2002, Huey et al., 2000; Ogden and Halliday-Boykins, 2004). Treating fidelity has been hypothesized as an area of continued exploration in understanding the effectiveness of MST (Boxer, 2011; Foster et al., 2009; Fox, Bibi, Millar, & Holland, 2017; Glebova, Foster, Cunningham, Brennan, & Whitmore, 2012; Greeson, Guo, Barth, Hurley, & Sisson, 2009; Henggeler et al., 2002; Henggeler et al., 2006; Huey et al., 2000; Letourneau et al., 2009; Ogden & Halliday-Boykins, 2004; Robinson et al., 2015; Schoenwald et al., 2000; Sheidow et al., 2004; Smith-Boydston et al., 2014; Weiss et al., 2013). Trainings, evaluations, team meetings, anonymous feedback, consultation, supervision, video recorded session analysis, and case audits are a few ways to maintain treatment fidelity (Borduin & Dopp, 2015; Bright et al., 2014; Cox et al., 2010; Ellis et al., 2010; Fonagy et al., 2015; Henggeler et al., 1992; Henggeler et al., 2006; Henggeler et al., 2016; Painter, 2009; Schoenwald et al., 2000). Despite the various forms of tracking treatment fidelity, there is a need for an increase in standardized assessment of fidelity with MST (Curtis et al., 2004; Milette-Winfrey & Mueller, 2018).

Treatment fidelity is not present in all of the MST research and it has been a point of question along with the overall concern of what creates change presented by the developers of MST (Henggeler et al., 2002; Huey et al., 2000). There are reports that treatment fidelity has a limited impact on therapist effectiveness even in manualized treatment such as MST, and that the

therapist can impact up to 9% of change found in clients regardless of treatment modality (Blow, Sprenkle, & Davis, 2007; Glebova et al., 2012; Greeson et al., 2009). Treatment fidelity continues to grow in importance with MST as the dearth of research by non-MST affiliates is beginning to be addressed (Curtis et al., 2004). These limitations created one of the gaps in the literature which this study explores and that is treatment fidelity.

MST Literature Explored

The literature supporting and challenging MST as an effective treatment modality has been published over the last 30 years. There have been countless studies which provide continued support indicating that it is the most effective form of treatment in comparison to other forms of therapy. Literature also challenges this theory to grow and continue to develop. The four outcome variables—recidivism, externalizing behaviors, peer relationships, and substance misuse—have all been tested with MST. Each of these variables has obtained statistically significant findings with MST. Once researchers began to look deeper, it was determined that MST is not effective in all situations or with all people. Additionally, there has been a push for research to identify the specific variables that create and maintain change with MST, yet this gap in the literature still remains to be unaddressed (Fox & Ashmore, 2015; Fox et al., 2017). The details surrounding when MST is effective and when it is not will be discussed in depth in the following sections.

Seminal MST Studies

Scott Henggeler and his colleagues have been actively engaging in determining the efficacy of MST for juvenile delinquents through numerous publications since the 1980s (Henggeler et al., 1986; Henggeler et al., 1995, Henggeler et al., 2002). Dr. Henggeler dedicated his life's work to identifying and addressing the gaps in literature associated with juvenile delinquents (Henggeler et al., 1986; Henggeler et al., 1995; Henggeler et al., 2002; Henggeler et

al., 2017; Huey et al., 2000). There is a structure, including training and supervision, associated with MST which was developed by Henggeler and his colleagues to add to the efficacy of this approach as well as its' transportability. In various studies, MST participants are compared to a treatment, which is identified as "*treatment as usual*," which consists of any treatment that the community typically provides including outpatient, hospitalization, residential treatment and traditional family counseling (Dekovic et al., 2012; Fain et al., 2014; Sundell et al., 2008).

Hanson, Henggeler, Haefele, and Rodick (1984) conducted a study which would be the springboard of countless future studies on the topic of what would later be coined "Multisystemic Therapy" (Henggeler et al., 1986). Hanson et al., (1984) sought out a manner to address the staggering reports of the juvenile arrest in the late 1970s and early 1980s. At this time, it was reported that despite juveniles equating to 14% of the population, they made up 34% of the population's arrests (Federal Bureau of Investigation (FBI), 1981, as cited in Hanson et al., 1986). Hanson et al., (1986) sought out to shed light on the fact that to date, there was a lack of empirical research on the impact of juvenile recidivism and the community. Henggeler et al., (1986) is a seminal piece of research for MST. In this study Henggeler et al., (1986) identified that MST was an effective form of treatment when working with juvenile delinquents. This study identified that a systems approach would create change within the juvenile and family system overall (Henggeler et al., 1992, Porter & Nuntavist, 2016; Wagner, Borduin, Sawyer, & Dopp, 2014; Weiss et al., 2013). The key variables of MST—conduct problems, externalizing behaviors, peer relationships and substance misuse—became integral parts of several empirically based studies which continue to validate MST as an effective treatment modality (Asscher, 2012; Asscher, 2014; Barth et al., 2007a; Henggeler et al., 1986; Huey et al., 2000; Letourneau et al.,

2009; Sundell et al., 2008; Tyuse et al., 2010; Yorgason et al., 2005). This work set the foundation for all future research into establishing MST as an effective treatment modality.

Henggeler's 1992 study was vital in continuing the work of establishing MST as an effective treatment modality. Henggeler et al. (1992) determined that MST is an effective form of treatment and added to the research that MST can address serious criminal offenses. At the time of this study, MST was still in its early stages and researchers sought to continue building the strong empirically base of studies to support MST as an effective treatment modality. This study was the first to be conducted by individuals who had been trained but were not involved in creating the tool (Henggeler et al., 1992). Additionally, Henggeler et al. (1992) continued to build the support of MST by assisting the researchers to determine if MST was fully addressing all the concerns of juvenile delinquents, their families, and the community. In the case of this article, the research team identified the need for follow-up studies to track the longevity of treatment effects (Henggeler et al., 1992). With this realization there was a peak in follow-up studies to track the long-term impact of MST. Henggeler et al. (1992) continued to strengthen the foundation which was being molded in the first studies that were presented by Hanson et al. (1984) and Henggeler et al. (1986).

Henggeler et al. (2002) expanded the research on MST by incorporating the variable of substance use as well as continuing to raise the bar for all MST research by extending the time frame of follow-up studies. Henggeler et al. (2002) examines the effect of MST on substance users after 4-years post discharge. There is a focus on 4-years post discharge as, at the time, no other study had reviewed effectiveness past 12-months post discharge. The results showed that there were significant long-term effects of MST regarding substance use and aggressive criminal behaviors of juvenile delinquents ($n = 118$). Surprisingly, there were mixed results as it pertained

to the 4-year follow-up to substance use, and there were no significant effects of MST on criminal behavior involving property damage (Henggeler et al., 2002). This is the first time in the research where the results were not significant for MST treatment. This provided a push to continue research but also began to establish the limitations of MST overall.

Henggeler et al. (2006) continued to build on the earlier work in Henggeler et al. (2002) by focusing on juvenile delinquents diagnosed with substance use disorders. This study saw an increase in sample size ($n = 161$); however, it differed as it compared MST services to those provided through the drug court system. This study included a 12-month follow-up post-discharge to assess the long-term effects of MST on substance use/misuse, externalizing behaviors and recidivism. Following the trend of Henggeler et al. (2002) (inconclusive results as it pertains to substance use with MST), Henggeler et al. (2006) did not produce significant results as it relates to MST effectiveness to treat substance use/misuse. These findings were attributed to the perceived increase in surveillance associated with drug court and juvenile delinquents (Henggeler et al., 2006). Despite not finding significant findings as it relates to substance use/misuse, there was continued significant support of MST when addressing externalizing behaviors and recidivism (Henggeler et al., 2006). MST, at this point, has not generated significant findings to support its use with substance use. There is a need for more research testing this specific behavior and establishing it as the treatment of choice. With the limitations of MST on the forefront, additional limitations in the research also began to emerge, including the research teams conducting the studies.

Recently, it has been acknowledged that there has been limited research on MST that is not associated with the developers of MST (Weiss et al., 2013). All previous research mentioned in this document involved at minimum Dr. Henggeler or one of the two other founders of MST

(Dr. Schoenwald and Dr. Rowland). Weiss et al. (2013) sought out to add to the research and eliminate some of the bias that was surrounding the previous efficacy studies. Weiss et al. (2013) utilized juvenile delinquents ($n = 164$) to determine if MST was effective regarding externalizing behaviors, family functioning, and psychopathology. The results indicated that MST was, in fact, effective at reducing these behaviors and symptoms.

Bright et al. (2014) highlighted the differences between gender of juvenile delinquents ($n = 5,000$) within the justice system. Girls were found to have a higher rate of success than boys when implementing MST. It was also considered that future research should build from this to determine if the success of MST is related to the severity of crimes committed prior to entering treatment (Bright et al., 2014). Similarly, to Bright et al. (2014), Winiarski et al. (2017) identified gender as a factor to explore within the effectiveness of MST. Winiarski et al. (2017) utilized juvenile delinquents ($n = 180$) to determine if MST would be effective relative to gender. This study included the following demographical breakdown in participants: male ($n = 120$) vs female ($n = 60$). The results indicated that MST was significant, and female participants expressed an increase in emotional regulation which indicated a sign of behavioral improvement at greater rates than males (Winiarski et al., 2017). These results resonate with earlier work that suggested that there was a direct correlation between gender matching of provider and identified patient (Greeson et al., 2009). Greeson et al. (2009) included a sample size of ($n = 1,416$) juveniles and determine that being a female was linked to higher rates of success with MST and home-based services. Continuing the breakdown of treatment effectiveness, Fain et al. (2014) included the factor of ethnicity in their MST research. This study was conducted in a community where 90% of the male juvenile delinquents ($n = 757$) involved in services identify as Black and/or Hispanic (Fain et al., 2014). Fain et al. (2014) was the first study to explore effectiveness with respect to

Hispanic youth. MST was significantly effective when working with Hispanic juveniles in comparison to usual care (Fain et al., 2014). However, this study did not produce significant support for MST when working with Black juveniles (Fain et al., 2014). With these articles, MST has been proven to be significant at the treatment of males, females, and Hispanics populations (Bright et al., 2014; Fain et al., 2014; Greeson et al., 2009; Winiarski et al., 2017). The studies in this section identified gender and ethnicity as factors to consider when utilizing MST. Female clients experienced greater success than males, and black males did not experience significant findings with MST at all. These studies of MST continue to enhance the depth of support of this modality overall by identifying specific variables associated with change.

Baglivio et al. (2014) utilized propensity score matching (PSM) to counteract any biases when sorting participants into treatment groups to continue increasing the efficacy of MST research. PSM accounts for the differences in participants and creates two groups with as many similarities as possible to increase the efficacy of the analysis (Baglivio et al., 2014). This study found that there were few significant differences between the effectiveness of MST and Functional Family Therapy (FFT) when treating juvenile delinquents ($n = 2,312$) after applying PSM (Baglivio et al., 2014). MST and FFT were both effective at reducing recidivism and the severity of crimes committed by juvenile delinquents (Baglivio et al., 2014). This study urges researchers to determine what specifically about these services (home-based family counseling) create change as well as determining why youth continue to offend while in treatment (Baglivio et al., 2014).

The last key factor from the seminal research to address is substance use/misuse within the US. Substance use/misuse is deviant peer behavior. Letourneau et al. (2009) implemented a 12-month post-discharge follow-up on sexually acting out juvenile delinquents ($n = 67$) to assess

the effectiveness of MST as it pertained to recidivism and substance use. Letourneau et al. (2009) study found that MST was significant in reducing substance use and recidivism throughout the follow-up time frame. MST was found to produce significant results when treating substance use (Love et al., 2014; Weiss et al., 2013). This study broadened the span of effectiveness by incorporating a different factor in the study from the original work. It also countered earlier work which suggested that MST did not produce significant results when treating substance use (Henggeler et al., 2002; Henggeler et al., 2006). Reexamining the earlier work by Henggeler and his research team became pivotal as newer studies have either found different results or simply expanded on his research to continue affirming MST as an effective form of treatment.

Progressing past the seminal work there are two studies which have been completed to date which incorporate long post discharge follow-ups conducted to identify the residual and long-term effects of MST treatment (Swayer & Borduin, 2011; Wagner et al., 2014). Swayer and Borduin (2011) implemented a follow-up of approximately 21 years post discharge of juvenile delinquents ($n = 176$). It was determined that juvenile delinquents that participated in MST had a lower account of recidivating in comparison to the control group even after 21 years post discharge from services (Swayer & Borduin, 2011). This was the longest follow-up period to date for an effectiveness study of MST focusing on the identified client. These results provide positive support to the continued usage of this treatment modality.

An additional study, which is one of a kind, highlighted the residual effects of MST on siblings of the identified client of services. Wagner et al. (2014) conducted a 25-year follow-up on the siblings of juvenile offenders ($n = 129$). The results continued the positive implications of MST by indicating that there were long term effects on the entire family system, which is a key

component of MST (Henggeler et al., 1992; Porter & Nuntavist, 2016; Wagner et al., 2014; Weiss et al., 2013). This validates the entire modality as this is the direct purpose of MST to address concerns from the system and create continued change (Henggeler et al., 1986; Henggeler et al., 1992).

MST Beyond the US

The next level of expanding MST research included studies within a variety of populations and countries. MST was created in the US (Eeren et al., 2018) and researchers have conducted effectiveness studies in various countries to determine if MST would be transportable outside of the US (Asscher et al., 2012; Ogden & Hagen, 2006; Ogden, Hagen, & Anderson, 2006; Ogden & Halliday-Boykins, 2004; Sundell et al., 2008). These studies all explored the effectiveness of MST beyond the borders of the US.

Sundell et al. (2008) conducted an MST effectiveness study in Sweden with juveniles classified as having conduct disorders ($n = 156$) and found drastically different results. Contrary to the previous studies focusing on MST studies within the US, MST was not found to be statistically significant at reducing aggressive behaviors in Sweden (Sundell et al., 2008). MST did not produce significant results in comparison to usual care; however, both MST and usual care did produce change and resolve to all juveniles involved in the study (Sundell et al., 2008). This study mirrors Baglivio et al. (2014) in that MST was effective, but it was not more effective than the usual care. This gives more reason for identifying what is specifically happening to create change when using MST as it could help with advancing the theory overall to produce the significant results within and beyond US borders.

Continuing the work of establishing efficacy within the Netherlands, Dekovic et al. (2012) continued the research by exploring MST within a Dutch environment. Dekovic et al.

(2012) explored family dyads ($n = 256$) in the Netherlands to determine MST effectiveness. The study found that despite the differences in population and culture, MST was effective at addressing both parental senses of competence and positive parenting, and there were no negative effects of MST on the community (Dekovic et al., 2012). Asscher et al. (2012) continued the MST research by utilizing juvenile delinquents ($n = 147$) in the Netherlands and using the family, specifically parents, in the determination of effectiveness. This study also challenged the methodology of previous research and sought out to increase the rigor of MST research. Asscher et al. (2012) found significant support for MST in treating externalizing behaviors, symptoms of Oppositional Defiant Disorder, Conduct Disorder, and property offenses; however, it was not effective at reducing violent crimes.

The research conducted by Ogden as the principle researcher examined the effectiveness within Norway (Ogden & Hagen, 2006; Ogden et al., 2006; Ogden & Halliday-Boykins, 2004). Ogden's research determined that MST was an effective form of treatment for juvenile delinquents in Norway (Ogden & Halliday-Boykins, 2004; Ogden & Hagen, 2006; Ogden et al., 2006). Ogden and Halliday-Boykins (2004) sought out to purely determine if juvenile delinquents ($n = 100$) in Norway would have significant effects with MST in Norway. These juvenile delinquents matched the general population of juvenile delinquents from studies in the US meaning they were under the age of 18 and had committed a crime (Ogden & Halliday-Boykins, 2004). Ogden and Hagen (2006) completed their study with juvenile delinquents ($n = 75$) in Norway and specifically examined if MST would be effective in reducing out of home placement and externalizing behaviors. Lastly, Ogden et al. (2006) compared two groups of MST participants ($n = 30$; $n = 55$) to determine the reliability of MST within Norway. They found that

MST was more effective than the usual treatment at preventing out of home placement and externalizing behaviors (Ogden et al., 2006).

The international studies were found to produce both significant and non-significant results of MST when treating juvenile delinquents. There is a need for continued research outside of the US to continue establishing it as a multiculturally applicable treatment modality (Asscher et al., 2012; Ogden & Hagen, 2006; Ogden et al., 2006; Ogden & Halliday-Boykins, 2004; Sundell et al., 2008).

MST: Therapist Perspective

An evaluation of the execution of MST is vital in the continued support of MST and all home-based family interventions (Ackerman & Hilsenroth, 2013; Greeson et al., 2009). Therapist that perform MST vary in experience but typically most have, at minimum, a master's degree in a related topic (Glebova et al., 2012; Wilkie et al., 2017) with all providers not possessing a license or credentialed with a higher degree (e.g. doctoral degree) (Wilkie et al., 2017). MST requires that you complete a training (Zajac et al., 2015), but the execution of the material comes into question as a result of interpretation and attention to detail (Glebova et al., 2012; Greeson et al., 2009). There is a need to ensure that each provider is able to support and encourage the growth and development of the client (Glebova et al., 2012).

Therapist alliance (Glebova et al., 2012; Zajac et al., 2015) is described in the literature as a precursor to the success of MST (Ackerman & Hilsenroth, 2013). Therapist alliance has been defined as the “quintessential integrative variable,” specifically when working with helping professions as it has a direct impact to the success of therapy (Glebova, Foster, Cunningham, Brennan, & Whitmore, 2017). Beyond the individual factors associated with MST, there is a need for attention to detail regarding the role of the provider (e.g. Therapist). Providers

characteristics, including gender, ethnicity, and age, have been associated with the long-term effects of MST (Greeson et al., 2009). Greeson et al. (2009) utilized therapist ($n = 265$) along with the juvenile sample ($n = 1,416$) to identify the impacts of therapist characteristics on the success rate of clients. They determined that gender and stability were linked to client success. Glebova et al. (2012) examined therapist ($n = 51$) as they executed MST services. It was determined that treatment delivery was impacted by therapist comfort within the home and their ability to connect authentically with the client, which was observable from the therapist as well as the client's perspective on reporting about treatment after termination (Glebova et al., 2012). This discomfort was displayed in the rating system of various families. The general discomfort of a therapist impacted the rating of progress and severity of client behaviors (Glebova et al., 2012). Glebova et al. (2017) explored this with caregiver dyads ($n = 164$) and identified a significant impact of therapist perception of the client and their overall success. These studies attribute to the wealth of efficacy studies by broadening the scope of awareness and attention to detail that MST provides.

Summary

Over the past 30 years, researchers have conducted studies testing the strength and integrity of MST (Baglivio et al. 2014; Glebova et al., 2012; Greeson et al., 2009; Henggeler et al., 1992; Ogden & Hagen, 2006; Ogden et al., 2006; Ogden & Halliday-Boykins, 2004; Sundell et al., 2008; Wilkie et al., 2017). As previously described, these studies have addressed each of the main variables identified in the seminal work (recidivism, substance use, peer relationships, and externalizing behaviors) and gone further by disaggregating the topics to identify secondary outcomes as it relates to race/ethnicity, sex, and the vast array of crimes juveniles have

committed. It can, therefore, be said that MST is an effective form of treatment when working with juvenile delinquents.

Ecological Systems Theory and Multisystemic Therapy

MST is a form of treatment which is based on EST (Henggeler et al., 1992, Porter & Nuntavist, 2016; Weiss et al., 2013). MST excels with juvenile delinquents as it is structured on the specific individualized needs of juvenile delinquents and their families as it relates to the systems they operate within throughout the lifespan (Henggeler et al., 1992; Porter & Nuntavist, 2016). As part of EST framework, MST is effective as it examines the various systems juveniles operate within to strategically address areas of growth and improvement (Henggeler et al., 1992; Porter & Nuntavist, 2016; Weiss et al., 2013). Studies have addressed MST effectiveness with a variety of populations including recidivism (Baglivio et al., 2014; Borduin et al., 1995; Bright et al., 2014;), peer relationships (Borduin et al., 1995; Curtis et al., 2004; Henggeler et al., 1992), externalizing behaviors (Dekovic, Asscher, Manders, Prins, & van de Laan, 2012; Letourneau et al., 2009; Millette-Winfrey & Mueller, 2018), and substance use/misuse (Evan et al., 2003; Sundell et al., 2008). Externalizing behavior, peer relationships, recidivism, and substance misuse have been tested and proven to be receptive to MST as a treatment modality (Henggeler et al., 2002; MST Treatment Model, 1998). Services such as MST with EST at its core provide effective assistance with a focus on individualized treatment plans and resource identification (Tyuse et al., 2010).

The longstanding effects of MST have been determined and this creates a greater need for continued usage of MST within communities (Sawyer & Borduin, 2011). Applying EST to treatment and creating MST also benefits those that are not the identified patient (Zajac et al., 2015). The same way that prosocial behaviors beget a continuation of positive behaviors, the

implementation of MST can impact deviant peer groups. Zajac et al. (2015) put it simply as “youth both are influenced by their peers and have influence on their peer group” (p.602). Siblings of the identified patient experienced effects of treatment despite not being the primary client (Wagner et al., 2014). Thus, the impacts of MST can be long founded.

Current Identified Best Practices

Therapy provides the necessary support for juvenile delinquents to rectify their situation and become active participants in living a healthy life (Mathys, 2017). When working with juvenile delinquents, they are typically extremely resistant to treatment and this increases the effectiveness of services such as MST taking place in the community and within their natural environments (Asscher et al., 2012; Glebova et al., 2012; Stagman & Cooper, 2010). A portion of the effectiveness is attributed to the incorporation of the entire family system in the treatment. Incorporating the systems approach increases the likelihood of maintaining and sustaining the changed behavior (Barth et al., 2007b)

A vital difference which highlights the importance of MST is personalized care. Each case for MST receives an individualized treatment plan which involves the various mesosystems specific to that case (Barth et al., 2007b). Through the individualized process, factors which typically increase the likelihood of needing services are addressed such as ethnic minority, within a lower socioeconomic status, or the LGBT* communities (McWhirter et al., 2017; Stagman & Cooper, 2010). Accounting for the varying demographics of clients, Bright et al. (2014) suggest that gender is a factor that should be considered when placing juveniles into treatment.

Current Study

The literature clearly establishes and defends MST as an effective treatment modality (Baglivio et al., 2014; Borduin et al., 1995; Bright et al., 2014). The literature also directly indicates populations and situations that resulted in findings that were not significant in regard to the efficacy of MST (Fain et al., 2014; Henggeler et al., 2002; Henggeler et al., 2006). This variance in effectiveness creates a new need of identifying what specifically creates changes within this approach. MST has been identified to be more effective with girls than boys (Bright et al., 2014) which contradicts the needs of the community and MST's underlining focus of providing support to communities ravaged by juvenile delinquents with limited to no support (Henggeler et al., 2002). As of 2015, the national breakdown of juvenile delinquents indicates that 72% of all juvenile delinquents are male (OJJDP, 2015). MST is effective but not with every population. Are there skills that could be implemented to increase the effectiveness overall to decrease the variation of effectiveness in specific populations? Fain et al. (2014) indicated that despite black males making up a disproportionately large percentage of that population's juvenile delinquents, MST was being used when it did not prove to be effective with black males. According to OJJDP (2015), black males did not make up the majority of the nation's juvenile delinquents. The total number of juvenile delinquents reported in 2015 included 43% white, 36% black, 19% Hispanic, and 3% other (OJJDP, 2015). Even though Fain et al. (2014) included a different population composition, there is still another discrepancy between what is needed in the community and what MST can provide.

Beyond the discrepancy with effectiveness between populations, MST research has suggested that there is a need for more research into the therapist's role and impact on MST effectiveness (Barth et al., 2007a; Bright et al., 2014). Countless studies were conducted which

did not account for therapist traits and effects on treatment (Henggeler et al., 1986; Henggeler et al., 1995, Henggeler et al., 2002; Henggeler et al., 2017).

Based on the identified gaps in the literature, this study addresses the following research questions:

1. Does MST show better outcomes than usual treatment paradigms?
2. Which factors influence outcomes of MST for youth?

Chapter 3

Methodology

This chapter details the methodological design of the study on Multisystemic Therapy (MST) best practices which increase effectiveness with adolescents. The purpose and research question will begin the chapter. Then there will be a brief history on meta-analysis, including the steps to conducting a meta-analysis. Next, the step utilized for this study will be described including a description of study eligibility and inclusion criteria. This will be followed by an explanation of how internal and external validity will be assessed. The chapter will end with a summary of what has occurred.

Purpose of Research

The purpose of this study is to identify best practices of MST which increase effectiveness. Henggeler et al. (1992) indicated that there was a need for exploration of the process of MST; however, there has been little research published since this call to action. Henggeler, along with colleagues, continued to declare that there was a need for justification of the success of MST (Henggeler et al., 2002, Huey et al., 2000) and suspected treatment fidelity; however, there is still a need for more research on the matter (Barth et al., 2007a; Bright et al., 2014). This study addresses this gap and identifies what the key aspects are that promote changed behavior for juvenile delinquents through the execution of MST. A meta-analysis will be used to address the research questions.

Question One

Does MST show better outcomes than usual treatment paradigms?

Question Two

Which factors influence the outcomes of MST for youth?

Meta-Analysis

Meta-analyses are “*The statistical synthesis of the data from separate but similar, i.e. comparable studies, leading to a quantitative summary of the pooled results*” (O’Rourke, 2007). A meta-analysis is a form of research that synthesizes a pool of articles on the same topic across disciplines to generate new findings (Lipsey & Wilson, 2000; Russo, 2007; Shin, 2017; Slaney, Tafreshi, & Hohn, 2018). The term meta-analysis was coined in the 1970s with the publication of one study by Smith and Glass (as cited in Lipsey & Wilson, 2000) which shed light on the efficacy of psychotherapy. The study by Smith and Glass (1977) is one of the first studies which utilized the term meta-analysis; however, historians and researchers date meta-analysis back to the work of Karl Pearson (O’Rourke, 2007). Pearson conducted studies to identify the effectiveness of a vaccine based on pulling other studies and loosely following what would develop into the foundation of the meta-analysis procedure (O’Rourke, 2007). Although Pearson is viewed as one of the first, his inspiration came from a textbook by George Biddell Airy, which also supported the work of Ronald Fisher. Fisher used meta-analysis as well to determine the effectiveness of fertilizer on crop growth (O’Rourke, 2007; Salsburg, 2001). There was a clear increase in meta-analyses conducted after the work by Smith and Glass; since then, there have been countless meta-analyses published in a variety of disciplines (Lipsey & Wilson, 2000; Shin, 2017). Meta-analysis can be understood as a form of quantitative data syntheses in which, instead of surveying the participants directly, the researcher is surveying the literature that has already been completed, including both published and unpublished work (Lipsey & Wilson, 2000). Unpublished work can be vital to a meta-analysis as it provides information that rounds out the perspective of what is being studied. Work may be unpublished for a variety of reasons

and if a study is sound but unpublished, it can be beneficial to a meta-analysis to potentially provide a different perspective than what has been published.

Meta-Analysis Strengths

There are many strengths to conducting a meta-analysis. Lipsey and Wilson (2000) identified four factors that highlight the strengths of meta-analysis. The four strengths highlight the early work done by Fisher and Pearson along with all strong meta-analyses which have been conducted to date. O'Rourke (2007) defines the first strength of meta-analysis as he spoke to the need to summarize the vast array of research to continue advancements in the world. When a meta-analysis is conducted it has the same, if not more, rigor of other studies as it requires thorough documentation of each step along with being open to feedback to increase the overall rigor (Lipsey & Wilson, 2000). Meta-analysis allows for there to be a more statistical framework for identifying best practices.

The second strength of meta-analyses can be seen clearly when thinking of the work by Fisher. When you are attempting to increase crop growth to feed communities it would be important to test and determine which is most effective over a time period instead of casting a vote based off opinions, which was commonly done prior to the use of meta-analysis (Lipsey & Wilson, 2000). Fisher, along with other researchers, used this approach to identify the strongest studies when synthesizing information to generate results. They assessed the situation and accounted for various factors to increase both the internal and external validity of the study. The answers that Fisher presented were not based on opinion but off statistical evidenced pooled from other studies (O'Rourke, 2007).

The third strength of meta-analyses identifies the statistical strength of meta-analysis in comparison to qualitative summative approaches (Lipsey & Wilson, 2000; O'Rourke, 2007). As mentioned, there are procedures which must be followed when conducting a meta-analysis. One step includes ensuring that each study has a minimum population which the researcher identifies. Another step includes verifying that each study has the necessary statistics such as sample size and standard deviations on all dependent variables. This process eliminates weaker articles, which increases the strength of the meta-analysis.

The fourth and final strength of meta-analysis pertains to the overall organization that this approach provides. As mentioned, O'Rourke (2007) identified that there are numerous studies in the world on various topics and there is a need to organize and summarize findings to continue to advance the world. Meta-analysis provides the necessary structure which lends itself to manipulating a large number of articles (Lipsey & Wilson, 2000).

Meta-Analysis Weaknesses

The primary weakness of meta-analysis is the extensive procedures. Meta-analyses are complicated and depending on the number of resources obtained it can be an extremely labor-intensive process to conduct a meta-analysis correctly (Lipsey & Wilson, 2000). The second weakness identified is also a strength. The purely quantitative background of this approach is a weakness as some disciplines need summative findings which may be better identified through a more qualitative approach (Lipsey & Wilson, 2000).

Current MST Meta-Analysis Procedures

Conducting a meta-analysis includes several steps which allow the researcher to analyze and synthesize data to discover new findings (Wolf, 1986). The steps to conduct a meta-analysis

include identifying articles (published and unpublished) on the topic, identifying inclusion criteria, and identifying effect sizes for all included data (Borenstein, 2009; Lipsey & Wilson, 2000; Wolf, 1986). Each of these steps will be detailed below for the proposed study.

Article Selection

The researcher utilized all electronic databases to search for articles. The databases which were used included CINHALL, PubMed, PsycINFO, and OneSearch to locate published articles. The researcher utilized ProQuest to locate unpublished works. The initial search term which was used was Intensive In-home. This term generated minimal articles and the majority were quantitative studies. Through this process of using Intensive In-Home as the search term, the researcher identified a new term, Multisystemic Therapy, which was listed as a key term on numerous articles. The search terms were updated and included: Intensive In-Home, Multisystemic Therapy, and Recidivism. Based on the new search terms CINHALL generated 2,151 peer-reviewed articles, PubMed generated 9,486 peer-reviewed articles, PsycINFO generated 8,196 peer-reviewed journal articles, and lastly, OneSearch generated 293,286 peer-reviewed journal articles. After searching for published works, the researcher began searching for unpublished articles. The search engine ProQuest generated 20 unpublished articles for consideration.

The researcher began selecting articles that discussed Multisystemic Therapy and entered them into an excel table including the author, sample size, and primary findings found in the article. Once all articles for consideration were identified and the aforementioned information was indicated, the data was checked for duplicates. All duplicate articles were removed from the table. This allowed the researcher to begin the inclusion process with 94 articles. There were seven inclusion criteria applied to the initial 94 identified articles, which included the date of

publication, quantitative research design, sample size greater than 100, sample compiled of juveniles; not a meta-analysis; outcome variables specific to externalizing behavior, peer relationships, recidivism, and substance misuse; and lastly, sufficient data to compute the effect size (d). The researcher attempted to create inclusion criteria which were both strict while also open enough to ensure a variety of studies would be included in the meta-analysis (Greco, Zangrillo, Biondi-Zoccai, & Landoni, 2013).

Inclusion Criteria

The first inclusion criterion required that only articles published between 2000 and 2018 be utilized. This time frame was identified to ensure that the most recent and relevant articles were included in the meta-analysis. This time frame was set in accordance with the American Psychological Association on obtaining the most up-to-date resources (APA, 2016). This reduced the number of articles to 68.

The second inclusion criterion indicated that the articles utilized a quantitative research design. This was specific to the importance of conducting a meta-analysis as only quantitative research can be used in this methodology (Lipsey & Wilson, 2000). The articles that remained utilized randomized controlled studies, propensity score matching, pre-test/post-test, longitudinal studies, and factorial designs as their quantitative methods. This resulted in 61 qualifying articles.

Next, all articles with a sample size of less than 100 were excluded from consideration. The sample size was set to continue to hone the studies to include similar studies with a clear connection in sample characteristics. This inclusion criterion brought the total number of studies to 47. The fourth inclusion criterion removed any studies that were meta-analyses. This was done

as it is a different procedure to do a meta-analysis of meta-analyses. This inclusion criterion resulted in 46 articles.

After considering the sample size, the research indicated that there needed to be an inclusion criterion which ensures that all participants were in the same age range. The focus of the study is on juvenile delinquents, and thus, all studies included would pertain to juvenile delinquents, specifically persons under the age of 18. With this inclusion criterion, the total articles resulted in 44.

Despite the previous inclusion criteria, the researcher identified that the articles were still vastly different, however, some similar themes were beginning to emerge. There were four outcome variables identified in the articles. This created the next inclusion criterion which indicated that the article must have an outcome variable consisting of one of the following: recidivism, peer dynamics, externalizing behavior, and substance misuse. This resulted in 21 articles.

The final inclusion criterion applied to the article sample determined if there was sufficient reported data in each article. To conduct a meta-analysis, each source must have the capacity to be converted into an effect size (Borenstein et al., 2009). When doing a meta-analysis Cohen's d is the effect size which is utilized (Borenstein et al., 2009). Cohen's d is the "common scale" as Pan (2004, p.121) describes it as Cohen's d assesses for the various means that researchers may have used to obtain results. If the means from each study were used instead of Cohen's d , then the results would not be considerate of the differences attributed to each study. To compute Cohen's d , the researcher used the formula $\frac{d=m1-m2}{Sc}$ (Borenstein et al., 2009; Pan, 2004). The researcher ensured that each article provided sample size, mean, and standard

deviation for each outcome variable. With this final inclusion, there are nine articles-which will be included in the meta-analysis.

The selected articles for the meta-analysis are from different disciplines and were published in the following journals: Journal of Experimental Criminology, Criminal Justice and Behavior, Children and Youth Services Review, Journal of Society for Social Work, OJJDP Journal of Juvenile Justice, Journal of Consulting and Clinical Psychology, Journal of Family Psychology, Administration and Policy in Mental Health, Journal of Children's Services, Australian and New Zealand Journal of Family Therapy, Journal of Evidence-Based Social Work, and the Journal of Marital and Family Therapy. These nine articles resulted in a total of 35 Cohen's *d* scores. The effect sizes are representative of the four variables which were isolated and identified for inclusion. The 35 *d* scores breakdown to externalizing behaviors (19 *d* scores), peer relationships/dynamics (4 *d* scores), recidivism (6 *d* scores), and substance misuse (6 *d* scores).

Threats and Considerations to External Validity

External validity addresses a studies ability to be generalized to different settings (Creswell, 2014). Meta-analyses are subject to low external validity as each meta-analysis may include different articles spanning published and unpublished works (Chalmers, 1989). This study is no exception to replication bias. The research accounted for external validity through the variety of search engines used including searches for both published and unpublished studies. The studies included range a span of 18 years. This time span is used in attempts to increase external validity by accounting for a similar approach to conducting research and the requirement of using current data for studies (APA, 2016). All studies included are not

randomized controlled studies, however, the majority are which strengthens the external validity of this study.

Threats and Considerations to Internal Validity

Internal validity addresses the causal relationship between variables in the study (Creswell, 2014). Internal validity was accounted for by following a standardized approach to conducting a meta-analysis, as seen in Figure 2 (Pan, 2004; Russo, 2007). Applying a strong framework increases internal validity. The first step to the framework of a meta-analysis, along with any research study, is identifying a research question. Once the literature was reviewed, a research question was identified. After the question was formed, a meta-analysis was chosen as the most appropriate quantitative approach to address the research question. Following this

method increases internal validity. Another major factor for attending to the internal validity of this study was the selection of articles.

Figure 2

Checklist for Meta-analysis	
Study question	<ul style="list-style-type: none"> • Objectives clearly stated • Clinically relevant and focused study question included • Effectiveness of intervention not convincingly demonstrated in clinical trials
Literature search	<ul style="list-style-type: none"> • Comprehensive literature search conducted • Searched information sources listed (ie, PubMed, Cochrane database) • Terms used for electronic literature search provided • Reasonable limitations placed on search (ie, English language) • Manual search conducted through references of articles, abstracts • Attempts made at collecting unpublished data
Data abstraction	<ul style="list-style-type: none"> • Structured data abstraction form used • Number of authors (>2) who abstracted data given • Disagreements listed between authors and how they were resolved • Characteristics of studies listed (ie, sample size, patient demographics) • Inclusion and exclusion criteria provided for studies • Number of excluded studies and reasons for exclusion included
Evaluation of results	<ul style="list-style-type: none"> • Studies were combinable • Appropriate statistical methods used to combine results • Results displayed • Sensitivity analysis conducted
Evaluation for publication bias	<ul style="list-style-type: none"> • Publication bias addressed through evaluation methods such as funnel plot or sensitivity analysis
Applicability of results	<ul style="list-style-type: none"> • Results were generalizable
Funding source	<ul style="list-style-type: none"> • Funding source(s) stated • No conflict of interest seen

Source: Russo, M.W. (2007). How to review a meta-analysis. *Gastroenterology & Hepatology*, 3(8), 637-642.

Publication bias impacts internal validity and was accounted for in the selection of studies by purposefully seeking out unpublished work on the topic through ProQuest. The initial ($n = 94$) identified articles included unpublished work, however, through the inclusion process, these articles were removed. The researcher accounted for publication bias to decrease the likelihood of making a Type 1 error, indicating a false positive result (Greco et al., 2013).

Conclusion

This chapter reviewed the methodology for the current study. There was a brief history of meta-analysis outlining the strengths and weaknesses followed by a detailed account of the procedures which have been conducted to complete a meta-analysis. The chapter ends by addressing the threats and considerations of internal and external validity.

Chapter 4

Results

The purpose of this study was to determine the best practices of Multisystemic Therapy (MST). MST is the focus of this study as it is an empirically tested form of intensive home-based therapy for working with juvenile offenders (Barth et al., 2007a; Borduin et al., 1995; Eeren et al., 2018; Henggeler et al., 1992; Henggeler et al., 2006; Henggeler & Schaeffer, 2016; Porter & Nuntavist, 2016; Sheidow et al., 2004; Weiss et al., 2013). Though there is extensive research support for MST, this study's purpose was to identify specific factors that contribute to the success of this treatment modality, and to apply these identified factors to other forms of treatment, such as intensive in-home (Barth et al., 2007a; Borduin et al., 1995; Eeren et al., 2018; Henggeler et al., 1986; Henggeler et al., 1992; Henggeler et al., 1995; Henggeler et al., 2002; Henggeler et al., 2006; Henggeler et al., 2017; Henggeler & Schaeffer, 2016; Porter & Nuntavist, 2016; Sheidow et al., 2004; Weiss et al., 2013). This chapter examines the process for selecting the sample, the procedures for the meta-analysis, and the primary outcome variables.

Data Selection

A literature search using the three key terms—intensive in-home, multisystemic therapy, and recidivism—produced over 300,000 articles. One key term, multisystemic therapy, was applied for article selection and produced 94 articles to be included in the synthesis. Seven inclusion criteria were identified to increase the power of the study and ensure all included articles were addressing the same subject. Criterion one limited the publication year to 2000-2018. The limitation was based on APA (2016) standards for using the most up-to-date research, was vital in decreasing the overall number of articles, and to ensure that they adhered to the same research protocol which is necessary for a meta-analysis. Criterion two required all articles to

utilize quantitative methodology. Criterion three required that all articles have a sample size greater than 100. Criterion four required that none of the chosen studies were meta-analyses. This was set to continue to build uniformity of the articles included in this study. Criterion five required that the participants in the included studies were juvenile delinquents under the age of 18. This population is the focal point of the study and the clientele of MST. Criterion six focused on four literature derived outcome variables: recidivism, peer dynamics, externalizing behavior, and substance misuse. Each article had to have at least one of the four outcome variables included to remain in consideration for this study. Finally, criterion seven evaluated the four outcome variables and determined if there was sufficient data reported. Sufficient data included the sample size, and if means and standard deviations were available for each of the mentioned outcome variables (see Appendix for a full list of articles that were excluded as a result of insufficient data). The sample size, mean, and standard deviation were required as this data is necessary for computing Cohen's *d* for a meta-analysis, which provides a standardized score to report the findings. Table 1 shows the number of articles remaining after each of the criteria was applied to the selection of articles. The selection process produced a total of nine articles that met the selection criterion.

Table 1
Meta-Analysis Inclusion Criteria

<u>Criteria</u>	<u>Inclusion Criterion</u>	<u><i>n</i></u>
Criterion 1	Published between 2000-2018	68
Criterion 2	Utilized quantitative methodology	61
Criterion 3	sample size > 100	47
Criterion 4	No Meta-Analyses	46
Criterion 5	Juvenile Delinquents <18	44
Criterion 6	externalizing behavior, peer relationships, recidivism, and substance misuse	21
Criterion 7	Sufficient data reported (<i>n</i> , Mean's, SD)	9

Outcome Variables and Included Articles

The nine articles had a total sample size of (n = 1,575), consisting of (n = 1170) males and (n = 405) females. These articles produced 35 d scores. The 35 d scores cover the results of MST as it pertains to the four outcome variables externalizing behaviors, peer relationships, recidivism, and substance misuse. Externalizing behavior includes violence, delinquency, and substance use behavior (McWhirter et al., 2017; Tung et al., 2018). Peer relationships pertain to unhealthy communication and behaviors, involvement with gangs and gang activity, dropping out of school, and using drugs (Asscher et al., 2012; Huey et al., 2000; McWhirter et al., 2017; Porter & Nuntavist, 2016). Recidivism is the process of obtaining a new conviction within three years of a prior conviction (NIJ, 2012b; Robst, 2017). Lastly, substance misuse includes inappropriate and unsafe usage of substance (APA, 2013). These studies produced an additional 33 d scores derived from the treatment as usual group which was used for comparison in the meta-analysis. Table 2 shows the included articles along with the sample sizes and gender breakdown for participants which provided data on at least one of the four outcome variables.

Table 2
Included Articles and Sample Size

	Author	N	Males	Females
1	Asscher et al., (2012)	256	188	68
2	Asscher et al., (2014)	256	188	68
3	Dekovic et al., (2012)	256	188	68
4	Huey et al., (2000)	155	124	31
5	Letourneau, et al., (2009)	127	124	3
6	Ogden et al., (2006)	105	68	37
7	Ogden & Halliday-Boykins (2004)	100	63	37
8	Sundell et al., (2008)	156	95	61
9	Weiss et al., (2013).	164	132	32

Asscher et al., (2012) provided data on recidivism and externalizing behaviors. The sample consisted of (n = 256) participants, including males (n = 188) and females (n = 68). Over half of the participant's ethnicity was reported as Dutch (55%) the remaining participant's ethnicities were reported as Moroccan (34%) or Surinamese's (32%). Beyond externalizing behaviors, this study examined the cognitions of parents and children and how this impacts treatment. Asscher et al., (2014) conducted another randomized controlled study as a follow-up that provided outcome data on recidivism, peer relationships, and externalizing behaviors. This study utilized the same data from the previous study and included the same demographics. The sample consisted of (n = 256) participants, including males (n = 188) and females (n = 68) with Dutch (55%), Moroccan (34%), and Surinamese's (32%) as the ethnicity breakdown. Asscher et al., (2014) identified the effectiveness of MST in the Netherlands over six months and post-test results showed that MST was effective for treating externalizing behaviors, peer relationships, and recidivism.

Dekovic et al., (2012) conducted a randomized controlled study that provided data on peer relationships and externalizing behaviors. There were (n = 256) participants, including males (n = 188) and females (n = 68), for this study. This study consisted of an ethnic breakdown of Dutch (55%), Moroccan (34%), and Surinamese's (32%). Dekovic et al., (2012) found that MST was effective at decreasing behaviors of children even though the culture changed from US participants to participants living in the Netherlands.

Huey et al., (2000) conducted a randomized controlled study to identify the specific qualities of MST, including MST provider dynamics that are connected to changed behavior. MST provider factors were therapist caseloads and years of clinical experience. In this study, therapist caseloads were limited to 4-6 families, and experience as a clinician from 1-15 years.

The participants (n = 155) in the experimental group consisted of males (83%) with an average age of 14.6 years. Seventy-seven percent were African American and 23% Caucasian.

Participants in the control group mirrored the treatment group with males (80%) and an average age of 15.0 years. The biggest difference is the ethnic breakdown that consisted of African Americans (45%) and Caucasians (54%). The study examined externalizing behaviors and peer relationships. One concept that emerged from this data was that the high level of engagement of the child and family with service coordination and treatment planning can be connected to a decrease in receptiveness from the family in MST service execution. This study concluded that family involvement in treatment planning would be a valuable factor to consider, especially when working with families that are perceived as difficult to treat.

Letourneau et al., (2009) sought to identify a community-based treatment for sexually acting out youth. This randomized controlled study included participants (n = 127) and had an age range of 11-18. The gender breakdown consisted of males (97.6%) and females (2.4%), with the following ethnicities black (54%), white (44%) and Hispanic (31%). The study concluded that MST was more effective than usual treatment along with being more cost-effective. There was a decrease in deviant sexual interest along with the following behaviors; sexual risk, delinquent, substance use, and externalizing behaviors; and reinforced the perspective that family focused, intensive treatment is best when treating severe antisocial behaviors.

Ogden and Halliday-Boykins's (2004) randomized controlled study reported on externalizing behaviors. This study included (n = 100) participants with a breakdown of males (n = 63) and females (n = 37) and an average age of 14.95 years across the genders. The participant pool was primarily Norwegian (95%). MST was found to produce more effective outcomes in comparison to the treatment as usual in this study. Ogden and Halliday-Boykins (2004)

continued by addressing the importance of treatment fidelity and usual treatment. Treatment fidelity emerged as a factor connected to the success of MST as it related to the testing and reporting of adherence to protocol. Treatment fidelity was a focal point in this study to determine if MST would be transferable to another country. Additionally, Ogden and Halliday-Boykins (2004) highlight the differences between treatment as usual in the US vs. Norway. Treatment as usual in the US and many other locations is less involved and lacks significant therapeutic interventions (Ogden & Halliday-Boykins, 2004). Treatment as usual in Norway involves individual and family-focused treatment with high levels of engagement (Ogden & Halliday-Boykins, 2004).

Ogden et al., (2006) conducted a randomized controlled study in Norway that provided outcome data on externalizing behaviors and recidivism. The study had (n = 105) participants which consisted of males (n = 68) and females (n = 37). All participants were of Norwegian or Scandinavian descent. This was an effectiveness study to determine if MST was transportable to Norway to treat out of home placement as it pertains to externalizing behaviors and recidivism. The study found that MST was more effective than treatment as usual at treating externalizing behaviors and recidivism. Additionally, the study found that MST was effective over two years.

Sundell et al., (2008) randomized controlled study consisted of (n = 156) participants from Sweden. Forty-seven percent of the participants identified as "other" in the study. The participants had an age range of 12-17 and consisted of (n = 95) males and (n = 61) females. This study provided data for all four of the selected outcome variables: externalizing behavior, peer relationships, recidivism, and substance misuse. Treatment fidelity was also assessed in this study to ensure MST was executed appropriately. Unlike previous studies, Sundell et al., (2008)

did not find statistically significant differences between MST and treatment as usual for short term treatment.

Weiss et al., (2013) randomized controlled study consisted of (n = 164) US participants with an age range of 11-18. The participants were primarily males (n = 83%) and primarily identified as African Americans (n = 60%) and (n = 40%) being Caucasian. The study examined the impact of MST on externalizing behaviors, recidivism, and substance misuse. In contrast to international studies, which have utilized more intensive forms of treatment when describing the treatment as usual; treatment as usual for this study was limited to classroom focused care. Classroom focused care include interventions to address negative behaviors solely in the school and specifically within the classroom. MST was effective at addressing the outcome variables. It was concluded that this study had a lack of involvement from the judicial system and may have impacted the outcomes.

Externalizing Behaviors

Externalizing behaviors are defined as violence, delinquency, and substance use; and the studies produced 22 d scores (McWhirter et al., 2017; Tung et al., 2018). These 22 scores came from nine different articles and can be found in Table 3. Externalizing behaviors was the most tested outcome variable from the pooled studies. This variable is common in most of the MST research as externalizing behaviors are more aggressive and are included more readily as an outcome variable in research. The participants in these studies included African Americans, European Americans, Swedish, Norwegian, Moroccan, Surinamese, Caucasian, Asian, Scandinavian, African, and Dutch participants. The participants had a total of (n = 1420) and consisted of males (n = 1046) and females (n = 374) for externalizing behavior. The data for addressing externalizing behaviors were derived from the Child Behaviors Checklist (CBLC)

(Achenbach, 1991; Achenbach, 1992). The CBLC reports on internalizing and externalizing behaviors which can be reported by both the parent and the child (Achenbach, 1991; Achenbach, 1992; Dekovic et al., 2012; Letourneau et al., 2009; Ogden & Halliday-Boykins, 2004; Sundell et al., 2008; Weiss et al., 2013).

The *d* scores for externalizing behaviors indicate that the juveniles in the treatment groups for these nine studies have a large spread of effectiveness, with the experimental group producing larger effect sizes than the control group in these specific studies. Out of the nine studies, there was one comparison with a small effect (.1), there were 10 effect scores in the medium effectiveness range between (.20 and .50), and this left eight test scores resulting in a large effect for externalizing behavior. There are four occasions where the control group outperformed the treatment group. This indicates that MST is more effective than the usual treatment in these specific situations when treating externalizing behaviors. The remaining four comparisons resulted in equivalent or in favor of treatment as usual instead of MST.

Table 3
Externalizing Behaviors: Articles Utilized, Mean (SD), Cohen's *d*

Author	<i>n</i>	<u>Pretest</u>		<u>Posttest</u>		<u><i>d</i></u>		<u>Post-Posttest</u>		<u><i>d</i></u>	
		EXP Mean(SD)	Control Mean(SD)	EXP Mean(SD)	Control Mean(SD)	EXP	Control	EXP Mean(SD)	Control Mean(SD)	EXP	Control
Asscher et al., (2012)	256	23.32(12.60)	22.55(12.95)	17.64 (11.57)	19.25 (10.56)	.469	.279	N/A	N/A	N/A	N/A
		12.40 (9.25)	12.36 (8.32)	10.39 (7.92)	11.95 (7.56)	.233	.05				
Asscher et al., (2014)	256	23.32(12.60)	22.55(19.25)	17.02(10.52)	21.70 (9.57)	.987	.68	N/A	N/A	N/A	N/A
		12.40 (9.25)	12.36 (8.32)	10.03 (6.05)	12.20 (6.27)	.81	.17				
Dekovic et al., (2012)	256	0.15(.74)	0.09 (.68)	-.19(.65)	-.04(.58)	.48	.20	N/A	N/A	N/A	N/A
Letourneau, et al., (2009)	127	47.5(12.8)	47.1(9.7)	41.9 (11.1)	48.2 (10.3)	.46	.39	40.8 (10.0)	44.9 (9.7)	.58	.22
		52.5(13.2)	54.9 (11.4)	47.1 (12.9)	53.4 (11.3)	.1	.13	45.4 (12.7)	8.5(10.3)	.54	.58
Ogden et al., (2006)	105	25.33 (8.2)	24.00 (7.5)	16.50 (8.5)	18.20 (10.00)	1.05	.65	N/A	N/A	N/A	N/A
		24.10 (7.3)		14.27 (8.6)		.23					
Ogden & Halliday-Boykins (2004)	100	0.02 (0.75)	-.04 (.57)	-.03 (.71)	.14 (.78)	.68	.26	N/A	N/A	N/A	N/A
Sundell et al., (2008)	156	69.4 (14.6)	71.0 (15.9)	65.2 (15.6)	64.9 (15.1)	.27	.39	N/A	N/A	N/A	N/A
Weiss et al., (2013).	164	25.90	23.40 (9.61)	20.64 (11.31)	19.54 (10.65)	.47	.38	17.68	19.57	.77	.36
		(10.63)	17.00 (7.97)	15.01 (9.33)	16.38 (8.06)	.28	.07	(10.57)	(11.50)	.62	.30
		17.63 (9.03)	22.50	19.31 (12.45)	23.21 (13.02)	.29	.05	12.39	14.56	.41	.03
		22.94 (12.50)	(11.67)					(7.59)	(8.04)		
							17.66	22.07			
							(12.92)	(12.99)			

Peer Relationships

Peer relationships are described as both positive and negative behaviors amongst persons of the same age (Huey et al., 2000; McWhirter et al., 2017). The relationships that were explored in this study included: engaging with peers that are frequently in trouble, viewing peers with negative behaviors highly, and engaging in risky behaviors with peers (Huey et al., 2000). Peer relationships produced four *d* scores, from the four studies found in Table 4. The participants ($n = 823$) in these four studies consisted of primarily male ($n = 595$) participants with ($n = 228$) females, and varying ethnicities: European, Swedish, Moroccan, Surinamese, Caucasian, Asian, Scandinavian, African, and African Americans (Asscher et al., 2012; Dekovic et al., 2012; Huey et al., 2000; Sundell et al., 2008).

The *d* scores indicated that MST produced greater outcomes in two of the four comparisons: Huey et al. (2000) experimental group ($d = .46$) and control group ($d = .30$), and Sundell et al. (2008) experimental group ($d = .25$) and control group ($d = .20$). Even though MST produced greater outcomes, half of the time this was not by a significant degree in the comparison (e.g. $.25$ treatment with $.20$ control group). There were no large ($> .5$) effect scores for the peer relationships outcome variable. MST does produce some favorable outcomes when treating peer relationships; however, it was not consistent throughout the reported studies.

Table 4
Peer Relationships: Articles Utilized, Mean (SD), and Cohen's *d*

<u>Author</u>	<u><i>n</i></u>	<u>Pretest</u>		<u>Posttest</u>		<u><i>d</i></u>	
		EXP Mean (SD)	Control Mean (SD)	EXP Mean (SD)	Control Mean (SD)	EXP	Control
Asscher et al., (2012)	256	1.82 (.76)	1.91 (.85)	1.62 (.63)	1.65 (.66)	.28	.34
Dekovic et al., (2012)	256	0.00 (0.68)	0.02 (.57)	0.06 (.47)	-.11(.47)	.10	.24
Huey et al., (2000)	155	.74(.66)	1.01 (.66)	.45 (.59)	.81 (.66)	.46	.30
Sundell et al. (2008)	156	2.75(.61)	2.88(.65)	2.91(.66)	3.02(.70)	.25	.20

Recidivism

Recidivism is the process of being charged with a new crime within a three-year window of a previous charge (NIJ, 2012b; Robst, 2017). Recidivism produced seven *d* scores from the studies. These seven scores came from five of the nine articles and can be found in Table 5. The participants ($n = 681$) consisted of ($n = 483$) males and ($n = 198$) females with ethnic breakdowns including African Americans, European Americans, Swedish, Norwegian, Moroccan, Surinamese, and Dutch participants.

The outcomes of MST as it relates to recidivism were mixed; similar to previous outcome variables. MST produced favorable outcomes in three of the seven outcomes. The remaining four outcomes produced equivalent effect sizes between the experimental and control group as well as outcomes that did not support MST. Recidivism obtained three small effect scores and one medium score when treated with MST. When considering recidivism from these studies it appears that usual treatment produces favorable outcomes instead of MST.

Table 5
 Recidivism: Articles Utilized, Mean (SD), and Cohen's *d*

<i>n</i>	<u>Pretest</u>		<u>Posttest</u>		<u><i>d</i></u>		<u>Post-Posttest</u>		<u>EXP</u>
	EXP Mean (SD)	Control Mean (SD)	EXP Mean (SD)	Control Mean (SD)	EXP	Control	EXP Mean (SD)	Control Mean (SD)	
256	.38 (.58)	.36 (.57)	.33(.52)	.31(.53)	.09	.09	N/A	N/A	N/A
105	90.87 (72.4) 57.24 (49.0)	80.85 (65.7)	63.51 (61.5) 33.17 (29.3)	73.70 (90.9)	.40 .59	.09	N/A	N/A	N/A
156	44.6(41.7)	48.7(50.0)	39.5 (48.9)	33.0(39.6)	.11	.34	N/A	N/A	N/A
164	.22 (.50)	.29 (.53)	.25 (.55)	.25 (.50)	.05	.07	.18 (.42)	.16 (.45)	.08

Substance Misuse

Substance misuse produced six d scores. These six scores came from two of the nine articles and can be found in Table 6. The participants in these studies included African Americans, European Americans, and Swedish individuals. Like the previous outcome variables, the participants ($n = 320$) consisted of males ($n = 227$) and females ($n = 93$).

MST produced the least favorable outcomes when treating substance misuse. Participants had better results with MST in one of the outcomes, which means that there were five other outcomes that were favorable of the usual treatment when addressing substance misuse. Unlike the previous variables, the outcomes for substance misuse produced no equivalent outcomes. The control group d scores ($d = .08$, $d = .07$, $d = .24$) indicated that there was a clear positive outcome for treatment as usual for three of the four comparisons. The effect scores were primarily small with only one medium score and no large effect scores.

Table 6
 Substance Misuse: Articles Utilized, Mean (SD), Cohen's *d*

Author	<i>n</i>	Pretest		Posttest		<i>d</i>		Post-Posttest		<i>d</i>	
		EXP Mean (SD)	Control Mean (SD)	EXP Mean (SD)	Control Mean (SD)	EXP	Control	EXP Mean(SD)	Control Mean (SD)	EXP	Control
Sundell et al., (2008)	156	5.55 (6.63)	4.95(6.19)	5.41(6.18)	5.47(6.36)	.02	.08	N/A	N/A	N/A	N/A
		2.53(5.89)	3.64(7.96)	3.33(7.18)	3.55(7.40)	.12	.01				
Weiss et al., (2013)	164	.22 (.50)	.29 (.53)	.25(.55)	.25(.50)	.05	.07	.18(.42)	.16(.45)	.08	.26
		.33 (.65)	.43 (.73)	.36(.69)	.26(.64)	.04	.24	.17(.47)	.21(.59)	.28	.33

Research Question One: Does MST show better outcomes than usual treatment paradigms?

Nine studies were analyzed in the meta-analysis to determine if MST would show better outcomes than usual treatment paradigms. The nine articles reported on MST practices in comparison to other forms of treatment. Table 7 provides a list of the four outcome variables with 20 *d* scores out of a possible 35 *d* scores which indicated a greater effect size than the usual treatment paradigms. There was one very large outcome ($d > 1.0$), seven large scores ($d > .5$), 11 medium scores ($d > .2$), and one small score ($d < .2$). A full list of outcome variables and the corresponding articles can be found in Table 8.

Table 7
Outcome variable *D* scores supporting MST

	Outcome Variables	<i>d</i>	<i>d</i>
		EX	Control
1	Externalizing Behaviors	.987	.68
		.81	.17
		.469	.279
		.233	.05
		.48	.20
		.46	.39
		1.05	.65
		.68	.26
		.47	.38
		.28	.07
		.29	.05
		.58	.22
		.77	.36
		.62	.30
2	Peer Relationships	.41	.03
		.46	.30
3	Recidivism	.25	.20
		.40	.09
4	Substance Abuse	.59	.09
		.12	.01

Table 8
MST *d* score report

Outcome Variable	Author	<i>n</i>	<i>Males</i>	<i>Females</i>	<i>d</i>		<i>Post-Posttest d</i>	
					EXP	Control	EXP	Control
Externalizing Behaviors								
	Asscher et al., (2014)	256	188	68	.987 .81	.68 .17	N/A	N/A
	Asscher et al., (2012)	256	188	68	.469 .233	.279 .05	N/A	N/A
	Dekovic et al., (2012)	256	188	68	.48	.20	N/A	N/A
	Letourneau, et al., (2009)	127	124	3	.46	.39	.58	.22
	Ogden et al., (2006)	105	68	37	1.05	.65	N/A	N/A
	Ogden & Halliday- Boykins (2004)	100	63	37	.68	.26	N/A	N/A
	Weiss et al., (2013).	164	132	32	.47 .28 .29	.38 .07 .05	.77 .62 .41	.36 .30 .03
Peer Relationships								
	Huey et al., (2000)	155	95	61	.46	.30	N/A	N/A
	Sundell et al. (2008)	156	132	32	.25	.20	N/A	N/A
Recidivism								
	Ogden et al., (2006)	105	68	37	.40 .59	.09 .09	N/A	N/A
Substance Misuse								
	Sundell et al., (2008)	156	132	32	.12	.01	N/A	N/A

Research Question Two: Which factors influence the outcomes of MST for youth?

Treatment fidelity statistically presented from the meta-analysis as a factor which influenced the outcomes of MST (Table 9). The Therapist Adherence Measure (TAM) is a standardized Likert-type item which provides data on therapist fidelity to MST protocol and procedure (Painter, 2009; Porter, 2016; Rowland, 2005; Timmons, 2006; Weiss et al., 2014). The TAM has been utilized multiple times, and common data shows that therapist reported on the TAM in the US ($M=4.41$, $SD=.49$) (Letourneau et al., 2002) and slightly lower scores in international studies ($M= 4.41$, $SD = .61$) (Sundell et al. 2008). The studies included in the meta-analysis produced means above and below the given mean for US studies ($M = 4.41$, $SD = .49$), and below and equivalent in international studies ($M= 4.41$, $SD = .61$) as seen in Table 9.

Table 9
Experimental Group TAM Scores

<u>EXP TAM Scores</u>			
Author	<i>n</i>	Mean (SD)	Z-score
Asscher et al., (2012) *	N/A	4.36 (.51)	-0.08
Dekovic et al., (2012)*	30	4.36 (.51)	-0.08
Letourneau, et al., (2009)	5	3.99 (.68)	-0.86
Sundell et al., (2008)*	20	4.00 (.61)	-0.67
Weiss et al., (2013)	8	4.41 (.51)	0

*=International Study

It was determined that a meta-analysis was not enough to report on research question two and qualitative measures were utilized to fully address this question. Specifically, a case study, consisting of the initial 94 articles which were identified to start the meta-analysis, were utilized in the qualitative measure. These 94 articles were read and included in qualitative exploration through the utilization of content analysis to address research question two. The content analysis and coding process produced an initial 10 codes; treatment fidelity, cultural considerations, therapist comfort, therapist personal traits, supervision, holistic family/community focused

treatment, lack of parent involvement/engagement, judicial system involvement, ability to create healthy connections, and severity of juvenile behaviors. These 10 codes were re-evaluated and condensed to create a final seven codes; treatment fidelity, therapist experience, holistic family/community focused treatment, lack of parent involvement/engagement, judicial system involvement, ability to create healthy connections, and severity of juvenile behaviors. The codes were based on 45 of the initial 94 articles and can be found in Table 10.

Table 10

Impacting factors of MST outcomes	
Influencing Factor	Author
Treatment Fidelity	
1.	Asscher et al., (2012)
2.	Baglivio et al., (2014)
3.	Blow et al., (2007)
4.	Cox et al., (2010)
5.	Cortes (2004)
6.	Curtis et al.,(2004)
7.	Dekovic et al., (2012)
8.	Foster et al., (2009)
9.	Hammond & Czyszczon (2014)
10.	Huey et al., (2000)
11.	Lauka et al., (213)
12.	Letourneau, et al., (2009)
13.	Ogden & Hagen (2006)
14.	Ogden & Halliday-Boykins (2004)
15.	Ogden et al., (2006)
16.	Sundell et al., (2008)
17.	Walter & Petr (2006)
18.	Weiss et al., (2013).
Therapist Experience	
1.	Ackerman & Hilsenroth (2003)
2.	Allen (2007)
3.	Allen & Tracy (2004)
4.	Chapman & Schoenwald (2011)
5.	Christense (1995)
6.	Cortes (2004)
7.	Foster et al., (2009)
8.	Fox et al., (2017)
9.	Glebova et al., (2012)

10. Greeson et al., (2009)
11. Henggeler et al., (2016)
12. Tate et al., (2014)
- Holistic family/community focused treatment
1. Allen & Tracy (2004)
2. Asscher et al., (2012)
3. Asscher et al., (2014)
4. Cox et al., (2010)
5. Curtis et al.,(2004)
6. Dekovic et al., (2012)
7. Dunne et al., (2016)
8. Ellis et al., (2010)
9. Huey et al., (2000)
10. Lange et al., (2018)
11. Letourneau, et al., (2009)
12. Ogden & Halliday-Boykins (2004)
13. Sundell et al., (2008)
14. Bright et al., (2014)
15. Vermeulen et al., (2017)
16. Winiarski et al., (2017)
17. Zajac et al., (2015)
- Lack of parent involvement/engagement
1. Allen (2007)
2. Asscher et al., (2012)
3. Asscher et al., (2014)
4. Dekovic et al., (2012)
5. Huey et al., (2000)
6. Leitz (2009)
7. Mitchell-Herzfeld et al., (2008)
- Judicial System Involvement
1. Eeren et al., (2018)
2. Henggeler et al., (2006)
3. Letourneau, et al., (2009)
4. Sundell et al., (2008)
5. Weiss et al., (2013).
6. Bright et al., (2014)
- Ability to create healthy connections
1. Boxer (2011)
2. Asscher et al., (2012)
3. Yorgason et al., (2005)
- Severity of juvenile behaviors
1. Bright et al., (2014)
2. Cox et al., (2010)
3. Curtis et al.,(2004)

4. Eeren et al., (2018)
 5. Henggeler et al., (2016)
 6. Letourneau, et al., (2009)
 7. Mitchell-Herzfeld et al., (2008)
 8. Sundell et al., (2008)
 9. Timmons-Mitchell et al., (2006)
 10. Weiss et al., (2014)
 11. Wilkie et al., (2017)
-

Internal Validity and Publication Bias

Internal validity was addressed by following and maintaining a standardized process throughout the execution of the meta-analysis as seen in Figure 2 in chapter three (Pan, 2004; Russo, 2007). Each step of the meta-analysis insured the highest level of inclusion within the study. Articles that did not fully address the research question were excluded. The synthesis only contains published work. Despite unpublished literature being sought out for inclusion in this study, all unpublished work was removed prior to synthesis as a result of ensuring the most timely and sound research was included (APA, 2016). While establishing the criteria, there were articles ($n = 36$) which were excluded due to a lack of sufficient reported data, (Appendix).

Of the articles ($n = 9$) included in the meta-analysis, a majority ($n = 6$) of the articles were conducted outside of the US. Although all these articles met the criteria for inclusion, it should be mentioned that this provided an alternative perspective than initially sought out as additional factors such as ethnicity, nationality, and the definition of treatment as usual, became increasingly relevant. These factors impact validity as these are major factors which could alter the results of any duplication of this study.

Summary

The results of the two research questions provide valuable results. The first research question asked does MST show better outcomes than usual treatment paradigms? The

importance of identifying what differences exist between MST and treatment as usual were significant, especially when considering the studies outside of the US. MST is not the best form of treatment for all the outcome variables. The second research question looked to assess which factors influence the outcomes of MST for youth: externalizing behavior, peer relationships, recidivism, and substance misuse? This question provided details on many of the nuances that differed in each of the studies included in the synthesis. There are numerous factors beyond the treatment approaches that impact the outcome of MST.

Chapter 5

Discussion

This study began with an overview of the necessity of adding to the Multisystemic Therapy (MST) research in chapter one. Literature was explored in chapter two with special attention to the gaps in MST literature between the founders of MST and those not affiliated with the creation of MST. Chapter three provided an explanation of how to conduct a meta-analysis. In chapter four the results were described. Chapter five will provide a summary of the study which was conducted. There will be an explanation of the major findings, discussion of strengths and limitations, and confounding variables. Next will be a discussion of how this study relates to past research and fills the gaps in the literature. Lastly, there will be an explanation of what this research brings to the profession of counseling and counselor education.

Review of Study

The aim of this study was to address a gap in the literature that has existed since 1992 when Henggeler et al. (1992), one of the founders of MST, questioned what created the change with this treatment modality. Over the years, several researchers have explored MST; its effectiveness (Asscher, 2012; Asscher, 2014; Barth et al., 2007a; Henggeler et al., 1986; Huey et al., 2000; Letourneau et al., 2009; Sundell et al., 2008; Tyuse et al., 2010; Yorgason et al., 2005), its transportability (Asscher, 2012; Asscher, 2014; Dekovic et al., 2012; Ogden & Halliday-Boykins, 2004; Ogden & Hagen, 2006; Ogden et al., 2006; Sundell et al., 2008), and its versatility with different juvenile behaviors such as substance abuse (Love et al., 2014; Henggeler et al., 2002; Henggeler et al., 2006; Weiss et al., 2013).

A meta-analysis was conducted to address the research questions and ultimately the question from the founders of MST directly (Henggeler et al., 1986; Henggeler et al., 1992;

Henggeler et al., 1995, Henggeler et al., 2002; Henggeler et al., 2017). There were nine articles included in this synthesis with a total sample size of ($n = 1,575$) including ($n = 1170$) boys and ($n = 405$) girls (Asscher et al., 2012; Asscher et al., 2014; Dekovic et al., 2012; Huey et al., 2000; Letourneau et al., 2009; Ogden et al., 2006; Ogden and Halliday-Boykins, 2004; Sundell et al., 2008; Weiss et al., 2013). These articles produced 35 d scores. The 35 d scores cover the results of MST as it pertains to the four outcome variables externalizing behaviors, peer relationships, recidivism, and substance misuse.

This study identified two research questions to address the gaps in the literature:

Question One

Does MST show better outcomes than usual treatment paradigms?

Question Two

Which factors influence the outcomes of MST for youth?

Major Findings

The results from the meta-analysis provide insight into the future of MST along with community-based clinical practice. As the previous research has indicated, there was a need to identify the specific actions which resulted in change when conducting MST (Henggeler et al., 1986; Henggeler et al., 1995, Henggeler et al., 2002; Henggeler et al., 2017). The results of the two research questions have provided valuable information into addressing these concerns.

Research question one

The first research question stated, does MST show better outcomes than usual treatment paradigms? The synthesis indicated that MST does show better outcomes than usual treatment paradigms overall. It may be interesting to learn that MST did not have a large difference in effect size in comparison to the usual treatment. Purely analyzing the results and looking at all

four outcome variables, MST had a greater effect in 20 of 35 cases. Considering the manner that MST is discussed and researched as a premier treatment modality for juveniles, and ,especially incarcerated youth, there was belief that change would be greater than 57% of the included studies (Barth et al., 2007a; Borduin et al., 1995; Eeren et al., 2018; Henggeler et al., 1992; Henggeler et al., 2006; Henggeler & Schaeffer, 2016; Porter & Nuntavist, 2016; Sheidow et al., 2004; Weiss et al., 2013). Fifty-seven percent effectiveness for MST is equated to only a slightly better chance than luck with correcting juvenile behaviors. The 20 successful cases of MST producing better outcomes than *treatment as usual* spreads across the four variables including externalizing behaviors, peer relationships, recidivism, and substance misuse.

MST was most effective when treating externalizing behaviors. In 15 of 19 cases, MST produced better outcomes than *treatment as usual* when targeting externalizing behaviors. There were primarily medium ($d > .20$) and large ($d > .50$) effect sizes for this outcome variable with only one effect size being small ($d < .20$). Of the total articles that were included in the synthesis, eight reported on externalizing behaviors making this the strongest outcome variable in the overall synthesis. It has been mentioned that there is a discrepancy with which practices are included in *treatment as usual* and based on the location of the study. Despite this information, MST still proved to produce better outcomes than *treatment as usual* both within the US and internationally.

Peer relationships' is the second outcome variable from the synthesis. There were four studies from the total nine within the synthesis that produced data on this outcome. Of the four studies, one was conducted in the US. The US study produced the largest effect size ($d = .46$). There was a 50% success rate with MST when treating peer relationships. The factor of what *treatment as usual* consisted of is less significant with this variable as the two successful

outcomes include data from both the US and Sweden. From reviewing the results, MST is creating change; however, in accordance with the overall discussion around the first research question, MST is not always producing better outcomes than treatment as usual.

Recidivism is the process of being a repeat offender, meaning an individual is charged with a crime after a previous conviction (NIJ, 2012b; Robst, 2017). One of the main focal points of MST is centered on addressing the causes that lead to juvenile recidivism (Butler et al., 2011; Hanson et al., 1986; Henggeler et al., 2006; Weiss et al., 2013). With a history of focusing on recidivism and variety of research supporting the usage of MST when treating recidivism, the results of this variable were fascinating. Recidivism was poorly represented in the studies that made it into the synthesis and only accounted for two of the 20 successful MST outcomes. Specifically looking at recidivism, there were six total effect sizes gleaned from four articles resulting in positive outcomes only 33% of the time. This was a surprise considering the significance of recidivism in MST research historically (Butler et al., 2011; Hanson et al., 1986; Henggeler et al., 2002; Henggeler et al., 2006; Weiss et al., 2013).

Of the four articles used in synthesis for recidivism, the US-based study produced the smallest effect sizes ($d = .05$), meaning that MST was not as effective when treating recidivism in comparison to the control group. This is significant as there was a need to continue to develop the research on MST by individuals not directly affiliated with its creation or longevity (Weiss et al., 2013). The three other studies were international studies and produced a variety of effect sizes with primarily medium effect sizes and with one large effect. When comparing the effect size of the treatment group to the control group there is only one occurrence where the treatment group's effect size is greater than the control group. In the other test, MST and *treatment as usual* have the same effect size or *treatment as usual* produced greater change than MST when

addressing recidivism. This indicates that MST is not effective at addressing recidivism, which is not supportive of previous research.

Substance misuse is the inappropriate use of legal and illegal substances. The outcome variable incorporated two of the nine articles which were included in the meta-analysis. Of the total nine, only two articles had significant data to report specifically on substance misuse. These two articles produced six effect scores with two of the six indicating positive outcomes for MST in comparison to treatment as usual. Like peer relationships, the two articles represent the US as well as Sweden. The effect of MST was overall small and *treatment as usual* proved to have a larger effect than MST at treating substance misuse. The notion that *treatment as usual* internationally is already family-focused was insightful in this outcome variable particularly. These findings are congruent with the literature which indicates that MST is not the best form of treatment for substance-based disorders (Henggeler et al., 2002; Henggeler et al., 2006). Overall, MST was not effective at treating substance misuse.

Regarding research question one, MST does not always show better outcomes than treatment as usual. The study showed that MST is effective; however, in many cases, especially internationally, *treatment as usual* has the same impact as MST. The results of this study do support previous research in that MST does lend itself to addressing externalizing behaviors (Asscher et al., 2012; Asscher et al., 2014; Dekovic et al., 2012; Letourneau et al., 2009; Ogden et al., 2006; Ogden & Halliday-Boykins, 2004; Sundell et al., 2008; Weiss et al., 2013). Even though there were minimal results, MST did produce better outcomes in 50% of the cases when treating peer relationships which is congruent with the literature (Asscher et al., 2012; Dekovic et al., 2012; Huey et al., 2000; Sundell et al., 2008). Recidivism (Asscher et al., 2012; Ogden et al., 2006; Sundell et al., 2008; Weiss et al., 2013) and substance misuse (Sundell et al., 2008; Weiss

et al., 2013), although they did have some successful cases, did not perform as well and did not produce better outcome variables than treatment as usual. The mixed findings from research question one lead into the second research question which provides insight into why MST has such variability in effectiveness.

Research question two

Through the process of conducting the meta-analysis, it was determined that the meta-analysis methodology would not fully report on the second research question. At this time a case study was deemed the best approach to answer research question two. A case study is a detailed analysis of a person or group, especially as a model of medical, psychiatric, psychological, or social phenomena (Creswell, 2012; Hancock & Algozzine, 2017). Case studies have been completed on a variety of topics including individuals' events, situations, programs, activities (Hancock & Algozzine, 2017). There are seven types of case studies: explanatory, exploratory, descriptive, multiple case studies, intrinsic, instrumental, and collective (Hancock & Algozzine, 2017; Yin, 2012). A collective case study was used to answer research question two. A collective case study is defined as the use of multiple cases that are explored to provide insight on a topic (Creswell, 2012; Hancock & Algozzine, 2017).

The key principles and procedures to conducting a case study include identifying the case, selecting the type of case study, and use of theory (Hancock & Algozzine, 2017; Yin, 2003; Yin, 2012). The case is defined as a "generally bound entity" (Yin, 2012). This provides the often-necessary flexibility afforded to case studies (Yin, 2012). There are four types of case studies which can be conducted; single-case study, multiple-case study, holistic, and embedded (Yin, 2012). Lastly, the use of theory assists with the framing of the entire study from the research questions to reporting results (Yin, 2012).

The initial 94 articles formed the “case” which was analyzed to address research question two (Hancock & Algozzine, 2017; Yin, 2003; Yin, 2012). The cases study followed a holistic multiple-case study design (Yin, 2012). Finally, it was decided that the theory would remain an active portion of this study as it was embedded in the study. Ecological system theory was applied to the case study.

The second research question stated, which factors influence the outcomes of MST for youth externalizing behavior, peer relationships, recidivism, and substance misuse? The meta-analysis identified treatment fidelity as an influencing factor of MST. Treatment fidelity is the accuracy that an approach is executed and was found in seven of the nine synthesized studies. Treatment fidelity was discussed in these studies as a factor which required attention to assist in strengthening the validity of the study as well as simply providing quality care. Henggeler et al. (2002) and Huey et al. (2000) indicated a need to determine if there was an impact of treatment fidelity, and these studies indicate that treatment fidelity does impact the outcome of MST. The studies described that there would be differences between sites within the study and it was related to the way MST was delivered. To monitor and assess treatment fidelity the studies recommend utilizing the Therapist Adherence Measure (TAM) (Ogden & Halliday-Boykins, 2004; Weiss et al., 2013).

The case study produced seven codes: treatment fidelity, therapist experience, holistic family/community focused treatment, lack of parent involvement/engagement, judicial system involvement, ability to create healthy connections, and severity of juvenile behaviors.

Treatment fidelity. Treatment fidelity, which presented from the meta-analysis, was strengthened by the case study with the additional support. There were ($n = 18$) articles which discussed treatment fidelity and the impact it has on outcomes of MST (Asscher et al., 2012;

Baglivio et al., 2014; Blow et al., 2007; Cox et al., 2010; Cortes, 2004; Curtis et al., 2004; Dekovic et al., 2012; Foster et al., 2009; Hammond & Czyszczon, 2014; Huey et al., 2000; Lauka et al., 2013; Letourneau, et al., 2009; Ogden & Hagen, 2006; Ogden & Halliday-Boykins, 2004; Ogden et al., 2006; Sundell et al., 2008; Walter & Petr 2006; Weiss et al., 2013).

Supervision is a primary way to monitor and account for treatment fidelity. Supervision is the process in which clinical work is monitored to ensure the highest level of care (Campbell, 2006). MST requires weekly supervision for all providers (MST Treatment Model, 1998; Weiss et al., 2013). Treatment fidelity studies identified that a lack of adequate, consistent, and efficient monitoring of treatment impacts the outcomes of MST. When treatment fidelity is executed appropriately, providers and most importantly the clients benefit.

Therapist experience. Therapist experience is the consolidation of three smaller codes which emerged from the case study. This code pertains to the experiences uniquely connected to the provider. Smaller themes included culture, comfort, and personal traits. There were ($n = 12$) articles which reported on therapist experience (Ackerman & Hilsenroth, 2003; Allen, 2007; Allen & Tracy, 2004; Chapman & Schoenwald, 2011; Christense, 1995; Cortes, 2004; Foster et al., 2009; Fox et al., 2017; Glebova et al., 2012; Greeson et al., 2009; Henggeler et al., 2016; Tate et al., 2014). The therapist impacts treatment outcomes. If the therapist feels uncomfortable, does not have the ability to make authentic connections, or simply is not a good fit and personally feels this way, then it can impact the outcome of MST.

Holistic family/community focused treatment. The presence of holistic community/family-focused treatment is a factor which impacts the outcomes of MST. There were ($n = 17$) articles from the case study that reported on the impact of holistic community-focused treatment as a factor (Allen & Tracy, 2004; Asscher et al., 2012; Asscher et al., 2014;

Bright et al., 2014; Cox et al., 2010; Curtis et al., 2004; Dekovic et al., 2012; Dunne et al., 2016; Ellis et al., 2010; Huey et al., 2000; Lange et al., 2018; Letourneau, et al., 2009; Ogden & Halliday-Boykins, 2004; Sundell et al., 2008; Vermeulen et al., 2017; Winiarski et al., 2017; Zajac et al., 2015). MST is an intensive collaborative therapeutic approach that focuses on utilizing the family and community in the treatment of the juvenile (Barth et al., 2007a; Borduin et al., 1995; Eeren et al., 2018; Henggeler et al., 1992; Henggeler et al., 2006; Henggeler & Schaeffer, 2016; Porter & Nuntavist, 2016; Sheidow et al., 2004; Weiss et al., 2013). *Treatment as usual* is any form of treatment which is typically provided in the identified research area that is not MST (Asscher et al., 2014; Dekovic et al., 2012). There were five studies which identified that holistic family-focused treatment would produce favorable outcomes for juveniles regardless of MST. In some cases, the effect size for MST was equivalent or close to those of the *treatment as usual* paradigm. This suggests that change was not unique to MST but to any approach that utilized a more intensive community/family structure. The presence of holistic community/family focused usual treatment as a factor is significant as it impacts the success rates of MST in studies. It indicates that progress and change with clients are not solely achieved with MST.

Lack of parent involvement/engagement. Lack of family involvement emerged as a code from ($n = 7$) articles as it shines light on the necessity of parental engagement (Allen, 2007; Asscher et al., 2012; Asscher et al., 2014; Dekovic et al., 2012; Huey et al., 2000; Leitz, 2009; Mitchell-Herzfeld et al., 2008). The lack of parent involvement/engagement highlights the specifics such as treatment planning for the family by the family. When families are involved in planning goals and executing them within the household there is a greater chance of success. Parents should not be left in the dark when the treatment is intended to be all encompassing.

Families should be able to vocalize the goals of their children and continue care when the provider is not in the home.

Judicial system involvement. Judicial system involvement provides a necessary structure and authoritative factor to MST. There were ($n = 6$) studies which addressed the impact of judicial involvement in the success of MST (Bright et al., 2014; Eeren et al., 2018; Henggeler et al., 2006; Letourneau, et al., 2009; Sundell et al., 2008; Weiss et al., 2013;). MST is a form of treatment for juvenile offenders; however, every juvenile is not on probation or still within direct supervision of the judicial system when they embark on MST services. When there is a lack of judicial involvement outcomes of MST have faltered. It was mentioned that when there was no supervision by the judicial system participation rates were low within the studies and follow-up was difficult.

Ability to create healthy connections. There were ($n = 3$) studies which indicated that juveniles' ability to form healthy connections impacts the outcomes of MST (Boxer, 2011; Asscher et al., 2012; Yorgason et al., 2005). These studies highlighted the significance of a juvenile's ability to form healthy connections as they, in turn, relate to the juvenile's ability to refrain from recidivating in the future. A key component of this study and MST research overall pertains to recidivism. Many of the studies on MST in the last 10 years have included follow-up components to truly determine if the impacts of MST are longstanding. A juvenile's ability to form healthy connections is vital to their ability to obtain positive outcomes from MST and continue a path towards a positive life trajectory after services.

Severity of juvenile behaviors. The last code which presented from the case study is the severity of juvenile behaviors. This code was developed from ($n = 11$) articles (Bright et al., 2014; Cox et al., 2010; Curtis et al., 2004; Eeren et al., 2018; Henggeler et al., 2016; Letourneau,

et al., 2009; Mitchell-Herzfeld et al., 2008; Sundell et al., 2008; Timmons-Mitchell et al., 2006; Weiss et al., 2014; Wilkie et al., 2017). This code directly connects to externalizing behaviors. The less significant the externalizing behavior the greater the success of MST. If a juvenile is displaying more significant behaviors this level of treatment may not be deemed clinically appropriate.

Generalizability

Although the number of studies included in this meta-analysis is small, the inclusion criteria were well-controlled. Therefore, the findings from these studies are generalizable for the research questions addressed. The procedure which was followed increased the external validity, which strengthens the generalizability; however, the number of studies included in the synthesis is representative of both US and international studies with different parameters on treatment as usual. The variety found in the *treatment as usual* group lowers the rate of generalizability as this study displayed lower success of MST than previous research.

Implications

MST has been researched for several decades and there is still a need to continue exploring and determining this intervention. MST is a well-researched and known form of treatment which is one of a variety of intensive community-based treatment. MST is an approach like Wraparound services and Intensive In-Home therapy (Burns et al., 1995; Leitz, 2009; Evans et al., 2003; Walker et al., 2012). Identifying the answers to these questions provides insight, not only on MST but also the overarching intensive community-based treatment paradigm. Exploring MST produces implications for counselor educators, clinical practice, and future research.

Implications for Counselor Education

Outpatient counseling is not the only form of treatment that counselors will engage in when they enter the field. Often, prior to securing the ideal office space, novice clinicians will have to work in community mental health, providing services such as MST while they secure their license. This study provides the most up-to-date assessment of MST practices and attempts to answer decades-old questions about what specifically is connected to the success of this approach. Students in all forms of counseling preparation programs should have a higher degree of awareness of MST and other treatment modalities. This study provides a starting point of areas that counselor educators could construct lesson plans and experiences to ensure students are both knowledgeable of the factors but also prepared to engage with the community as informed providers.

This study indicated that MST has key aspects which are related to clear outcomes. Counselor educators would benefit from integrating the knowledge produced on MST from this study in counselor training. MST is effective but with the incorporation of family-focused care in multiple levels of treatment, modalities such as MST will continue to decrease in producing such significant results when compared to newer programs. It would behoove counselor educators to utilize the seven themes that emerged as a focal point in teaching clinical based courses. Counseling students may benefit from having simulated sessions focused around MST style sessions beyond simply those structured for outpatient.

These findings contribute to the support of MST as an evidenced-based practice. Counselor educators teach and prepare students to engage critically with evidence-based practices to both provide services but also enter the field with the knowledge to enhance them in the field. Through the implementation of these findings in counselor education, future clinicians

can become knowledgeable of how to implement MST in the most effective manner. Counselor educators can utilize the themes which emerged as a guide for training future clinicians on specific topics which are essential to community focused care. They can provide this training to students but also offer them to the community. Counselor educators often have the resources that community mental health agencies are lacking, and this provides an opportunity for partnerships with the community. Each of the themes can be a training which can better equip providers and future providers with the necessary tools to provide the best MST services.

Meta-analyses and content-analyses are exceptional tools within research which should be included in the curriculum of counselor education programs. Counselor educators would benefit from these methodologies as they increase the efficacy of new research. The incorporation of an exhaustive assessment of current literature provides a more inclusive depiction of the subject area being explored. Increasing the efficacy of future research assists all evidenced-based practices to maintain their status.

Implications for Clinical Practice

As counselor educators provide future clinicians with information on community mental health and MST, a new generation of providers will enter the field with greater awareness. Research question two would benefit MST sites as they evaluate what is occurring and how to improve the success rates of families as well as potentially decrease rates of burnout with providers. Each of the seven codes can provide insight into clinical work and the families involved in the juvenile justice system.

Treatment fidelity is one of the most important aspects of the implementation of a treatment modality. Treatment may be found to be strong and produced positive results but if it is not executed correctly then the likelihood of the treatment producing the intended effect is

lower. Clinicians and providers need to incorporate treatment fidelity measures. As mentioned, there are several ways to attend to treatment fidelity such as supervision, reviewing tapes, and quality assurance calls but these all must be completed and regularly to adequately attend to treatment fidelity. If companies are attending to treatment fidelity families involved in the juvenile justice system will have the largest positive impact. Services such as MST are highly involved and based on the description and manual of services if administered appropriately, they will have an impact on behaviors of juveniles that frequent the juvenile justice system.

Therapist experience directly impacts treatment fidelity and the functionality of MST overall. If therapist and providers do not feel comfortable they may not fully engage in the manner that MST requires. This lack of involvement and engagement impacts the juveniles and families most significantly as they have already taken the risk to engage in services and yet they are potentially not receiving the best care. Focusing on therapist experiences of the session will also provide insight into the working relationships between provider and family. This is not always representative of negative relationships but also relationships that have crossed boundaries and are no longer therapeutic. If a therapeutic relationship is altered in any way the client, family and therapist are all at risk. This study indicates that there should be greater attention placed on the experiences of the provider to determine the success of the treatment administration. When a provider's disposition in regard to a family changes it can be an early sign that the rendering of services has also shifted. Companies should incorporate more attention to attending to providers experiences to increase positive outcomes of services for juveniles and their families.

Holistic family/community focused treatment is the premise behind MST. Clinical providers if they are attempting to start implementing MST in a community should take into

consideration other modalities within the community which have this same premise. If a community already implements highly engaging family and community-based care the integration of MST will not be as significant in regard to outcomes. It is also noted that this as a primary aspect of MST and more successful modality is the key quality that can be infused into any approach to increase its success. If communities are receiving holistic family/community focused treatment they will see a decrease in externalizing behaviors, peer dynamic concerns, substance misuse, and recidivism.

Families need to be involved in the planning and execution of treatment. The lack of parent involvement/engagement should be a focus area for providers. When a family is involved from the very start of services there is a greater likelihood of success. Families also report that they feel more involved. Instead of providers making up goals and objectives for families, the family should tell the provider what they need to work on. The lack of involvement is seen in the daily behaviors and the lack of accountability. Providers should have a strong and clear message that MST is family focused and this is at all levels of care.

The presence of a strong external factor, beyond the services being rendered is noted as a strength in the positive outcomes of MST. Judicial system involvement increases success rates. There is a need for juveniles and families to comply and the judicial system proves to be this strong structure. When clients come into care with a referral from the judicial system, they tend to have a higher rate of completion which in turn has long-standing benefits. Providers would benefit from identifying if other external referral sources produce the same level of completion to work on shifting MST to a proactive form of treatment instead of reactive.

Ability to create healthy connections is connected with the success of juveniles. Providers can focus on incorporating this theme into treatment plans and screening of potential clients. If a

child is not able to form healthy connections the likelihood of their success drops. MST works on engaging with the entire community and juveniles need positive and healthy connections to continue to utilize the skills they have been taught in treatment. It is imperative that providers identify healthy outlets for juveniles to decrease recidivism rates and create long last change.

The severity of juvenile behaviors simply looks at the type of behaviors that juveniles are existing. MST is a step below having a juvenile removed from the community through either incarceration or hospitalization and the goal is to maintain the juvenile in the community however an honest assessment of a child's behaviors could have the biggest impact on the juvenile's wellbeing along with the community. Some behaviors cannot be maintained in the community. This could be a result of the limited resources in that community or simply the severity of the juvenile's behaviors. Providers would benefit from determining if their agency has the resources to provide MST at the level that the potential client requires prior to implementing services. If a juvenile is not able to be maintained in the community it is best to make the clinical decision as soon as possible to provide the best care for the juvenile and family.

Future Research

Future research can utilize this study to conduct additional studies focused on treatment fidelity. Treatment fidelity emerged as a primary factor influencing the outcome of MST. It would be beneficial if there was a meta-analysis on treatment fidelity alone. This would provide a greater understanding of this factor and provide significant literature prior to conducting an experiment around MST in the community. An experimental study on treatment fidelity would be the next step for expanding from the current study and continuing to add to the research on this topic.

The themes that emerged would also be good options for conducting future research. Specifically, the therapist experiences of MST would be a meaningful study to determine a greater understanding of the impact of the therapist role on the overall success of treatment. If a more in-depth study was conducted there could be greater implications for counselor education and clinical practice. Lastly, there is room for future research on other treatment paradigms which are used with juveniles such as functional family therapy, dialectical behavioral therapy, and motivational interviewing. Research on these modalities would provide greater direction in treating juveniles at the lowest level of care and most importantly in the community. There is a need for continued research on the practices that we implement. Juveniles are constantly evolving with the impact of technology and social media; our practices must constantly be evaluated to ensure they are meeting the needs of the population of clients currently.

Limitations

The number of articles included in the synthesis is the first limitation. The number of total articles included in the synthesis was nine, however, all nine articles did not report on each of the four outcome variables. The lower number of reporting articles is a limitation, the remaining three outcome variables utilized four or less of the total nine articles when reporting on *d* scores. This may not provide a full picture of the impact of MST on the outcome variables. This can also impact the generalizability of these results as the sample size is so small.

The second limitation is that two-thirds of the nine articles are international studies. This is concerning as the study explored MST in comparison to treatment as usual. *Treatment as usual* consist of different forms of therapeutic intervention within the US than internationally (Ogden & Halliday-Boykins, 2004; Sundell et al., 2008). This accounts for some of the variability in

effect sizes when comparing US studies and international studies. This limitation impacts the generalizability of the study.

The third limitation of this study is the low generalizability. The information which was found is valuable; however, it would be beneficial to conduct additional studies to produce results which are generalizable. The findings are specific to these populations and specifically with MST. All community-based agencies do not follow the same procedure, and, although there is great value in the results of this study, there should be a degree of caution when applying the results to other populations.

Conclusion

This study explored the nuances of MST as it pertains to the treatment of juvenile delinquents. The purpose of the study was to determine if MST produced better outcomes than usual treatment paradigms when treating youth externalizing behavior, peer relationships, recidivism, and substance misuse and which factors influence the outcomes of MST for youth externalizing behavior, peer relationships, recidivism, and substance misuse.

Through the study, it was determined that Multisystemic Therapy (MST) is an effective form of treatment. It was also determined that treatment fidelity, the presence of holistic community/family focused usual treatment, supervision, lack of family involvement, and judicial system involvement are factors that influence the outcome of MST when treating externalizing behaviors, peer relationships, recidivism, and substance misuse with juveniles.

Future research on MST would benefit looking into the next steps for this treatment modality. MST was created several decades ago and the results of this study showed that although these services are still effective at providing treatment it is not providing change at as drastic of a rate from its former years. MST continues to benefit those that utilize it and instead

of continuing to explore effectiveness additional research would be beneficial if it focuses on specific nuances which elicit change when targeting juvenile delinquent behaviors.

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Appendix
Articles excluded for insufficient data

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- 33 Weiss, B., Han, S.S., Tran, N.T., Gallop, R., & Ngo, V.K. (2014). Test of “facilitation” vs. “proximal process” moderator models for the effects of multisystemic therapy on adolescents with severe conduct problem. *Journal of Abnormal Child Psychology*, 43, 971-983.
- 34 Wilkie, D.P., Cicero, D.C., & Mueller, C.W.(2017). Disruptive behavior treatment progress as a function of therapy focus and youth diagnosis in a community mental health setting. *Administration and Policy in Mental Health and Mental Health Services Research*,45(3), 484-494
- 35 Winiarski, D.A., Schechter, J.C., Brennan, P.A., Foster, S.L., Cunningham, P.B., & Whitmore, E.A. (2017). Adolescent physiological and behavioral patterns of emotion dysregulation predict multisystemic therapy response. *Journal of Emotional and Behavioral Disorders*, 25(3), 131-142.
- 36 Yorgason, J.B., McWey, L.M., & Felts, L. (2005). In-home family therapy: Indicators of success. *Journal of Marital and Family Therapy*, 31(4), 301-312.
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Vita

T'Airra C. Belcher

6230 Winthrope Dr., Suffolk, Virginia 23435

Email: tbelcher@odu.edu Phone: 804-389-5877

EDUCATION

Old Dominion University

Norfolk, VA

PhD, Education, CACREP-Accredited

Anticipated Graduation – Spring 2019

Concentration: Counselor Education and Supervision

Dissertation: Reshaping counselor education: The identification of influential factors on multisystemic therapy.

Advisor: Dr. Brown

Old Dominion University

Norfolk, VA

Master of Science in Education, CACREP-Accredited

May 2014

Concentration: Clinical Mental Health Counseling

James Madison University

Harrisonburg, VA

Bachelor of Arts in Psychology

May 2012

*Centennial Scholars Recipient***LICENSES AND CERTIFICATIONS**

National Certified Counselor, NCC # 340593

Certified August 2014

Licensed Professional Counselor, LPC # 0701007952

Certified October 2018

PUBLICATIONS

Peer-Reviewed PublicationsBorden, N., **Belcher, T.**, Rivas, F., & Ricks, S.A. (In Press). Bringing social movements into human services classrooms: Movements and human services education. *Journal of Human Services*, 38.

Under Review

Sparkman-Key, N., Vajda, A., & **Belcher, T.** Exploratory study of service-learning in human services education. *Journal of Service Learning in Higher Education*.

Sparkman-Key, N., **Belcher, T.**, & Borden, N. E-Portfolio: Advancing human services education through technology. *Journal of Technology in Human Services*.

Johnson, K.F., Franklin, J., Zimmerman, B., & **Belcher, T.** Interprofessional partnerships involving school counselors for children with special needs: A broad-based systematic review using the PRISMA framework. *Journal of School Health*.

In Preparation

Dice, T., Byrd, R., & **Belcher, T.** Human services trainees' perspectives of experiential learning in an addictions course.

PRESENTATIONS

Peer-Reviewed Presentations**National**

Borden, N., **Belcher, T.**, Rivas, F., & Ricks, S. (2019, March). *Courageous conversations: Social justice movements and counselor education*. American Counseling Association National Conference, New Orleans, LA.

Belcher, T., Lund, S., & Vajda, A. (2017, October). *Forging a path to empathy in a divided America: Teaching multicultural counseling*. Association for Counselor Education and Supervision National Conference, Chicago, IL.

Lund, S., & **Belcher, T.** (2018, February). *Meeting the unique mental health needs of college student-athletes: Integrating our services*. American College Counseling Association Annual Conference, Charlotte, NC.

Vajda, A., Fernandes, S., & **Belcher, T.** (2017, July). *Counseling Implications for working with undocumented Latino youth*. American Mental Health Counselors Association National Conference, Washington, D.C.

Regional

Belcher, T. (2018, October). *Where do we go from here? Creating inclusive spaces for African-American women in CES programs*. Southern Association for Counselor Education and Supervision, Myrtle Beach, SC.

State

Belcher, T. (2018, November). *A review of intensive in home in Virginia and potential new direction*. Virginia Counselor Association, Norfolk, VA.

Belcher, T., & Lund, S. (2018, February). *Empathy 101: You don't know what you don't know*. Virginia Counselors Education and Supervision Annual Conference, Lynchburg, VA

- Belcher, T., & Borden, N.** (2018, February). *Where do we go from here? Creating spaces for African-American women in counselor education and supervision programs.* Virginia Counselors Education and Supervision Annual Conference, Lynchburg, VA
- Horton-Parker, R., & **Belcher, T.** (2018, November). *May they all flourish! Creating a trans-friendlier world for children, adolescents, and adults.* Virginia Counselor Association, Norfolk, VA.
- Horton-Parker, R., & **Belcher, T.** (2017, November). *Please don't forget the T (in LGBTQ, that is!): Understanding and collaboratively advocating for trans individuals.* Virginia Counselors Association Annual Convention, Williamsburg, VA.
- Horton-Parker, R., & **Belcher, T.** (2017, November). *What will happen to us? Strategies to collaboratively reduce fear and anxiety while promoting inclusion and social justice in an uncertain world.* Virginia Counselors Association Annual Convention, Williamsburg, VA.
- Horton-Parker, R., Dustin, J. (in absentia), & **Belcher, T.** (2016, November). *This is what transgender looks like! What you need to know to be an effective counselor and advocate for trans individuals.* Virginia Counselors Association Annual Convention, Williamsburg, VA.
- Vajda, A., Fernandes, S., & **Belcher, T.** (2017, February). *Counseling gay Latinos: Addressing the complexities of multidimensional identities.* Virginia Association for Counselor Education and Supervision Conference, Norfolk, VA.
- Belcher, T. (2017, Fall). *Interventions to use with At-Risk youth.* Old Dominion University. Norfolk, VA.

TEACHING EXPERIENCE

Old Dominion University

August 2016 – August 2018

Department of Counseling and Human Services

- Master's level courses Co-Instructor:
 - Mental Health Counseling (30911)
 - Introduction to Supervision (18045)
- Undergraduate courses Instructor of Record:
 - Family Guidance (24119)
 - Interventions and Advocacy with Children (10674)
- Undergraduate courses Co-Instructor:
 - Diversity Issues-Human Services(24179)
 - Family Guidance Online (32414)
 - Interpersonal Relations Online (34440)
 - Intro to Human Services Online (13115)
 - Intro to Substance Abuse Online (32405)

EMPLOYMENT & CLINICAL EXPERIENCES

Clinical Assessor

Norfolk, VA

Kaleidoscope Counseling and Case management

October 2017 – Present

- Conduct clinical assessment for Intensive in Home services
- Establish rapport and professional relationship with clients
- Develop treatment plans
- Provide family therapy
- Conduct risk-assessments and mental health evaluations for individuals seeking intensive in-home therapy.

**Career and Academic Resource Center
Human Services Undergraduate Advisor**

Norfolk, VA

Old Dominion University

August 2016-August 2017

Co-Director

August 2017-Present

- Provided academic and career advising to a caseload of approximately 100 human services undergraduate students.
- Met with students at least once a semester to discuss and develop academic and career plans.
- Ensured students were meeting departmental and university requirements.
- Developed academic plans for students who failed to meet academic requirements.
- Coordinated with various campus offices, such as educational accessibility, to ensure advisees were receiving the appropriate accommodations in class.
- Developed and delivered at least 1 workshop per semester on topics including study skills and stress management to facilitate academic success.
- Assisted in the training of 1-2 new advisors each semester.
- Facilitated advising sessions for new student and transfer student orientations
- Maintained up-to-date advising records through an online database

Program Therapist

Richmond, VA

Hallmark Youthcare

September 2015 – September 2016

- Provided residents and their families with weekly case management.
- Conducted psychotherapy through daily individual and family therapy sessions.
- Completed psychosocial assessments, strengths assessments, and behavioral support plans for individualized treatment.
- Led specialized group therapy sessions in areas of psychoeducation, general process, chemical dependency, and trauma.
- Implemented best practices, evidenced-based practice models where appropriate, and adhered to program expectations.
- Provide individual therapy on locked extended- and sub-acute mental health units.

Behavioral Health Specialist

Richmond, VA

Good Neighbor Community Services

July 2014 – September 2015

- Provided Intensive In-Home Counseling to children addressing mental health concerns.
- Advocated for clients to increase their overall functioning.
- Created treatment plans and executed appropriate interventions for children and adults.
- Effectively communicated with community agencies to make referrals.

Community Services Board Resident

Norfolk, VA

Community Services Board

July 2014 – September 2015

- Provided Intensive In-Home Counseling to children addressing mental health concerns.
- Advocated for clients to increase their overall functioning.
- Created treatment plans and executed appropriate interventions for children and adults.
- Effectively communicated with community agencies to make referrals.

RESEARCH & SCHOLARLY ACTIVITIES

Research Assistant

January 2017 – Present

Old Dominion University

- Conducted quantitative and qualitative research on human services experiences with digital pedagogy.
- Utilized systematic review to research the role of interprofessional partnerships within school counseling.
- Identified core issues and concerns with navigating current political climate in the human services classroom
- Assisted in determining the multicultural components of advising graduate level students with a focus on international students.

CLINICAL SUPERVISION EXPERIENCE

Supervisor

Norfolk, VA

Old Dominion University

January 2017 – Present

- Provide individual, triadic and group supervision for master's level advanced psychotherapy techniques and skills course.
- Simulate role play to increase learning and comfort of skills.
- Serve as group leader for process group for 6 human services undergraduates' students
- Focus on interpersonal communication skills, interpersonal awareness, and empathic responding

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

- American Counseling Association (ACA)
- Association for Counselor Education and Supervision (ACES)

- Association for Gay, Lesbian, Bisexual, and Transgender Issues in Counseling (ALGBTIC)
- American College Counseling Association (ACCA)
- Virginia Counselors Association (VCA)
- Virginia Association for Counselor Education and Supervision (VACES)
- Chi Sigma Iota (CSI) International Honors Society, Omega Delta Chapter at Old Dominion University

SERVICE

Mentor

August 2017-Present

Old Dominion University

- Provide mentorship to first- and second-year students in the doctoral program.
- Plan activities to engage students and welcome them to campus community.

President-Elect, Chi Sigma Iota

May 2017 – May 2018

Old Dominion University

- Support all committees of the chapter in the execution of CSI International Requirements.
- Plan end of semester recognition program for all graduate, family members, faculty, staff and award winners.
- Organized fundraiser programs for the chapter in the community.

President, Chi Sigma Iota

May 2018 – Present

Old Dominion University

- Finalize budget for 2018-2019 academic year.
- Organize board meetings to plan and prepare for the academic year.
- Addressed successes and shortcomings as a chapter during previous years.
- Identified with board ways to reignite the passion and drive of the chapter

PROFESSIONAL DEVELOPMENT/CLINICAL TRAININGS ATTENDED

- Suicide assessment
- Sexual assault
- PTSD
- Health issues of women