2018

A Comparative Analysis of Family Therapies on Youth with a Co-occurring Disorder

Rochelle Henderson-Clark
Walden University

Walden University

College of Social and Behavioral Sciences

This is to certify that the doctoral dissertation by

Rochelle Henderson-Clark

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee
Dr. Tracey Phillips, Committee Chairperson, Human Services Faculty
Dr. Shari Jorissen, Committee Member, Human Services Faculty
Dr. Nathan Moran, University Reviewer, Human Services Faculty

Chief Academic Officer
Eric Riedel, Ph.D.

Walden University
2018

Abstract

A Comparative Analysis of Family Therapies on Youth with a Co-Occurring Disorder

by

Rochelle Henderson-Clark

MS, Walden University, 2010

BA, University of North Florida, 2001

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Human Services

Walden University

August 2018

Abstract

There are approximately 1.3 million youth who have been diagnosed with a co-occurring disorder. The purpose of this study was to analyze the relationship between the type of therapy (brief strategic family therapy or family functional therapy), demographic factors (age, race, type of drug used), and therapy discharge status (successful or unsuccessful) in male youth with a co-occurring disorder of attention-deficit hyperactivity disorder and substance use disorder. A correlational research design of a cross-sectional nature was used for this study and secondary data were obtained from a mental health agency located in Hampton Roads Virginia. The theoretical basis for this study was Bowens family systems theory. A purposeful convenience sample was used from archival data (n=392). Independent sample t-Tests were conducted to analyze differences between demographic groups and discharge status, and it was found that males whose drug of choice was alcohol had a statistically significant lower successful discharge rate (p=.031). Type of therapy unrelated to discharge status at a statistically significant level (p=.418). Results of a multiple logistic regression analysis showed that non-White/Caucasian males were 1.86 times more likely to have a successful discharge status from the program (p=.048). Age, drug type, and therapy used were unrelated to discharge status at statistically significant levels (p>.05). This study can educate therapists about their preconceived notions regarding ethnicity and the potential to successfully complete therapy. This could result in more empowerment shared with clients of these ethnic groups which could positively impact completion of therapy.

A Comparative Analysis of Family Therapies on Youth with a Co-Occurring Disorder

by

Rochelle Henderson-Clark

MS, Walden University, 2010

BA, University of North Florida, 2001

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Human Services

Walden University

August 2018

Dedication

This study is dedicated to my dearly departed Aunt Dee (Elizabeth Mitchell). She was always such a source of inspiration and encouragement. She desired that all her family become educated and do well in their chosen profession. It is because of her that I continue to strive for success. She was the first to expose me to the beauty of the African culture through the performing arts. Gathering all her nieces and nephews and taking them to see Alvin Ailey Dance Theater or a stage play on Broadway was the norm. A quick phone call to say hello, would turn into hours of her guidance and inspiration. She made me proud to be an African American Woman and she made me want to better myself and my community. It was fitting that I successfully defended my dissertation on her birthday. I want to thank her from the bottom of my heart for being such an inspiration in my life and encouraging me to become the first Doctor in the family.

Acknowledgments

I would like to thank my husband, Jimmie Clark Jr. for his patience and encouragement through this process. You never complained about the endless hours spent in my office researching and writing. To my parents, from day one, you always instilled the importance of education and I am forever grateful. To my son Mark, thank you for your constant encouragement and telling me quitting was not an option when I was frustrated with the process. To my siblings, Michael, Ronald, and Nicole, thank you for inspiring me to do better. To Florentine Johnson, Marian Hinton, Gail Brown and Susan Darden, thank you for always praising me and helping me understand the value of all my hard work. To my fellow Doctor and friend Donelle Ainsworth, thank you for letting me vent to you about the process and helping me understand how to navigate it to the end. To my partners at Here 2 Help Community Services, Catina Williams, Marquise Hardison, and Joey Whitmore, thank you for allowing me the time to research and write from home and not pressuring me to be in the office on a daily basis. I would also like to acknowledge and thank my friend and colleague Dr. Seymour Ward for being my editor. Finally, to my committee, I would like to thank my chair, Dr. Tracey Phillips, who continued to encourage me when my frustrations were at their highest. I would also like to thank my committee member, Dr. Shari Jorissen, for challenging me to do more and increasing my knowledge of quantitative methods.

Table of Contents

List of Tables

List of Figures

Chapter 1: Introduction to the Study

Introduction

There has been a major health concern in the United States regarding the 1.3 million youth who have been diagnosed with substance abuse disorders, as only 15% of them receive treatment for the condition (Krampe, Naassila, & Rodriguez-Orengo 2013; Substance Abuse and Mental Health Services Administration [SAMSHA], 2015). According to the U.S. Department of Health and Human Services (USDHHS, 2015), 43% of adolescents in the United States who have received mental health services had a co-occurring substance use disorder (SUD) in 2015. They indicated that the percentage of youth diagnosed with co-occurring disorders were almost equal with those of adults, estimated between 50% and 75%, respectively (Bergman, Greene, Slaymaker, Hoeppner, & Kelly, 2014; USDHHS, 2015).

Treatment for adults with co-occurring disorders has been available since the 1980s; however, it was not until recently that youth were also diagnosed and treated for co-occurring disorders (Anderson, 2008). Evidence-based treatment protocols for adults with co-occurring disorders improved in the 1990s when programs began to incorporate assertive outreach, motivational interventions, and cultural competence (Anderson, 2008). However, a comprehensive plan was initiated to address both the mental health and SUDs concurrently, rather than treating them separately (USDHHS, 2002).

Controlled studies of outpatient treatment for adults with co-occurring disorders have been refined over the years, and there are now multiple evidence-based treatment protocols utilized to treat adults (USDHHS, 2015). However, treatment protocols for

adolescents are not as well developed as treatment models available for adults (Centers for Disease Control and Prevention [CDC], 2016; USDHHS, 2015). Thus, this study explored whether there are differences in the effectiveness of brief strategic family therapy (BSFT) and family functional therapy (FFT) on youth diagnosed with attention-deficit hyperactivity disorder (ADHD) and SUD. While both therapies have been proven effective in separate cases, with limited research, clinicians cannot make informed decisions on which treatment provides better results for their adolescent clients (USDHHS, 2015).

Although there has been evidence that both BSFT and FFT have been successful in treating youth with co-occurring disorders (CDC, 2015; SAMSHA, 2015), I was unable to find evidence of a comparative analysis between the two treatments, thus showing a gap in the literature. This analysis answered the question for clinicians when determining what form of treatment has provided better results. This research offers an innovative approach in the treatment of youth with co-occurring disorders, and the social change implications will also increase the effectiveness of treatment for youth by clinicians who lack the appropriate knowledge to treat youth with co-occurring disorders.

Background

BSFT is a short-term model, developed for youth, based on the premise that families provide the needed support in treatment for youth with behavioral problems, such as abusing drugs, engaging in sexually risk behaviors, and exhibiting other delinquent behaviors (Szapocznik, Schwartz, Muir, & Brown, 2012). BSFT is based on structural and strategic family theories and uses family therapy techniques to modify

interactions within the family system that could be enabling the youth's problem behaviors (Szapocznik et al., 2012). BSFT requires between six to 12 sessions (Szapocznik et al., 2012). The primary goal of BSFT is to decrease the problematic behaviors and increase positive family relationships (Robbins et al., 2011; Szapocznik et. al, 2012).

FFT is another form of family therapy. This therapy model also sets out to improve family relationships first, and then the problem behaviors are targeted (Malloy, 2013). The phases of FFT are as follows: (a) engagement, (b) motivation, (c) relational assessment, (d) behavior change, and (e) generalization (Malloy, 2013). Below are various articles on treating youth with co-occurring disorders that have highlighted the treatments of BSFT and FFT:

- **Becker, Luebbe, and Langberg (2012)** conducted a study to examine the effect of co-occurring mental health problems on the peer functioning of youth with ADHD who had co-occurring diagnoses of oppositional defiant disorder, conduct disorder, anxiety, and depression. They indicated that youth who are diagnosed with ADHD and have other co-occurring disorders encounter difficulties in peer relations. They are also at a higher risk of developing more severe mental health problems.
- **Boger et al. (2014)** examined (a) putative dysfunctions in reward responsiveness in a sample of adolescents with co-occurring depressive and SUDs; (b) possible links between reward responsiveness and symptoms of depression, anhedonia, anxiety, and motivation for change in relation to

alcohol and drug use; and (c) potential gender differences in findings. The authors indicated that as depression and anhedonia symptoms decreased, motivation for change relative to drug use increased. Improved reward responsiveness over the course of residential treatment only emerged in female participants.

- **Denby, Brinson, and Ayala (2011)** examined clinicians who are employed by the juvenile justice system. Their goal was to determine their level of competency in treating youth diagnosed with co-occurring disorders. The researchers found that these clinicians conceded that they lack the appropriate knowledge to treat youth diagnosed with co-occurring disorders.
- **Henggeler and Sheidow (2012)** conducted trials to examine the effectiveness of family therapies on youth treated for conduct disorders and delinquency. The treatments included were multisystem therapy, FFT, multidimensional treatment foster care, and BSFT. Although there was evidence that these models have been successful, greater effectiveness has been identified in community settings. They concluded that more studies need to be done to determine if the other therapies can be interchanged and utilized in community settings.
- **Krampe et al. (2013)** completed a review of ADHD and SUD literature. They concluded ADHD is a key risk factor in the development of SUD. Also, the authors reported that ⅓ of all males treated for SUD were diagnosed with ADHD.

- **Robbins et al. (2011)** conducted a randomized trial for substance abuse youth in eight community treatment sites. The authors attempted to determine which form of treatment was more effective between BSFT, which included the family in the treatment process, and treatment as usual (TAU), which only treated the youth. It was determined BSFT was more effective in engaging a family and allowing them to provide support of the substance-abusing youth as it showed a more significant rate of abstinence at the 1-year follow-up assessment.
- **Sexton and Turner (2011)** studied the effectiveness of FFT compared to probation services, in a community juvenile justice setting, 12 months' post-treatment. They found that FFT was efficacious when therapists did not deviate from any factors of the treatment model. The youth receiving FFT showed a statistically significant reduction in their violent crime and recidivism.
- **Shepler, Newman, Cleminshaw, Webb, and Baltrinic (2009)** conducted a study analyzing integrated co-occurring treatment (ICT) and nonintegrated treatment (TSS), to determine which intervention was more effective for youthful offenders. The youth who received ICT showed improvement in both mental health and substance abuse. Conversely, the youth in the TSS group only improved their mental health.
- **Szapocznik et al. (2012)** reported on the evolution of BSFT over the past 40 years. The authors concluded that BSFT is appropriate across all ethnic/racial

groups. The authors showed that BSFT, implemented in a community, allows family interactions to support the process and the individual.

- **Tiet and Schutte (2012)** set out to determine which of the three programs—co-occurring disorder, substance use, or psychiatric treatment programs—had the greatest efficacy for the treatment of individuals with co-occurring disorders. The dual- diagnoses program addressed both the mental health and SUDs. This approach was more effective than both substance abuse and the psychiatric specific treatment programs.

Problem Statement

There have been approximately 1.3 million youth diagnosed with SUD (Alkema, King, & Tadehara, 2015; USDHHS 2015). Adolescent SUD is a serious health concern in the United States as only 15% of adolescents receive treatment for their SUD (Krampe et al., 2013; SAMSHA 2015). A co-occurring disorder occurs when an individual has both a mental health diagnosis and SUD simultaneously. Ninety percent of youth diagnosed with co-occurring disorders have mental health disorders that existed before an SUD developed (Shepler et al., 2009; SAMSHA, 2015).

As youths are often dealing with factors such as poverty, homelessness, and neglect, and these factors may increase a youth's desire to utilize illegal substances as a way of coping with or escaping from their family stressors (Henggeler & Sheidow, 2012; Pottick, Warner, Vander Stoep, & Knight, 2014). The number of youth who are receiving treatment for co-occurring disorders has increased from 20% in the early 1990s to 33% in 2014 (Anderson, 2008; SAMSHA, 2014; USDHHS, 2015). Youth who do not get the

adequate treatment for their co-occurring disorder may face challenges that can cause undue stress on themselves, as well as their families (Henggeler & Sheidow, 2012; Pottick et al., 2014). Therefore, the problem that I addressed through this project was the negative impact of co-occurring disorders including untreated mental illness and substance abuse disorders. Negative outcomes include health issues, homelessness, lack of education opportunities, and problems with interpersonal relationships.

Purpose of the Study

Although there has been evidence that BSFT and FFT have been successful in treating youth with co-occurring disorders, family therapies are the preferred form of treatments for youth who are exhibiting problematic behaviors and co-occurring disorders (Danzer, 2014; Robbins et al., 2011, Shepler et al., 2009; Szapocznik et al., 2012). It is essential to provide more evidence-based results on effective interventions for clinicians (Sexton & Turner, 2011). Through an extensive search of previous literature, I found no evidence of researchers who have compared the two types of treatment. Further research is warranted to address the documented problem of determining effective treatment for youth with co-occurring disorders, which can decrease the need for higher levels of intervention (Denby et al., 2011; USDHHS, 2015). The results of my research may provide clinicians with additional information and resources when determining what form of treatment to utilize when working with adolescent males diagnosed with ADHD and SUD. This research can be valuable when determining treatment plans for youth with co-occurring disorders throughout the United States and the world.

Research Question

The following research question and corresponding hypotheses were used for this study.

RQ: What is the relationship between the type of therapy (BSFT or FFT), demographic factors (age, race, type of drug used) and therapy discharge status (successful or unsuccessful) in male youth with a co-occurring disorder of ADHD and SUD?

H_0: There is no statistically significant predictive relationship between the type of therapy (BSFT or FFT), demographic factors (age, race, type of drug used) and therapy discharge status (successful or unsuccessful) in male youth with a co-occurring disorder of ADHD and SUD.

H_a: There is a statistically significant predictive relationship between the type of therapy (BSFT or FFT), demographic factors (age, race, type of drug used) and therapy discharge status (successful or unsuccessful) in male youth with a co-occurring disorder of ADHD and SUD.

Theoretical Framework

The theoretical basis for this scholarly study was the Bowen Family Systems Theory (BFST).

> BFST is one means of assessing and treating the chemically dependent individual as an individual function learned within the family of origin. This comprehensive assessment utilizing BFST analyzes the family of origin with concepts described by Bowen: differentiation of self, family emotional system, family projection

process, sibling position, triangles, cut-off, and multigenerational transmission. (Cook, 2007, p. 131)

Both the BSFT and FFT treatment methods utilize the principals of BFST and recognize that the family member's problematic behaviors stem from unhealthy family interactions (Cook, 2007).

Nature of the Study

I conducted a cross-sectional correlational study to determine the predictive relationship between the independent and dependent variables in my experiment. Independent variables were BSFT and FFT (types of therapy). The dependent variable was the discharge status (0 = unsuccessful; 1 = successful). Participants were deemed successfully discharged from treatment when they met all requirements of the treatment program and needed no further treatment. Participants were considered unsuccessfully discharged when they had not met all the requirements of the treatment program, did not receive additional treatment from the mental health agency, and had to seek additional treatment elsewhere.

I utilized three statistical processes to measure the differences in the outcomes of BSFT and FFT. First, descriptive statistics (frequencies) described the population and distributions of the independent and dependent variable categories. Second, *t*-test analyses determined whether there are any statistically significant differences between the independent variables, relative to the dependent variables. Lastly, multiple logistic regression was applied to generate an odds ratio (OR) to determine the predictive relationship between the independent variables and the dependent variable.

This quantitative study utilized secondary data from A Step Beyond, Inc (ASBI). To determine the type of treatment the youth received, as well as whether the youth were successfully or unsuccessfully discharged from treatment. Information from assessments, comprehensive clinical assessments, and discharge summaries were used. All information converted to numerical data.

Definition of Terms

This study utilized the following terms:

Attention deficit hyperactivity disorder (ADHD): ADHD is a neuro-developmental disorder diagnosed in youth up to age 12 (CDC, 2016). The three types of ADHD include (a) predominantly inattentive presentation, (b) predominantly hyperactive-impulse presentation, and (c) a combination of the first and second in which inattentiveness and hyperactivity-impulsivity are equally present in the youth (American Psychiatric Association, 2013). There is no specific test for the diagnosis of ADHD (Felt, Biermann, Christner, Kochhar, & Harrison, 2014). However, the criteria presented in the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*) is recognized in the displayed behaviors of the youth (CDC, 2016; Felt et al.,2014).

Co-occurring disorders: A condition whereas an individual is diagnosed with a mental health disorder as well as a substance abuse disorder (Alkema et al., 2015; Shepler et al., 2009). Multiple terms used in place of co-occurring disorders include *coexisting*, *comorbid*, and *dual diagnosis*. I used the term *co-occurring* to refer to male adolescents diagnosed with mental health disorders; specifically, ADHD and SUD.

Mental health disorder: A medically diagnosable illness that causes a person to suffer from problems such as impairments and relational abilities (Rogers & Pilgrim, 2014). The most common types of mental health disorders in children include ADHD, conduct disorder, posttraumatic stress disorder, and opposition defiant disorder (SAMSHA, 2015).

Substance use disorder (SUD): A term used to define the mild, moderate, or severe usage of substances. SUD is determined by the *DSM-5* criteria (SAMSHA, 2015). For an individual to meet the criteria for having a SUD, the use of the alcohol or drug must cause significant impairment in their daily lives (SAMSHA, 2015).

Assumptions

A primary assumption associated when using archival data is that the data are accurate (Jones, 2010). ASBI is an organization founded by myself and three partners located in Hampton Roads Virginia that provides BSFT and FFT to youth diagnosed with co-occurring disorders. ASBI has ongoing quality assurance monitoring to ensure the accuracy and completion of all files. The therapists who provide treatment are licensed professional counselors and certified substance abuse counselors with no disciplinary actions on their records. Therefore, I assume that they have provided appropriate treatment, and have not shown bias when, at the end of treatment, determined youth as having been successfully or unsuccessfully discharged.

Scope and Delimitations

The study was a cross-sectional correlational study, performed to determine whether a predictive relationship exists between the independent and dependent

variables. Independent variables represented the type of therapy delivered (BSFT and FFT). The dependent variables represented the discharge statuses (0 = unsuccessful; 1 = successful). All the data used for this study came from ASBI's Comprehensive Clinical Assessments and Discharge Summaries. The participants' information used in this study met the following two criteria: (a) 14 to 17 years of age and (b) co-occurring ADHD and SUD. All clients included in this study met the criteria.

Limitations

There were two limitations to this study. The first limitation involves the use of archival data, as I had no control over how the data were collected (Jones, 2010). The second limitation to the study is the use of data collected from a single agency. When utilizing data from a single source, caution must be taken when generalizing of the entire population of youth diagnosed with a co-occurring disorder.

Significance of this Study

There are disparities in the delivery of treatment of youth who have been diagnosed with a mental health and SUD. This is due to various assessment, diagnosis, and treatment procedures of mental health agencies (Chapman & Schoenwald, 2012; Denby et al., 2011). Youth are often expected to first be treated for their mental health disorder prior to engaging in substance abuse treatment (Chapman & Schoenwald, 2012; Denby et al., 2011; Shepler et al., 2009). This form of fragmented intercession has led to undesired conclusions such as relapse and additional psychiatric treatment before enrolling into a substance abuse treatment program (Chapman & Schoenwald, 2012; Denby et al., 2011; Shepler et al., 2009). According to Shepler et al. (2009) and the

National Alliance on Mental Illness (2015), mental health therapists and substance abuse counselors have agreed that it is essential for treatment for both disorders be conducted at the same time, which in most cases will produce a better outcome with long-term success. This research may provide information on an effective treatment approach that decreases the likelihood of relapse by clients diagnosed with ADHD and a SUD.

Summary

This chapter provided a summary of the study and addressed the problem of limited evidence-based research for youth diagnosed with a co-occurring disorder. This quantitative study utilized archival data from ASBI, Inc. to conduct a cross-sectional correlational study to determine the predictive relationship between the independent and dependent variables. The next section, Chapter 2, contains an in-depth literature review that discusses the foundation of this study.

Chapter 2: Literature Review

Introduction

Approximately 1.3 million youth in the United States are diagnosed with a SUD (Alkema et al., 2015; USDHHS, 2015). Adolescent SUD is a growing health concern in the United States, and currently only 15% of adolescents receive treatment for their SUD (Krampe et al., 2013; SAMSHA, 2015). Researchers indicated that ⅓ to ½ of adolescents with SUD also have co-occurring ADHD (Wilens, 2006).

The co-occurring disorder diagnosis is determined when an individual has both a mental health and SUD simultaneously (Shepler et al., 2009; SAMSHA, 2015). Ninety percent of youth diagnosed with a co-occurring disorder have had a mental health disorder that existed before a SUD develops (Shepler et al., 2009; SAMSHA, 2015). Treatment protocols for adolescents diagnosed with a co-occurring disorder are not well developed, compared to treatment models available for adults (USDHHS, 2015). There has been an increase in empirically supported treatments over the past 30 years for youth diagnosed with co-occurring disorders, yet there still is limited evidence of any significant and long-lasting improvements (Hulvershorn, Quinn, & Scott, 2015).

The purpose of this study was to examine the use of BSFT and FFT with youth diagnosed with ADHD and SUD and to determine which treatment was more effective. Both BSFT and FFT have been shown to be effective in treating youth with co-occurring disorders. However, with limited evidence-based research, clinicians cannot make an informed decision on what protocol provides better results for their adolescent clients.

Based on my review of the literature, I was unable to find a comparative analysis on the use of BSFT and FFT on youth who have been co-diagnosed with ADHD and SUD. These two forms of treatment are used in youth substance abuse treatment (SAMSHA, 2015). Family therapies are the preferred form of intercessions for youth who are exhibiting problematic behaviors and co-occurring disorders, yet it is essential more research be conducted on effective treatments for clinicians (Sexton & Turner, 2011). Further research on decreasing higher levels of intervention through effective treatment for youth is warranted (Denby et al., 2011; USDHHS, 2015). The results of my research provide clinicians with additional information and resources when determining what form of treatment to utilize when working with adolescents diagnosed with ADHD and SUD. This research is valuable when determining treatment plans for youth with co-occurring disorders throughout the United States and the world.

Literature Search Strategy

I conducted a literature search using Walden University Library resources as well as the search engine Google Scholar. The Walden library databases searches were as follows: Academic Search Complete, American Doctoral Dissertations, Business Source Complete, CINAHL Plus Will Full Test, Cochrane Central Register of Controlled Trials, Cochrane Database of Systematic Reviews, Cochrane Methodology Register, Communication & Mass Media Complete, and Computers & Applied Sciences Complete.

I also accessed the Database of Abstracts of Reviews of Effects, eBook Collection (EBSCOhost), Education Source, Education Research Complete, ERIC, GreenFILE, Health and Psychosocial Instruments, and Health Technology Assessments. Examination

of Hospitality & Tourism Complete, International Security & Counter Terrorism Reference Center, LGBT will Full Text, Library, Information Science & Technology Abstracts, MEDLINE with Full Text, Mental Measures Yearbook with Tests in Print, the Military & Government Collection, the NHS Economic Evaluation Database, Political Science Complete, Primary Search, PsycARTICLES, PsychBOOKS, PsycCRITIQUES, PsycEXTRA, PsycINFO, PsycTESTS, Regional Business News, Research Starters-Education, SocINDEX with Full Text, and Teacher Reference Center concluded the Walden library database search.

The following keywords were used: *co-occurring disorders*, *substance abuse, youth*, *Brief Strategic Family Therapy*, *Functional Family Therapy*, *treatment, prevention*, *implementation*, *therapy, adolescents*, *ADHD*, *Bowens Family Systems Theory*, *integrated treatment*, and *comparative analysis*. I sorted the results by research that discussed using BSFT or FFT for youth diagnosed with co-occurring disorders. Also, I searched for alternative ways of addressing the issue of youth who are diagnosed with co-occurring disorders and subsequently narrowed the search results, with the focus on four terms, *BSFT*, *FFT*, *ADHD*, *SUD* and *co-occurring disorders*.

In this chapter, I discuss the strategies used to conduct the literature search including library databases and search engines used. Furthermore, this chapter includes the key search terms used and the treatment protocols that were analyzed along with the theoretical foundation for the study and an analysis of theory application throughout similar research. A synthesis of the literature reviewed for this study is discussed in detail in this chapter.

Theoretical Framework

BFST

BFST was developed by Dr. Murray Bowen and focuses on the broad view of the family rather than on the individual view of the family member experiencing an issue (Titelman, 2014.). According to Skowron, Epps, Cipriano, Rabin, and Mikulincer (2015), BFST has two fundamental guiding principles. The first principle addresses how the emotional functioning of every family member plays a crucial role in the occurrence of psychiatric, medical, and social illness within a specific family member (Skowron et al., 2015). The second principle addresses how all the intervention activities should not be directed towards the affected person (Skowron et al., 2015). Skowron et al. suggested when the symptomatic person is not directly treated, it introduces a new way in which the previously difficult clinical situations is addressed. Titelman (2014) stated that some of the problems solved through the introduction of BFST include addressing difficulties that arise from conditions where symptomatic persons refuse to seek therapy, or where a member of a family is forced to seek treatment.

BFST does not mandate that the entire family be present at the time when the counseling process is ongoing but emphasizes that counseling should be undertaken in such a manner that it conceptualizes reciprocity in functioning among the family members (Skowron et al., 2015). In previous research, Titelman (2014) summed up the theory by stating that in BFST there should be a therapeutic relationship between one member of the family who is intending to change his or her emotional functioning within a family unit and a therapist who is providing the therapy to the family member.

Application of Family Therapies and Bowen Family System Theory (BFST)

Previous researchers established a relationship between BSFT and FFT (Randall & Bodenmann, 2013). The fundamental principle that underlines BFST is the focus on specific emotional behaviors in symptomatic individuals to defuse the level of anxiety among the family members (Randall & Bodenmann, 2013). Spencer (2015) pointed out that a primary cause of apprehension in families is a notion of excessive distance or closeness in a relationship. Often, the degree of anxiety and other mental health disorders addressed through BSFT and FFT are determined by external stressors, as well as sensitivity to a way of life passed down through generations (Spencer, 2015). To avoid a situation where family members react anxiously to perceived emotional demands, BFST offers families the capacity to think through various relational dilemmas endemic within a family setting where there are symptomatic individuals (Spencer, 2015).

The core objectives of BFST are to reduce anxiety within an individual and their family by enhancing awareness of how the emotional system within a family setting functions (Spencer, 2015). BFST encourages the level of diversity within the family setting (Randall & Bodenmann, 2013). BFST places the focus of change on the individual and not on the other family members (Randall & Bodenmann, 2013). According to Kerr (2000), to achieve the stated objective BFST uses the following 8 principles:

(1) *Triangles* are a three-person system in which two people are experiencing anxiety, and a third person is introduced to relieve some of the anxiety.

(2) *Differentiation of self* relates to how the family affects how an individual in the family thinks, feels, and acts. The effect on each family member varies depending on how susceptible they are conforming to the group or how much pressure the group puts on the individual to adapt.

(3) *Nuclear family emotional system* includes four basic relationship patterns in families that demonstrate where problems begin. The relationship patterns are marital conflict, dysfunction in one spouse, impairment in one or more children, and emotional distance.

(4) *Family projection process occurs* when parents project their emotional problems onto a child, leading to the child to begin demonstrating emotional or behavioral difficulties as a result.

(5) *Multigenerational transmission process* describes how a parent's view towards family members is transmitted and accepted through a multigenerational unit. Furthermore, how the differential of self is realized is a constituent of the multigenerational transmission process.

(6) *Emotional cutoff* defines an individual cutting off emotional contact with members of their family to manage the unresolved issues they have with a member of the unit.

(7) *Sibling position* refers to the oldest, middle, and youngest child taking on predictable roles in the family unit. Bowen used the foundation of psychologist Walter Toman's research to develop this concept.

(8) *Societal emotional process* refers to people being anxious based on societal factors such as scarcity of natural resources, economic forces, and lack of skills for living in a diverse world.

Boszormenyi-Nagy and Framo (2013) stated that in family-based intervention programs such as BSFT and FFT, BFST provides fundamental principles of engagement between a therapist, symptomatic individual, and the rest of the family members. The theory points out the role of the therapist in both BSFT and FFT and the process of connecting without being emotionally reactive with family members who have a member with co-occurring disorders. Emphasis focused on asserting that a therapist should maintain an appropriate demeanor through the entire process of therapy (Boszormenyi-Nagy & Framo, 2013).

According to Spencer (2015), during the process, a therapist should not be under or over responsive as he or she provides treatment to an individual diagnosed with a co-occurring disorder within a family dynamic. Spencer further reiterated that a therapist should maintain a calm demeanor as the family begins to learn about itself as a fundamental emotional process. As therapists utilizing BSFT or FFT engage with the family, Bowen instructs therapists to move out of the helping position and get the families and the affected individuals to accept responsibility for their change.

Literature Review Related to Key Variables and Concepts

According to Hawkins (2009), there are many consequences for youth not receiving appropriate treatment for their co-occurring disorders. However, the stigma associated with mental and SUDs can keep youth and their caretakers from seeking

treatment. Caretakers are often anxious about the social implications as well as the financial cost of treatment. Therefore, treatment for co-occurring disorders must be integrated to address the mental health and SUDs (Hawkins, 2009; Krampe et al., 2013). Failure to provide integrated treatment may result in a further intervention that can lead to financial burdens on the families of the affected youth (Alkema et al., 2015). Youth who do not receive appropriate treatment will often find themselves facing serious problems to include; serious medical and legal problems, incarceration, suicide, school difficulties and dropout, unemployment, and poor interpersonal relationships (Hawkins, 2009)

Other researchers have reported that co-occurring disorders contribute to adolescents' social and academic impairments (Becker et al., 2012; Marshall, Evans, Eiraldi, Becker, & Power, 2014). Victimization of youth is a contributing factor in their co-occurring disorder diagnosis (Sabri, 2012). To provide effectual treatment for youth with co-occurring disorders, clinicians must be competent in the assessment and treatment process (Denby et al., 2011). However, Denby et al. (2011) found that clinicians reported having limited skills in the treatment of co-occurring disorders in youth and would need to increase their knowledge and skills to be competent in the delivery of appropriate treatments. Adolescents with co-occurring disorders require comprehensive service delivery for an extended period, which will prevent further intervention and relapse (Mendenhall, Fontanella, Hiance, & Frauenholtz, 2014).

BSFT

BSFT is a short-term family-based intervention program tailored for youth. The underlying principle behind BSFT involves youth diagnosed with behavioral problems

receiving support from the family while undergoing treatment (Szapocznik et al., 2012). According to Robbins et al. (2011), the foremost goal of BSFT is to decrease the behaviors that are considered problematic among young people. BSFT uses family therapy techniques to enhance the level of interactions among the different family factions, consequently increasing positive family relationships (Szapocznik et al., 2012).

According to Briones, Robbins, and Szapocznik (2013), a strength identified within BSFT is the capacity of the model and the therapist to appreciate the existence of interdependency among family members, meaning what affects the adolescents within a family dynamic also affects the rest of the family members. A second strength that was attributed to BSFT was the ability of BSFT to address the pattern of interaction within the family system and identifying the cause of the detrimental behavior in the youth. A third strength is the adaptability of BSFT in administering intervention programs within a family dynamic (Briones et al., 2013).

Szapocznik et al. (2012) tracked the evolution of BSFT over a period of four decades as the theory was used in different family settings with varied racial and ethnic backgrounds. The unique structure and programs provided in BSFT make it one of the most preferred family-based intervention programs. BSFT is easily implemented with the family offering support to the adolescent throughout the entire therapeutic process. Cleek, Wofsy, Boyd-Franklin, Mundy, and Howell (2012) pointed out that getting a family engaged throughout the therapeutic process is often as difficult as treating the behavioral problems. BSFT has been tailored to engage family members and the affected adolescent and to retain them in treatment (Cleek et al., 2012).

FFT

FFT provides interventions not only to youth but across the family spectrum. Antshel (2013) noted that FFT aims at ascertaining whether the relationship at the family level promotes positive interaction and growth of the youth before addressing problems linked to the behaviors of the youth. FFT interacts with children at the family level through a sequential process that includes engaging the entire family, motivating them, assessing the level of relations among the family members, introducing intervention programs, and finally presenting the concept of generalization among the family members (Sexton & Alexander, 2015). Antshel identified the lasting impact that FFT has on the behavioral patterns of the adolescents, with behavioral stability being evident even after a five-year follow-up.

Sexton and Turner (2011) studied youth who had been released from the juvenile justice system and indicated that FFT is a more effective family-based intervention program for treating adolescents identified as having co-occurring disorders compared to the use of probation services accessible through the community juvenile justice program. After analyzing a group of youth for 12 months after receiving treatment from either probation services offered through the community juvenile justice programs or FFT, the study concluded that FFT was more effective as compared to the intervention program given through probation services (Sexton & Turner, 2011).

Therapist adherence to the principles of FFT is essential when administering this form of treatment (Sexton & Turner, 2011). When there was high therapist adherence to the treatment protocol, FFT demonstrated a 21% reduction in misdemeanor recidivism, a

30% reduction in violent crime, and a 35% reduction in felonies (Sexton & Turner, 2011).

Darnell and Schuler (2015) also reported that FFT has been widely used in a variety of community settings and has proven to be effective. However, they caution there is little evidence that FFT is successful as an intervention when treating racial/ethnic minorities (Darnell & Schuler, 2015). Minority youth are overwhelmingly represented in a Juvenile Justice System which typically offers the probation supervision and the FFT youth model (Darness & Schuler, 2015). These models show promising results in effectiveness with minority youth (Darnell & Schuler, 2015). Despite the prevalence of using FFT in community settings, further research is needed to demonstrate the effectiveness of the treatment of minority youth (Darness & Schuler, 2015).

Youth and SUD

Approximately 67% of the American population who are aged 12 years or older consumed alcohol in the year 2014. Of these individuals, 6.4% met the *DSM-5* criteria for having a SUD (SAMHSA, 2014). While only 15% of the 1.3 million youth diagnosed with substance use received treatment for a SUD, the SAMHSA (2014) indicated use of illicit drugs among adolescents increased in the last 10 years, rising from approximately 8.3% (2004) to 10.2% by the year 2014 (SAMHSA, 2014). Previous researchers have suggested marijuana is a gateway drug and often leads to an individual wanting to increase the level of psychoactive effects (CDC, 2016; USDHHS, 2015). During the last decade, there has been a dramatic increase in opioid overdose among adolescents (USDHHS, 2015).

Factors such as poverty, neglect, and homelessness were fueling the desire for youth to engage in illicit drugs as a way of coping with these problems (Belendiuk et al., 2016; Henggeler & Sheidow, 2012). Major transitions in a child's life is another factor in their drug use (CDC, 2016). Major transitions include experiencing new social situations as in the transition from elementary to middle and high schools (CDC, 2016).

Substance Use Treatment

Treatment for substance abuse can encompass many components including individual and group counseling, inpatient and residential treatment, intensive outpatient treatment, peer support, recovery support services, and medication (Centers for Disease Control and Prevention, [CDC] 2016). Adolescents are often resistant to treatment, so the burden is placed on parents to ensure that they adhere to treatment (Kirby et al., 2015). It is essential not only for the adolescent to enter treatment, but to complete the program and participate in aftercare services to reduce the likelihood of relapse (Versek et al., 2015). Motivational Interviewing (MI) has been a tool that has produced good outcomes at the six-month follow-up of adolescent drug users post treatment (Brown et al., 2015). However, there was no significant outcomes noted at the twelve-month follow-up (Brown et al., 2015).

Family-based interventions to treat youth substance abuse have been highly successful in comparison to individual and group treatment approaches (CDC, 2016; Hogue & Liddle, 2009). The causes of adolescent drug abuse vary and include mental illness, physical abuse, emotional abuse, trauma, or sexual abuse (Brown et al., 2015). Family-based approaches address a wide array of issues within the family structure and

help the family recognize the underlying causes and triggers for the adolescent (NIDA, 2014).

Illicit drug use amongst adolescents can have a lasting effect on their brain development and cause familial and peer relational problems (NIDA, 2014). Family and community involvement has been consistently deemed appropriate to address adolescent substance abuse issues (Versek et al., 2015). It is the parent' responsibility to remain vigilant when addressing issues of substance use and abuse and not allow adolescents to sweep the problem under the rug (Kirby et al., 2015).

Family therapy models have been successful in the treatment of youth substance abuse but do not single out the affected individuals (CDC, 2016). The entire family is treated to ensure that they address the problems associated with the substance abuse (Kirby, et al., 2015). Substance abuse treatment tailored to individuals and their family is imperative (NIDA, 2014). Having a one size fits all approach is not beneficial (NIDA, 2014). Therefore, even when evidence-based methods are utilized, it is essential for the therapist to address the specific needs of the individual family members (NIDA, 2014).

Furthermore, adolescents not addicted to illegal substances still benefit from substance abuse intervention programs (Brown et al., 2015). Substance abuse intervention programs typically providing evidence of the consequences of using illicit substance uses. This evidence (homelessness, family separation, academic underachievement, and juvenile justice interventions) often serves as an effective deterrent for youth contemplating this activity (NIDA, 2014).

Youth and ADHD

ADHD is a neuro-developmental disorder diagnosed in youth up to age 12 (CDC, 2016). The three types of ADHD are: (1) predominantly inattentive presentation. (2) predominantly hyperactive-impulse presentation. (3) A combination of inattentiveness and hyperactivity-impulsivity (American Psychiatric Association, 2013). There is no specific test for the diagnosis of ADHD, so the criteria presented in the *DSM-5* must be recognized in the displayed behaviors of the youth (CDC, 2016; Felt et al., 2014).

There are approximately 6.4 million children diagnosed with ADHD (CDC, 2016; Felt et al., 2014; Polanczyk, Willcutt, Salum, Kieling, & Rohde, 2014). As of 2014, 6.2% of girls and 14.1% of boys are diagnosed with ADHD (CDC, 2016). The annual cost associated with ADHD in the United States ranges from $143 to266 billion annually (CDC, 2016; Meppelink, de Bruin, & Bögels, 2016).

Most of the costs are due to adult loss of income (Meppelink, de Bruin, & Bögels, 2016). However, $38 to 72 billion is related to healthcare and education costs for children (Doshi, Hodgkins, Kahle, Sikirrica, Cangelosi, Setyawan, Erder, Neumann, 2012; Meppelink, de Bruin, & Bögels, 2016). “Educational-related costs come from children receiving special education services, occupational, speech and physical therapy, grade retention, disciplinary incidents and school counseling” (Doshi et al., 2012). Between 30% and 40% of students diagnosed with ADHD require special education services (Barkley, 2015). Costs of annual health care for children vary depending on the severity of the disorder and range from between $16.97 billion to $25.86 billion annually (Doshi et al., 2012).

Children with ADHD experience functional impairment in everyday life activities (Stern, 2001). Untreated ADHD results in familial and peer relational problems, school failure, truancy, and eventually dropping out of school (Chan, Fogler, & Hammerness, 2016). Adolescent males are at increased risk for delinquent and anti-social behavior which have long-term negative consequences including emotional disorders and incarceration (Stern, 2001).

The juvenile justice system was responsible for providing a rehabilitative/ medicalization approach which diverted from the punitive features that were faced by adults. Community-based programs became the intervention of choice for youth who had a mental health diagnosis and exhibited juvenile delinquency. However, as the number of community-based programs decreased, the juvenile justice systems detention approach became the alternative for these youths.

The shift from community-based programs to the juvenile justice system was a detriment to adolescents because the justice system was not equipped to address the acute needs of the adolescents diagnosed with a mental illness (Underwood & Washington, 2016). The number of adolescents in the juvenile justice system diagnosed with a mental illness is consistently higher than that of adolescents not incarcerated (Gilbert, Grande, Hallman, Underwood, 2014; Underwood & Washington, 2016). The author's recommended seeking alternatives to incarcerating youth because long-term confinement leads to higher incarceration and recidivism rates.

Community-based programs provide therapists who are more equipped to deal with mental health diagnoses as well as being more cost-effective (Underwood &

Washington, 2016). Juvenile delinquency approaches, in conjunction mental health concerns should include family-based interventions (Underwood & Washington, 2016). "The models of treatment are most effective when they involve, thoroughly trained professionals, families and youth, are community-based, and deal with problem behaviors and stresses as a systemic unit" (Underwood &b Washington, 2016, p. 9).

ADHD Treatment

Treatment for ADHD includes behavioral therapy, parent training, and medication (CDC, 2016; Felt et al., 2014; Polanczyk et al, 2014). Less than 1 out of 3 children receiving treatment for ADHD received the ideal treatment protocol both medication and behavior therapy, (CDC, 2016). Approximately nine million children are prescribed with medication for their ADHD, yet it is reported that medication is underutilized for children diagnosed with ADHD (Hogue, Lichvar, & Bobek, 2016). While the Clinical Practice Guidelines of the American Academy of Paediatrics (2011) recommended behavioral therapy for children six years of age and younger, the Academy also recommended children six years of age and older undergo both behavioral therapy and medications.

Parent training programs in behavioral therapy provide new skills to parents to guide their children in exhibiting appropriate behaviors (CDC, 2016). Parent training is essential to reinforce what the child is learning in therapy (Hogue, Lichvar, & Bobek, 2016). In addition to therapy and medications, there are other ways to manage the symptoms associated with ADHD (CDC, 2016; Hogue, Lichvar, & Bobek, 2016). Healthy diet, staying active, limiting the use of electronic devices, and getting proper

sleep will increase symptom management for adolescents diagnosed with ADHD (CDC, 2016).

If adolescent ADHD goes untreated, it may lead to juvenile delinquency and substance abuse (Underwood & Washington, 2016). Untreated adolescent ADHD presents greater challenges as the adolescent enters adulthood. They may exhibit daily functional impairments, leading to the inability to maintain employment (Underwood & Washington, 2016).

Youth with Co-occurring Disorders

According to the USDHHS (2015), 43% of adolescents in the United States receiving mental health services also had a co-occurring SUD. The report further indicated that the number of youth diagnosed with a co-occurring disorder were almost equal with those of adults, estimated between 50% and 75% (USDHHS, 2015; Bergman, Greene, Slaymaker, Hoeppner, & Kelly, 2014). The associated mechanisms in which ADHD enhances the chances of an individual developing substance abuse disorder include emphasizing self-medication, engaging in risky behaviors, deviant peer association, conduct disorder, and academic failure (Krampe et al., 2013).

ADHD is a strong predictor of developing SUD, and therefore, therapists and practitioners should use family-based intervention programs to treat such co-occurring disorders (Krampe et al., 2013). Youth diagnosed with ADHD are almost two times more likely to be diagnosed with alcohol use disorder than children who do not have ADHD (Belendiuk, Pedersen, King, Pelham & Molina, 2016; Charach, Yeung, Climans, & Lillie, 2011). The documented co-morbidity linked between ADHD and SUD

necessitates that ADHD is integrated into psychiatric, addictive, educational, cognitive, social, and family evaluation and made available for adolescents (Krampe et al., 2013).

Substance use by individuals who have mental health problems cause societal health burdens, specifically increased healthcare costs (SAMSHA, 2014; Williams, Steinberg, Griffiths, & Cooperman, 2013). Preventive measures for both SUDs and mental health disorders may go a long way in improving the physical and behavioral health of American citizens (SAMSHA, 2014; Schoenwald, Chapman, Henry, & Sheidow, 2012). The SAMSHA (2014) indicated that individuals diagnosed with mental health disorders have a higher risk of SUDs compared with individuals who are not affected by a mental health disorder. By the year 2014, 18.2% of adolescents diagnosed with mental illness also used illicit drugs (SAMHSA, 2014). In addition to illegal drugs, individuals diagnosed with co-occurring disorders also register the highest rate of tobacco use (Goodwin, Sheffer, Chartrand, Bhaskaran, Hart, Sareen, & Bolton, 2014; Prochaska, Fromont, Wa, Matlow, Ramo, & Hall 2013SAMSHA 2014).

Treatment for Co-Occurring SUD/ADHD

The available treatment models for adolescents are not well developed as compared to treatment models available for adults (Alkema et al., 2015; USDHHS, 2015). Treatment options focus on either the substance use or the mental health disorder but not both (USDHHS, 2015; Bergman, Greene, Slaymaker, Hoeppner, & Kelly 2014). The USDHHS (2015) indicated that youths with both mental health disorders and a SUD but only received treatment for their mental health disorder showed significant improvement in mental health, but not in substance use. Conversely, youth who received

treatment for SUD and not mental health intervention showed significant recovery in SUD but not in mental health (USDHHS, 2015). The authors determined there are unmet intervention needs for adolescents diagnosed with both mental health and SUD (USDHHS, 2015). The USDHHS concluded that efforts be channeled towards improving the intervention programs targeting adolescents with co-occurring disorders by eliminating barriers that may hinder suitable provision of care and intervention services.

There are various treatment protocols available to treat youth who have been diagnosed with ADHD and SUD. Sexton and Turner (2011) stated with juvenile crime rising, an effective intervention program for treating adolescent youth diagnosed with co-occurring disorders needs to be identified. Shepler et al. (2009) conducted a study comparing integrated co-occurring treatment (ICT) and nonintegrated treatment (TSS) to determine which intervention is more effective treating adolescents diagnosed with a co-occurring disorder. To provide services to adolescents diagnosed with substance abuse and mental health disorders, ICT utilizes an integrated treatment approach that incorporates an intensive home-based method of service delivery. According to Shepler et al. (2009), ICT provides a pro-social recovery environment for adolescents through the establishment of positive connections, functional success, strategic accommodations, relational support, adaptive skills, and emotional coping strategies on behalf of both the youth diagnosed with co-occurring disorders and their families. Shepler et al. (2009) concluded ICT is more effective as compared to TSS.

TAU is another approach used to treat youth diagnosed with ADHD and SUD. TAU includes various interventions such as outpatient therapy, group therapy, parent

training groups, nonmanualized family therapy, and case management (Robbins et al., 2011). The participant is only required to engage in one of the interventions weekly (Robbins et al., 2011). A randomized study was conducted to determine the effectiveness of BSFT compared to TAU. The study examined intervention treatments in eight community treatment sites for adolescents diagnosed with having SUD. The randomization of the program included the incorporation of adolescents from various backgrounds including Black, Hispanic, and White adolescents, as well as different therapists from the agencies who were involved in the treatment of TAU or BSFT. The researchers concluded BSFT was more effective when compared to TAU relative to adolescent and family member engagement (Robbins et al., 2011). Additionally, BSFT was more efficient as compared to TAU in retaining family members as well as in improving parent's reports of family functioning.

Henggeler and Sheidow (2012) set out to determine the effectiveness of family therapies among the youth who had previously treated for delinquency and conduct behaviors. They observed family-based therapies are effective in changing the at-risk behaviors among adolescents. Some of the assessed family-based therapies included Multidimensional Treatment Foster Care, Multi-Systemic Therapy, and FFT, and to a lesser extent BSFT, due to it being an emerging model to treat youth with substance abuse disorders. The researchers concluded family-based therapies are successful in addressing antisocial behavior in adolescents (Henggeler & Sheidow, 2012). However, the researchers did not conduct a comparative analysis to determine which therapy was

most effectual and there was not enough available research to determine if BSFT would produce similar results.

Assessment and Treatment Issues

The first step to addressing the problem of co-occurring disorders in youth is to have an appropriate assessment conducted (Lichtenstein, Spirito, & Zimmermann, 2010). However, clinicians admitted having a formal assessment process for the diagnosis of co-occurring disorders (Hulvershorn et al., 2015; Lichtenstein et al., 2010). An effective treatment program to address co-occurring disorders in youth includes an appropriate assessment, parent involvement, and specifically tailoring interventions for the youth (Hulvershorn et al., 2015). Failure to adequately assess and treat youth with co-occurring disorders may result in significant problems including school failure, criminal activity, high-risk sexual behaviors, familial conflict, and poor social relations (Hulvershorn et al., 2015; Lichtenstein et al., 2010). Mental health and substance use problems have historically been treated separately (Priester, Browne, Iachini, Clone, DeHart, & Seay, 2016). Integrated treatment is the preferred intervention to address the mental health and substance use problem simultaneously (Priester et al., 2016; SAMSHA, 2014).

According to Lichtenstein et al. (2010), many general psychotherapists do not have the skills to treat youth diagnosed with co-occurring disorders. Although substance abuse issues are identified they often go untreated (Lichtenstein et al., 2010). When there are limited or ineffective services, while the primary presenting disorder is treated the co-occurring mental health concerns are neglected (Lichtenstein et al., 2010). Failure to adequately assess and treat youth with co-occurring disorders also results in high rates of

incarceration due to their delinquent behaviors (SAMSHA, 2015). It is more expensive to incarcerate youth for their delinquent actions rather than to address the cause of their behaviors in a community-based program (Underwood & Washington, 2016). Family-based interventions such as BSFT and FFT are effective interventions for youth diagnosed with co-occurring disorders, thereby eliminating the need for higher-level interventions (CDC, 2016; Hogue & Liddle, 2009).

Summary

There is a public health need to increase the availability of effective treatment programs for youth with co-occurring disorders (Chapman & Schoenwald, 2012). According to SAMHSA (2014), approximately 66.6% of the US population who are aged 12 years or older indulged in alcohol in the year 2014. Moreover, 6.4% of these individuals met the *DSM-5* criteria for SUD (SAMHSA, 2014). The SAMHSA report further indicated that the use of illicit drugs among youth increased significantly in the last ten years from approximately 8.3% to 10.2% by the year 2014, with nearly 1.3 million youth diagnosed with SUD. Only 15% of the 1.3 million youth diagnosed with SUD received treatment for the SUDs (SAMHSA, 2014).

According to SAMHSA (2014), approximately 66.6% of the U.S. population who are aged 12 years or older indulged in alcohol in the year 2014. Moreover, 6.4% of these individuals met the *DSM-5* criteria for SUD (SAMHSA, 2014). The SAMHSA report further indicated that the use of illicit drugs among youth increased significantly in the last 10 years from approximately 8.3% to 10.2% by the year 2014, with nearly 1.3

million youth diagnosed with SUD. Only 15% of the 1.3 million youth diagnosed with SUD received treatment for the SUDs (SAMHSA, 2014).

Although co-occurring disorders in youth continue to rise, there are challenges to addressing the urgency of this issue (Boger et al., 2014; Chapman & Schoenwald, 2012). There are documented limitations to providing evidence-based treatment services and consequently clinicians continue to provide ineffective treatment (Boger et al., 2014; Chapman & Schoenwald, 2012). Henggeler and Sheidow (2012) pointed out factors such as poverty, neglect, and homelessness as leading factors that were fueling the desire for the youth to engage in illicit drugs as a way of coping with these problems. Many youths diagnosed with SUD are diagnosed concurrently with a mental health disorder (Henggeler & Sheidow, 2012). Since developers of family-based intervention programs have capitalized on many decades of research on intervention programs in BSFT and FFT, such knowledge should be used to address co-occurring disorders such as ADHD) and SUD (Henggeler & Sheidow, 2012).

While co-occurring disorders in youth continue to increase, there are challenges to addressing the urgency of this issue (Chapman & Schoenwald, 2012). Various interventions can be used to treat adolescents diagnosed with the co-occurring disorders of ADHD and SUD, however, there is limited availability of evidence-based treatment services and subsequently clinicians continue to provide ineffective treatment (Chapman & Schoenwald, 2012; Zaso, Park, & Antshel, 2015). Despite the fact BSFT and FFT are two widely used evidence-based family therapies utilized to treat adolescents with a co-occurring disorder, the effectiveness of BSFT compared to FFT has not been replicated.

Whereas BSFT and FFT have both been effective in treating youth with co-occurring disorders, a comparative analysis of the two treatment protocols has not been conducted to determine which is more effective. These findings can be used by clinicians when deciding on an effective treatment protocol for youth diagnosed with ADHD and SUD. Additionally, the individual and community implications for positive social change help minimize relapses and further treatment.

To address the gap in the literature relative to the effectiveness of BSFT and FFT, a quantitative study was conducted. The study utilizes secondary data to conduct a comparative analysis of the two treatment protocols for youth having completed either program in the past three years. Chapter three includes a discussion on the methodology used to develop a comparative examination of BSFT and FFT. Additionally, Chapter 3 includes discussion of (a) the research methodology, (b) the research design, (c) design appropriateness, (d) data collection process, (e) data instrumentation, (f) analysis, and (g) validity and reliability. Chapter 3 concludes with a summary of the topics discussed.

Chapter 3: Research Method

Introduction

There is a serious health concern in the United States regarding the 1.3 million youth diagnosed with substance abuse disorders as only 15% of these youths receive treatment for the syndrome (Krampe et al., 2013; SAMSHA, 2015). According to the USDHHS (2015), in 2015, 43% of adolescents in the United States receiving mental health services had a co-occurring SUD. They indicated that the percentage of youth diagnosed with co-occurring disorders was almost equal to adults (estimated between 50% and 75% respectively; Bergman et al., 2014; USDHHS, 2015).

Adults began receiving treatment for co-occurring disorders since the 1980s, but it was not until recently that youth are diagnosed and treated for co-occurring disorder (Anderson, 2008). Evidence-based treatment protocols for adults with co-occurring disorders improved in the 1990s when programs began to incorporate assertive outreach, motivational interventions, and cultural competence areas to their treatment plans (Anderson, 2008). A comprehensive strategy was later initiated to address both the mental health and SUDs rather than treating them separately (USDHHS, 2002).

Controlled studies of outpatient treatment for adults with co-occurring disorders have also been refined and currently there are various evidence-based treatment protocols utilized to treat adults (Horsfall, Cleary, Hunt, & Walter, 2009; USDHHS, 2015). Treatment protocols for adolescents are not as developed as treatment models available for adults (CDC, 2016; USDHHS, 2015). This study was conducted to explore whether there are differences in the effectiveness of BSFT and FFT with youth diagnosed with

ADHD and SUD. Both therapies have been proven effective in separate cases, yet clinicians cannot make informed decisions on which protocol provides better results for their adolescent clients, due to limited evidence-based research (Baldwin, Christian, Berkeljon, & Shadish, 2012; USDHHS, 2015).

Although there is evidence that both forms of action are successful in treating youth with co-occurring disorders (CDC, 2015; SAMSHA, 2015), I have been unable to find evidence of a comparative analysis between the two treatments. This analysis clarified for clinicians what approach provides better results in this population. This research provides an alternative approach relative to treatment of youth with co-occurring disorders. In addition, the social change implications increase the effectiveness of the treatment received by youth.

In this chapter, I restate the research questions and provide the purpose and significance of this study. This following chapter will include a discussion of my role as the researcher in the study, the study's methodology, and any bias and limitations. Finally, this chapter concludes with a summary of the most important points of the chapter.

Research Design and Rationale

A quantitative methodology was used to study the relationship between the independent variable (the type of therapy used, BSFT or FFT) and the binary dependent variable of discharge status (unsuccessful or successful). This study utilized a correlational research design of a cross-sectional nature and secondary data. A cross-sectional correlational design using secondary data was most appropriate because I

looked at the relationships between the variables using archival data from ASBI gathered at one point in time (Allwood, 2012; Creswell, 2009).

A quasi-experimental, case-control design was not considered appropriate due to the nonrandomization of the participants (Creswell, 2009). Case-control studies are nonrandomized experimentations that compare two similar but different groups within the same population. In this case, the participants diagnosed with a co-occurring disorder already received treatment in either BSFT or FFT.

The archival data were maintained by ASBI as part of its ongoing quality control and program evaluation efforts. This archival data provided an opportunity to study the correlation of BSFT and FFT on successful or unsuccessful discharge status. This study will assist practitioners when deciding which form of therapy is more effective in youth diagnosed with co-occurring disorders.

Methodology

Population

ASBI is an organization founded by myself and three partners and is in Hampton Roads Virginia. The organization offers an extensive array of services to adolescents and adults. The services provided include mental health skill building, intensive in-home, therapeutic day treatment, substance abuse and co-occurring disorders treatment, and outpatient therapy. For this study, I focused on the co-occurring disorders treatment for adolescents. According to the Virginia Department of Juvenile Justice (2016) Data Resource Report, 67.5% of juvenile intake cases were male and 32.5% were female. Consequently, there are a limited number of female participants referred for treatment

and as result female clients and their family members are not seen in a group setting but instead seen individually. Therefore, the study only used data from male clients.

The age range of adolescents serviced at ASBI is 14 to 17 years old. The organization offers BSFT and FFT to treat the co-occurring disorders for adolescents. Both forms of therapies include 12 sessions over a 6-week period. There are two 2-hour sessions per week. The first session is an adolescent group session and the second session is an individual session with the adolescent and their family members. One of four licensed professional counselors who are also certified substance abuse counselors provide the treatment. Participant assignment to a specific group is based on the information derived from the comprehensive clinical assessment.

This analysis is facilitated via chart review. The sample is derived from the ASBI clients who participated in either BSFT or FFT treatment. The participants selected for the sample must meet the following two criteria: (a) 14 to 17 years of age and (b) diagnosed with co-occurring ADHD and SUD. This study included all clients who met the criteria.

Sampling and Sampling Procedures

This study utilized a chart review to gather and quantify the data to determine if there was a difference in the effectiveness of BSFT and FFT on youth with co-occurring diagnoses of ADHD and SUD. The sample for the study consisted of ASBI clients, between the ages of 14 and 17, diagnosed with co-occurring ADHD and SUD. The selection of teenage clients with co-occurring ADHD and a SUD is appropriate for a

study that compares two types of family treatment for teenagers who exhibited a co-occurring disorder.

The sample size was calculated using G* Power 3.1.9.3 (descriptive frequencies, *t* test, and multiple logistic regression). The study included a power of 80% and a significance level of 5% for the a priori power analysis, degrees of specificity that are consistent with generally accepted statistical practices (Murphy, Myors, & Wolach, 2014). Satisfactory sample size for this study required a minimum of 194 participants combined. With 392 participants combined, the study has a statistically acceptable sample size.

Archival Data Collection

As a co-owner of the organization ASBI, I have received written cooperation agreement from my partners to utilize the existing data in the organization for this study (Appendix A). The archival data utilized for this study were coded in an Excel spreadsheet (by an employee of the organization) and were then imported into SPSS for data analyses. The dataset did not include the participants identifying information. To determine the type of treatment the youth received and if the youth successfully or unsuccessfully completed treatment, data were retrieved from the comprehensive clinical assessments and discharge summaries. All information was converted to quantitative data.

The administrative assistant for the substance abuse department retrieved all the relevant archived files and removed all identifying information of the participants to ensure confidentiality. She assigned each participant a number. The participants were

represented by numbers in all related documentation (example 1, 2, 3) and no client names were associated with the data. An analysis was done of all existing chart data and was input into an Excel spreadsheet. The spreadsheet included the following information: age, gender, ethnicity, diagnosis, type of treatment, and successful or unsuccessful discharge. The Excel spreadsheet was password protected by the administrative assistant and was provided only to me as the researcher. While no other employee at ASBI had access to the spreadsheet used for this study, the original files are available to the employees for purposes of ASBI work-related activities.

To ensure the data were input into the Excel spreadsheet accurately, the administrative assistant put the information into two separate spreadsheets and used a double entry software program to ensure that both spreadsheets were exact duplicates. This approach also ensured that I remained unaware of the identities of the participants. The administrative assistant was provided with the headers needed for the Excel spreadsheet. They included Type of therapy (BSFT and FFT), Age (14-17), Race (White, Black/African American, Hispanic/Latino, Mixed race, Unknown), Type of drug used (Alcohol, Marijuana, Cocaine, Methamphetamine, Heroine, Polysubstance Use [3 or more substances], other), and lastly, Discharge Status (unsuccessful or successful). She was instructed to use only the choices provided to her. An example of the spreadsheet appears in Figure 1.

Type of Therapy BSFT of FFT	**Age** 14-17	**Race** White Black/African American, Hispanic/Latino, Mixed race, Unknown	**Type of Drug Used** Alcohol, Marijuana, Cocaine, Methamphetamine, Heroine, Polysubstance Use (3 or more substances), Other	**Discharge Status** unsuccessful or successful

Figure 1. Excel spreadsheet sample.

Instrumentation and Operationalization of Constructs

Instrumentation

I did not utilize a specific instrument to collect data for this study as all data for the study were archival data collected from ASBI Community Services comprehensive clinical assessments and discharge summaries. ASBI adheres to a strict quality assurance policy set forth by the licensing agency Virginia Department of Behavioral Health and Developmental Services (DBHDS). All documents must be reviewed and approved by a licensed mental health professional (LMHP) before the document is placed in the chart. This quality assurance process ensures information contained in all documentation is accurate. The administrative assistant utilized an Excel spreadsheet that contained the headers of the information required for this study. The data gathered from the chart were clear and concise, and consequently she did not have to interpret the data, just copy them as stated in the chart.

Operationalization

The independent variables in this study were the type of therapy (BSFT and FFT), age at the time of admission, race, and type of drug used. I am not controlling for specific variables because I examined the potential relationships of the independent variables to the dependent variables in the study. The dependent variables are 0 = unsuccessful discharge and 1 = successful discharge. If a participant successfully completed either BSFT or FFT, this means they met all the program requirements. The program requirements are as follows: (a) participates in all individual and family sessions (with not more than two excused absences), (b) treatment compliance to include completing all objectives and assignments, (c) actively participates in meetings, and (d) have a negative result for all substance abuse screenings. An individual who received an unsuccessful discharge failed to meet one or more of the program requirements.

Table 1

Study Variables

Variable	Values/Coding
Type of therapy (IV)	0=Brief Strategic Family Therapy (BSFT) 1=Family Function Therapy (FFT)
Age (Demographic; IV)	Actual age at the time of admission
Race (Demographic; IV)	0=White 1=Black/African American 2=Hispanic/Latino 3=Mixed race 4=Unknown
Type of drug used (Demographic; IV)	0=Alcohol 1=Marijuana 2=Cocaine 3= Methamphetamine 4=Heroine 5=Polysubstance Use (3 or more substances) 6=Other
Therapy Discharge Status (DV)	0=unsuccessful 1=successful

Data Analysis Plan

I used three statistical processes to measure the differences in the outcomes of BSFT and FFT. First, descriptive statistics (frequencies) were used to describe the population and the distributions of the independent and dependent variable across categories in the population. Descriptive statistics are used to describe the data in the study (Etchegaray & Fischer, 2009).

The descriptive statistics showed the distribution of youth in each treatment category and the distribution of the youth successfully or unsuccessfully discharged as

well as each demographic variable collected (IVs). A *t*-test analysis was performed to determine if there were any statistically significant differences in a dependent variable between categories of an independent variable (such as ethnicity: White vs. non-White; Allwood, 2012). Lastly, multiple logistic regression was conducted to provide an analysis of the dependent variable. An OR was generated to determine the predictive relationship between the independent variables and the dependent variables. For this study, IBM SPSS Statistics 25 was the software package used for the data analysis.

Threats to Validity

Internal Validity

Internal validity is concerned whether there is a casual relationship between the independent variable and dependent variables. The goal of internal validity is to verify if the observed changes can be attributed to independent variables or from other causes. Internal threats to validity include the disparate selection of subjects, pretest bias, flawed data collection, or statistical regression (Gibbert & Nair, 2013). All participants who were selected for this study meet the following criterion: (1) 14-17 years of age and (2) diagnosed with co-occurring ADHD and SUD. Furthermore, the participants were not aware that the study was conducted. Only archival ASBI data was used to ensure strict data collection and storage, consistent with the procedure outlined by the licensing agency, DBHDS. I was not part of the treatment process for any of the participants. Therefore, I have no bias for or against any participant. The therapists who treated the participants have active licenses as a Licensed Professional Counselors (LPCs), Licensed Clinical Social Workers (LCSWs) and Certified Substance Abuse Counselors (CSACs).

Additionally, they have received training in integrated treatment for co-occurring disorders. Consistent data collection procedures minimized any threats that may affect the results.

The administrative assistant who coded the data had no impact on the data reliability or validity. She had access to the data due to her daily work functions. However, her role is limited to precisely entering data into the computer provided by the licensed mental health professionals. The administrative assistant receives bi-annual training to ensure continuing education on the rules and regulations set forth by the licensing agency. To date, the administrative assistant has always received satisfactory employee evaluations, and has no adverse corrective actions placed in her employee file. Therefore, she was the ideal candidate to assist with the coding process as she pays close attention to detail in all her daily job responsibilities.

External Validity

The goal of external validity is to determine the extent by which changes associated with a dependent variable can be generalized across the population and in other settings (Creswell, 2009; Giggert & Nair, 2013). External threats to validity include selection biases, the effect of the procedures, or interference (Giggert & Nair, 2013). All the archival data used was collected from ASBI. In addition, all the participants included in the study, live in the Hampton Roads area which consist of seven cities: Chesapeake, Hampton, Newport News, Norfolk, Portsmouth, Suffolk, and Virginia Beach. There is no reason to assume that the location or any interaction with the agency biased the results in any way. However, taking residence into account, other agency participants may have

different characteristics from the ones used in this study. Therefore, caution should be used when generalizing the results (Campbell & Stanley, 1963; Frankfort-Nachmias & Nachmias, 2008). The results of this study may promote further research in other cities across the country.

Content Validity

Content validity refers to whether the documents used to measure constructs are relevant to the objectives and learning outcomes (Rutherford-Hemming, 2015). This study used comprehensive clinical assessments and discharge summaries to determine if BSFT or FFT produce more favorable outcomes for youth diagnosed with ADHD and a SUD. The comprehensive clinical assessment includes all relevant information related to the youth's diagnosis, current and past treatment, as well as family dynamics that may affect their co-occurring disorders. The discharge summary provided detailed information regarding the successful or unsuccessful discharge status and the reason. The outcome based on the following criteria: 1-participates in all individual and family sessions (with not more than 2 excused absences), 2-treatment compliance to include completing all objectives and BN3assignments, 3- actively participant in session, 4-have a negative result for all substance abuse screenings.

Ethical Procedures

As a co-owner of the organization ASBI, I obtained a cooperation agreement signed by my three partners to utilize the existing data in the organization for this study. The three partners were provided with a copy of my approved prospectus for review to provide clarity on the scope of the data used in the study. The three partners separately

stated that they understood the scope of the data being used and verbalized their willingness to allow me to use the data. I have attached the Cooperation Agreement (see Appendix A) for this purpose.

While the youth in this study are considered protected groups of participants, I utilized existing (secondary) data and therefore informed consent was not needed from them nor their parents. This research meets the criteria for an Expedited Review Procedure by the IRB because the "research involves materials (data, documents, records, or specimens) collected, or was collected solely for nonresearch purposes" (45 CFR 46.110 and 21 CFR 56.110, 2009). Moreover, this research poses no threat to human subjects because I only used archival data.

As a Licensed Professional Counselor and an owner of ASBI, I adhered to the Hospital Insurance Portability and Accountability Act requirements set forth by the licensing agency and by the American Counseling Association (ACA) Code of Ethics which both require that I maintain the confidentiality of all client records. It is a requirement that the parents/guardians of all youth who enter treatment receive and sign a Notice of Privacy Practices as this explains the use of Protected Health Information (PHI). The document provides details on how the youth's information has remained confidential which permits the use of the PHI without authorization. I have attached a copy of the Notice of Privacy Practices (see appendix B) for Institutional Review Board (IRB) review.

The secondary data is safely secured in a locked file room that only the administrators with keys have access. ASBI has a strict policy of confidentiality that was

instituted by their licensing agency DBHDS. To ensure that all ethical concerns have been addressed and minimized, I requested permission from the Institutional Review Board (IRB) to conduct this study. The IRB was satisfied that I am abiding by the research code of ethics and therefore granted me permission to begin my study. After obtaining IRB approval, the administrative assistant began retrieving the relevant files and entering the required information into the provided excel spreadsheet. The IRB approval number for this study is 12-11-17-0060902.

According to the American Counseling Association (ACA) code of ethics (2014), code F.3.a. regarding extending Conventional Supervisory Relationships, the code states that "counseling supervisors clearly define and maintain ethical professional, personal, and social relationships with their supervisees. Supervisors consider the risks and benefits of extending current supervisory relationships in any form beyond conventional parameters. In extending these boundaries, supervisors take appropriate professional precautions to ensure that judgment is not impaired and that no harm occurs". To ensure that I was ethical in seeking the assistance from the administrative assistant to gather the information for this study, I informed that participation was not mandatory and that it was not a function of her normal administrative activities. I paid her for her assistance in gathering the information as the work was performed outside of normal business hours. Since the administrative assistant had access to all the client records that were utilized to perform her daily job tasks, there was no breach of confidentiality to persons outside of the agency. She signed a confidentiality agreement (see Appendix C) to ensure the information gathered for this study remains confidential.

Summary

This chapter introduced and justified the research design and rationale for this study. In addition to the appropriateness of utilizing a quantitative approach to obtain numerical data regarding the relationship of BSFT and FFT on the successful or unsuccessful discharge of youth who have a co-occurring mental health and substance abuse diagnosis. The results of this study could be valuable to clinicians in making informed decisions about treatment for youth diagnosed with co-occurring disorders. This chapter also provided details on the data collection process and participants for the study. No data collection began until IRB approval. The next two chapters discuss the results of the study and a summary of how these results address the gap in the current literature. The concluding sections also contain recommendations for future research in this area of study.

Chapter 4: Results

Introduction

The purpose of this study was to quantitatively examine the relationships between type of family therapy (BSFT or FFT), demographic factors (age, race, type of drug used), and therapy discharge status (successful or unsuccessful) in male youth with a co-occurring disorder of ADHD and SUD. The null hypothesis for the study stated there were no statistically significant relationships between the independent variables of age, ethnicity, type of drug used, and type of therapy and the dependent variable of discharge status. The purpose of this chapter is to summarize the descriptive and inferential findings from statistical analyses and to utilize results to inform the decision as to whether to fail to reject (retain) or reject the null hypothesis.

Data Collection

There were no discrepancies in the collection of data from the plan presented in Chapter 3. I received written cooperation agreement from ASBI, located in Hampton Roads Virginia, to use existing data (see Appendix A). Upon IRB approval, I requested that an ASBI employee retrieve pertinent data from password-protected and encrypted computer files of comprehensive clinical assessments and discharge summaries. Selected were male youth who met study criteria (i.e., had a diagnosis of ADHD and a co-occurring substance abuse disorder, were between the ages of 14 and 17, and had received BSFT or FFT). In December 2017, upon receipt of Walden IRB approval, the ASBI employee converted Word data to numerical data and entered these data into an

Excel spreadsheet. No identifying information was included in the dataset. Excluded from the data were any potential participants who did not meet criteria.

Data retrieval, transfer, organization, coding, and analyses initiated in December 2017, one day after receiving IRB approval, and was completed in March 2018. I first transferred the data from an Excel spreadsheet to a Statistical Package for the Social Sciences version 25.0 (SPSS 25.0) data file. A review of the data revealed that four participants were polydrug users. As the sample size of four was too small to include as an individual group for statistical analyses and as this group was not combined with another drug group, these data were removed. The final sample size was $N = 392$, 99.0% of the original sample.

Results

Sample Demographics

The participant data were accessed using archival data from the years 2014 through 2017 from a mental health agency in Hampton Roads Virginia. As archival data were utilized, informed consent from individuals was not required. The sample size was $N = 392$. A post hoc power analysis for multiple logistic regression was conducted to determine the achieved power. This is the power analysis used for hypothesis testing. Power was calculated using G* Power 3.1.9 (Faul, Erdfelder, Buchner, & Lang, 2007). The test was two-tailed. The OR, an indicator of effect size, was set to medium $OR = 2.30$. The $Pr(Y=1|X=1)\ H0$ was set to 0.30, the significance (α) was set to $p < .05$, the sample size was set to 392, and the R^2 *for other X* was set to .25. Results from the post hoc power analysis showed that the achieved power was .99 (Figure 2).

z tests - Logistic regression

Options:	Large sample z-Test, Demidenko (2007) with var corr		
Analysis:	Post hoc: Compute achieved power		
Input:	Tail(s)	=	Two
	Odds ratio	=	2.30
	Pr(Y=1|X=1) H0	=	0.30
	α err prob	=	0.05
	Total sample size	=	392
	R^2 other X	=	.25
	X distribution	=	Normal
	X parm μ	=	0
	X parm σ	=	1
Output:	Critical z	=	1.96
Power (1-β err prob)		=	0.99

Figure 2. Post hoc power analysis using G*Power (Faul et al., 2007)

I conducted descriptive statistics on the study/participant variables, presented in Table 2. Of the 392 participants, 190 received BSFT, and 202 received FFT. Over a third of the male youth were 16 (*n* = 123, 31.4%) or 17 (*n* = 132, 33.7%), while 88 (22.4%) were 15, and 49 (12.5%) were 14. The mean age of the youth was 15.86 years (*Md* = 16.00 years, *SD* = 1.02 years). Almost half (*n* = 193, 49.2%) of the male youth were Black/African American. The ethnicity of the remaining male youth was White/Caucasian (*n* = 123, 31.4%), Hispanic/Latino (*n* = 61, 15.6%), and mixed-race/other (*n* = 15, 3.8%). Marijuana was the most common drug of choice, used by 263 (67.1%) of the youth, followed by stimulants (cocaine/methamphetamine; *n* = 52, 13.3%), alcohol (*n* = 44, 11.2%), and heroin (*n* = 33, 33.7%). Most of the male youth had a successful discharge (*n* = 324, 82.7%).

Table 2

Descriptive Statistics of Study Sample (N =392)

Variable	*Frequency n*	*Percentage %*
Type of Therapy		
BSFT	190	48.5
FFT	202	51.5
Age		
14	49	12.5
15	88	22.4
16	123	31.4
17	132	33.7
Ethnicity		
White/Caucasian	123	31.4
Black/African American	193	49.2
Hispanic/Latino	61	15.6
Mixed Race/Other	15	3.8
Type of Drug		
Alcohol	44	11.2
Marijuana	263	67.1
CNS Stimulants (cocaine, methamphetamine)	52	13.3
Heroin	33	8.4
Discharge Status		
Successful	324	82.7
Unsuccessful	68	17.3

Table 3

Descriptive Statistics of Study Participants by Therapy Group (N = 392)

	BSFT *n = 190*		*FFT* *n = 202*	
Variable	*n*	*%*	*n*	*%*
Age				
14	21	11.1	28	13.9
15	46	24.2	42	20.8
16	62	32.6	61	30.2
17	61	32.1	71	35.1
Ethnicity				
White/Caucasian	60	31.6	63	31.2
Black/African American	93	48.9	100	49.5
Hispanic/Latino	27	14.2	34	16.8
Mixed Race/Other	10	5.3	5	2.5
Type of Drug				
Alcohol	22	11.6	22	10.9
Marijuana	124	65.3	139	68.8
CNS Stimulants (cocaine, methamphetamine)	30	15.8	22	10.9
Heroin	14	7.3	19	9.4
Discharge Status				
Successful	154	81.1	170	84.2
Unsuccessful	36	18.9	32	15.8

I calculated age, ethnicity, type of drug used, and discharge status descriptive statistics for participants according to type of therapy received (i.e., BSFT, FFT). Table 3 presents the descriptive statistics. The mean age of the youth who received BSFT (n = 190) was 15.86 years (SD = 1.00 year), and the mean age of the youth who received FFT (n = 202) was 15.87 years (SD = 1.05 years). Overall, the two groups of male youth were similar regarding age, ethnicity, type of drug used, and discharge status.

Independent samples *t* tests. The purpose of independent-samples t test is to determine if two groups (of people, interventions, etc.) have statistically significant different dependent variable mean scores (Delacre, Lakens, & Leys, 2017; Field, 2013; Lakens, 2017). Certain assumptions to the data must be met for independent samples t tests (Delacre et al., 2017; Field, 2013). One assumption is that the independent variable is dichotomous, that is, the variable has two categories (Delacre et al., Field, 2013). This assumption was met, as the independent variables were (a) family therapy type, coded as 0 = BSFT and 1 = FFT; (b) race, coded as 0 = White/Caucasian and 1 = non-White/Caucasian; and (c) type of drug used, where 0 = alcohol and 1 = other drug (i.e., marijuana, cocaine/methamphetamine, heroin). Another assumption is that the dependent variable is interval- or ratio-coded (to have mean scores; Delacre et al., 2017; Field, 2013). The dependent variable in this study was discharged status, coded as 0 = unsuccessful discharge and 1 = successful discharge. As the dependent variable was dichotomously coded, the second assumption was not met.

The assumption of an interval- or ratio-coded dependent variable is linked with two other significant assumptions. One is that the dependent variable has a normal

distribution of data around the mean (Delacre et al., 2017; Field, 2013; Rusticus & Lovato, 2014). I calculated the *z*-skewness value (i.e., skewness/skewness standard error) and conducted a Shapiro-Wilk test to determine if the dependent variable of discharge status met the assumption of normality. A *z*-skewness value greater than +/-1.96 and a statistically significant Shapiro-Wilk test indicates a violation of the normality assumption (Field, 2013; Rusticus & Lovato, 2014). The *z*-skewness value was 14.06 and the Shapiro-Wilk test was statistically significant, $W(392) = .458$, $p < .001$. The discharge status variable violated the assumption of normality.

An assumption for independent samples *t* test is the homogeneity of variances (Delacre et al., 2017; Field, 2013; Rusticus & Lovato, 2014). The homogeneity of variance assumption is that the two independent variable groups have equal distributions of dependent variable scores around the mean (Delacre et al., 2017; Field, 2013). There are specific data factors that increase the likelihood of violating the homogeneity of variances assumption (Delacre et al., 2017; Field, 2013; Rusticus & Lovato, 2014). One data factor is the use of a dichotomous dependent variable (Delacre et al., 2017; Field, 2013). Another data factor is unequal independent variable sample sizes (Delacre et al., 2017; Field, 2013; Rusticus & Lovato, 2014). The use of an independent variable with unequal cell sizes per category is not only a concern regarding the homogeneity of variance assumption, it is a concern when interpreting findings. As stated by Delacre et al. (2017), “if the sample sizes differ across independent variable groups,” results can be “severely biased and lead to invalid statistical inferences” (p .94). Rusticus and Lovato

(2014) further stated that "unequal sample sizes paired with unequal variances" have a "substantial impact on power" (p. 7).

A Levene's test of homogeneity of variances was conducted to test if the homogeneity of variances assumption was satisfied for every independent samples *t* test. A statistically significant (at $p < .05$) Levene's test indicates that the homogeneity of variances assumption is violated. Findings are reported from the Levene's tests with the independent samples *t*-test findings in the following sections. A violation of the homogeneity assumption can result in an inflated *t*-value and lower *p*-value, which increases the likelihood of committing a Type I error or rejecting the null hypothesis when in fact it is true (Delacre et al., 2017; Field, 2013; Rusticus & Lovato, 2014). Statisticians recommend the use of the Welch adjusted *t*-value, denoted as $t_{Welch,}$ adjusted *df*, denoted as $df_{Welch,}$ and an adjusted *p*-value, denoted as p_{Welch} when the homogeneity of variances assumption is violated (Delacre et al., 2017; Field, 2013; Rusticus & Lovato, 2014).

The dependent variable mean scores in the conducted independent samples *t* tests pertained to discharge status. As discharge status was an interval variable, scores could range from 0.00 to 1.00. A discharge status mean score closer to 0.00 was considered to represent an increased likelihood for an unsuccessful discharge while a discharge status mean score closer to of 1.00 represented an increased likelihood for a successful discharge.

Independent samples t test: Ethnicity and discharge status. An independent samples *t* test was conducted to determine if there were statistically significant discharge

mean score differences between White/Caucasian (n = 123) and non-White/Caucasian (n = 269) youth. The Levene's test for equality of variances was statistically significant, F_{Levene} = 41.65, p < .001, indicating a violation of the homogeneity of variances assumption. Due to the violation of the homogeneity of variances assumption, I reported the Welch adjusted t-value, denoted as $t_{Welch,}$ the adjusted df, denoted as $df_{Welch,}$ and the adjusted p-value denoted as $p_{Welch.}$

The independent samples t test was statistically significant, t_{Welch} (188.53) = -3.07, p_{Welch} = .002 (see Table 4). White/Caucasian youth (n = 123) had a statistically significantly lower discharge status mean score (M = 0.73, SD = 0.45) than did non-White/Caucasian youth (n = 269, M = 0.87, SD = .34). The results implied that non-White/Caucasian youth were more likely than White/Caucasian youth to be successfully discharged.

Table 4

Independent Samples t Test: Ethnicity/Race and Discharge Status (N = 392)

	n	*M*	*SD*	t_{Welch}	df_{Welch}	p_{Welch}
Discharge Status				-3.07	188.53	.002
White/Caucasian	123	0.73	0.45			
Not White/Caucasian	269	0.87	0.34			

Note. Discharge status coded as 0 = not successful and 1 = successful. The Welch-adjusted t, df, and p values are reported as the homogeneity of variance assumption was violated.

Independent samples t test: Type of drug used and discharge status. An independent samples *t* test was conducted to determine if there were statistically significant discharge mean score differences between youth whose drug of choice was alcohol ($n = 44$) and youth whose drug of choice was not alcohol ($n = 348$). The Levene's test for equality of variances was statistically significant, $F_{Levene} = 19.56$, $p < .001$, indicating a violation of the homogeneity of variances assumption. Due to this violation, I reported the Welch adjusted *t*-value, denoted as $t_{Welch,}$ the adjusted *df*, denoted as $df_{Welch,}$ and the adjusted *p*-value denoted as $p_{Welch.}$ The independent samples *t* test was statistically significant, $t_{Welch}(49.65) = -2.21$, $p_{Welch} = .031$ (see Table 5). Youth whose drug of choice was alcohol ($n = 44$) had a statistically significantly lower discharge status mean score ($M = 0.68$, $SD = 0.47$) than youth whose drug of choice was not alcohol ($n = 348$, $M = 0.84$, $SD = .36$). The results imply that youth whose drug of choice was alcohol were *less* likely than were youth whose drug of choice was not alcohol to be successfully discharged.

Table 5

Independent Samples t Test: Type of Drug Used and Discharge Status (N = 392)

	n	*M*	*SD*	t_{Welch}	df_{Welch}	p_{Welch}
Discharge Status				-2.21	49.65	.031
Alcohol	44	0.68	0.47			
Not Alcohol	348	0.84	0.36			

Note. Discharge status coded as 0 = not successful and 1 = successful. The Welch-adjusted *t*, *df*, and *p* values are reported as the homogeneity of variance assumption was violated.

Independent samples t test: Type of therapy and discharge status. I conducted an independent samples *t* test to determine if there were statistically significant discharge status mean score differences between youth who received BSFT (*n* = 190) and youth who received FFT (*n* = 202). The Levene's test for equality of variances was not statistically significant, $F_{Levene} = 2.63$, $p = .106$, likely due to the equivalent sample sizes in the two therapy groups. As the assumption of homogeneity of variances was met, I reported the standard *t*, *df*, and *p*-values. The independent samples *t* test was not statistically significant, $t(390) = -0.81$, $p = .418$ (see Table 6). Youth who received BSFT (*n* = 190) did not have a statistically significantly lower discharge status mean score (*M* = 0.81, *SD* = 0.39) than youth who received FFT (*n* = 202, *M* = 0.84, *SD* = .37). Discharge status was not different between youth who received BSFT and those who received FFT at a statistically significant level.

Table 6

Independent Samples t Test: Type of Therapy and Discharge Status (N = 392)

		n	*M*	*SD*	*t*	*df*	*p*
Discharge Status					-0.81	390	.418
	BSFT	190	0.81	0.39			
	FFT	202	0.84	0.37			

Note. Discharge status coded as 0 = not successful and 1 = successful

Spearman's Rho Correlations

I conducted a series of Spearman's rho correlation (two-tailed) between age (coded as an interval variable from 14 to 17), ethnicity (White/Caucasian as compared to non-White/Caucasian), type of drug (alcohol as compared to not alcohol), type of family therapy (BSFT as compared to FFT) and discharge status (successful as compared to unsuccessful). Spearman's rho correlation is the nonparametric equivalent to Pearson bivariate correlation (Field, 2013). Results from the Spearman's rho correlation analyses are in Table 7.

There was a statistically significant relationship between age and discharge status, r_s (392) = .16, p = .002. As age increased (i.e., from 14 to 17), so did the likelihood of successful discharge status. Non-White/Caucasian ethnicity was significantly associated with a successful discharge status, r_s(392) = .17, p = .001. Drug use other than alcohol (i.e., marijuana, cocaine/methamphetamine, or heroin use) was significantly associated with a successful discharge status, r_s(392) = .14, p = .007. There was not a statistically significant correlation between family therapy type (BSFT as compared to FFT) and discharge status, r_s(392) = .04, p = .418.

Table 7

Spearman's Rho Correlations: Age, Ethnicity, Type of Drug, Type of Family Therapy, and Discharge Status (N = 392)

	Discharge Status
Age	.16**
Ethnicity (White/non-White)	.17**
Type of Drug (Alcohol/not Alcohol)	.14**
Type of Therapy (BSFT/FFT)	.04

Note. ** $p < .01$

Hypothesis Testing

The null hypothesis of this study stated there are no statistically significant relationships between type of therapy (BSFT or FFT), demographic factors (age, ethnicity, type of drug used) and therapy discharge status (successful or unsuccessful) in male youth with a co-occurring disorder of ADHD and SUD. I conducted a binary multiple logistic regression for hypothesis testing of the null hypothesis. A binomial multiple logistic regression analysis analyzes the association between one or more independent variables, which can be nominal, ordinal, interval, or ratio and the odds (probability) that an observation falls into one of two categories of a dichotomous dependent variable, also called a binary response data (Menard, 2018).

Multiple logistic regression has assumptions of the data that must be met (Field, 2013; Menard, 2018). The assumption that the dependent variable was dichotomous (coded as 0 = unsuccessful discharge and 1 = successful discharge) was met. Another assumption of multiple logistic regression is lack of multicollinearity among the

independent variables (Field, 2013; Menard, 2018). I calculated variance inflation factors (VIFs) to determine if the assumption of lack of multicollinearity among the independent variables was met. VIFs greater than 4.00 indicate the presence of multicollinearity and a violation of this assumption (Field, 2013; Menard, 2018). The VIFs are in Table 8. None of the VIFs were greater than 4.00, indicating that the lack of multicollinearity among the independent variables was met.

Table 8

Variance Inflation Factors: Age, Ethnicity, Type of Drug, and Type of Family Therapy (N = 392)

	Variance Inflation Factor (VIF)
Age	1.27
Ethnicity (White/non-White)	1.27
Type of Drug (Alcohol/not Alcohol)	1.32
Type of Therapy (BSFT/FFT)	1.00

Multiple logistic regression findings. Results from the binary multiple logistic regression are in Table 9. The model chi-square was statistically significant, $\chi^2(10) = 15.51$, $p = .004$. The Hosmer and Lemeshow chi-square (χ^2) provide another estimate of the fit of the model (Field, 2013; Menard, 2018). A finding that is not statistically significant ($p > .05$) is desired for this test, as a Hosmer and Lemeshow test that is not statistically significant indicates that the sample model does not differ from a predicted model at a statistically significant level (Field, 2013; Menard, 2018). The Hosmer and Lemeshow chi-square were not statistically significant, $\chi^2(7) = 13.62$, $p = .058$. The classification table showed that the group of independent (predictor) variables (i.e., age,

ethnicity, type of drug, type of family therapy) correctly classified 82.7% of the discharge status (i.e., unsuccessful, successful) cases. The Nagelkerke R^2 was .06, a small effect size.

While the chi-square (χ^2) results indicated good model fit, they do not provide information as to which independent variables are associated with the dependent variable at statistically significant levels (Field, 2013; Menard, 2018). A Wald χ^2 test indicates if the independent (predictor) variable is associated with the dependent variable at a statistically significant level and the OR provides additional effect size information for the respective association (Field, 2013; Menard, 2018). As seen in Table 9, the multiple logistic regression results showed that ethnicity was the only statistically significant predictor of discharge status. Non-White/Caucasian male youth were 1.86 (OR 95% Confidence Interval: 1.31 to 3.44) times more likely to be successfully discharged, Wald $\chi^2(1) = 3.89$, $p = .048$. As therapy type, as well as age and type of drug, were not related to discharge status at statistically significant levels, the overall null hypothesis was retained.

Table 9

Binary Multiple Logistic Regression: Age, Ethnicity, Type of Drug, and Type of Family Therapy Predicting Discharge Status (N = 392)

	B	*SE*	*Wald* χ^2	*p*	*Odds Ratio*	*95% OR CI*	
						Lower	*Upper*
Age	.234	.146	2.56	.110	1.26	0.95	1.68
Race/Ethnicity (White/non-White)	*.619*	*.314*	*3.89*	*.048*	*1.86*	*1.31*	*3.44*
Drug Type (Alcohol/not Alcohol)	.282	.420	0.45	.503	1.33	0.58	3.02
Therapy Type (BSFT/FFT)	.222	.273	0.66	.417	1.25	0.73	2.13

Note. Statistically significant findings in italics.

Summary

The purpose of this study was to determine if type of family therapy (i.e., BSFT or FFT) and demographic factors (i.e., age, ethnicity, type of drug) were significantly associated with discharge status (i.e., unsuccessful/successful) among 392 male youths diagnosed with ADHD and a SUD. I conducted descriptive statistics for the study group of participants and by type of therapy (i.e., BSFT/FFT) the youth received. The power was .99. I conducted multiple logistic regression for hypothesis testing. The assumptions for multiple logistic regression (i.e., use of a dichotomous dependent variable, lack of multicollinearity between independent variables) were met. Independent samples *t* tests and Spearman's rho correlation analyses augmented findings from the multiple logistic regression. Three assumptions for independent samples *t* tests were violated: (a) using an interval- or ratio-coded dependent variable; (b) dependent variable normality; and (c) homogeneity of variances.

Results from the independent samples *t* tests indicated statistically-significant discharge status mean score differences across ethnicity and type of drug categories. White/Caucasian male youth had a significantly lower discharge status mean score as compared to non-White/Caucasian male youth. Youth whose drug of choice was alcohol had a statistically significant lower discharge status mean score as compared to youth whose drugs of choice were marijuana, stimulants (cocaine and methamphetamine), or heroin. Results from the Spearman's rho correlations showed a statistically significant relationship between age and discharge status: as age increased, so did the likelihood of successful discharge status. Results from the Spearman's rho correlations also showed a statistically significant relationship between ethnicity and drugs of choice and a successful discharge status. Multiple logistic regression results showed that non-White/Caucasian male youth were 1.86 times more likely than White/Caucasian male youth to be successfully discharged. However, since all variables were not related to discharge status at statistically significant levels, the null hypothesis of the study was retained. Chapter 5 provides a review and discussion of these findings.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this study was to determine if the type of family therapy (i.e., BSFT or FFT), demographic factors (i.e., age and ethnicity), and drug of choice significantly influenced discharge status (i.e., successful/unsuccessful). The study involved examining a sample of 392 male youth with a dual diagnosis of ADHD and SUD residing in Hampton Roads Virginia. The majority (65.1%) of participants were age 16 or 17 and almost half (49.2%) of the sample participants were Black/African American. Marijuana was by far the drug of choice, used by 67.1% of the participants. The percentages of male youth who received BSFT as compared to FFT were equivalent (48.5% and 51.5%, respectively). Moreover, the age, ethnicity, and drug of choice participant percentages were similar across the two treatment modalities. Type of family therapy did not emerge as related at statistically significant in any of the statistical analyses.

I conducted a multiple logistic regression for hypothesis testing. Non-White/Caucasian male youth were 1.86 times more likely to be successfully discharged as compared to White/Caucasian male youth. They were also more likely to be successfully discharged as compared to male youth whose drugs of choice were alcohol, stimulants (cocaine and methamphetamine), and heroin. As the age of the male youth increased (i.e., from 14 to 17), so did the likelihood of having a successful discharge status.

With the inclusion of the independent variables as collective predictors of discharge status in the multiple logistic regression model, youth age and type of drug

were no longer associated with discharge status at a statistically significant level. However, ethnicity remained a statistically significant predictor of discharge status. Non-White/Caucasian male youth were 1.86 times more likely than White/Caucasian male youth to be successfully discharged. The null hypothesis was retained as all independent variable were not related at statistically significant levels.

Interpretation of Findings

Few interventions have received such extensive empirical attention as adolescent substance abuse treatments (Carr, 2016). Findings from studies synthesized in meta-analyses indicated that family therapies, especially BSFT and FFT, were superior to individualized and group therapy approaches in reducing substance use among adolescents with comorbid mental health issues (e.g., ADHD, conduct disorders, depression; Huey & Polo, 2008; Riedinger, Pinquart, & Teubert, 2017; Tanner-Smith et al., 2016). While the premise that family therapy treatment modalities are more successful than cognitive behavior therapy, adolescent group therapy, and motivational enhancement therapy, the significant differences are statistically modest (Huey & Polo, 2008; Riedinger et al., 2017; Tanner-Smith et al., 2016).

The comparative effectiveness of substance abuse treatment modalities is complicated by numerous factors. These factors include (a) features of the treatments (e.g., type of delivery, treatment duration and intensity, adjunctive treatment components); (b) therapist attributes (e.g., demographic factors, degree of training and level of expertise); (c) family and adolescent characteristics (e.g., demographic factors, degree of dysfunction); (d) evaluative elements (e.g., attrition rates, operationalization of

study constructs, design); and (e) the drug under examination (Horigian, Anderson, & Szapocznik, 2016; Lindstrøm et al., 2015).

Despite the extensive evaluative focus on family therapies and their effectiveness in reducing substance abuse among children and adolescents with comorbid mental health illness, there exist no comparative empirical examinations of differing family therapies (Carr, 2016). This gap in the literature is especially concerning when considering the cross-cultural effectiveness of family therapies (Horigian et al., 2016). Huey and Polo (2008), in their meta-analyses of evidence-based interventions, reported the success of both BSFT and FFT in reducing substance use in Black/African American and Hispanic/Latino adolescents. This study was the first comparative empirical examination of two different family therapy modalities (BSFT and FFT). Results from this study indicated that one type of family therapy was not superior to another regarding discharge status. This finding differed from previous evidence supporting the effectiveness of family therapies among adolescents with co-occurring substance abuse and emotional/behavioral problems (Riedinger et al., 2017; Tanner-Smith et al., 2016) but was similar to findings reported by Huey and Polo (2008).

The most robust finding in this study was the increased odds of non-White/Caucasian as compared to White/Caucasian male youth to have successful discharge status. These findings contradicted those in prior studies (Smeets et al., 2014; Tanner-Smith et al., 2016). Lack of statistically significant demographic effects on treatment outcomes in adolescent samples was noted by Smeets et al. (2014), in their meta-analysis of 25 studies on cognitive behavior therapy and adolescent treatment

outcomes. In a meta-analysis of 61 studies evaluating the effectiveness of family therapies, Tanner-Smith et al. (2016) found no statistically significant treatment outcome differences across adolescent gender, ethnicity, and age groups. The statistically significant differences regarding demographic factors in this study contradict Tanner-Smith et al (2016) argument that family therapy treatments "produce similar outcomes among adolescents with different demographic characteristics" (p. 14).

This study examined the potential differences in discharge status because of the type of drug used. Drug use has been most frequently operationalized in the family therapy evaluative literature as drug use frequency or drug abuse severity (Carr, 2016; Lindstrøm et al., 2015). The result from the independent samples *t* test and Spearman's rho correlation analyses indicated male youth whose drug of choice was alcohol were more likely to have an unsuccessful discharge than were male youth whose drug of choice was marijuana, stimulants (cocaine/methamphetamine), or heroin. This finding was dissimilar to Riedinger et al.'s (2017) finding, which was family therapy was most effective among adolescents whose drug of choice was alcohol.

Many substance abuse interventions for adolescents, including BSFT and FFT, take a family systems approach (Randall & Bodenmann, 2013; Spencer, 2105). The primary objectives of family-systems-based therapies are to reduce feelings of distress and anxiety among family members, which in turn can enhance social functioning and reduce drug use among adolescents and their parents (Randall & Bodenmann, 2013; Spencer, 2105). Family systems theory also emphasizes the importance of family protective factors that can contribute to family and adolescent social functioning and

skills (Randall & Bodenmann, 2013; Spencer, 2105). There were intriguing findings in this study as they concerned the ethnicity of the male youth. Non-White/Caucasian youth were 1.86 times more likely than White/Caucasia male youth to have a successful discharge. When examining these findings within the context of the family systems theory, it is postulated that ethnic minority youth may have higher levels of family support and experience lower levels of anxiety regarding the family milieu (Smith, Faulk, & Sizer, 2016). The strengths seen in ethnic minority families (e.g., close bonds, social support, trust, feelings of responsibility for family members' social welfare) also enhance therapeutic interventions (Smith et al., 2016).

Limitations of the Study

One limitation of this study was that I as the researcher had no control over how data were collected, as I had used archival data (Jones, 2010). Therefore, I had no control over the procedure used to collect the data. Regarding this limitation, ASBI has clear rules for their staff regarding data entry into the archival system, as it is used daily in the daily responsibilities of the organization. Because organizational guidelines do not guarantee that all staff follow them appropriately, a double entry software was used with data input into two separate spreadsheets to ensure that both spreadsheets are exact duplicates.

Another limitation of the study was that it is not clear if the therapist followed the program guidelines as outlined or showed any bias in the discharge of the participants. Successful or unsuccessful discharges should not be subjective when program guidelines are adhered to. The discharge summary provides detailed information regarding the

successful or unsuccessful discharge status and the reason for the outcome. The outcome is based on the following criteria: (a) participation in all individual and family sessions (with not more than 2 excused absences), (b) treatment compliance to include completing all objectives and assignments, (c) actively participates in session, and (d) has a negative result for all substance abuse screenings.

The last limitation of this study relates to the generalizability of results. The data were collected from one agency in Hampton Roads Virginia and only included male youth with the same co-occurring diagnosis of ADHD and a SUD. Therefore, I must be cautious when making generalizations across the entire population of male youth diagnosed with a co-occurring disorder.

Recommendations

This study failed to answer which treatment protocol (BSFT or FFT) provided more positive outcomes. Treatment protocols for adolescents are not as developed as treatment models available for adults (CDC, 2016; USDHHS, 2015). According to Hawkins (2009), there can be profound consequences for youth who have been diagnosed with a co-occurring disorder but do not receive appropriate treatment. Other researchers have reported that co-occurring disorders contribute to adolescents' social and academic impairment (Becker et al., 2012; Marshall et al., 2014). Victimization of youth is also a contributing factor in their co-occurring disorder diagnosis (Sabri, 2012).

To provide effective treatment for youth with co-occurring disorders, clinicians must be competent in the assessment and treatment process (Denby et al., 2011). However, Denby et al. (2011) found that clinicians reported that they have limited skills

in the treatment of co-occurring disorders in youth and would need to increase their knowledge and skills to be effective in the delivery of appropriate treatments. Further research on a broader scale can provide clinicians with more evidence-based results. Additionally, assessing clinician's ability to facilitate co-occurring treatment protocols for youth should garner training opportunities for clinicians to ensure that they are adhering to guidelines and not being subjective in the treatment process.

It is unfortunate that the coding of the race/ethnicity variable (i.e., White/Caucasian as compared to non-White/Caucasian) did not allow for a more in-depth analysis of racial/ethnic differences regarding discharge status. Scholars have cautioned against the use of variable categorization of race/ethnicity as White/non-White, termed *essentialism* (Johnston-Guerrero, 2017; Mayhew & Simonoff, 2015). Essentialism incorrectly assumes that all non-White individuals have "a uniting essence that is unchangeable, inborn, [or] natural" that makes them qualitatively different from White individuals and furthermore an essentialist approach in research can "serve as a foundation for scientific racism" (Johnston-Guerrero, 2017, p. 8).

It is also unfortunate that the coding of the type of drug variable in this study did not allow for the examination as to whether male youth whose drug of choice was heroin were likely to be successfully discharged when considering the current opioid epidemic in the United States. Although future research should include a broader demographic area, it can also limit the scope of the population to all White/Caucasian or non-White participants to gain a better understanding of the results for each group alone, rather than versus each other.

Social Change Implications

The findings from this study have contributed to the existing body of knowledge of treatment protocols for youth diagnosed with a co-occurring disorder. The results of this study allow future researchers to expand the study to include a larger population of youth diagnosed with a co-occurring disorder. The repetition of this study in various agencies like the one examined in this study could provide additional confidence in generalizing the results. Future studies should highlight the differences in the populations in various demographic locations to include different genders, different agencies, different geographic locations, and different ages.

"Walden University defines *positive social change* as a deliberate process of creating and applying ideas, strategies, and actions to promote the worth, dignity, and development of individuals, communities, organizations, institutions, cultures, and societies. Positive social change results in the improvement of human and social conditions." (Walden University Student Handbook, 2012). This study can positively impact the treatment protocols delivered to various ethnicities.

Conclusion

The purpose of this quantitative study was to assess the predictive relationship between type of therapy (BSFT or FFT), demographic factors (age, race, type of drug used), and therapy discharge status (successful or unsuccessful) in male youth with a co-occurring disorder of ADHD and SUD?

According to USDHHS (2015), 43% of adolescents in the United States who received mental health services had a co-occurring SUD in 2015. They indicated that the

percentage of youth diagnosed with co-occurring disorders were almost equal with those of adults (Bergman et al., 2014; USDHHS, 2015). However, because treatment protocols for adolescents are not as well developed as treatment models available for adults, clinicians cannot make an informed decision on what protocol provides better results for their adolescent clients (CDC, 2016; USDHHS, 2015).

In final analysis, while the results of this study did not provide evidence of which treatment protocol (BSFT or FFT) produced more positive results, it did provide evidence that non-White male youth were 1.86 times more likely to receive a successful discharged from treatment. This knowledge can provide clarity for clinicians in determining how to incorporate variations in the treatment protocol to increase the rate of successful discharges for White/Caucasian male youth.

References

Abrantes, A. M., Hoffmann, N. G., & Anton, R. (2005). Prevalence of co-occurring disorders among juveniles committed to detention centers. *International Journal of Offender Therapy and Comparative Criminology, 49*(2), 179-193. doi:10.1177/0306624X04269673

Alkema, A., King, B., & Tadehara, E. (2015). Adolescent co-occurring disorder: Treatment trends and guidelines. Retrieved from http://ufsac.org/wp-content/uploads/ 2014/09/Tadehara.Eric_.pdf

Allwood, C. M. (2012). The distinction between qualitative and quantitative research methods is problematic. *Quality & Quantity*, *46*(5), 1417-1429. doi:10.1007/s11135-011-9455-8

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author.

Ammerman, S., Ryan, S., Adelman, W. P., Levy, S., Ammerman, S. D., Gonzalez, P. K., & Alderman, E. M. (2015). The impact of marijuana policies on youth: clinical, research, and legal update. *Pediatrics*, *135*(3), e769-e785. doi:10.1542/peds.2014-4147

Anderson, R. L. (2008). Finding the balance in evolving service sectors for youth with co-occurring disorders: Measurement and policy implications. *Residential Treatment for Children & Youth*, *24*(3), 261-281. doi:10.1080/08865710802115759

Antshel, K. M. (2013). Attention deficit/hyperactivity disorder (ADHD). In W.

O'Donohue & S. O. Lillienfeld (Eds.), *Case studies in clinical psychological science: Bridging the gap from science to practice* (pp. 25-42). New York, NY: Oxford University Press.

Baldwin, S. A., Christian, S., Berkeljon, A., & Shadish, W. R. (2012). The effects of family therapies for adolescent delinquency and substance abuse: a meta-analysis. Journal Of Marital And Family Therapy, 38(1), 281-304. doi:10.1111/j.1752-0606.2011.00248.x

Barkley, R. A. (2015). Educational, occupational, dating and marital, and financial impairments in adults with ADHD. In R. A. Barkley (Ed.), *Attention-deficit hyperactivity disorder: A handbook for diagnosis and treatment* (4th ed., p. 314). New York, NY: Guilford Press.

Becker, S. P., Luebbe, A. M., & Langberg, J. M. (2012). Co-occurring mental health problems and peer functioning among youth with attention-deficit/hyperactivity disorder: A review and recommendations for future research. *Clinical Child & Family Psychology Review*, *15*(4), 279-302. doi:10.1007/s10567-012-0122-y

Belendiuk, K. A., Pedersen, S. L., King, K. M., Pelham, W. E., & Molina, B. G. (2016). Change over time in adolescent and friend alcohol use: Differential associations for youth with and without childhood attention-deficit/hyperactivity disorder (ADHD). *Psychology of Addictive Behaviors*, *30*(1), 29-38. doi:10.1037/adb0000117

Bergman, B. G., Greene, M. C., Slaymaker, V., Hoeppner, B. B., & Kelly, J. F. (2014). Young adults with co-occurring disorders: Substance use disorder treatment

response and outcomes. *Journal of Substance Abuse Treatment*, (46), 420-428. doi:10.1016/j.jsat.2013.11.005

Boger, K. D., Auerbach, R. P., Pechtel, P., Busch, A. B., Greenfield, S. F., & Pizzagalli, D. A. (2014). Co-occurring depressive and substance use disorders in adolescents: An examination of reward responsiveness during treatment. *Journal of Psychotherapy Integration*, *24*(2), 109-121

Boszormenyi-Nagy, I., & Framo, J. L. (2013). *Intensive family therapy: Theoretical and practical aspects*. doi:10.1037/e409922005-012.

Briones, E., Robbins, M. S., & Szapocznik, J. (2013). Engagement and treatment. *Family Interventions in Substance Abuse: Current Best Practices*, *26*(1-2), 81.

Brown, R. A., Abrantes, A. M., Minami, H., Prince, M. A., Bloom, E. L., Apodaca, T. R., & ... Hunt, J. I. (2015). Motivational interviewing to reduce substance use in adolescents with psychiatric comorbidity. *Journal of Substance Abuse Treatment*, 5920-29. doi:10.1016/j.jsat.2015.06.016

Carr, A. (2016). Family therapy for adolescents: A research-informed perspective. *Australian and New Zealand journal of family therapy*, *37*(4), 467-479. doi:10.1002/anzf.1184

Centers for Disease Control and Prevention. (2016). Facts about ADHD Retrieved from http://www.cdc.gov/ncbddd/adhd/facts.html

Chan, E., Fogler, J. M., & Hammerness, P. G. (2016). Treatment of attention-deficit/hyperactivity disorder in adolescents: A systematic review. *JAMA: Journal of The American Medical Association*, *315*(18), 1997-2008.

doi:10.1001/jama.2016.5453

Chapman, J. E., McCart, M. R., Letourneau, E. J., & Sheidow, A. J. (2013). Comparison of youth, caregiver, therapist, trained, and treatment expert raters of therapist adherence to a substance abuse treatment protocol. *Journal of Consulting and Clinical Psychology*, *81*(4), 674. doi:10.1037/a0033021

Chapman, J. & Schoenwald, S. (2012). Taking effective treatments to scale: organizational effects on outcomes of multisystemic Therapy for youths with co-occurring substance use. *Journal of Child & Adolescent Substance Abuse*, *21,* 1–31. doi:10.1080/1067828X.2012.636684

Charach, A., Yeung, E., Climans, T., & Lillie, E. (2011). Childhood attention-deficit/hyperactivity disorder and future substance use disorders: Comparative meta-analyses. *Journal of the American Academy of Child & Adolescent Psychiatry, 50*, 9 –21. http://dx.doi.org/10.1016/j .jaac.2010.09.019

Choi, S., Adams, S. M., Morse, S. A., & MacMaster, S. (2015). Gender differences in treatment retention among individuals with co-occurring substance abuse and mental health disorders. *Substance Use & Misuse*, *50*(5), 653-663. doi:10.3109/10826084.2014.997828

Chung, Y. (2016). A review of nonparametric statistics for applied research. *Journal of Educational and Behavioral Statistics, 41*(4), 455-458. doi:10.3102/1076998616640744

Cleek, E. N., Wofsy, M., Boyd-Franklin, N., Mundy, B., & Howell, T. J. (2012). The family empowerment program: An interdisciplinary approach to working with

multi-stressed urban families. *Family Process*, *51*(2), 207-217. doi:10.1111/j.1545-5300.2012.01392.x

Clinical Practice Guidelines of the American Academy of Pediatrics. (2011). ADHD: Clinical practice guideline for the diagnosis, evaluation, and treatment of attention-deficit/hyperactivity disorder in children and adolescents. (2011). *Pediatrics*, *128*(5), 1007-1022. doi:10.1542/peds.2011-2654

Cook, L. (2007). Perceived conflict, sibling position, cut-off, and multigenerational transmission in the family of origin of chemically dependent persons: An application of Bowen Family Systems Theory. *Journal of Addictions Nursing*, *18*(3), 131-140.

Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches* (Laureate Education, Inc., custom ed.). Thousand Oaks, CA: Sage.

Danzer, G. (2014). Multidimensional family therapy in theory and in practice. *Child & Youth Services*, *35*(1), 16-34. doi:10.1080/0145935X.2014.893742

Darnell, A.J. & Schuler, M. S., (2015). Quasi-experimental study of Functional Family Therapy effectiveness for juvenile justice aftercare in a racially and ethnically diverse community sample. *Children and Youth Services Review, 50*, 75-82

Degenhard, L., Whiteford, H. A., Ferrari, A. J., Baxter, A. J., Charlson, F. J., Hall, W. D., & Flaxman, A. (2013). Global burden of disease attributable to illicit drug use and dependence: findings from the Global Burden of Disease Study 2010. *The Lancet*, 382(9904), 1564-1574. doi:10.1016/S0140-6736(13)61530-5

Delacre, M., Lakens, D., & Leys, C. (2017). Why psychologists should by default use

Welch's *t* test instead of student's *t* test. *International Review of Social Psychology*, *30*(1), 92-110. doi:10.5334/irsp.82

Denby, R. W., Brinson, J. A., & Ayala, J. (2011). Adolescent co-occurring disorders treatment: clinicians' attitudes, values, and knowledge. *Child & Youth Services*, *32*(1), 56-74. doi:10.1080/0145935X.2011.553581

Diamond, G., & Josephson, A. (2015). Family-based treatment research: A 10-year update. *Journal of the American Academy of Child & Adolescent Psychiatry*, 44(9), 872-887.

Doshi, J. A., Hodgkins, P, Kahle, J, Sikirrica, V, Cangelosi, M. J., Setyawan, J, . . . Neumann, P. J. (2012). Economic impact of childhood and adult attention-deficit/hyperactivity disorder in the United States. *Journal of the American Academy of Child & Adolescent Psychiatry, 51*(10):990–1002.e2

Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G*Power: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, *39*(2), 175-191. doi:10.3758/BF03193146

Felt, B. T., Biermann, B., Christner, J. G., Kochhar, P., & Harrison, R. V. (2014). Diagnosis and management of ADHD in children. *American Family Physician*, *90*(7), 456-464.

Field, A. (2013). *Discovering statistics using IBM SPSS statistics*. Thousand Oaks, CA: Sage.

Gilbert A., Grande T., Hallman J., Underwood L. (2014). Screening incarcerated juveniles using the MAYSI-2. J. *Correct. Health Care*. (21) 35–44.

doi:10.1177/1078345814557788

Gibbert, M., Balachandran Nair L. (2013) Boosting Internal and External Validity in Team and Innovation Research: A review of internal and external validity of case study research 1996-2006. EURAM Conference 2013

Goodwin, R. D., Sheffer, C. E., Chartrand, H., Bhaskaran, J., Hart, C. L., Sareen, J., & Bolton, J. (2014). Drug use, abuse, and dependence and the persistence of nicotine dependence. *Nicotine & Tobacco Research*, 16(12), 1606-1612. doi:10.1093/ntr/ntu115

Green, S. B., & Salkind, N. J. (2008). *Using SPSS for Windows and Macintosh: Analyzing and understanding data* (6th ed.). Upper Saddle River, NJ: Pearson.

Greenberg, M. T., & Melissa A. L. (2013). Promoting healthy outcomes among youth with multiple risks: Innovative approaches. *Annual Review of Public Health,* (34)253. doi:10.1146/annurev-publhealth-031811-124619

Hawkins, E. H. (2009). A tale of two systems: co-occurring mental health and substance abuse disorders treatment for adolescents. *Annual Review of Psychology*, (60) 197-227. doi:10.1146/annurev.psych.60.110707.163456

Henggeler, S. W., & Sheidow, A. J. (2012). Empirically supported family-based treatments for conduct disorder and delinquency in adolescents. *Journal of Marital & Family Therapy*, *38*(1), 30-58. doi:10.1111/j.1752-0606.2011.00244.x

Hogue, A., Lichvar, E., & Bobek, M. (2016). Pilot evaluation of the medication integration protocol for adolescents with ADHD in behavioral care: Treatment fidelity and medication uptake. *Journal of Emotional and Behavioral Disorders*,

24(4), 223-234. doi:10.1177/1063426615611648

Hogue, A.; and Liddle, H. A. (2009). Family-based treatment for adolescent substance abuse: controlled trials and new horizons in services research. *Journal of Family Therapy* 31(2):126–154. doi:10.1111/j.1467-6427.2009.00459.x

Horigian, V. E., Anderson, A. R., & Szapocznik, J. (2016). Family-based treatments for adolescent substance use. *Child and Adolescent Psychiatric Clinics*, *25*(4), 603-628. doi:S1056-4993(16)30061-X

Huey, S. J., & Polo, A. J. (2008). Evidence-based psychosocial treatments for ethnic minority youth. *Journal of Clinical Child & Adolescent Psychology*, *37*(1), 262-301. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2413000/

Hulvershorn, Quinn, & Scott (2015). Treatment of adolescent substance use disorders and co-occurring internalizing disorders: A critical review and proposed model. *Current Drug Abuse Reviews, 8*(1), 41–49. doi:10.2174/1874473708666150514102745

Johnston-Guerrero, M.P. (2017). The (mis)use of race in research on college students: A systematic review. *The Journal of the National Conference on Race and Ethnicity in American Higher Education, 3*(1), 1-37. Retrieved from https://ncore.ou.edu/media/filer_public/b2/ae/b2ae92f2-fdb8-4e68-9909-8d698f3f178d/johnston-

Kalibatseva, Z., & Leong, F. T. (2014). A critical review of culturally sensitive treatments for depression: recommendations for intervention and research. Psychological services, 11(4), 433-450. Doi:10.1037/a0036047

Kerr, M. E. (2000) One Family's Story: A Primer on Bowen Theory. Retrieved from: http://www.thebowencenter.org.

Kirby, K. C., Versek, B., Kerwin, M. E., Meyers, K., Benishek, L. A., Bresani, E., & Meyers, R. J. (2015). Developing Community Reinforcement and Family Training (CRAFT) for Parents of Treatment-Resistant Adolescents. *Journal of Child & Adolescent Substance Abuse*, 24(3), 155-165. doi:10.1080/1067828X.2013.777379

Krampe, H., Naassila, M., & Rodriguez-Orengo, J.F. (2013). Male adolescent substance use disorder and attention-deficit hyperactivity disorder: a review of the literature. *Journal of Addiction, 2013*(10). doi:10.1155/2013/815096

Kraemer, H. C., & Blasey, C. (2015). *How many subjects? Statistical power analysis in research*. Thousand Oaks, CA: SAGE.

Lakens, D. (2017). Equivalence tests: a practical primer for t tests, correlations, and meta-analyses. *Social Psychological and Personality Science*, *8*(4), 355-362. doi:10.1177/1948550617697177

Lichtenstein, D., Spirito, A., & Zimmermann, R. (2010). Assessing and treating co-occurring disorders in adolescents: examining typical practice of community-based mental health and substance use treatment providers. *Community Mental Health Journal*, 46(3), 252-257. doi:10.1007/s10597-009-9239-y

Lindstrøm, M., Saidj, M., Kowalski, K., Filges, T., Rasmussen, P. S., … & Jørgensen, A. M. K. (2015). Family behavior therapy (FBT) for young people in treatment for illicit non-opioid drug use: A systematic review. *Campbell Systematic Reviews*,

11(9), 1-77. Retrieved from https://campbellcollaboration.org/media/k2/attachments/Lindstrom_FBT_Review.pdf

Lundervold, A. J., Hinshaw, S. P., Sørensen, L., & Posserud, M. (2016). Co-occurring symptoms of attention deficit hyperactivity disorder (ADHD) in a population-based sample of adolescents screened for depression. BMC Psychiatry, 1646-55. doi:10.1186/s12888-016-0739-3

Malloy, J. (2013). J. F. Alexander, H. B. Waldron, M. S. Robbins and A. A. Neeb: Functional family therapy for adolescent behavior problems. *Contemporary Family Therapy: An International Journal*, *35*(4), 806-807.

Marshall, S., Evans, S., Eiraldi, R., Becker, S., & Power, T. (2014). Social and Academic Impairment in Youth with ADHD, Predominately Inattentive Type and Sluggish Cognitive Tempo. *Journal of Abnormal Child Psychology*, 42(1), 77-90. doi:10.1007/s10802-013-9758-4

Mathers, B. M., Degenhardt, L., Bucello, C., Lemon, J., Wiessing, L., & Hickman, M. (2013). Mortality among people who inject drugs: A systematic review and meta-analysis. *Bulletin of the World Health Organization*, 91(2), 102-123. doi:10.2471/BLT.12.108282

Mayhew, M. J., & Simonoff, J. S. (2015). Non-White, no more: Effect coding as an alternative to dummy coding with implications for higher education researchers. *Journal of College Student Development*, *56*(2), 170-175. Retrieved from https://muse.jhu.edu/article/578153/summary

Menard, S. (2018). *Applied logistic regression analysis*. Thousand Oaks, CA: Sage.

Mendenhall, A. N., Fontanella, C. A., Hiance, D. L., & Frauenholtz, S. (2014). Factors associated with treatment attrition for Medicaid-enrolled youth with serious emotional disturbances. *Children and Youth Services Review*, 4020-28. doi:10.1016/j.childyouth.2014.02.011

Meppelink, R., de Bruin, E. I., & Bögels, S. M. (2016). Meditation or Medication? Mindfulness training versus medication in the treatment of childhood ADHD: a randomized controlled trial. BMC Psychiatry, 161-16. doi:10.1186/s12888-016-0978-3

Molina, B. S. G., Flory, K., Hinshaw, S. P., Greiner, A. R., Arnold, L. E., Swanson, J. M., Wigal, T. (2007). Delinquent behavior and emerging substance use in the MTA at 36 months: Prevalence, course, and treatment effects. *Journal of the American Academy of Child & Adolescent Psychiatry*, 46, 1028 –1040. http://dx.doi.org/10 1097/ chi.0b013e3180686d96

Murphy, K. R., Myors, B., & Wolach, A. (2014). *Statistical power analysis: A simple and general model for traditional and modern hypothesis tests.* New York, NY: Routledge.

National Alliance of Mental Illness. (2015). Retrieved from: Numbers of Americans Affected by Mental Illness. http://www.nami.org/factsheets/mentalillness_factsheet.pdf on August 3, 2014.

Polanczyk, G. V., Willcutt, E. G., Salum, G. A., Kieling, C., & Rohde, L. A. (2014). ADHD prevalence estimates across three decades: an updated systematic review

and meta-regression analysis. *International Journal of Epidemiology*, 43(2), 434-442. doi:10.1093/ije/dyt261

Pottick, K. J., Warner, L. A., Vander Stoep, A., & Knight, N. M. (2014). Clinical characteristics and outpatient mental health service use of transition-age youth in the USA. *The Journal of Behavioral Health Services & Research, 41*(2), 230-243. doi:10.1007/s11414-013-9376-5

Priester, M. A., Browne, T., Iachini, A., Clone, S., DeHart, D., & Seay, K. D. (2016). Treatment access barriers and disparities among individuals with co-occurring mental health and substance use disorders: An integrative literature review. *Journal of Substance Abuse Treatment*, 6147-59. doi:10.1016/j.jsat.2015.09.006

Prochaska, J. J., Fromont, S. C., Wa, C., Matlow, R., Ramo, D. E., & Hall, S. M. (2013). Tobacco use and its treatment among young people in mental health settings: a qualitative analysis. *Nicotine & Tobacco Research, 15*(8), 1427-1435. doi:10.1093/ntr/nts343

Randall, A. K., & Bodenmann, G. (2013). *Therapy, Family and Marital. In Encyclopedia of Behavioral Medicine* (pp. 1967-1973). Springer New York.

Riedinger, V., Pinquart, M., & Teubert, D. (2017). Effects of systemic therapy on mental health of children and adolescents: A meta-analysis. *Journal of Clinical Child & Adolescent Psychology, 46*(6), 880-894. doi:10.1080/15374416.2015.1063427

Robbins, M. S., Feaster, D. J., Horigian, V. E., Rohrbaugh, M., Shoham, V., Bachrach, K., & Szapocznik, J. (2011). Brief strategic family therapy versus treatment as usual: Results of a multisite randomized trial for substance using adolescents.

Journal of Consulting & Clinical Psychology, *79*(6), 713-727. doi:10.1037/a0025477

Rogers, A., & Pilgrim, D. (2014*). A sociology of mental health and illness*. McGraw-Hill Education (UK).

Rusticus, S. A., & Lovato, C. Y. (2014). Impact of sample size and variability on the power and type I error rates of equivalence tests: A simulation study. *Practical Assessment, Research & Evaluation, 19*(11), 2-10. Retrieved from http://pareonline.net/getvn.asp?v=19&n=11

Sabri, B. (2012). Severity of victimization and co-occurring mental health disorders among substance using adolescents. 41(1), 37-55. doi:10.1007/s10566-011-9151-9

Schoenwald, S. K., Chapman, J. E., Henry, D. B., & Sheidow, A. J. (2012). Taking effective treatments to scale: Organizational effects on outcomes of multisystemic therapy for youths with co-occurring substance use. *Journal of Child & Adolescent Substance Abuse,* 21(1), 1-31. doi:10.1080/1067828X.2012.636684

Sexton, T. L., & Alexander, J. F. (2015). Functional family therapy. *Handbook of family therapy*, 250-270.

Sexton, T., & Turner, C. W. (2011). The effectiveness of functional family therapy for youth with behavioral problems in a community practice setting. *Couple & Family Psychology: Research & Practice*, *1*(S), 3-15. doi:10.1037/2160-4096.1.S.3

Shepler, R., Newman, D., Cleminshaw, H., Webb, T., & Baltrinic, E. (2009). A comparison study of different treatment programs for youth offenders with co-occurring disorders: Preliminary results. *New Research in Mental Health: 2006-2007 Biennium*, 264-273.

Skowron, E. A., Van Epps, J. J., Cipriano, E. A., Rabin, I. C., & Mikulincer, M. (2015). Toward greater understanding of differentiation of self in Bowen Family Systems Theory: Empirical developments and future directions. *Differentiation of self: Theory, research, and clinical applications*.

Smeets, K. C., Leeijen, A. A., van der Molen, M. J., Scheepers, F. E., Buitelaar, J. K., & Rommelse, N. N. (2015). Treatment moderators of cognitive behavior therapy to reduce aggressive behavior: a meta-analysis. *European Child & Adolescent Psychiatry*, *24*(3), 255-264. doi:10.1007/s00787-014-0592-1

Smith, E. P, Faulk, M. & Sizer, M.A. (2016). Exploring the Meso-System: The Roles of Community, Family, and Peers in Adolescent Delinquency and Positive Youth Development. *Youth & Society*, 48(3), 318-343. doi.org/10.1177/0044118X13491581

Spencer, T. A. (2015). *Exploring the lived experiences of marriage and family therapy students who study Bowen family systems theory and relating those experiences to concepts of differentiation of self and emotional intelligence: An interpretative phenomenological analysis*. Nova Southeastern University.

Stern, K. R. (2001). A treatment study of children with attention deficit hyperactivity disorder. Office of Juvenile Justice and Delinquency Prevention. Retrieved from:

https://www.ncjrs.gov/pdffiles1/ojjdp/fs200120.pdf.

Substance Abuse and Mental Health Services Administration. (2015). *Prevention of Substance Abuse and Mental Illness.* Retrieved from: http://www.samhsa.gov/prevention/ on December 18, 2015.

Substance Abuse and Mental Health Services Administration. (2015). Substance use disorders. Retrieved from: http://www.samhsa.gov/disorders/substance-use November 2016.

Substance Abuse and Mental Health Services Administration. (2014) *Behavioral Health Trends in the United States*: *Results from the 2014 National Survey on Drug Use and Health.* Retrieved from: http://www.samhsa.gov/data/sites/ default/files/NSDUH-FRR1-2014/NSDUH- FRR1-2014.pdf on June 1, 2016.

Substance Abuse and Mental Health Services Administration. (2014). Results from the 2013 National Survey on Drug Use and Health: Summary of National Findings. NSDUH Series H-48, HHS Publication No.(SMA) 14-4863. Substance Abuse and Mental Health Services Administration, Rockville, MD.

Substance Abuse and Mental Health Services Administration (2013). Results from the 2012 National Survey on Drug Use and Health: Summary of National Findings (No. NSDUH Series H-46, HHS Publication No.(SMA) 13–4795). Rockville, MD: Substance Abuse and Mental Health Services Administration.

Szapocznik, J., Schwartz, S. J., Muir, J. A., & Brown, C. H. (2012). Brief strategic family therapy: An intervention to reduce adolescent risk behavior. *Couple & Family Psychology: Research & Practice*, *1*(2), 134-145. doi:10.1037/a0029002

Tabachnick, B., & Fidell, B. (2013). *Using multivariate statistics*. New York, NY: Elsevier.

Tanner-Smith, E. E., Steinka-Fry, K. T., Kettrey, H. H., … & Lipsey, M. W. (2016). *Adolescent substance use treatment effectiveness: A systematic review and meta-analysis*. Nashville, TN: Peabody Research Institute, Vanderbilt University.

Tiet, Q. Q., & Schutte, K. K. (2012). Treatment setting and outcomes of patients with co-occurring disorders. *Journal of Groups in Addiction & Recovery*, *7*(1), 53-76. doi:10.1080/1556035X.2012.632330

Titelman, P. (2014) *Clinical applications of Bowen family systems theory*. Routledge.

Underwood, L. A., & Washington, A. (2016). Mental Illness and Juvenile Offenders. *International Journal of Environmental Research and Public Health*, 13(2), 228. http://doi.org/10.3390/ijerph13020228d

U.S. Department of Health and Human Services. (2015). *Substance abuse treatment for persons with co-occurring disorders*, *A treatment improvement protocol,* Volume 52. Rockville, MD: SAMSHA

Virginia Department of Juvenile Justice. (2016). Data Resource Guide. Retrieved from: http://www.djj.virginia.gov/pdf/about-djj/DRG/FY16_DRG.pdf

Vogt, W. P. (2007). *Quantitative research methods for professionals*. Boston, MA: Allyn & Bacon.

Walden University (2012). Walden University Student Handbook. Retrieved from: http://catalog.waldenu.edu/content.php?catoid=41&navoid=5182

Wilens, T. E. (2006). Attention-deficit/hyperactivity disorder and substance use disorders

in adolescents. *American Journal of Psychiatry*, *164*(6), 973-974.

Willcutt, E. G. (2012). The prevalence of DSM-IV attention-deficit/hyperactivity disorder: A meta-analytic review. *Neurotherapeutics*, 9(3), 490-499. doi:10.1007/s13311-012-0135-8

Williams, J. M., Steinberg, M. L., Griffiths, K. G., & Cooperman, N. (2013). Smokers with Behavioral Health Comorbidity Should Be Designated a Tobacco Use Disparity Group. *American Journal of Public Health*, 103(9), 1549-1555. doi:10.2105/AJPH.2013.301232

Winward, J. L., Hanson, K. L., Tapert, S. F., & Brown, S. A. (2014). Heavy alcohol use, marijuana use, and concomitant use by adolescents are associated with unique and shared cognitive decrements. *Journal of the International Neuropsychological Society*, 20(08), 784-795. doi:10.1017/S1355617714000666.

Yule, A. (2017). Assessment and treatment of youth with opioid use disorders. *Journal of the American Academy of Child & Adolescent Psychiatry*, *56*(10), S89-S93. doi: 10.1016/j.aac.2017.07.351

Zaso, M. J., Park, A., & Antshel, K. M. (2015). Treatments for adolescents with comorbid ADHD and substance use disorder: A systematic review. *Journal of Attention Disorders*, (2) 1-7. doi:10.1177/1087054715569280