PROGRAM EFFECTIVENESS OF SUBSTANCE ABUSE TREATMENT FOR ADOLESCENTS IN JUVENILE CORRECTIONS

by

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Abstract

Adolescents who reach the juvenile justice system and are placed in correctional facilities often have a variety of risk factors including mental health concerns, educational needs, substance abuse and dependency issues, family discord, or financial instability. In order to reduce the likelihood of future adolescent recidivism, correctional facilities can be a catalyst for change by promoting protective factors. The goal of this study was to determine the effectiveness, in supporting resiliency, of a substance abuse treatment program inside a juvenile correctional facility. Resiliency was defined by comparing the adolescents' risk, measured on 17 different subscales, both before and after treatment. Two groups were used to compare differences in risk and protective factors, a treatment group and a control group. Two standardized tests were given to the adolescents, once upon entering the correctional facility and again 30 days later. This study found adolescents in the substance abuse treatment group improved the overall risk factor score, school functioning score, and substance abuse score. Further discussion and directions for future research are included.

Dedication

This project is dedicated to my sister Valantina. She is my inspiration and strength to move forward. She reminds me everyday why my work and this research project are so important.

Acknowledgments

First and foremost I want to thank God for giving me the patience and the perseverance to complete my doctorate. I feel blessed.

Each of my committee members took an interest in my project and supported me even in the most difficult times. My mentor, Dr. Theresa Crawford, provided useful feedback as I wrote my chapters and encouraged me to continue to move forward throughout my doctorate even when I thought I could not do it. Dr. Jim Mirabella was instrumental in the development of my research design and data analysis. He was generous with his time, patient with me, and incredibly supportive. Dr. Kim Kostere not only helped me brainstorm topics for my dissertation but his expertise in the field of addiction was extremely valuable during the comprehensive exam and dissertation process. Dr. Krista Krebs was generous enough to be a member of my committee and asked important questions to make me critically think about my research. A good committee makes such a difference and I had a wonderful experience writing my dissertation because of my committee members support.

I was fortunate to have Douglas Craig edit my chapters and provide feedback, especially when I was too familiar with the chapters to see the edits myself. Thank you for taking the time and putting in the effort to make my manuscript better.

Most importantly, thank you to my parents for valuing education, always encouraging me to follow my dreams, and not allowing me to give up.

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CHAPTER 1: INTRODUCTION

Background of the Study

One of the most misunderstood and underserved populations in society is adolescents who exhibit criminal thinking and antisocial behaviors. Often adolescents who exhibit maladaptive behaviors exhibit poor performance in school or at work, have difficulty making good choices, live in unsafe communities, have conflict with family members, and eventually serve time in juvenile correctional facilities (Todis, Bullis, Waintrup, Schultz, & D'Ambrosio, 2001). Since 1987 there has been a steady increase in the number of juveniles adjudicated and sentenced to out of home placements (MacKenzie, 1999).

Many of the adolescents involved in the juvenile justice system have special education needs (20% to 60%), are emotional behavioral disabled (EBD) (40% to 60%) (Rutherford, Bullis, Wheller Anderson, & Griller, in press) or have comorbid disorders with substance abuse or dependence (70% to 80%) (McClelland, 2003). Adolescents who use drugs and or alcohol often start by experimenting with these substances, which creates a loss of inhibitions and an increase in risk for dependency. A study conducted by the Center on Addiction and Substance Abuse at Columbia University revealed adolescents view addiction as something they fear more than a crime against them, peer pressure, low grades, and sex (Lewin, 1995). This is because initially drugs are fun and exciting but addiction can set in quickly and takes over the user's life. Will power alone is not enough to stop the addiction from occurring.

Adolescents who experiment with drugs have a greater risk of developing an addiction than adults because the adolescent brain is less developed than the adult brain, the adolescent

brain adapts to the drug abuse quicker, substance abuse leaves more permanent damage in the adolescent brain, and adolescents are unable to see the warning signs an adult may be more attuned to (Walsh, 2004). Regular use of drugs or alcohol at developmentally critical stages interferes with crucial growth and learning adjustment tasks (Newcomb & Bentler, 1989; Walsh, 2004). In fact, the younger an adolescent experiments with drugs and alcohol the more likely they are to develop a problem. Few people use illegal drugs during adulthood if they do not experiment in adolescence (Jaffe, 1998).

Peer pressures, family relationships, school, neighborhood environment, and cultural norms are all examples of factors that either protect the adolescent from using illegal drugs or increase the risk that they will use (Liddle et al., 2001). Other risk factors include the availability of drugs or alcohol, low socio-economic status, early use or experimentation with drugs, low value on achievement, poor school performance, and unmanaged mental health concerns (Beman, 1995; Jaffe, 1998).

One of the biggest risk factors of early drug use is exposure to family members who abuse substances (Kennedy & Minami, 1993; Myers, Brown, & Mott, 1993). If parents or siblings are using substances the adolescent is more likely to start using because of the acceptance by family members, availability of the substance, and developed pattern of substance use that exists (Waldon, Slesnick, Brody, Turner, & Peterson, 2001).

Increasing the number of protective factors, or supportive people and resources, available to adolescents when they leave a correctional facility increases their chances of demonstrating resilient behavior. To build resiliency, treatment program interventions in correctional facilities should include efforts to enhance the protective factors and decrease the risk factors the

adolescent will be exposed to once they are released from the correctional facility (Dowden & Andrews, 1999a). First, it is necessary to identify factors that either cause or prevent the adolescent from being successful in the community (Dowden & Andrews, 1999b). Often adolescents with negative family and peer associations, antisocial attitudes, anger, and impulsivity control are more likely to participate in criminal activity and drug abuse (Andrews & Bonta, 1998). Second, correctional facilities can offer treatment programs during incarceration that provide skills, services, and support necessary to meet the needs of the adolescent and facilitate their reentrance into society (Todis, Bullis, Waintrup, Schultz, & D'Ambrosio, 2001). The more protective factors an adolescent has, the more likely the individual will be resilient. This will reduce recidivism (Conger & Cogner, 2002).

The correctional facility under investigation in this study is the Dakota County Juvenile Service Center (JSC) in Minnesota. The majority of the adolescents held in the facility are from the surrounding cities of Apple Valley, Farmington, Burnsville, Lakeville, South St. Paul, Inver Grove Heights, Eagan, Rosemount, and Hastings. Dakota County has grown from a rural farming community in 1970 with 137,000 people to a suburban community with over 227,000 people in 1990 (United States Census Bureau, 1990) and 355,000 people in 2000 (United States Census Bureau, 2000). Out of the 355,000 it is estimated that 112,000 are under the age of 18 years old. Although the dominant race in Dakota County is Caucasian (91%), there are also African American (2.3%), Asian (2.9%), and Hispanic (2.9%) (United States Census Bureau, 2000).

The Dakota County Juvenile Service Center (JSC) is a juvenile correctional facility under the Department of Community Corrections. JSC has a long-term program and a short-term

program, each with a capacity of 10 adolescents. Every adolescent in the facility has committed a crime and is serving a sentence. The age of the adolescents ranges from 14-18 years old with residents serving a sentence of 30-90 days in the short-term program and six to nine months in the long-term program. Most of the adolescents reside in suburban or rural communities with their families when not incarcerated.

The Odyssey Substance Abuse Program has provided services to the adolescents in the JSC for two and a half years. The program admits on average four adolescents per month. Preliminary data collection showed promising changes in the behaviors of adolescents that were admitted to the substance abuse treatment program. In fact, when probation officers were surveyed they reported adolescents that completed the program were using fewer substances then before incarceration, were attending school more often, and reported higher functioning family relationships (Odyssey programs, 2004). Over half of the adolescents who participated in the substance abuse program did not have new offenses and reported improved quality of living conditions at follow up (Odyssey Programs, 2004).

The cornerstone of the Odyssey Program is to create behavior change over time. To do this, the program gauges the adolescents' interest in change, encourages exploration of their interest and strengths, uses research based curricula to address risk, and works with the adolescent to develop a comprehensive relapse prevention plan in preparation for discharge. At the beginning of the program the adolescents go through an initial assessment that uses a multisystemic perspective to identify strengths, areas for improvement, and motivation for change. Motivation for change is important to assess because it dictates treatment goals and progress. For instance, some adolescents in treatment are able to say, "I will not use drugs until I

am off probation." Although the best answer is "I am not going to use at all", it may not be realistic for the adolescent. This example meets adolescent clients where they are and adheres to the principles of motivational interviewing by letting them identify what they are interested in changing or doing differently, rather than telling them what to change (Miller & Rollnick, 2002). Once strengths, motivation, and areas of growth are identified, individualized treatment planning can begin.

Next, the adolescent and therapist generate short- and long-term goals the adolescent can focus on during treatment and transition. Some goals the clients choose involve drug education, understanding the progression of addiction, and learning about the stages of change. Other goals include finding a job, exploring post secondary school options (going on a school visit, looking up the institution's website, getting an application, etc), improving family relationships through counseling, finding a mentor, attending Alcoholics Anonymous meetings, or finding a sponsor. Although one might question whether finding a job is related to substance abuse treatment, the reality is that adolescents are influenced by the system they are part of. The people, places and things a person is surrounded by help mold decisions, determine self-confidence, and affects goal setting (Miller & Rollnick, 2002). Enhancing positive aspects from a multisystemic view provides the client with support and resources when that person goes back into the community. Reducing negative influences after treatment and incarceration also reduces the likelihood of reoffending (McClelland, 2003).

To achieve its means, the Odyssey Program uses a cognitive behavioral model of therapy with an emphasis on harm reduction using motivational interviewing. Three research-based curricula are used as the foundation of the substance abuse program: Wanberg and Milkman's

(1998) *Criminal Conduct and Substance Abuse Treatment, The Cannabis Youth Treatment (CYT) Series* from the U.S. Department of Health and Human Services Center [HHSC] (2002), and Gorski and Miller's (2001) *Relapse Prevention Planning*. The curricula emphasize meeting clients where they are in the their recovery (harm reduction) and empowering them to set and achieve their goals to reduce recidivism and relapse. Collectively, the curriculums provide education focusing on the following: the negative effects of drug use, the addiction cycle, the stages of change, the warning signs, and identification and change of risk and protective factors.

There is a community-based component to the program, which lasts for 12 weeks following incarceration. It exposes the adolescents to new activities and resources, already existing in their community that they can access. This type of community based programming exposes adolescents to leisure and recreational activities, sober supports, community-based resources, and after school and summer programs. Introducing the adolescents to new things once they are released from juvenile corrections provides them with a different perspective that instills confidence to try new things and move towards prosocial development (Altschuler & Armstrong, 1996).

The adolescents in the short-term program meet on Monday, Tuesday, Thursday, and Friday from 2:15 p.m. to 4:15 p.m. in one of the classrooms in the school section of the JSC. Every group starts with a reading of the group expectations, which one typed on a laminated sheet. To create a sense of tradition and ritual in the group experience, one adolescent is assigned to bring a leather bound journal to group. This individual is responsible for taking attendance and writing down the group topic. Other clients then read from two daily meditation

books: *Touchstones* (Hazelden, 1987) and *Believing in Myself (*Larsen & Hegarty, 1991). The group then discusses the passages and relates the readings to their own individual situations.

Initially, the group spends between thirty and sixty minutes presenting information and discussing the topic of the day. The second half of group allows clients to "check-in" and talk about significant events, feelings, and emotions they have recently experienced. This allows adolescents to practice communication and taking feedback from others. It also encourages the development of interpersonal skills, intrapersonal skills, affective strength, as well as stronger behavior patterns and peer relationships.

Statement of the Problem

A correctional facility often becomes a confinement that temporarily suppresses problematic behavior without acknowledging the fact that the adolescents will return to the same community from which they came. Many of the adolescents in juvenile corrections have experienced trauma, drug abuse, family discord, racism, and poverty. Their behaviors range from violent outbursts to numbness of any feeling or emotion (O'Conner, 2001). In particular, adolescents in corrections have a difficult time recognizing their feelings and managing how and when to express themselves in an appropriate way (Krystal, 1988; O'Conner, 2001). In a juvenile correctional facility it is not unusual for an adolescent's chronological age to be 16, cognitive age to be 10, and emotional age to be 2 or 3. Discrepancies of this magnitude lead to inappropriate placements and treatment services (O'Conner, 2001).

The ability for an at-risk youth to recover from substance abuse problems and traumatic childhood experiences is essential to their well-being in adulthood (Keogh & Weisner, 1993).

One's ability to be resilient is influenced by internal and external risk and protective factors. Increasing resiliency factors in adolescents decreases psychosocial maladaption and psychopathology in adulthood (Hunter & Chandler, 1999). Researchers want to identify what specific factors in children and adolescents impact resiliency and adjustment in adulthood (Compas, Hinden, & Gerhardt, 1995).

To be effective, programs in correctional facilities need to assess and enhance the protective factors an adolescent will be exposed to when they go back to the community (Dodge & Pettit, 2003). The Search Institute has conducted research on the factors that influence growth and development, and centering around 40 internal and external assets most important to resiliency. The more assets adolescents have, the better the chances of reducing recidivism and adjustment in adulthood (Search Institute, 2004). The assets fall under the following headings: support, empowerment, boundaries and expectations, constructive use of time, commitment to learning, positive values, social competencies, and positive identity (Search Institute, 2004).

Purpose of the Study

The goal of the juvenile justice system is to have programs in correctional facilities that have enough impact to lower recidivism rates. A powerful way to reduce recidivism is to increase the protective factors and decrease the risk factors in an adolescent's life (Dodge & Pettit, 2003; Search Institute, 2004). The purpose of this pilot study is to measure the effectiveness of a particular substance abuse treatment program in increasing protective factors and decreasing risk factors with adolescents in a juvenile correctional facility. Research suggests substance abuse is a primary contributor to criminal activity and puts adolescents at high-risk for

reoffending (Wierson & Forehand, 1995). Understanding the adolescents within the substance abuse program and the changes made over time with regards to risk and protective factors will provide meaningful information as to whether the substance abuse treatment program is assisting with change. If adolescents in the substance abuse treatment program are increasing protective factors at a higher rate than the general correctional population, the program may be a catalyst for change and a reduction of recidivism.

Research Questions/Hypotheses

1. Is the Odyssey substance abuse treatment program effective in assisting the adolescents in increasing their protective factor score on the Behavioral and Emotional Rating Scale –2 (BERS-2) and decreasing their risk factor score on the Drug Use Screening Inventory (DUSI-R).

Ho1.1: There is no difference in the protective factor score on the BERS-2 at the beginning of treatment as compared to 30 days into the treatment process.

Ha1.1: There is a difference in the protective factor score on the BERS-2 at the beginning of treatment as compared to 30 days into the treatment process.

Ho1.2: There is no difference in the risk factor score on the DUSI-R at the beginning of treatment as compared to 30 days into the treatment process.

Ha1.2: There is a difference in the risk factor score on the DUSI-R at the beginning of treatment as compared to 30 days into the treatment process.

2. Is there a difference between the self-reported risk factors on the DUSI-R and protective factors on the BERS-2 among adolescents in the substance abuse treatment program as opposed to the adolescents in the general population of the correctional facility?

Ho2.1: There is no difference in the improvement of protective factor score on the BERS-2 among adolescents in the substance abuse treatment program as opposed to the adolescents in the general population of the correctional facility.

Ha2.1: There is a difference in the improvement of protective factor score on the BERS-2 among adolescents in the substance abuse treatment program as opposed to the adolescents in the general population of the correctional facility.

Ho2.2: There is no difference in the improvement of risk factor score on the DUSI-R among adolescents in the substance abuse treatment program as opposed to the adolescents in the general population of the correctional facility.

Ha2.2: There is a difference in the improvement of risk factor score on the DUSI-R among adolescents in the substance abuse treatment program as opposed to the adolescents in the general population of the correctional facility.

3. Does the Odyssey substance abuse treatment program increase the interpersonal strength score on the BERS-2 between the time the adolescents enter the treatment program and 30 days into the treatment process?

Ho3.1: There is no increase in the interpersonal strength score on the BERS-2 between the time the adolescents enter the treatment program and 30 days in the treatment process.

Ha3.1: There is an increase in the interpersonal strength score on the BERS-2 between the time the adolescents enter the treatment program and 30 days in the treatment process.

Ho3.2: There is no difference in the improvement of the interpersonal strength score on the BERS-2 between adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

Ha3.2: There is a difference in the improvement of the interpersonal strength score on the BERS-2 between adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

4. Does the Odyssey substance abuse treatment program increase the family involvement score on the BERS-2 between the time the adolescents enter the treatment program and 30 days into the treatment process?

Ho4.1: There is no increase in the family involvement score on the BERS-2 between the time the adolescents enter the treatment program and 30 days into the treatment process.

Ha4.1: There is an increase in the family involvement score on the BERS-2 between the time the adolescents enter the treatment program and 30 days into the treatment process.

Ho4.2: There is no difference in the improvement of the family involvement score on the BERS-2 score between the adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

Ha4.2: There is a difference in the improvement of the family involvement score on the BERS-2 between the adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

5. Does the Odyssey substance abuse treatment program increase the intrapersonal strength score on the BERS-2 between the time the adolescents enter the treatment program and 30 days into the treatment process?

Ho5.1: There is no increase in the intrapersonal strength score on the BERS-2 between the time the adolescents enter the treatment program and 30 days into the treatment process.

Ha5.1: There is an increase in the intrapersonal strength score on the BERS-2 between the time the adolescents enter the treatment program and 30 days into the treatment process.

Ho5.2: There is no difference in the improvement of the intrapersonal strength score on the BERS-2 between the adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

Ha5.2: There is a difference in improvement of the intrapersonal strength score on the BERS-2 between the adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

6. Does the Odyssey substance abuse treatment program increase the school functioning score on the BERS-2 between the time the adolescents enter the treatment program and 30 days into the treatment process?

Ho6.1: There is no increase in the school functioning score on the BERS-2 between the time the adolescents enter the treatment program and 30 days into the treatment process.

Ha6.1: There is an increase in the school functioning score on the BERS-2 between the time the adolescents enter the treatment program and 30 days into the treatment process.

Ho6.2: There is no difference in the improvement of the school functioning score on the BERS-2 between the adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

Ha6.2: There is a difference in the improvement of the school functioning score on the BERS-2 between the adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

7. Does the Odyssey substance abuse treatment program increase the affective strength score on the BERS-2 between the time the adolescents enter the treatment program and 30 days into the treatment process?

Ho7.1: There is no increase in the affective strength score on the BERS-2 between the time the adolescents enter the treatment program and 30 days into the treatment process.

Ha7.1: There is an increase in the affective strength score on the BERS-2 between the time the adolescents enter the treatment program and 30 days into the treatment process.

Ho7.2: There is no difference in the improvement of the affective strength score on the BERS-2 between the adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

Ha7.2: There is a difference in the improvement of the affective strength score on the BERS-2 between the adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

8. Does the Odyssey substance abuse treatment program increase the substance abuse score on the DUSI-R between the time the adolescents enter the treatment program and 30 days into the treatment process?

Ho8.1: There is no increase in the substance abuse score on the DUSI-R between the time the adolescents enter the treatment program and 30 days into the treatment process.

Ha8.1: There is an increase in the substance abuse score on the DUSI-R between the time the adolescents enter the treatment program and 30 days into the treatment process.

Ho8.2: There is no difference in the improvement of the substance abuse score on the DUSI-R between the adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

Ha8.2: There is a difference in the improvement of the substance abuse score on the DUSI-R between the adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

9. Does the Odyssey substance abuse treatment program increase the behavior patterns score on the DUSI-R between the time the adolescents enter the treatment program and 30 days into the treatment process?

Ho9.1: There is no increase in the behavior patterns score on the DUSI-R between the time the adolescents enter the treatment program and 30 days into the treatment process.

Ha9.1: There is an increase in the behavior patterns score on the DUSI-R between the time the adolescents enter the treatment program and 30 days into the treatment process.

Ho9.2: There is no difference in the improvement of the behavior patterns score on the DUSI-R between the adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

Ha9.2: There is a difference in the improvement of the behavior patterns score on the DUSI-R between the adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

10. Does the Odyssey substance abuse treatment program increase the health status score on the DUSI-R between the time the adolescents enter the treatment program and 30 days into the treatment process?

Ho10.1: There is no increase in the health status score on the DUSI-R between the time the adolescents enter the treatment program and 30 days into the treatment process.

Ha10.1: There is an increase in the health status score on the DUSI-R between the time the adolescents enter the treatment program and 30 days into the treatment process.

Ha10.2: There is no difference in the improvement of the health status score on the DUSI-R between the adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

Ha10.2: There is a difference in the improvement of health status score on the DUSI-R between the adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

11. Does the Odyssey substance abuse treatment program increase the psychiatric disorder score on the DUSI-R between the time the adolescents enter the treatment program and 30 days into the treatment process?

Ho11.1: There is no increase in the psychiatric disorder score on the DUSI-R between the time the adolescents enter the treatment program and 30 days into the treatment process.

Ha11.1: There is an increase in the psychiatric disorder score on the DUSI-R between the time the adolescents enter the treatment program and 30 days into the treatment process.

Ho11.2: There is no difference in the improvement of the psychiatric disorder score on the DUSI-R between the adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

Ha11.2: There is a difference in the improvement of the psychiatric disorder score on the DUSI-R between the adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

12. Does the Odyssey substance abuse treatment program increase the social competence score on the DUSI-R between the time the adolescents enter the treatment program and 30 days into the treatment process?

Ho12.1: There is no increase in the social competence score on the DUSI-R between the time the adolescents enter the treatment program and 30 days into the treatment process.

Ha12.1: There is an increase in the social competence score on the DUSI-R between the time the adolescents enter the treatment program and 30 days into the treatment process.

Ho12.2: There is no difference in the improvement of the social competence score on the DUSI-R between the adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

Ha12.2: There is a difference in the improvement of the social competence score on the DUSI-R between the adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

13. Does the Odyssey substance abuse treatment program increase the family system score on the DUSI-R between the time the adolescents enter the treatment program and 30 days into the treatment process?

Ho13.1: There is no increase in the family system score on the DUSI-R between the time the adolescents enter the treatment program and 30 days into the treatment process.

Ho13.1: There is an increase in the family system score on the DUSI-R between the time the adolescents enter the treatment program and 30 days into the treatment process.

Ho13.2: There is no difference in the improvement of the family system score on the DUSI-R between the adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

Ha13.2: There is a difference in the improvement of the family system score on the DUSI-R between the adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

14. Does the Odyssey substance abuse treatment program increase the school performance score on the DUSI-R between the time the adolescents enter the treatment program and 30 days into the treatment process?

Ho14.1: There is no increase in the school performance score on the DUSI-R between the time the adolescents enter the treatment program and 30 days into the treatment process.

Ha14.1: There is an increase in the school performance score on the DUSI-R between the time the adolescents enter the treatment program and 30 days into the treatment process.

Ho14.2: There is no difference in the improvement of the school performance score on the DUSI-R between the adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

Ha14.2: There is a difference in the improvement of the school performance score on the DUSI-R between the adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

15. Does the Odyssey substance abuse treatment program increase the work adjustment score on the DUSI-R between the time the adolescents enter the treatment program and 30 days into the treatment process?

Ho15.1: There is no increase in the work adjustment score on the DUSI-R between the time the adolescents enter the treatment program and 30 days into the treatment process.

Ha15.1: There is an increase in the work adjustment score on the DUSI-R between the time the adolescents enter the treatment program and 30 days into the treatment process.

Ho15.2: There is no difference in the improvement of the work adjustment score on the DUSI-R between the adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

Ha15.2: There is a difference in the improvement of the work adjustment score on the DUSI-R between the adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

16. Does the Odyssey substance abuse treatment program increase the peer relation's score on the DUSI-R between the time the adolescents enter the treatment program and 30 days into the treatment process?

Ho16.1: There is no increase in the peer relation's score on the DUSI-R between the time the adolescents enter the treatment program and 30 days into the treatment process.

Ha16.1: There is an increase in the peer relation's score on the DUSI-R between the time the adolescents enter the treatment program and 30 days into the treatment process.

Ho16.2: There is no difference in the improvement of the peer relations score on the DUSI-R between the adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

Ha16.2: There is a difference in the improvement of the peer relations score on the DUSI-R between the adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

17. Does the Odyssey substance abuse treatment program increase the leisure and recreation score on the DUSI-R between the time the adolescents enter the treatment program and 30 days into the treatment process?

Ho17.1: There is no increase in the leisure and recreation score on the DUSI-R between the time the adolescents enter the treatment program and 30 days into the treatment process.

Ha17.1: There is an increase in the leisure and recreation score on the DUSI-R between the adolescents enter the treatment program and 30 days into the treatment process.

Ho17.2: There is no difference in the improvement of the leisure and recreation score on the DUSI-R between the adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

Ha17.2: There is a difference in the improvement of the leisure and recreation score on the DUSI-R between the adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

Significance of the Study

This was a pilot study to identify the risk and protective factors reported by adolescents in a juvenile correctional facility. The pilot study compared the risk and protective factors of two groups, those in the general correctional population and those who were in the correctional facility and participated in the substance abuse treatment program. The adolescents were asked about their risk and protective factors when they first arrived at the facility and again after 30 days of incarceration. By doing this, the pilot study identified what risk and protective factors changed over time and whether there was a difference between the two groups.

If the substance abuse program was a catalyst in the development of protective factors, this study would provide meaningful information supporting treatment in correctional facilities. Further, the treatment model could then be used as a means to build resiliency and reduce recidivism of drug, alcohol, or other high-risk behaviors. Other substance abuse treatment programs could look at the specific treatment interventions used and make modifications to fit their populations. If the substance abuse treatment program offers promising results that information can be used by the correctional facility to justify funding for the program.

The correctional facility and substance abuse program can both benefit from the study results by being able to present data about the risk and protective factors reported by adolescents they serve. Also, compare changes in risk and protective factors to recidivism rates, provide outcome data for the substance abuse program's theoretical model, and determine a cost analysis. If the substance abuse treatment program is cost effective, uses a theoretical model, and reduces recidivism it will be valuable to juveniles in the justice system. There is little research on building resiliency factors with incarcerated adolescents. This pilot study provides a stepping-stone for future projects. The study could be duplicated with different correctional populations to determine its effectiveness with more culturally diverse populations. The substance abuse program's theoretical framework can be used and studied with general correctional populations to determine its effectiveness with a larger group other than those in substance abuse treatment.

Nature of the Study

This study consisted of two groups, both of which included adolescents in a juvenile correctional facility. One group involved adolescents admitted to a substance abuse treatment program in the facility. The adolescents were given a short questionnaire and two standardized tests shortly after entering the facility and again 30 days following their initial interview. This study was a quasi-experimental design because it compared one group to a control group and sought to establish if there was a cause and effect relationship. It was not an experiment because the individuals were not randomly assigned to one of the two groups. Instead, the adolescents in the substance abuse treatment program met DSM-IV criteria for substance abuse or dependence while substance abuse criteria, although often present, was not a determiner for an adolescent to

be in the general correctional population. The study sought to establish change in the risk and protective factor scores between the beginning of treatment and 30 days from the initial interview. A pre/post test was a good way to mark progress during a treatment phase. Some adolescents were in the program longer than 30 days but all were in the program for at least 30 days, which makes it a reasonable amount of time to set for a posttest.

Definition of Terms

Behavioral and Emotional Rating Scale- Revised (BERS-2). A standardized test used to assess the participant's overall protective factor score and protective factors in five areas (Interpersonal strength, family involvement, intrapersonal strength, social functioning, and affective strength) (Epstein, 2004).

Correctional Facility. A place where individuals (adults or juveniles) are sentenced to serve a period of time for a crime they were found guilty of in a court of law. Typically state and local governments authorize and oversee correctional facilities (Andrews & Kiessling, 1980; Thomson & Rogona, 1987; Turner, Sundt, Applegate, & Cullen, 1995).

Dakota County Juvenile Service Center. The juvenile correctional facility the adolescents reside in.

Drug Use Screening Inventory (DUSI-R). A standardized test used to assess the participant's overall risk factor score and risk in eleven areas (drug and alcohol use, substance use, behavior patterns, health status, psychiatric disorder, social competence, family system, school performance, work adjustment, peer relationships, and leisure (Tarter & Hegedus, 1991).

General Correctional Population. The term used throughout the paper to refer to the adolescents who reside in the correctional facility but do not participate in the substance abuse treatment program.

Interviewer. The term used throughout the paper to refer to the administrator of the study. This refers to the therapist that presents to and sits with the participants while they complete the questionnaire and standardized tests.

Odyssey Substance Abuse Treatment Program. The substance abuse program contracted with the correctional facility to provide treatment services to some of the adolescents residing in the facility. It is located on the campus of the correctional facility.

Participants. The term refers to adolescents residing at the Dakota County Juvenile Service Center who participate in the study.

Post-adjudicated. When a person has been to court, found guilty, and given a sentence to serve by a judge (Office of Juvenile Justice and Delinquency Prevention [OJJDP], 2003).

Protective Factors. Positive people, places, and things that encourage goal setting and success and reduce the likelihood of negative outcomes (Haggerty, Garmezy, Rutter, & Sherrod, 1994).

Recidivism. Reoffending within a certain time frame. Typically the interval ranges from 12 to 30 months (Myner, Santman, Cappelletty, & Perlmutter, 1998).

Resiliency. "Adaptation or the ability to bounce back despite negative circumstances" (Jaffe, 1998, p.494).

Risk Factors. Characteristics associated with an increased probability of causing maladaptive outcomes (Brown, Schulenberg, Bachman, O'Malley, & Johnston, 2001b).

Substance Abuse Treatment Program. The term used throughout the paper to refer to the Odyssey substance abuse treatment program.

Assumptions

There were a number of assumptions in this study. First, we were assuming the adolescents would give truthful answers to the questions asked during the interviews and took precautionary steps to preserve honesty. For instance, the adolescents volunteered to participate in the study, which reduced the resistance to answering questions. Also, the adolescents were told before they participated that their answers would not be shared with anyone or used to consequence them. This is important because they could worry that the information they present would lead to more legal problems, which may lead them to lie. If adolescents believe the information they provide will not be used to consequence them, they are more likely to be honest (Oetting & Beauvais, 1990).

There was also an assumption that the adolescent's definitions and or interpretations of the questions asked were similar to the researchers. For instance, an adolescent may see a question that reads, "accepts criticism" and think it has a negative connotation or may not know what the word means. To resolve this dilemma, a field study was conducted to assess how the adolescents interpreted the questions and how they thought through to provide an answer. This ensured the research captured the information it set forth to obtain. The interviewer was also available to answer questions and provide clarification.

All the adolescents in the study resided at the correctional facility and roughly half participated in the substance abuse program. We compared a group of adolescents as they

entered the correctional facility to a group entering the substance abuse program in the same facility. There was an assumption that both groups were similar in nature, and that both samples were similar with regards to family background, school delinquency, and criminal history. We also assume this population is similar to the population of adolescents in other correctional facilities in suburban/rural communities. We provided demographic information about the population in the correctional facility and compared that to demographic information of the sample size.

Lastly, there is the assumption that the interviewer facilitated all the interviews in the same way. This diminishes the potential for bias, favoritism, or coaching. Each adolescent was given the same environment in which to answer the questions. The interviewer followed a narrative script and administered the questionnaire and standardized tests the same way each time.

Limitations

There were varying levels of literacy that may impact a participant's understanding of the questions asked during the interview. Some participants needed additional assistance while completing the inventories due to problems with comprehension. It was important that in such cases the interviewer did not lead the participant towards certain answers but presented each question as neutral and unbiased.

The study would have to be duplicated in a correctional facility that has an urban population to see if the treatment is effective cross culturally. A profile of the adolescent

participants was gathered through the questionnaire to examine whether the population is representative of all adolescents in juvenile corrections

The study used 14 to 18 year old males from the correctional facility. The study recognized there are many developmental differences between a 14 and 18 year old. However, because of the limited number of adolescents entering the correctional facility during the specific eight-month period, it was necessary to include as many participants as possible, regardless of their age.

CHAPTER 2: REVIEW OF LITERATURE

There is a segment of the population that is lost in society. It is the children born into generational poverty, unsafe neighborhoods, family discord, and a lack of resources and support encouraging them to have dreams. These children are often exposed early to drug use, gang violence, sex, and criminal behaviors (Payne, DeVole, & Smith, 2001). The exposure to unjust circumstances puts them at risk to succumb to the juvenile justice system. Once in the juvenile justice system they have a criminal record, struggle to maintain stability outside correctional facilities and end up learning and developing in institutions (Lipsey, Wilson, & Cothern, 2000). Once they become accustomed to the juvenile justice system it is difficult to make changes. They find themselves most comfortable institutionalized and lack an understanding of how to cope in the world around them. Finding an alternative lifestyle is complicated and most will struggle for years without proper intervention (Austin, Johnson, & Weitzer, 2005).

Adolescents involved in the juvenile justice system are important to study because they are responsible for a significant portion of crimes committed, tend to resist interventions services but benefit from early interventions, influence the community and peer groups, and are at risk of becoming life long criminals (Florsheim, Behling, South, Fowles, & DeWitt, 2004). Unfortunately, there is little research on the specific interventions that are best practices with adolescents in the juvenile justice system. Most research conducted on adolescence looks at theories of behavior change for typical adolescents. Most research supports the use of cognitive behavioral therapy (CBT) but does not look at specific interventions, suitable, for adolescents in corrections (Palmer, 1996).

This review of the literature provides an overview of the juvenile justice system and explores best practices for building resiliency factors in adolescents in corrections. First, a description of the juvenile justice system and profiles of adolescents in the juvenile justice system are provided. Next, the review will summarize research on key risk and protective factors for adolescents in juvenile corrections. Thereafter, research studies that outline effective treatment interventions in corrections will be critically assessed. The goal of this study is to identify whether or not a substance abuse treatment program is effective at increasing protective factors and decreasing risk factors for adolescents in juvenile corrections.

Juvenile Justice System

An overview of the history of the juvenile justice system will provide a basic understanding for how juvenile corrections came to service offenders as they do. To maintain public safety and hold adolescents accountable for crimes they commit, the juvenile justice system was inducted nearly one hundred years ago (Austin, Johnson, & Weitzer, 2005). Since its inception there have been major philosophical shifts in how the government and society view juvenile crime and punishment (Fritsch, Caeti, & Hemmens, 1996). Public opinion and governmental influences affect the philosophy practiced in correctional facilities, which in turn, impacts the rehabilitative services offered to juvenile offenders.

Historical View

In the 1950's and early 1960's rehabilitation had a core function in the philosophy of corrections and the justice system. The public opinion and action taken by local and state officials was to support treatment efforts in correctional facilities in hopes to "cure" the offender

and reduce the likelihood that they would reoffend (Sundt, Cullen, Applegate, & Turner, 1998). However, little research was conducted on the effectiveness of treatment programs in corrections, which fueled a critical attack on whether rehabilitation was useful to those incarcerated, and whether it was cost effective (Sundt, Cullen, Applegate, & Turner, 1998).

During the early 1970's the political climate changed and the focus shifted with regards to how government thought correctional facilities should balance rehabilitation and punishment. Political circles opposed rehabilitation because it supposedly was undermining crime control, created lenient punishments, and took away the power of the courts to provide sanctions (Sundt, Cullen, Applegate, & Turner, 1998). The politicians pointed out the lack of research supporting rehabilitation in corrections, which in turn influenced the public opinion. Opinion polls and political statements alluded to the lack of public support for rehabilitation services in corrections which made it appear as though rehabilitation efforts were not supported (Sundt, Cullen, Applegate, & Turner, 1998).

By the mid 1980's there was an overt discrepancy between how government and the public viewed punishment and rehabilitation in the juvenile justice system. Research was conducted and evidence found that the general public was most in support of a combination of rehabilitation and punishment (Cullen, Clark, & Wozniak, 1985; Cullen, Golden, & Cullen, 1983; Stienhart, 1988). The general public thought the offender would be less likely to reoffend if they had some sort of rehabilitation services available while incarcerated.

The government and juvenile corrections continued to move towards punishment and focused less on rehabilitation into the 1990's. Between 1973 and 1992 the number of prisoners increased by 332% and the incarceration rate increased by more than 200%, yet the crime rate

did not increase at the same rate (Office of Juvenile Justice and Delinquency Prevention [OJJDP], 2004). Legislation also supported tough punishment in corrections; for instance, in 1993 and 1994 15 states implemented a "three strike and you're out" rule that mandates a life sentence with no possibility of parole for a third felony (OJJDP, 2004).

The juvenile justice system continues to be punitive with its punishment throughout juvenile correctional facilities across the nation (Caeti, Cullen, & Burton, 2003; Hemmens, Fritsch, & Caeti, 1998). The current "tough on crime" justice model resulted in an increase in determinate sentencing, mandatory institutionalization, and the widening use of adult court for serious and chronic juvenile offenders (Sundt, Cullen, Applegate, & Turner, 1998). Although there is an overall embracing of punitive ideologies there is also a growing body of research that points to the success of rehabilitation services in correctional facilities to reduce recidivism. This may shift government thinking towards a combination model, where the justice system provides consequences for behavior and effective rehabilitation services (Cullen, Evans, Skovron, Scott, & Burton, 1990; McCorkle, 1993).

Process

The process a juvenile offender in the justice system experiences is a similar process to those in the adult system, with a couple of exceptions. Referent sources are one of the biggest differences between adult and adolescent offenders. Police or probation officers typically refer adults, whereas law enforcement officers, school officials, social services agencies, neighbors, and even parents refer adolescents to court. Also adolescents are often referred for behavioral problems that require formal intervention by the system while adults usually receive punishment for a crime committed (Bureau of Justice Statistics, 2004).

The prosecuting attorney's department usually determines if a petition to charge will be filed and requests an adjudicatory hearing. Once a formal charge is made a court date is set and sentencing, diversion program, or other mandatory programming is assigned. Alternative sentencing could include; drug treatment, counseling, educational or recreational programming, or vocational training. In extreme cases adolescents can be tried in adult court. Each state has their own set of criteria for how and when they can charge an adolescent in adult court. After completion of a sentence at a correctional facility or completion of an alterative treatment program, the adolescent typically is required to participate in an aftercare program and probation (Bureau of Justice Statistics, 2004).

According to Austin, Johnson and Weitzer (2005) when an adolescent first enters the justice system it is important to assess their risk level. A risk assessment refers to the process of determining the likelihood the adolescent will be a flight risk or reoffend while awaiting court. The risk assessment looks at the number of probation violations, number of failures to appear in court, and other risk factors in the adolescent's environment.

Next, the justice system assesses what level of intervention an adolescent offender needs to reduce their risk of reoffending (Austin, Johnson, & Weitzer, 2005). The classifications from a risk assessment plays an important role in determining whether the adolescent would benefit most from diversion programs, temporary confinement, out of home placements, community based therapeutic services, or a long term sentence in a secure setting (Austin, 2001).

Profile of Adolescents in Juvenile Corrections

There are a significant number of adolescent offenders, which is why having interventions is important to reduce the likelihood of reoffending. In October 1999, 134,011 youth were housed in an out of home placement (OJJDP, 2004). In 2002, there were an estimated 2.3 million arrests of persons under the age of 18 years old (OJJDP, 2002). Typically, the prevalence of committing a crime is highest during adolescence with a peak at 17 years old and a drastic decline after that (Moffitt, 1990).

Overview

Data collected by OJJDP (2005) noted several characteristics about adolescents. First, 3 out of 10 adolescents lived in single parent homes in 1998. Second, children living only with their mothers were more than twice as likely to live in poverty than those living with only their fathers. And in 2000, 11.6 million juveniles (16% of all youth under age 18) were living below the poverty level. Boesky (2002) notes many adolescents involved in the juvenile justice system also exhibit mental health issues that were neither addressed nor treated. Adolescents who enter corrections with a mental health disorder can exhibit serious attention and concentration problems, mood disorders, extreme anxiety, reactions to previous traumatic events, distorted thought processing, low intellectual functioning, and drug abuse (Boesky, 2002). Aside from mental health issues, most adolescents incarcerated report experiencing physical, sexual, and or emotional abuse, and have a history of minor delinquent acts (Mulvey, & Pieffer, 1993; Johnson-Reid, 1999). It can be these factors that lead adolescents to inappropriate and illegal behaviors in the community and to eventually navigate the juvenile justice system. These factors also contribute to adolescent's loss of interest in age appropriate activities like school, recreation, and

prosocial peer activities (Boesky, 2002; Henggler, Melton, & Smith, 1992). In other words, the more risk factors children and adolescents encounter the more likely they are to fall into criminal behavior and find themselves in the justice system.

The population in an in-patient psychiatric hospital often mirrors the population inside a juvenile correctional facility (Cohen et al., 1990; Boesky, 2002). Cohen et al. (1990) looked at 68 adolescents between 12 and 15 years old to compare emotional and behavioral characteristics of adolescents in a psychiatric hospital with that of a state juvenile justice facility in Virginia. To gather data about the behaviors of the adolescents, parents were given a questionnaire to complete as well as the Child Behavior Checklist (Achenbach, 1994). The researchers found extreme behavioral problems noted in both groups with no difference between the types of behavioral problems. Of the 32 adolescents in the psychiatric facilities, 21 were male and 21 were white while 11 were black, 31% were admitted voluntarily, the courts committed 69%. All the adolescents in the correctional facility were charged with a crime and of the 36 participants, 27 were male, 13 were white and 23 were black. When comparing the two populations it is interesting to note that black adolescents were over represented in the correctional facilities as opposed to the psychiatric hospitals.

The issue of race was a critical factor in the Cohen et al. (1990) study. It speaks to the continued problem of disproportionate minority contact in the juvenile justice system (Minnesota Juvenile Justice Advisory Committee, 2004; Miller, 1999). There tends to be a high percentage of minority adolescents in correctional facilities than represented in the general population (Coalition for Juvenile Justice [CJJ], 2005). In fact, a survey conducted by the U.S. Bureau of the Census for the Office of Juvenile Justice and Delinquency Prevention found that in 1999,

nearly two-thirds of the population in juvenile corrections was minority youth (Sickmund, 2004). The problem of disproportionate minority contact (DMC) occurs at many levels of the justice system. For instance, when police make an initial arrest of an adolescent, whether the adolescent is taken home after or to a detention center, whether a petition for court is filed during court proceedings, with intervention opportunities provided, and eventually whether they are sent to a correctional facility (CJJ, 2005). Reducing the proportion of youth of color at all points in the juvenile justice system would provide a closer representation of minorities in the general population (Minnesota Juvenile Justice Advisory Committee, 2004). It is important for adolescents of all cultural and ethnic backgrounds to have the same opportunities whether it is prevention, intervention, or diversion services to encourage a prosocial adulthood.

Less Serious Offenders

There are two categories of incarcerated juveniles involved in the juvenile justice system: the series and chronic offenders and the less serious offenders. It is important to distinguish chronic offenders from less serious offenders when treating and sentencing adolescents (Austin, Johnson, & Weitzer, 2005). Several recent meta-analytic reviews concluded the intensity of juvenile justice sentencing should be tailored to match the risk level of the offender. For instance, high-risk cases should receive more intensive incarceration while less serious offenders should receive alternative sentencing (Dowden & Andrews, 1999a; Dowden & Andrews, 1999b; Lipsey, 1989; Lipsey, 1995). What class the offender is in is based on the risk assessment, previous record, risk of recidivism, criminogenic needs, the responsivity of the offenders to different service options, and empathy for their crime (Andrews, Bonta, & Hoge, 1990).

For less serious offenders, studies suggest they can be rehabilitated without being incarcerated (Austin, Johnson, & Weitzer, 2005). Services such as interpersonal skills training, offering individual/ family counseling, and behavioral programs are more likely to reduce recidivism for less serious offenders (Clingempeel & Henggeler, 2003). Services that provide community based support are also helpful in encouraging the development of protective factors in adolescents and guiding them away from high-risk situations (Altschuler & Armstrong, 2002).

Serious and Chronic Offenders

Although the number of adolescents engaging in violent crimes has declined since the mid-1990s there are still adolescents entering juvenile correctional facilities habitually for aggressive crimes (Snyder & Sickmund, 1999). In 1999-2000 roughly 23,000 youth offenders were placed in correctional facilitates. Of those, 22 percent committed offenses involving violence to another person (McClelland, 2003). Often serious juvenile offenders have significant personal problems and their criminal activities become a way to hide and release their pain (Henggeler, Melton, & Smith, 1992). They commit crimes and end up being over represented in the "deep end" of the justice system with little rehabilitation services available.

Often chronic offenders will exhibit one of three mental health diagnoses: Conduct Disorder (CD), Oppositional Defiant Disorder (ODD), and antisocial behaviors (OJJDP, 2004). An adolescent diagnosed with Oppositional Defiant Disorder often exhibits hostility, negative behaviors, and has trouble controlling his or her anger. The adolescent may excessively blame others, become easily annoyed, deliberately annoy others, and become resentful or hold a grudge that appears unreasonable (American Psychological Association [APA], 2000). An adolescent

with ODD does not meet criteria for Conduct Disorder but the disorder does create significant impairment in social, recreational, or occupational functioning.

Another diagnosis often seen in adolescents incarcerated in corrections is Conduct Disorder. Adolescents with Conduct Disorder typically have committed multiple crimes, have been destructive to property, have had serious violations of rules, have exhibited negative behavior before the age of 10 years old, with problems taking place in most settings (APA, 2000). If negative behaviors are continually reinforced and untreated, the behaviors can manifest into antisocial personality disorder in adulthood.

It appears the manifestations of antisocial behaviors emerge very early in the lifespan and remains present even though one cannot be diagnosed with Antisocial Personality Disorder until 18 years of age (Moffitt, 1990). Typical symptoms are failure to follow social norms, deceitfulness, irritability and aggressiveness, irresponsibility, and a lack of remorse (APA, 2000). Across the lifespan, individuals exhibit changing manifestations of antisocial behavior, biting and hitting at age 4, shoplifting and truancy at age 10, selling drugs and stealing cars at age 16, robbery and rape at age 22, and fraud and child abuse at age 30. The underlying disposition remains the same, but its expression changes form as new social opportunities arise at different points in development (Moffitt, 1990). As far as treatment goals, it is presumed that antisocial personality types are relatively unresponsive to rehabilitative services (Andrews, Bonta, & Hoge, 1990; Tate, Reppucci, & Mulvey, 1995) and in some cases treatment increases the risk of recidivism for those who use treatment to learn new ways of criminal thinking (Caldwell & Van Rybroek, 2001).

There is research that supports treatment efforts for serious and chronic offenders. Lipsey and Wilson (1998) conducted a meta-analysis with 200 studies, reports, and literature reviews on treatment for serious and chronic offenders. Most of the studies compared a treatment group with a control group. The greatest impact on behavior change in chronic juvenile offenders was for interventions that focused on family functioning, behavioral treatment, interpersonal skills training, and community integration after incarceration.

In a meta-analysis consisting of 46 treatment studies, Izzo and Ross (1990) found effective treatment for chronic offenders being community based; used to encourage and support the adolescent during transition from incarceration back to the community. Transition services and community based resources for high-risk chronic offenders have shown to reduce risk in areas of mental health, family relationships, and vocational and educational needs (Lipsey, Wilson, & Cothern, 2000). Specifically, research suggests incarceration followed up with interpersonal skills training, community based reentry services, family group, and in-home therapy should be required for serious offenders (Clingempeel & Henggeler, 2003; Izzo and Ross, 1990).

Adolescent Addiction in Juvenile Corrections

Adolescent Drug Use Trends

Although the data collection surrounding drug abuse among adolescents in corrections is sparse, since 1975 the Monitoring the Future Survey has annually studied the extent of drug abuse among high school 12th-graders (National Institute on Drug Abuse [NIDA], 2004). The survey was expanded in 1991 to include 8th- and 10th-graders. The research is funded by NIDA

and is conducted by the University of Michigan's Institute for Social Research. The goal of the survey is to collect data on 30-day, annual, and lifetime drug use among students in 8th grade, 10th grade, and 12th grade. In 2004 the study found 8th graders reported an overall decrease in drug use from the previous year. There was also a decrease in the use of illicit drugs, marijuana, and MDMAs. There was, however, an increase in the amount of inhalants and crack/cocaine 8th graders reported using. Drug use reported for alcohol, heroin, crack cocaine, hallucinogens other than LSD, PCP, amphetamines, tranquilizers, and sedatives remained stable among all grades from 2003 to 2004 (NIDA, 2004).

In 2005 49,347 students in the 8th, 10th, and 12th grades from 402 public and private schools participated in the survey. The results for drug use continued to decline. Some interesting findings include an all time low of cigarette smokers among teenagers, a 23 % decline in marijuana use since 2001, and a decline in alcohol and methamphetamine use from the previous year. However, the abuse rates of prescription painkillers continued to be on the incline especially for opiates. For example, in 2005, 9.5 percent of 12th graders reported using Vicodin in the past year, and 5.5 percent of these students reported using OxyContin in the past year (NIDA, 2004).

Drug Abuse Trends in Juvenile Corrections

When adolescents enter a correctional facility ideally they are screened for substance abuse and or dependency. Adolescents incarcerated are at least five times more likely to abuse drugs or alcohol than adolescents in the general population (Deschenes & Greenwood, 1994). A national survey of incarcerated adolescents found 80% of the adolescents reported drug use in their lifetime. Three out of five reported using one drug on a regular basis while close to half said

they were under the influence during their commitment offense (Snyder & Sickmund, 1995). One study looked at anonymous urine samples and found one-third of the adolescent's sampled tested positive for at least one drug when they arrived at the correctional facility (National Institute of Justice, 1994). Another study found 46 percent of the youth surveyed in a correctional facility reported alcohol abuse or dependence while 63 percent suffered from some other type of drug abuse or dependence (Davis, Bean, Schumacher, & Stringer, 1991). These statistics speak to the number of adolescents abusing substances and ending up in the juvenile justice system. It also alludes to the importance of having services to provide support and intervention during incarceration and after release to reduce the likelihood of drug relapse and recidivism.

More alarming the number of adolescents arrested for drug charges has increased in the past decade (Stahl, 2003). Juvenile courts were seeing a decline in the number of adolescents with drug offense between 1988 and 1991. In the early 1990's there was a sharp increase in drug offenses. In 1994 alone there were 120,200 drug offenses by adolescents throughout the United States (Stahl, 2003). The number of drug offense cases processed during 1994 was 35% greater than in 1993 and 82% greater than in 1991. By 1999, juvenile courts in the United States handled an estimated 191,200 juvenile delinquency cases in which a drug offense was the most serious charge. Drug offense cases accounted for 11% of all delinquency cases in 1999 (Stahl, 2003).

According to Boesky (2002) the most common drugs abused by adolescents in juvenile corrections are marijuana and alcohol. Since 1990, the Drug Use Forecasting (DUF) Study has measured substance abuse among males in juvenile detention. Through this study, male juveniles

were interviewed about their drug use in 12 detention centers in the following cities: Birmingham, AL; Cleveland, OH; Denver, CO; Indianapolis, IN; Los Angeles, CA; Phoenix, AZ; Portland, OR; St. Louis, MO; San Antonio, TX; San Diego, CA; San Jose, CA; and Washington, D.C (Crow, 1998). According to the data marijuana is the illicit drug most frequently used by delinquent youth (Crow, 1998).

There are a variety of drugs adolescents are abusing before they enter the juvenile justice system. Many have experimented with at least one drug and have often suffered consequences in their lifestyle due to their drug use (Johnston, O'Malley, & Bachman, 1993). The use of "rave" party drugs or MDMA's have been a recent trend (NIDA, 2001). Adolescents attend parties that have, for instance ecstasy, which gives them a burst of energy and an increased sense of self and well-being (NIDA, 2001).

Another dangerous trend adolescents refer to as "wet" or "lulu" involves dipping marijuana or tobacco cigarettes in formaldehyde. Ingesting these drugs results in extreme agitation, aggression, violent behavior, and also causes long-term brain and nervous system problems (NIDA, 2001). Both ecstasy and wet are dangerous to the heart rate, blood pressure, body temperature, and long term brain functioning. Adolescents ingesting such drugs experimentally or regularly can experience mood swings or illness after discontinuing use (NIDA, 2005a).

Methamphetamine abuse is also a growing problem among adolescents sentenced to corrections. The drug is created in laboratories by mixing a variety of dangerous and unhealthy chemicals. The labs range from large operations to small labs in rural communities (NIDA, 2001). The popularity of methamphetamine has increased the number of related drug charges as

well as the number of adolescents addicted to the drug when they arrive in corrections. When an adolescent is withdrawing from the drug they may experience extreme tiredness, irregular heartbeat or blood pressure, moodiness, and depression (Walters, 2004). These are important symptoms for correctional staff to assess when determining health and safety risks and treatment interventions.

A fourth trend in drug abuse reported by adolescents in corrections is huffing or inhaling toxic cleaning supplies or gases (National Institute on Drug abuse, 2005b). Huffing can cause serious reiteration of cognitive ability over time and seriously affect the way people grasp and comprehend concepts. It can also damage the liver and kidneys and cause the heart to stop (Boesky, 2002). Correctional facilities have to be cautious and keep chemicals out of reach from adolescents, given that the potential to huff is always present (Cleaning supplies, markers, etc.).

The plethora of drugs available to adolescents and the detrimental effects of using such drugs are causing serious damage to public safety (NIDA, 2001). If adolescents are able to get treatment for their addiction early, it will reduce the likelihood of furthering into adult addiction. Courts can assist in this process by screening for addiction and including treatment in court orders. In correctional facilities it is important for staff to screen for drug use during the intake process in order to determine if the adolescent is going to have withdrawals, struggle with behavioral problems, and or need medical attention (Andrews & Carvell, 1998).

Substance Abuse

According to the Diagnostic Statistical Manual IV (DSM-IV), an adolescent or adult can be diagnosed with either Substance Abuse or Dependence (APA, 2000). To meet criteria for substance abuse there has to be a pattern of substance use present which leads to recurrent or

significant adverse consequences. Substance abuse is an appropriate diagnosis when multiple substance related problems occur within the same 12-month period of time (APA, 2000). In addition, the substance use leads to a failure to fulfill major roles at school, home or work, having legal problems, and or using even though there are social or interpersonal problems (APA, 2000).

Adolescents who abuse substances typically experience a lack of follow through with their goals, actions, and intents. Adolescents who use on a regular basis are affected at home, school, and or work. They may miss class or go to school high, receive school suspensions, experience conflict at home, have trouble completing tasks, or refuse to find legitimate employment. Abuse of drugs or alcohol can lead to physically dangerous situations which are often what inevitably gets adolescents in trouble with the law and sent to juvenile corrections and or a treatment program. The progression of addiction may start with an adolescent fighting with peers when drunk and stealing cars but eventually leads to robbing people for money to buy drugs or alcohol. The addiction sets in when the adolescent receives negative consequences from their drug use and continues to use (Gorski & Miller, 2001; Boesky, 2002).

Substance Dependence

When an adolescent continues to abuse a drug or alcohol despite negative consequences they are often increasing their tolerance for the drug and their chances of experiencing withdrawal symptoms (Boesky, 2002). Tolerance refers to the amount of the drug or alcohol an adolescent needs in order to get high. As the adolescent needs more of the drug to get high their tolerance increases. For instance, at first an adolescent needs smaller amounts of marijuana to feel high, whereas later, the adolescent will take more to get the same high. When adolescents

withdrawal from a drug they can experience physical symptoms such as sweating, heart palpitations, relentlessness, tremors, anxiety, seizures, and vomiting. There is a physiological or cognitive change taking place as well due to the reduction of heavy and or prolonged use (APA, 2000). To get rid of the physical symptoms, the adolescent will use the drug again. Having an increase in tolerance and withdrawal symptoms are not the only symptoms of substance dependency in adolescents. Although tolerance and withdrawal symptoms are dangerous aspects of addiction, they are not necessary to meet the DMS-IV criteria for Substance Dependence.

In order to meet criteria for substance dependency, an adolescent or adult has to have three or more of the following symptoms: the presence of withdrawal symptoms, increased tolerance, takes the substance in larger amounts than intended, has had unsuccessful efforts to cut down, spends a great deal of time getting and using the drug, gives up important activities to use, uses even though there are physical or psychological problems due to use, or their compulsive use is leading to extreme suffering or impairment in daily functioning (APA, 2000). Impairment could include difficulty discontinuing use when they set their mind to stop using, using more than intended or for a longer period of time than planned, planning their activities around use of the drug, and spending a considerable amount of time using or getting the drug (APA, 2000). These problems in living impact school performance, relationships, and one's ability to hold a job and participate in after school activities. They also often lead to legal problems.

Dual Diagnosis

During a screening for substance use, an adolescent should also be screened for any mental health concerns. Undetected mental health disorders are one of the leading reasons adolescents turn to drug use (Boesky, 2002). Between 50% and 75% of adolescents in the

juvenile justice system have a diagnosable mental health problem (CJJ, 2000). This rate is twice as high as that of the general population (National Center for Juvenile Justice, 2003). A dual diagnosis is used to describe an adolescent who meets DSM-IV criteria for a substance abuse disorder and has a mental health disorder (e.g.; attention deficit hyperactivity, depressive disorder, posttraumatic stress disorder).

Co-occurring disorders are important to detect because of the dangers associated with them. An adolescent who has co-occurring disorders has a higher risk of suicide, a higher rate of hospitalization, poor medication compliance, faster progression to dependence on drugs, and trouble finishing treatment (Peters & Hills, 1993). Dual diagnosis or co-occurring disorders can be difficult to detect because the adolescent is going through developmental changes while experiencing problem behavior. It is also difficult to detect if the substance abuse triggered the mental health disorder or if the mental health disorder was present first (Drake, Mercer-McFadden, Mueser, McHigo, & Bond, 1998). Sometimes drugs are used to mask a predisposed mental health concern such as depression or ADHD and other times the drug causes mood disorders.

There are few assessment tools that measure both substance abuse and mental health disorders and the ones that do typically do not assess for the relationship between the development and progression of the co-occurrence. One option is to use separate tests to identify mental health disorders and substance abuse. The best practice is to have a comprehensive evaluation of the adolescent's mental health and substance use history by a trained professional. Having historical information can help determine if the mental health issue was present before the chemical health problem. Also, information related to family, intellectual functioning, age of

onset, juvenile justice status, criminal behaviors, and social history should also be taken into account. Collateral sources are often helpful in making sure the information provided is reliable (Lipsey, Wilson, & Cothern, 2000).

Substance Abuse Treatment and Corrections

Although juvenile corrections, psychiatric hospital programs, and substance abuse treatment programs provide services to similar adolescents to inspire change in behaviors the philosophies behind the interventions are dramatically different (Boesky, 2002). The philosophy inside a correction facility impacts the interventions used with the offenders and inevitably impacts relapse and recidivism rates.

Philosophy of Treatment in Corrections

There are two philosophies that dictate treatment inside a correctional facility. The psychological philosophy of criminal conduct often conflicts with the criminal philosophy because the fundamentals stem from very different theories (Andrews, Bonta, & Hoge, 1990). Criminology has its roots in law and order, gathering crime rates, and societal structures that impact the economy and public safety (Andrews, Bonta, & Hoge, 1990). A psychological perspective to treatment in corrections is mostly interested in understanding the characteristics of criminal conduct and the individual. Criminology has historically been skeptical of risk and needs of the individual and focuses more on community safety as a whole (Andrews, Bonta, & Hoge, 1990).

Treatment staff working from a psychological perspective will assess each individual's history, family of origin, cognitive functioning, and needs that may contribute or exacerbate

criminal conduct. While criminology maintains punishment is more effective than clinical interventions (Andrews, Bonta, & Hoge, 1990). Once released from juvenile corrections, the psychological perspective would look for mental health and other community services while criminology would focus on supervision and restitution (Andrews, Bonta, & Hoge, 1990).

Differences Between Treatment and Corrections

Treatment programs often have licensed mental health professionals on site that meet with clients on a daily basis and have crisis intervention and medication management services available. Substance abuse treatment programs often include individual therapy, daily or weekly group therapy and family therapy depending on the adolescent's individual needs (Hogue, Liddle, Dauber, & Samuolis, 2004). Treatment uses a psychological perspective when treating clients. Often cognitive behavioral approaches are the foundation of therapy treatment programs and are used in conjunction with other psychological and family therapy theories (OJJDP, 2004).

On the other hand, juvenile corrections focus is on safety and security with less emphasis on changing the adolescent's behaviors or providing treatment and discharge planning to stabilize long-term mental wellness (Boesky, 2002). The staff in correctional facilities often have less training in mental health and or substance abuse treatment and more training in criminal justice and policing (Boesky, 2002). Furthermore, correctional facility staff often concentrate on behavior compliance to ensure a physically safe atmosphere. Correctional facilities also have a higher staff to resident ratio, which makes it difficult to have individual time with an incarcerated adolescent. Subsequently, effective individualized interventions are difficult to maneuver and often interventions are conducted in a group format (Boesky, 2002).

A balance between chemical/mental health and corrections is difficult to create because of the differences in philosophy, funding, staffing, and facility goals and objectives (Austin, Johnson, & Weitzer, 2005). In practice, the safety and security philosophy at times conflicts with treatment driven interventions. On the other hand, a residential treatment program does not have the longevity of a sentence to corrections and treatment programs often do not have the ability to keep adolescents who exhibit aggressive behaviors. An ideal juvenile justice model would combine individualized treatment planning while maintaining structured behavior management programming (Andrews, Bonta, & Hoge, 1990).

Best Practices

An article published by Office of Juvenile Justice and Delinquency Prevention and written by Lipsey, Wilson and Cothern (2000) describes effective interventions as those that reduce recidivism, provide interpersonal skills training, and offer individual counseling. Lipsey, Wilson and Cothern (2000) conducted a meta-analysis to determine what types of intervention programs were most effective in juvenile corrections. The analysis compared differences in the observed effect size, the equated effect size, and the method adjusted effect size, which led to the mean effect, variance around each mean, and extent of agreement across the studies.

First, the study looked at intervention effectiveness for serious and violent offenders and separately looked at less serious offender interventions to see if there were differences in the way the two groups responded to intervention. Most of the studies did not use random assignment but compared a treatment and control group. The studies in the meta-analysis met the following criteria: they were published before 1970, the sample sizes were largely male, the average age the participants in the studies was 14 to 17 years old, most participants had prior juvenile

offenses, and most participants were involved in the juvenile justice system and receiving court ordered interventions. Most of the court ordered treatments lasted between 1 and 30 weeks and involved daily therapy.

Overall, adolescents who received some sort of treatment showed a decrease in recidivism as opposed to those incarcerated only. The intervention effectiveness was associated with the characteristics of the juveniles who received the treatment. Chronic and high-risk offenders and less serious offenders showed different needs for intervention. Lipsey, Wilson and Cothern (2000) separated 117 studies on less serious offenders and suggest three types of treatments most effective on their recidivism rates, interpersonal skills training, individual counseling, and behavioral programs. Programs that were found to be ineffective include wilderness/challenge programs, an early release from probation, deterrence programs, vocational programs, and meetings with other high-risk adolescents.

Lipsey, Wilson and Cothern's (2000) analysis showed the most significant interventions for chronic offenders were interpersonal skills training, behavioral programs, and community based programs all working in conjunction. Ideally, programs teach social skills, anger control, provide drug treatment and family interventions (community based and/or in-home). Henggeler, Brondina, Melton, Scherer, and Hanley (1997) also suggest family and group home interventions were important in reducing recidivism for chronic juvenile offenders. Further, resources offered as the adolescent transitions back into the community rather than discontinuing all services when he or she leaves the correctional facility was important in both studies. Drug abstinence programs, wilderness programs, and employment related programs did not show a significant effect size.

Lipsey, Wilson and Cothern (2000) recognized three variables emerged as important in terms of reducing the recidivism. First, the programs that followed a cognitive based intervention were the programs that appeared to have better success with reducing recidivism. The programs with a longer treatment component tended to also positively affect the recidivism rate of the adolescents transitioning from incarceration. Well-established programs (more than two years) were found to have better recidivism outcomes than start up programs. The strongest related effect size was when mental health personnel administered the services as opposed to correctional staff.

Ideally, correctional facilities within the juvenile justice system would contract with clinical staff to provide therapeutic services using individualized interventions based on the adolescent's needs (Dowden & Andrews, 2004). This model would allow correctional staff to focus on safety and behavioral modification while the treatment staff could focus on interventions and therapeutic services. The juvenile justice system could also look at how they balance accountability and sanctions with skill development (Snyder & Sickmund, 1999). If the philosophy of the juvenile justice system is to provide the adolescent with a punishment, then corrections has to decide how they are going to view and support the skill development.

There is substantial support from the research community on the importance of relapse prevention augmenting the treatment services offered in corrections (Laws, 1999). Relapse prevention originated as an intervention for addictive behaviors (Marlatt & Gordon, 1085). It was found to be primarily successful with substance abusing offenders (Peters & Hill, 1993) and sex offenders (Laws, 1999). Relapse prevention programs focus on teaching people how to

identify and cope with high-risk situations and enhance feelings of self-efficacy (Bakker, Ward, Cryer, & Hudson, 1997; Laws, 1999).

A true relapse prevention model is difficult to detect because historically any post treatment intervention was coined "relapse prevention" (Laws, 1999). However, a true relapse prevention model is going to include several core components. First, the offender recognizes their offense cycle and the precursor cues that lead to the behavior. Next, the program incorporates relapse prevention rehearsal where the adolescent identifies potentially high-risk situations and develops skills to minimize risk of relapse/recidivism. Ideally the relapse prevention rehearsal starts with hypothetical situations and gradually the situations become real life circumstances. The goal is for the adolescent to generalize the skills they are learning. In order to practice relapse prevention rehearsal, offenders needs to identify high-risk situations, learn ways to cope in those situations, and explore how to deal with failure or relapse constructively rather than with hopelessness and self destruction (Dowden, Antonowicz, & Andres, 2003).

Good relapse prevention programs use a multisystemic view when assessing the offender and would include treatment around building self-confidence as well as developing new prosocial community supports. Lastly, the treatment services should extend outside the correctional facility to provide support during transition (Dowden, Antonowicz, & Andres, 2003). Ideally, parents are included in the treatment process. This allows the opportunity to talk about parenting concerns, praise the client for goals they have achieved, and assess the direction therapy is taking (Smith & Nylund, 1997; Henggeler, Brondina, Melton, Scherer, & Hanley,

1997). It also allows the family to share strengths and the therapist to model behaviors in constructive ways to support family protective factors.

Building Resiliency in Corrections

Screening and Assessment

In order for treatment programs inside correctional facilities to reduce recidivism and decrease risk factors, programs need to encourage the development of resiliency in juvenile offenders (Wanberg & Milkman, 1998). To begin, a thorough screening, and if deemed appropriate, an assessment is warranted with each adolescent in the juvenile justice system. With regards to assessment, the Center for Substance Abuse Treatment (CSAT) published guidelines for screening and assessment of juveniles in corrections. They recommend for screening the Drug Use Screening Inventory- Revised (DUSI-R) (Tarter, 1991) and the Personal Experience Screening Questionnaire (PESQ) (Winters, 1992). Recommendations for good assessment instruments include: The Adolescent Diagnostic Interview (ADI) (Winter & Henly, 1993) and The Personal Experience Inventory (PEI) (Winters & Henly, 1989).

If adolescents are identified early they can receive assistance based in their needs. While in a correctional facility adolescents can build resiliency through learning to problem solve, build relationships with staff, have the opportunity to mend family relationships, and practice protective behaviors (e.g. going to school, sobriety, visiting with family, etc.). Once in the community the adolescent will be exposed to old friends, places they used to use, and feelings that used to trigger using (Altschuler & Armstrong 2002). If they learned skills while in corrections they can utilize them after release from corrections.

Correctional facilities, through treatment programs, can support community based resources and transition services (Boesky, 2002). Discharge planning incorporates what was learned in corrections/treatment and how it applies to the world after release from juvenile corrections. The plan should encompass short and long term goals targeted to increase protective factors and decrease risk factors in the community (Lambert & Barley, 2001).

Resiliency Defined

"Adaptation despite negative environmental circumstances is referred to as resiliency" (Jaffe, 1998, p.494). Developing resiliency is to withstand or recover from hardship and adapt in the face of obstacles and adversity (Smith, Thornberry, Riveram, Huizingd, & Stouthamer-Loeber, 2000; Search Institute, 2004). The process of developing resiliency is long term and developmental. There are internal and external factors that influence the ability to be resilient (Hunter & Chandler, 1999).

As an individual's ability to overcome obstacles develops, immunity and strength to use when exposed to new adversities evolves (Mastern et al., 1996). Rutter (1987) formed the matrix to discuss four protective mechanisms that foster resilience. Reducing exposure to risk, reducing negative chain reaction following risk exposure, establishing a positive sense of self, and being open to new opportunities are protective mechanisms. For example, an adolescent leaving a juvenile correctional facility should have a good plan in place that takes into account previous risk factors, coping skills to use when challenged with a trigger or exposure to relapse, and educational, recreational, cultural, spiritual, etc. experiences available to them.

Although it is important to understand an adolescent's problem areas, it is equally important to determine positive characteristics they possess that can strengthen the adolescent's

emotional, psychological, and physical state of mind (Cicchetti, Rappaport, Sandler, & Weissberg, 2000). In fact, when assets or strengths and risk are both assessed, adolescents are more likely to experience an intervention as affirming, empowering, motivating, and a positive experience (Saleebey, 1996). Correctional programs looking at strengths and the development of competencies supports and encourage wellness, and enhances an adolescent's ability to be resilient and repair damage caused by negative experiences (Tedeschi & Kilmer, 2005). A resilient individual demonstrates a healthy sense of self, is independent, bold, determined, and tends to find meaningfulness in life (Mastern et al., 1996).

While many resilient factors are innate and evolve through development of self, certain concepts can be taught. Skill building, asset development, and incorporating cultural strengths are examples of skills and attributes adolescents can learn and use to enhance their lifestyle in a positive way. Winfield (1994) developed a list of ways clinicians and correctional staff can foster resiliency in children and adolescents based on a literature review. Some examples are promote positive teaching and peer interactions, encourage mentoring, collaborate with community resources, encourage career exploration and athletics and allow adolescents to make informed decisions around medication management. The goal is to link children and adolescents with support systems and activities that support prosocial behavior.

Risk and Protective Factors

People are born with genetic predisposition towards specific physical, mental, and chemical health disorders. These predispositions are exasperated by external factors. The individual is placed in a family that exists in a larger social system that integrates social norms

and cultural beliefs into patterns of behavior (Search Institute, 2004). For instance, the environment exposes people to experiences and events, and families instill communication styles and parenting practices, which affects children's development. Search Institute (2004) proposes adults can support and encourage prosocial development in children and adolescents by increasing the positive or protective attributes and decreasing risk and the negative attributes in the child or adolescent's life. This includes exposure to positive people, supporting the development of self-esteem, encouraging skills building and goal setting, and encouraging prosocial activity involvement.

No one asset is the most important but rather it is a combination of protective factors that influence the reduction of risk factors. Clingempeel and Henggeler (2003) conducted a longitudinal study with 80 adolescents from the Department of Juvenile Justice in Charleston, South Carolina to determine how risk and protective factors operating during adolescent development impacted overt aggression and violent behaviors five years later. Participants had to be between 12-17 years old, have a diagnosis of substance abuse or dependence, have probationary status, and have a permanent address with a legal guardian. The study looked at the variable change of the participants and controlled for everyone having some form of treatment. For instance, forty-three participants had participated in a multisystemic family therapy while the rest attended other community-based services. The participants were each interviewed seven times throughout a 5-year period.

Fifty-five percent of the participants reported one or more assault felonies on their record. Many came from disadvantaged and low-income homes, and had families with minimal education. The adolescents who reported a lack of emotional support, disengaged family

relationships, negative friendships, substance abuse/dependence, and difficulties in school were often the ones who had not obtained a high school degree, had no reported income, and had at least one biological child out of wedlock (Clingempeel & Henggeler, 2003; Loeber, Farrington, & Washbush, 1998).

On the contrary, adolescents who committed less serious crimes, fewer property offenses, and had emotional bonds with their peers had committed fewer aggressive crimes, fewer property crimes, had more support, higher job satisfaction, and treated psychiatric disorders five years later. This longitudinal data suggests adolescents should receive treatment that incorporates ecologically orientated interventions and view the adolescents from a multisystemic perspective to reduce recidivism. Treatment interventions can include: building family relationships, promoting prosocial activities, and teaching skill development (Clingempeel & Henggeler, 2003).

The process of building protective factors takes place in baby steps. For instance, while the goal may be to find support in the community, for the adolescent the first step is to examine what type of activity the adolescent would enjoy, then find where those activities are being offered, and finally encourage the adolescent to sign up for the community activity. It is not the end result that makes the complete difference but the process of achieving the goal as well (Wolkow & Ferguson, 2001).

Risk Factors

Risk factors are those characteristics associated with an increased probability of causing maladaptive developmental outcomes (Stouthamer-Loeber, et al., 2002; Haggerty, Garmezy, Rutter, & Sherrod, 1994). More specifically, risk factors are the people, places, and things that

lead to negative outcomes or undesirable behaviors in an adolescent (Brown, Schulenberg, Bachman, O'Malley, & Johnston, 2001b). Critical risk factors for an adolescent are as follows: disengagement or conflict with family, lack of parental involvement, families accepting behaviors and values around drug and alcohol use, academic failure, low commitment to school, peer rejection, association with drug-using peers, alienation and rebelliousness, low socioeconomic status, neighborhood disorganization, access to drugs and alcohol, exposure to early problem behaviors, physiological factors, and early onset of drug use (Boesky, 2002; Search Institute, 2004).

The more risk factors an adolescent is exposed to the higher the risk of mortality, morbidity, behaviors that compromise their health and wellness, detachment from traditional values, and lack of social involvement (Brook & Brook, 1996). The more risk factors a child or adolescent has the more likely they are to develop problem behaviors, drug abuse, early sexual activity, violent behaviors, school problems and depression (Search Institute, 2003).

Protective Factors

Protective factors are the positive people, places, and things that encourage prosocial behaviors, success and reduction of negative outcomes (Haggerty, Garmezy, Rutter & Sherrod, 1994). Research suggests protective factors serve a positive function when coping with stressful situations, reducing adjustment problems to new situations, and increasing positive health outcomes (i.e. chemical use, self destructive behaviors, etc.) (Cowger 1994; Epstein, 1999; Tedeschi & Kilmer, 2005). Furthermore, protective factors are linked to lower levels of substance abuse, avoidance of negative peers, lower risk-taking behaviors, and higher social and academic involvement (Brown, Schulenberg, Bachman, O'Malley & Johnston, 2001a).

Protective factors include parental employment, having a structured schedule, positive affirmations by self and others, participation in community activities, and time to reflect and mature (Todis, Bullis, Waintrup, Schultz, & D'Ambrosio, 2001). Gordon (1995) explains three levels of factors that impact the ability to be resilient: individual, familial, and societal.

Individual Factors

One key individual factor that impacts an adolescent's development is their intrapersonal skills. Typically interpersonal strengths include using anger management skills, expressing remorse and empathy, reacting appropriately to disappointment, listening to others, apologizing to others when wrong, sharing with others, and respecting the rights of others (Epstein, 2004). Adolescents who are able to cope with stress related issues and relationships tend to have less relapse and recidivism (Miller, Westerberg, Harris, & Tonigan, 1996).

Having good intrapersonal skills impacts an adolescents self worth and self-confidence. When adolescents are able to build self esteem and confidence within themselves and reduce negative emotions and self defeating thoughts, they are less likely to get involved in criminal behaviors (Hodgins, El-guebaly, & Armstrong, 1995). Intrapersonal skills include self esteem, a healthy sense of humor, the ability to ask for help if needed, an enthusiasm about life, and a positive outlook about the possibilities of life (Epstein, 2004). Adolescents who are able to express themselves with others, engage in close relationships, demonstrate affective strength, and are comfortable with themselves demonstrates better coping skills and critical thinking (Epstein, 2004).

One's character can also be a factor associated with building resiliency and leads adolescents toward particular behaviors. A person's character refers to their distinguishing traits

or qualities (Merriam-Webster, 1997). Character starts with the innate genetic makeup from ones parents and evolves throughout the lifespan based on natural and environmental events (Jaffe, 1998). An adolescent with a depreciated character often feels a sense of worthlessness, a sense of inadequacy, and a lack of energy. On the other hand, an adolescent with a transcendent character usually portrays confidence and a strong sense of self. Often the transcendent character takes more risk to make familial and community connections as compared to a depreciated character (Jaffe, 1998). This idea may help answer the question why some adolescents, regardless of their upbringing, are able to be resilient as adults even though they experience many risk factors.

Another important individual factor is the overall behavioral patterns of the adolescent. This includes the reactions and actions to situations and experiences. For example, chemical use, defiant behaviors, and acting out are examples of behavioral patterns. A Donovan, Jessor and Costa (1999) study found behavioral patterns to be a consistent and strong predictor of adolescent relapse. When adolescents have low self worth and lack critical thinking skills, they often make poor choices in how they behave and how they react to situations around them (Lipsey, Wilson, & Cothern, 2000). They tend to use negative means for coping as well.

Adolescents with comorbid psychiatric disorders have a higher risk of relapse into substance abuse and crime than do adolescents without a comorbid or dual diagnosis (Curran, Flynn, Kirchner, & Booth, 2000; McCarthy, Marlatt, Tomlinson, Anderson, & Brown, 2005). One of the reasons adolescents with comorbid psychiatric disorders are prone to relapse is their tendency to self medicate in order to alleviate distressing symptoms (Khantzian, 1985). In fact, addiction research has shown adolescents are more likely to abuse alcohol if they suffer from anxiety or negative symptoms of schizophrenia whereas cocaine and other stimulants are

used to cope with depression (Khantzian, 1997). Even though it appears that certain drugs are used based on certain psychopathology, there is evidence, especially for adolescents, that they will relapse on a drug because of its availability, even if it is not their drug of choice (McCarthy, Marlatt, Tomlinson, Anderson, & Brown, 2005).

Familial Factors

The adolescent's addiction is impacted and understood in the context of the entire family system (Newcomb & Felix-Ortiz, 1992). One of the biggest risk factors of early recidivism or relapse after treatment is the pre and post treatment exposure to family members using substances (Kennedy & Minami, 1993; Myers, Brown & Mott, 1993). If parents or siblings are using substances the adolescent is more likely to start using after treatment because of the acceptance by the family members, availability of the substance, and developed pattern of substance use that previously existed.

Family relationships and dynamics within the family system also lead to relapse. The adolescent is affected by the supervision of the parent, discipline, the overall relationship between the parents and adolescent and the role of conflict and resolution between members of the family (Waldon, Slesnick, Brody, Turner, & Peterson, 2001). Parental behaviors (poor supervision, parenting styles, low level of control) and parent characteristics (low competence, substance abuse, aggressive behaviors) are associated with antisocial behaviors and juvenile delinquency (Moffitt, 1993)

A plethora of research suggests the most important protective factor for children and adolescent's is the existence of cohesive family relationships (Ungar, 2004). Parental support is suggested to be the strongest single explanatory factor for the way adolescents feel internally and

how they view themselves in the world around them (Rodgers & Rose, 2002). How parents supervise and monitor their children, the communication style they use, the role modeling they exhibit, and the understanding they have of their adolescent's lifestyle influences the adolescent's risk and protective factors (Dishion & McMahon, 1998).

In fact, poor parenting can be the strongest predictor of mental health and problem behavior outcomes in children and adolescents (Gerard & Buehler, 1999). Children and adolescents from divorced families tend to have fewer protective factors and show more aggressive behaviors, more depressed affect, more parent-child conflict, and poor performance in school (Demo & Acock, 1996). Having said that, many children from divorced families are resilient and learn to regain balance and begin to function at or beyond baseline, depending on support they get from their family members (Emery & Forehand, 1994).

Community Factors

Adult support in a child or adolescent's life is a significant protective factor (Wolkow & Ferguson, 2001; Dondero, 1997). The Rodgers and Rose (1994) study found blended families and children and adolescents with mentors or other community support systems have the same forms of resiliency as those from intact families. Other researchers have similarly reported that having a solid support system throughout childhood and adolescence leads to higher academic achievement, less substance use, less violent behaviors, better relationships with family and peers and better school attendance (Grossman & Tierney, 1998).

A study conducted by Zimmerson, Bingenheimer and Notaro (2002) interviewed a group of high school students to determine how mentors impacted their lifestyles. The researchers asked whether the adolescent had a supportive person 25 or older in their life and asked them

about problem behaviors, school attitude, psychological distress, and peer relationships. The adolescents with mentors or other natural support systems reported lower levels of marijuana use and nonviolent delinquency. The also found adolescents with mentors to have higher school attachment and school efficacy. Having said that, they found no relationship between having a mentor and a reduction of anxiety and depression symptoms. Lastly, mentors only had a partial effect on negative peer influences. The interviews were taken at a school thus only adolescents attending school participated. Therefore, the study proposes the results are only generalizable to adolescents attending school. However, it would seen plausible that adult support would be equally or more important for high-risk adolescents.

Another important community factor that influenced relapse and recidivism was peer pressure and the exposure to substance abuse (Latimer, Newcomb, Winters, & Stinchfield, 2000). Donovan, Jessor and Costa (1999) conducted a study looking at the predictors of relapse on alcohol and drug use and found peer relationships to be one of the highest predictors of relapse and recidivism.

Environmental factors such as traumatic events, economic status and or chronic poverty put children and adolescents at risk (Winfield, 1994). For example, environmental characteristics (neighborhood crime, poor housing) model negative or positive behaviors and expose children and adolescents to negative or positive experiences. A study conducted by Stoiber and Good (1998) concurs that resiliency is built from an ecological, multidimensional look at risk and protective factors. It suggests that it takes a community working together to raise our children.

Another key factor to adolescent's development of resiliency is to fill time with structure and prosocial activities (Brown, Schulenberg, Bachman, O'Malley & Johnston, 2001a). This

encourages them to do better in school and shields them from idle time to commit crimes, use drugs, and participate in other unhealthy behaviors. It further exposes them to peers with productive activities. Brown, Schulenberg, Bachman, O'Malley and Johnston (2001a) found school performance, college plans, grade point average, and truancy hours to be predictors of relapse. The less involved adolescents were in school and the less they valued their school experience the more apt they were to get low grades and eventually become truant and participate in high risk activities. However, bonding adolescents to school and academics can be a reliable and effective strategy for minimizing substance abuse.

Brown, Schulenberg, Bachman, O'Malley and Johnston (2001a) found the number of hours per week spent in recreational activities influences an adolescent's likelihood of getting involved in drugs and alcohol. The more time spent in prosocial activities the more likely adolescents were to build their self esteem, develop prosocial values, and have positive peer relationships. In fact, in a longitudinal study looking at data from 1976 through 1997 with regards to relapse on drugs and alcohol, evenings out in activity was one of the consistent predictors of problems behaviors or prosocial behaviors (Brown, Schulenberg, Bachman, O'Malley & Johnston, 2001a).

Summary

In summary, researchers have found a variety of individual, familial, and societal factors influence adolescents in negative and positive ways. The factors can either encourage a prosocial lifestyle or maladaption in adulthood. It is unclear which factors are the most important but most research supports having as many protective factors built into an adolescent's

lifestyle as possible is ideal. This is especially crucial for adolescents involved in the justice system. If high-risk adolescents can enhance the positive contributions they have to their life they will be at less risk of reoffending.

CHAPTER 3: METHODOLOGY

Restatement of Purpose

In 2002, there were an estimated 2.3 million arrests of persons under the age of 18 in the United States (Office of Juvenile Justice and Delinquency Prevention [OJJDP], 2004). Typically, the likelihood of committing a crime is highest during adolescence with a peak at 17 years old and a drastic decline thereafter (Moffitt, 1990). Often juvenile offenders are under the influence of drugs or alcohol when they commit an offense. In fact, criminal behavior is strongly associated with substance abuse and dependency (Smith & Newman, 1990; Levin, Davey & Jones (2001); Shenk & Zehr (2001). This is demonstrated by the high number of adolescents in corrections who report substance abuse and dependency, are detained for drug charges or commit a crime while under the influence (Smith & Newman, 1990).

Increasing resiliency factors in adolescents while incarcerated decreases psychosocial maladaption and psychopathology in adulthood (Hunter & Chandler, 1999). Researchers are looking at what specific factors in children and adolescents impact resiliency and adjustment in adulthood (Compas, Hinden, & Gerhardt, 1995; Masten et. al, 1999; Clingempeel & Henggeler, 2003; Search Institute, 2004). The goal of this study was to identify change in risk and protective factors within one population, incarcerated adolescents, and across two groups; those assigned to treatment and incarceration and those assigned to no alcohol treatment, just incarceration.

Research Design

The group of adolescents who participated in this study were sentenced to the short-term program (usually 30-90 days) at the Dakota County Juvenile Services Center Correctional Facility (JSC). All were sentenced to the program by a juvenile court judge after they were found guilty of committing a crime. Upon arrival to the correctional facility, the adolescents stayed in a holding area for several days. The time was used to screen for safety and immediate needs, screen for substance abuse concerns, contact parents, prepare a bed on one of the pods (all the participants in this study are from pod two) and seek any medical/psychiatric attention if needed. The adolescents were also given a uniform to wear and a rules book to review.

After the first few days the adolescents were transferred to a pod. If a substance abuse problem was detected at intake, the therapists in the substance abuse treatment program completed an assessment and determined if the adolescent was eligible for treatment. If an adolescent was assessed and deemed for treatment, they started the substance abuse treatment program, typically within the first week of incarceration. These adolescents participated in the substance abuse program for the duration of their stay at the JSC.

The study compared two groups of adolescents confined to the correctional facility. One group consisted of adolescents in the substance abuse program while the other group consisted of adolescents in the general population of the correctional facility's short-term program (control group). All the adolescents lived in the same pod and had the same structured schedule. All adolescents went to school at the correctional facility during the day and remained in their pods during the evening. The adolescents involved in the substance abuse treatment program varied

from that regime only by attending the treatment program after school every Monday through Thursday from 2:00p.m. to 4:00p.m.

The study interviewer was a licensed marriage and family therapist. The therapist not only had experience working in substance abuse treatment programs, but also possessed over 8 years of field experience working with adolescents. The therapist went through specific training for this project. Topics covered in the training included confidentiality and safety procedures, administration of the interview with minimal bias, and data analysis. The therapist practiced reading the narrative script and administered the standardized tests three times before starting the study.

Once an adolescent was admitted to the correctional facility the correctional officer supervisor contacted the parent/guardian of the adolescent, informed them about the study, discussed procedures for collecting data, disclosed rights to confidentiality, and asked for consent. Once the parent provided verbal consent, official consent forms were sent to the parent/guardian, signed, and returned. Adolescents could not participate without parental consent. Once parental consent was obtained the correctional officer supervisor notified the interviewer of a potential study participant.

After these primary steps were taken and parental consent was obtained, the interviewer met with the adolescent, provided information about the study, and gave a written description of what participation would entail. The written description provided an overview of the purpose of the study, the procedure for participation, the risks and benefits of participating, and, most importantly, information about confidentiality. The adolescents in this population were often concerned that the correctional staff would have access to their answers or worried that their

answers could lead to additional charges. The fact that their answers were private permitted them to be honest when completing the standardized tests. To encourage honesty, the interviewer clearly explained confidentiality and who would have access to the data collected. If interested in participating in the study, the adolescents were given an assent form to sign.

Once the consent forms were signed the adolescents were assigned a study number by the interviewer. The first interview often occurred within the first week after the adolescent was admitted to the correctional facility. The second interview was 30 days after the initial one. Both sessions followed the same procedure. The interviewer started with a 5 minutes questionnaire asking about of demographic information, age, previous criminal history, when they entered the facility, and their anticipated release date from the correctional facility.

Following the questionnaire, the interviewer provided the participants with the Drug Use Screening Inventory-Revised (DUSI-R) to complete independently. This test usually took approximately 20 minutes to complete and was designed for persons at a fifth grade reading level. When finished, the interviewer provided the participants with the Behavioral and Emotional Rating Scale (BERS-2) to complete. This test took approximately 15 minutes to complete and was designed for persons at a fifth grade reading level. Collectively, the two standardized tests provided an overall risk and protective factor score as well as 17 subscales that measured risk and protective factors.

This data was entered into SPSS and an analysis was conducted to determine any significant changes in risk and protective factors reported by the participants. The study compared the participants in the substance abuse treatment program to the general correctional

population and looked for any changes that occurred for participants during their 30 days in treatment.

Target Population

The sample consisted of male adolescents ranging from 14-18 years old residing in the short-term program at the JSC. JSC demographic information suggests many of the adolescents who participated in the study came from unstable, chaotic homes that struggle with conflict, drug abuse and emotional, legal, and financial problems. Another portion of the adolescent participants came from middle class families in which both parents were employed. The participants were from various cities and cultural backgrounds (Dakota Community Corrections Juvenile Service Center, 2006).

All the participants met criteria for Oppositional Defiance Disorder and the adolescents in the substance abuse program met criteria in the Diagnostic Statistical Manual IV (American Psychological Association, 2002) for Substance Abuse or Dependence. Over half met criteria for other mental or emotional problems including Generalized Anxiety Disorder, Attention Deficit Hyperactivity Disorder, and Bipolar Disorder while up to 70% of those incarcerated were diagnosed with more than one disorder. The participants had at least one legal charge on their record, had been placed in the custody of community corrections, and were serving a length of stay ranging from 30 days to 90 days (Dakota Community Corrections Juvenile Service Center, 2006). After release from the correctional facility, the participants either returned to their homes, were placed in either foster care, a treatment program, or a group home, or, if they were 18 years or older, were released on their own.

Selection of Participants

The adolescents who were sentenced to the short-term program at the JSC during the eight-month period of the study were eligible to participate in the study. The adolescents who were sentenced to the short-term program of the JSC and attended the substance abuse treatment program in that eight-month period were also eligible to participate in the study. While the adolescents were in the holding area, a correctional officer supervisor contacted the parent/guardian and explained the study to them in detail, making sure to outline the confidentiality precautions. If the parent/guardian was willing to provide consent for the adolescent to participate in the study, the correctional officer supervisor sent a consent form for the parent/guardian to sign and return. Parental consent was necessary in order for an adolescent to participate in the study.

If, during the screening in the holding area, the adolescent appeared to have substance abuse issues, they also met with a therapist from the substance abuse treatment program to determine whether they would be admitted to the program. This process of screening and assessment for substance abuse treatment was conducted independent of the study. The study did not in any way influence who attended the treatment program. Program admittance into the substance abuse treatment program was strictly based on whether they met DMS-IV criteria for substance abuse/dependence. This process did however determine which group, treatment or general population, each participant would be assigned to in the study.

Data was collected over an eighth month period of time with a target of getting 30 adolescents in each group for a sample size of 60 participants. Variables that affected the

number of adolescents available to participate in the study included the number of adolescents admitted to the correctional facility, the number of parents who provided consent, the number of adolescents who agreed to be in the study and the number of adolescents who were sentenced to serve at least 30 days at the correctional facility.

Variables

The Odyssey Substance Abuse Treatment Program was an independent variable. The most crucial dependent variable to measure was the change in risk and protective factor scores obtained from the two screening instruments. The risk factor score from the Drug Use Screening Inventory-Revised (DUSI-R) and the protective factor score from the Behavioral and Emotional Rating Scale (BERS-2) demonstrated change that occurred between the time individuals entered treatment and 30 days into the treatment/correctional program.

Other dependent variables were the subscale scores on the two standardized tests. The DUSI-R provided scores in the domains of drug use, behavioral patterns, health status, psychiatric disorders, social competence, family system, school performance, work adjustment, peer relationships, and leisure-recreation. The BERS-2 provided scores on the following scales subscales: interpersonal strengths, family involvement, intrapersonal strength, school functioning, and affective strength.

Measures

A questionnaire and two standardized tests were used to gather data. The interview started with a questionnaire that gathered demographic information used to profile the

adolescents in the correctional facility and substance abuse treatment program. This information helped to determine if the population inside this specific correctional facility was similar to adolescents in correctional facilities in other parts of the country. Self-reports from the adolescents allowed for information to be gathered from their point of view, as opposed to gathering information from the correctional officers or family members point of view.

To increase validity two standardized tests were used as a way to control for differing variables among the adolescents. Also, using standardized tests helped increase the validity of the self-report (Harrell, 1997; Wish, Hoffman, & Nemes, 1997). The participants in the same room with the interviewer completed the standardized tests. If questions arose the interviewer could restate the question for clarification but could not give any information or guidance that would contaminate the participant's answers.

Behavioral and Emotional Rating Scale

The BERS-2 consisted of 52 likert scale items to identify emotional and behavioral strengths of children and adolescents 5-18 years old. The rating scale captured individual strengths as well as external environmental strengths. The rating scale primarily explores 5 subscales: interpersonal strength, family involvement, intrapersonal strength, school functioning, and affective strength (Epstein, 2004).

The interpersonal strength subscale looked at an adolescent's ability to control emotions and behaviors in social situations. The family involvement subscale measured participation in relationships with family members and the intrapersonal strength subscale measured the adolescent's outlook on competence and accomplishments. The school functioning subscale focused on competence in the classroom. Finally, the affective strength subscale assessed the

ability to accept and express feelings towards others (Epstein, 2004). Questions for each subscale were scattered randomly throughout the rating scale. Each subscale had a scaled score, which was expressed in standard deviation units to indicate the difference from the normative sample. The adolescent's scores could be compared to another group as well as their own scores on other subscales and over time. The higher the scaled score the more of a protective factor that subscale was for the adolescent.

The reliability of the test was reviewed and studied to insure the test scores were measuring true differences in the characteristic under consideration (Epstein, 2004). To measure the amount of error variance associated with the scores, three types of errors were explored: content sampling, time sampling, and scorer differences. To measure content sampling, or the degree of homogeneity among items within a test of subscale, coefficient alpha methods were used to calculate data from the entire normative sample. The average alphas for the subscales were highly acceptable with an average coefficient of .80.

Time sampling, or performance changes over time, was measured by identifying whether raters interpret items the same over time. The test-retest correlation coefficient provides information about the rater's consistency to interpret the items over time, the degree to which the questions are written clearly and unambiguous, and the tendency for behaviors to remain constant. Short terms test-retest (2 weeks) studies ranged from .80 to .99 while long-term test-retest (6 months) ranged from .53 to .79. This illustrates a strong sampling time reliability. Lastly, scorer differences or interrater reliability were assessed in three separate studies. To measure the amount of error due to examiner variability, data was collected in the studies on coefficients which were generalizable across the normative sample.

The strength index score was recorded in this study as the protective factor score. The strength index was a standard score that provided an overall rating for behavioral and emotional strength (Epstein, 1999). It was found to have coefficients for reliability consistently above .94 and to have no bias relative to different cultural groups.

There are three types of validity the BERS-2 reviewed: content-description validity, criterion-prediction validity, and construct-identification validity. Content-description validity, a qualitative measurement, was built in during the early phases of the test's development. First, a rationale was created for the content and format of the BERS-2. Next, an item analysis was conducted to decide what questions to include and exclude during scale construction. Lastly, differential functioning analyses were used to show the absence of bias in items. Defining constructs to measure was pursued while insuring items are representative of emotional and behavioral strengths of interest. In later stages one-way analysis of variance (ANOVA) and Pearson chi-square analyses were conducted. The ANOVA was significant for each item. The Pearson chi-square determined 37 items that were deleted from the first test.

Criterion-prediction validity indicates the effectiveness of a test in predicting an individual's performance on a specific task. One way they assessed this type of validity was to measure it against other tools that measure behavioral and emotional strengths. Tests such as The Youth Self Report (Achenbach & Edelbrok, 1987), The Child Behavior Checklist (Achenbach, 1991), and The Social Skills Rating System (Greshman & Elliot, 1990) were compared and it was determined that the BERS-2 produced similar results as these other tests, set out to measure similar characteristics (Epstein, 2004).

Lastly, the construct-identification validity measured the degree to which the traits being identified in the test match the theoretical model the test is based from. In this case, test performance constructs were identified, hypotheses generated, and the hypotheses were verified through empirical methods. Specifically, the BERS-2 should measure behavioral and emotional strengths, differentiate between EBD and those without EBD, and analyze the relationship between the subscales and theoretical model. Each item is meant to measure a specific type of behavior.

To administer the test the interviewer studied the examiners manual, understood the theoretical underpinnings of the test, practiced administration, and had knowledge of how to interpret the results. The interviewer practiced the administration with three adolescents before beginning the study (See narrative script in appendix).

To score the BERS-2 the interviewer filled in the column subtotals and added them to obtain the raw score for each subscale. Only two omitted or multiple marked items were allowed per subscale and have to be factored into the interpretation (Epstein, 2004). Other scores gathered from the assessment included raw scores, percentile ranks, scaled scores, and the BERS-2 strength index score. The raw scores were used mostly to convert into standard scores. Percentile ranks indicated how many people from the normative sample were below and above the raw score. More useful than percentiles, scales scores represented the distance from the mean in terms of standard deviations. A larger scaled score represented more strength in that behavior (Epstein, 2004). The scaled scores can be compared to the normative group, test-retest, or profiling and comparing. There are normative tables for converting the subscale raw scores to

percentile ranks and scaled scores. Before scoring the interviewer chose a set of norms to use and determined the degree and direction of deviance to observe within the individual scores.

Each subscale was recorded to explore differences in strengths between the time they start the program and the 30-day mark. The normative data was based on children (5-18 years old) identified as having emotional or behavioral disorders, adolescents not identified as having emotional and behavioral disorders, and a representative sample of the population nationwide. The wide spectrum in the normative group allows for the standardized test to be appropriate with the participants being used. It takes approximately 10 minutes to score.

Drug Use Screening Inventory-Revised

The DUSI-R is a self-report inventory consisting of 159 yes or no items related to problem areas. The DUSI-R was designed to quantify severity of problems in multiple domains. It can be used for intake evaluation, intervention monitoring, outcome assessment, and program evaluation (Gorney, 2004). The inventory takes approximately 20 minutes to complete.

The inventory assessed life in ten domains: substance use, behavior patterns, health status, psychiatric disorder, social competence, family system, school performance, work adjustment, peer relations, and leisure recreation (Tarter, 1991). Each subscale was given a relative problem density profile, which determines the level of risk in each subscale. The overall problem density profile reflected general severity of disturbance (Tarter & Hegedus, 1991).

For study purposes, the overall problem density profile was recorded as the risk factor score and was compared before and after treatment and between two groups (substance abuse program and general corrections). Any change exceeding 15% is considered significant. If the

overall problem density profile goes down, the adolescent has less risk on that particular subscale.

This inventory is used to assess program effectiveness and screen for substance abuse and other problems. The subscales are useful in examining the change in risk factor scores in particular areas. The reliability of the test was studied with a sample of 191 youth having alcohol and drug disorders. Although the test administers provided little information on norms, they did find the internal consistency was adequate and coefficients across all domains were reported to be above .74. In another study, test/retest method found the mean coefficient in a sample of adolescents with Polysubstance Abuse was .95 (Tarter, 1991). Although further data collection with the DUSI-R is important, these are significant results supporting the reliability of the DUSI-R.

Little is available on the content validity of the instrument because of the minimal information available on the item selection and test construction as well as what theory the rating scale is derived from. The concurrent validity was found by comparing the DUSI-R to the K-SADS (Ambrosimi, Metz, & Prabucki, 1989), a semi structured clinical interview to determine substance abuse and psychiatric disorder domains coefficients which were both over .65. When the coefficients of the standardized tests are close, they support the same results relevant to the participant's risk factors. The Standard Health Rating Checklist was compared to the DUSI-R health score and found to have a .53 coefficient. Lastly, the social competence scale was compared to the Adolescent Assertive Expression Scale with a coefficient of .51.

The DUSI-R also included a lie score which counts the number of no responses to the last item in each domain. The range of scores is from 1 to 10 and a score of 5 or higher invalidates the results. These scores are not used as part of the computing.

The interviewer provided the participants with some brief instructions and then asked them to complete the tests on their own. There is a scoring sheet that accompanies the test. The answers are taken from the test and moved onto the scoring sheet. It takes approximately 10 minutes to score the standardized test.

Procedures

Before the adolescents could participate in the study an IRB needed to be completed and submitted to the superintendent of the correctional facility and the Department of Corrections. Furthermore, IRB approval from Capella needed to be obtained.

When the adolescent arrived at the correctional facility an appointed correctional officer supervisor would call the parents of the adolescents, to inform them about the study and then mail both a written description of what participation would entail and a consent form to sign and send back. The written description described the purpose of the study, the procedure for participation, the risk and benefits of participation, and, most importantly, how the study would handle confidentiality issues. Once the parent written consent form was signed the interviewer met with the adolescent. If interested in participating in the study, the adolescents were given an assent form to sign that covers rights to confidentiality, how the information will be used, and what the procedure will be.

Once the adolescents were placed in a pod and consent forms were collected, they were assigned a study number. There was one spreadsheet with the participant's name and number. This is the only place the name and number were located together. The only person who had access to this log was the interviewer. The questionnaire and standardized tests did not have the participant's name on them, just the assigned number. The log was used to ensure the participants had the same number on their questionnaire and standardized tests during both interviews. Once the participants completed the second interview the name and numbers were erased from the log.

Once a number was assigned, the first interview took place. The interviewer met in a private room with the participant during the first week of the adolescents stay at the correctional facility. The interviews for the study took place in the morning. The second interview took place 30 days after the first interview.

During the interview the participant sat across from the interviewer at a table. When the participant arrived, they had a manila folder and two pencils on the table. The session started with the interviewer reading a narrative script which gave an overview of the session. Next, the participant was given a short questionnaire that asks questions about demographic information, criminal history, ethnicity, date of birth, and time of incarceration. The participants were instructed to put the questionnaire in the manila folder when it was completed. Afterwards, the interviewer provided the adolescent with the DUSI-R and read the instructions from the narrative script. Upon completion, the participant was directed to put the completed DUSI-R in the envelope. Lastly, the interviewer provided the participants with the BERS-2 and gave instructions from the narrative script. After completion, the participant was asked to put the data

sheets in the manila folder. The standardized tests were taken out of the manila folder, scored, and compiled into SPSS. There was no identifying information on the outside of the manila folder and only the number of the participant inside the manila folder on the standardized tests.

Thirty days after the initial assessment the adolescent met with the interviewer for the second session. The interviewer read from the same narrative script, went through the same questionnaire, the DUSI-R and the BERS-2. Again, the data sheets and questionnaires were put in the manila folder. Only the participant's number was inside the manila folder.

Data Collection

The participants met with the interviewer by appointment, one at a time for two sessions spaced 30 days apart. A licensed marriage and family therapist facilitated the interviews. A narrative script was used to give initial directions to the participants regarding completion of the questionnaire and standardized tests. The interviewer set the questionnaire in front of each participant. Once completed, the interviewer gave the participant the DUSI-R to complete. Upon completion, the interviewer presented the BERS-2.

The interviewer was in the room while the participant completed the questionnaire and standardized tests. The interviewer was available to answer questions, read aloud if needed, insure each test question on the standardized tests was answered, and observe the participants while they completed the tests.

The data in the manila folder was entered into SPSS by the interviewer. The interviewer also kept a log of the names and numbers assigned to each participant to ensure the participants

had the same number 30 days later. The log was confidential and available only to the interviewer.

Data Analysis

The data was collected and compiled into SPSS. The BERS-2 provided scores in five domains and an overall protective factor score while the DUSI-R provided scores in ten domains and an overall risk factor score. The before and after treatment overall protective factor scores from the BERS-2 and overall risk factor score on the DUSI-R were compiled and analyzed with a Wilcoxon Test. Next, each subscale score on both standardized tests was analyzed with a Wilcoxon Test to determine changes in the treatment group pre and post treatment. Third, a Mann-Whitney non-parametric test for two independent samples was used to determine any significant differences in factors between the treatment group and the general correctional population. Lastly, the participant's overall protective factor scores from the BERS-2 and the risk factor scores on the DUSI-R of were analyzed with a Mann-Whitney Test to determine any differences between the two groups.

Expected Findings

The adolescents in the substance abuse treatment program show a greater increase in protective factors on the BERS-2 than the general population of adolescents in the correctional facility.

The adolescents in the substance abuse treatment program show an increase in protective factors on the BERS-2 at the end of the treatment program as opposed to the adolescents who were just starting the program.

The adolescents in the substance abuse treatment program show a greater decrease in risk factors on the DUSI-R than the general population of adolescents in the correctional facility.

The adolescents in the substance abuse treatment program show a decrease in risk factors on the DUSI-R at the end of the treatment program as opposed to the adolescents who were just starting the program.

4: RESULTS

Introduction

Roughly 100 adolescents entered the short-term program at the Dakota County Juvenile Correctional Facility (JSC) during the eighth month period the study was conducted. Of the 100 potential participants, a total of 11 participated in the study, which was significantly lower than the target sample size of 60. The low participation was due to difficulty getting parent consent, a limited number of admissions to the correctional facility to sample from, and many adolescents serving less than a 30-day sentence. Of the 11 participants, six adolescents were assigned to the treatment group while five did not participate in the treatment group and were assigned as only part of the general correctional program population.

Because of the small sample size, nonparametric tests were warranted. A Wilcoxon Test was used to assess change that occurred in risk and protective factor scores for the adolescents in the treatment program. A Mann-Whitney Test was used to determine differences in risk and protective factor scores between the treatment group and the control group (general correctional program population). Two standardized tests were used to determine the risk and protective factors. The BERS-2 test is a strength-based standardized test that measured five areas. On each subscale, an increase in score indicated the adolescents improved their strengths or protective factor score. The DUSI-R is a problem severity standardized test and measures ten areas. On each subscale, as the scores decreased the adolescents reduced their risk on that factor.

Demographics

The adolescents residing at the JSC ranged in age from 14 to 18 years old. The participants of this study comprised of three 18 year olds, five 17 year olds, and three 15 yeas olds. All participants reported being picked up for at least three other crimes, nine reported at least four charges on their juvenile record, and eight reported spending time in at least three different out of home placements. Of the 100 adolescents admitted into the correctional facility short term program, 57 were Caucasian, 13 were Hispanic, two were native American, 27 were African American, and one was identified as "other". Of the eleven participants in the study there were seven Caucasian, three Hispanic, and one African American. The participants were in the correctional facility for a sentence of 30, 60, or 90 days for committing crimes ranging from theft, robbery, possession of drugs, auto theft, or carrying a weapon.

Results

Hypothesis 1.1 (null) stated: There is no difference in the protective factor score on the BERS-2 at the beginning of treatment as compared to 30 days into the treatment process.

Table 1: Wilcoxon Test for Ho 1.1

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Protective Factor Score Before	6	94.8333	7.98540	83.00	103.00
Protective Factor Score After	6	110.6667	14.05228	88.00	126.00

Ranks

		N	Mean Rank	Sum of Ranks
Protective Factor Score After - Protective Factor Score Before	Negative Ranks	1 [a]	2.00	2.00
	Positive Ranks	5 [b]	3.80	19.00
	Ties	0 [c]		
	Total	6		

a. Protective Factor Score After < Protective Factor Score Before

b. Protective Factor Score After > Protective Factor Score Before

c. Protective Factor Score Before = Protective Factor Score After

Test Statistics[b]

	Protective Factor Score After - Protective Factor Score Before
Z	-1.782[a]
Asymp. Sig. (2-tailed)	.075

a. Based on negative ranks.

b. Wilcoxon Signed Ranks Test

Table 1 shows the results of the Wilcoxon Test. With a p value of .075, which is more than .05, the null hypothesis cannot be rejected. As a result, there is insignificant evidence to conclude a difference exists between the protective factor score in the BERS-2 at the beginning of treatment in comparison to 30 days into treatment. More specifically, the adolescents appeared not to have more protective factors at 30 days of treatment then when they first arrived in treatment evidenced by the overall protective factor score.

Hypothesis 1.2 (null) stated: There is no difference in the risk factor score on the DUSI-R at the beginning of treatment as compared to 30 days into the treatment process.

Table 2 Wilcoxon Test for Ho 1.2

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Risk Factor Score Before	6	40.5000	4.84768	34.00	49.00
Risk Factor Score After	6	29.6667	12.17648	12.00	44.00

Ranks

		N	Mean Rank	Sum of Ranks
Risk Factor Score After - Risk Factor Score Before	Negative Ranks	6 [a]	3.50	21.00
	Positive Ranks	0 [b]	.00	.00
	Ties	0 [c]		
	Total	6		

a. Risk Factor Score After < Risk Factor Score Before

b. Risk Factor Score After > Risk Factor Score Before

c. Risk Factor Score Before = Risk Factor Score After

Test Statistics[b]

	Risk Factor Score After - Risk Factor Score Before
Z	-2.201[a]
Asymp. Sig. (2-tailed)	.028

a. Based on positive ranks.

b. Wilcoxon Signed Ranks Test

Table 2 shows the results of the Wilcoxon Test. With a p value of .028, which is less than .05, the null hypothesis is rejected. As a result, it can be concluded there is a significant difference between the risk factor score on the DUSI-R at the beginning of treatment when compared to 30 days into treatment. More specifically, the participants had fewer risk factors at 30 days of treatment then when they first arrived in treatment evidenced by the overall risk factor score.

Hypothesis 2.1 (null) stated: There is no difference in the improvement of protective factor score on the BERS-2 among adolescents in the substance abuse treatment program as opposed to the adolescents in the general population of the correctional facility

Table 3 Mann Whitney for Ho 2.1

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Difference in Protective Factor	11	9.1818	17.92104	-15.00	33.00
Treatment or Control	11	1.4545	.52223	1.00	2.00

Ranks

	Treatment or Control	N	Mean Rank	Sum of Ranks
Difference in Protective Factor	Treatment	6	7.17	43.00
	Control	5	4.60	23.00
	Total	11		

Test Statistics[b]

	difference in protective factor score
Mann-Whitney U	8.000
Wilcoxon W	23.000
Z	-1.278
Asymp. Sig. (2-tailed)	.201
Exact Sig. [2*(1-tailed Sig.)]	.247[a]

a. Not corrected for ties.

b. Grouping Variable: Treatment or Control

Table 3 shows the results of the Mann-Whitney Test. With a p value of .247, which is more than .05, the null hypothesis cannot be rejected. As a result, there is insignificant evidence to conclude a difference exists between the treatment group and the general correctional population

group with regards to the protective factor score. In other words, there was not a significant difference between the protective factor scores reported by the participants in the treatment program and those in the general correctional population.

Hypothesis 2.2 (null) stated: There is no difference in the improvement of risk factor score on the DUSI-R among adolescents in the substance abuse treatment program as opposed to the adolescents in the general population of the correctional facility.

Table 4: Mann-Whitney Test for Ho 2.2

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Difference in Risk Factor	11	-9.8182	10.37129	-28.00	1.00
Treatment or Control	11	1.4545	.52223	1.00	2.00

Ranks

	Treatment or Control	N	Mean Rank	Sum of Ranks
Difference in Risk Factor	Treatment	6	5.17	31.00
	Control	5	7.00	35.00
	Total	11		

Test Statistics[b]

	Difference in Risk Factor
Mann-Whitney U	10.000
Wilcoxon W	31.000
Z	-.917
Asymp. Sig. (2-tailed)	.359
Exact Sig. [2*(1-tailed Sig.)]	.429[a]

a. Not corrected for ties.

b. Grouping Variable: Treatment or Control

Table 4 shows the results of the Mann-Whitney Test. With a p value of .429, which is more than .05, the null hypothesis cannot be rejected. As a result, there is insignificant evidence to conclude a difference exists between the treatment group and the general correctional population group with regards to the risk factor score. In other words, there was not a significant difference between the risk factors reported by the participants in the treatment program and those in the general correctional population.

Hypothesis 3.1 (null) stated: There is no increase in the interpersonal strength score on the BERS-2 between when the adolescents enter the treatment program and 30 days in the treatment process.

Table 5: Wilcoxon Test for Ho 3.1

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Interpersonal Before	6	10.5000	4.08656	7.00	17.00
Interpersonal After	6	12.0000	2.52982	8.00	15.00

Ranks

		N	Mean Rank	Sum of Ranks
Interpersonal strength After - Interpersonal strength Before	Negative Ranks	1 [a]	5.00	5.00
	Positive Ranks	5 [b]	3.20	16.00
	Ties	0 [c]		
	Total	6		

a. Interpersonal strength After < Interpersonal strength Before

b. Interpersonal strength After > Interpersonal strength Before

c. Interpersonal strength Before = Interpersonal strength After

Test Statistics[b]

	Interpersonal strength After - Interpersonal strength Before
Z	-1.156[a]
Asymp. Sig. (2-tailed)	.248

a. Based on negative ranks.

b. Wilcoxon Signed Ranks Test

Table 5 shows the results of the Wilcoxon Test. With a p value of .248, which is more than .05, the null hypothesis cannot be rejected. As a result, as a result there is insignificant evidence to conclude a difference exists between the interpersonal strength score on the BERS-2 at the beginning of treatment when compared to 30 days into treatment. More specifically, the interpersonal strength scores did not improve over the 30 days in the treatment program.

Hypothesis 3.2 (null) stated: There is no difference in the improvement of interpersonal strength score on the BERS-2 between adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

Table 6: Mann Whitney for Ho 3.2

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Difference in Interpersonal	11	.7273	4.05194	-6.00	7.00
Treatment or Control	11	1.4545	.52223	1.00	2.00

Ranks

	Treatment or Control	N	Mean Rank	Sum of Ranks
Difference in Interpersonal score	Treatment	6	6.58	39.50
	Control	5	5.30	26.50
	Total	11		

Test Statistics[b]

	Difference in interpersonal score
Mann-Whitney U	11.500
Wilcoxon W	26.500
Z	-.642
Asymp. Sig. (2-tailed)	.521
Exact Sig. [2*(1-tailed Sig.)]	.537[a]

a. Not corrected for ties.

b. Grouping Variable: Treatment or Control

Table 6 shows the results of the Mann-Whitney Test. With a p value of .537, which is more than .05, the null hypothesis cannot be rejected. As a result, there is insignificant evidence to conclude a difference exists between the treatment group and the general correctional population group with regards to the interpersonal strength score.

Hypothesis 4.1 (null) stated: There is no increase in the family involvement score on the BERS-2 between when the adolescents enter the treatment program and 30 days into the treatment process.

Table 7: Wilcoxon Test for Ho 4.1

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Family Involvement Before	6	8.5000	2.42899	6.00	12.00
Family Involvement After	6	12.1667	3.25064	7.00	16.00

Ranks

		N	Mean Rank	Sum of Ranks
Family Involvement After - Family Involvement Before	Negative Ranks	0 [a]	.00	.00
	Positive Ranks	4 [b]	2.50	10.00
	Ties	2 [c]		
	Total	6		

a. Family Involvement After < Family Involvement Before

b. Family Involvement After > Family Involvement Before

c. Family Involvement Before = Family Involvement After

Test Statistics[b]

	Family Involvement After - Family Involvement Before
Z	-1.857[a]
Asymp. Sig. (2-tailed)	.063

a. Based on negative ranks.

b. Wilcoxon Signed Ranks Test

Table 7 shows the results of the Wilcoxon Test. With a p value of .063, which is more than .05, the null hypothesis cannot be rejected. As a result, there is insignificant evidence to conclude a difference between the family involvement score in the BERS-2 at the beginning of treatment

when compared to 30 days into treatment. More specifically, the family involvement scores did not improve over the 30 days of treatment.

Hypothesis 4.2 (null) stated: There is no difference in the improvement of family involvement score on the BERS-2 score between the adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

Table 8: Mann Whitney Test for Ho 4.2

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Difference Family Involvement	11	2.5455	3.32757	-2.00	7.00
Treatment or Control	11	1.4545	.52223	1.00	2.00

Ranks

	Treatment or Control	N	Mean Rank	Sum of Ranks
Difference Family Involvement Score	Treatment	6	7.17	43.00
	Control	5	4.60	23.00
	Total	11		

Test Statistics[b]

	Difference in family functioning score
Mann-Whitney U	8.000
Wilcoxon W	23.000
Z	-1.293
Asymp. Sig. (2-tailed)	.196
Exact Sig. [2*(1-tailed Sig.)]	.247[a]

a. Not corrected for ties.

b. Grouping Variable: Treatment or Control

Table 8 shows the results of the Mann-Whitney Test. With a p value of .247, which is more than .05, the null hypothesis cannot be rejected. As a result, there is insufficient evidence to conclude a difference exists between the treatment group and the general correctional population group with regards to the family involvement score.

Hypothesis 5.1 (null) stated: There is no increase in the intrapersonal strength score on the BERS-2 between when the adolescents enter the treatment program and 30 days into the treatment process.

Table 9: Wilcoxon Test for Ho 5.1

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Intrapersonal Before	6	11.6667	2.42212	8.00	15.00
Intrapersonal After	6	11.0000	1.78885	9.00	13.00

Ranks

		N	Mean Rank	Sum of Ranks
Intrapersonal Strength After - Intrapersonal Strength Before	Negative Ranks	4 [a]	2.50	10.00
	Positive Ranks	1 [b]	5.00	5.00
	Ties	1 [c]		
	Total	6		

a. Intrapersonal strength After < Intrapersonal strength Before

b. Intrapersonal strength After > Intrapersonal strength Before

c. Intrapersonal strength Before = Intrapersonal strength After

Test Statistics[b]

	Intrapersonal Strength After - Intrapersonal Strength Before
Z	-.677 [a]
Asymp. Sig. (2-tailed)	.498

a. Based on positive ranks.

b. Wilcoxon Signed Ranks Test

Table 9 shows the results of the Wilcoxon Test. With a p value of .498, which is more than .05, the null hypothesis cannot be rejected. As a result, there is insignificant evidence to conclude a difference exists between the intrapersonal strength score on the BERS-2 at the beginning of treatment when compared to 30 days into treatment. More specifically, the intrapersonal strength scores did not improve over the 30 days of treatment.

Hypothesis 5.2 (null) stated: There is no difference in the improvement of intrapersonal strength score on the BERS-2 between the adolescent's involved n the substance abuse treatment program and those in the general population of the correctional facility.

Table 10: Mann Whitney Test for Ho 5.2

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Difference in Intrapersonal	11	-1.0909	2.54773	-4.00	5.00
Treatment or Control	11	1.4545	.52223	1.00	2.00

Ranks

	Treatment or Control	N	Mean Rank	Sum of Ranks
Difference in Intrapersonal	Treatment	6	6.42	38.50
	Control	5	5.50	27.50
	Total	11		

Test Statistics[b]

	Difference in intrapersonal score
Mann-Whitney U	12.500
Wilcoxon W	27.500
Z	-.463
Asymp. Sig. (2-tailed)	.644
Exact Sig. [2*(1-tailed Sig.)]	.662[a]

a. Not corrected for ties.

b. Grouping Variable: Treatment or Control

Table 10 shows the results of the Mann-Whitney Test. With a p value of .662, which is more than .05, the null hypothesis cannot be rejected. As a result, there is insignificant evidence to conclude a difference exists between the treatment group and the general correctional population group with regards to the intrapersonal score. More specifically, the intrapersonal scores did not show improvement by those in the treatment group when compared to those in the general correctional population.

Hypothesis 6.1 (null) stated: There is no increase in the school functioning score on the BERS-2 between when the adolescents enter the treatment program and 30 days into the treatment process.

Table 11: Wilcoxon Test for Ho 6.1

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
School Functioning Before	6	8.5000	1.22474	7.00	10.00
School Functioning After	6	11.1667	1.94079	8.00	13.00

Ranks

		N	Mean Rank	Sum of Ranks
School Functioning After - School Functioning Before	Negative Ranks	0 [a]	.00	.00
	Positive Ranks	6 [b]	3.50	21.00
	Ties	0 [c]		
	Total	6		

a. School Functioning After < School Functioning Before

b. School Functioning After > School Functioning Before

c. School Functioning Before = School Functioning After

Test Statistics[b]

	School Functioning After - School Functioning Before
Z	-2.232[a]
Asymp. Sig. (2-tailed)	.026

a. Based on negative ranks.

b. Wilcoxon Signed Ranks Test

Table 11 shows the results of the Wilcoxon Test. With a p value of .026, which is less than .05, the null hypothesis is rejected. As a result, it can be concluded there is a significant difference

between the school functioning score on the BERS-2 at the beginning of treatment when compared to 30 days into treatment. More specifically, the school functioning scores improved over the 30 days of treatment.

Hypothesis 6.2 (null) stated: There is no difference in the improvement of school functioning score on the BERS-2 between the adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

Table 12: Mann Whitney Test for Ho 6.2

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Difference in School Functioning	11	2.0909	2.16585	-1.00	6.00
Treatment or Control	11	1.4545	.52223	1.00	2.00

Ranks

	Treatment or Control	N	Mean Rank	Sum of Ranks
Difference in School Functioning	Treatment	6	7.08	42.50
	Control	5	4.70	23.50
	Total	11		

Test Statistics[b]

	Difference In School
Mann-Whitney U	8.500
Wilcoxon W	23.500
Z	-1.206
Asymp. Sig. (2-tailed)	.228
Exact Sig. [2*(1-tailed Sig.)]	.247[a]

a. Not corrected for ties.

b. Grouping Variable: Treatment or Control

Table 12 shows the results of the Mann-Whitney Test. With a p value of .247, which is more than .05, the null hypothesis cannot be rejected. As a result, there is insignificant evidence to conclude a difference exists between the treatment group and the general correctional population group with regards to the school functioning score. More specifically, the school functioning scores did not show improvement by those in the treatment group when compared to those in the general correctional population.

Hypothesis 7.1 (null) stated: There is no increase in the affective strength score on the BERS-2 between when the adolescents enter the treatment program and 30 days into the treatment process.

Table 13: Wilcoxon Test for Ho 7.1

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Affective Strength Before	6	10.6667	2.87518	9.00	16.00
Affective Strength After	6	11.5000	3.14643	6.00	15.00

Ranks

		N	Mean Rank	Sum of Ranks
Affective Strength After - Affective Strength Before	Negative Ranks	2 [a]	3.50	7.00
	Positive Ranks	4 [b]	3.50	14.00
	Ties	0 [c]		
	Total	6		

a. Affective Strength After < Affective Strength Before

b. Affective Strength After > Affective Strength Before

c. Affective Strength Before = Affective Strength After

Test Statistics[b]

	Affective Strength After - Affective Strength Before
Z	-.755[a]
Asymp. Sig. (2-tailed)	.450

a. Based on negative ranks.

b. Wilcoxon Signed Ranks Test

Table 13 shows the results of the Wilcoxon Test. With a p value of .450, which is more than .05, the null hypothesis cannot be rejected. As a result, there is insufficient evidence to conclude a difference exists between the affective strength score on the BERS-2 at the beginning of treatment when compared to 30 days into treatment. More specifically, the affective strength scores did not improve over the 30 days of treatment.

Hypothesis 7.2 (null) stated: There is no difference in the improvement of affective strength score on the BERS-2 between the adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

Table 14: Mann Whitney Test for Ho 7.2

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Difference in Affective	11	.4545	2.38175	-3.00	4.00
Treatment or Control	11	1.4545	.52223	1.00	2.00

Ranks

	Treatment or Control	N	Mean Rank	Sum of Ranks
Difference in Affective score	Treatment	6	6.67	40.00
	Control	5	5.20	26.00
	Total	11		

Test Statistics[b]

	Difference in affective score
Mann-Whitney U	11.000
Wilcoxon W	26.000
Z	-.737
Asymp. Sig. (2-tailed)	.461
Exact Sig. [2*(1-tailed Sig.)]	.537[a]

a. Not corrected for ties.

b. Grouping Variable: Treatment or Control

Table 14 shows the results of the Mann-Whitney Test. With a p value of .537, which is more than .05, null hypothesis cannot be rejected. As a result, there is insignificant evidence to conclude a difference exists between the treatment group and the general correctional population group with regards to the affective strength score. More specifically, the affective strength scores did not show improvement by those in the treatment group when compared to those in the general correctional population.

Hypothesis 8.1 (null) stated: There is no increase in the substance abuse score on the DUSI-R between when the adolescents enter the treatment program and 30 days into the treatment process.

Table 15: Wilcoxon Test for Ho 8.1

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Substance Abuse Before	6	56.5000	9.07193	40.00	66.00
Substance Abuse After	6	26.3333	21.39782	6.00	66.00

Ranks

		N	Mean Rank	Sum of Ranks
Substance Abuse After - Substance Abuse Before	Negative Ranks	5 [a]	3.00	15.00
	Positive Ranks	0 [b]	.00	.00
	Ties	1 [c]		
	Total	6		

a. Substance Abuse After < Substance Abuse Before

b. Substance Abuse After > Substance Abuse Before

c. Substance Abuse Before = Substance Abuse After

Test Statistics[b]

	Substance Abuse After - Substance Abuse Before
Z	-2.032[a]
Asymp. Sig. (2-tailed)	.042

a. Based on positive ranks.

b. Wilcoxon Signed Ranks Test

Table 15 shows the results of the Wilcoxon Test. With a p value of .042, which is less than .05, the null hypothesis is rejected. As a result, it can be concluded there is a significant difference between the substance abuse score on the DUSI-R at the beginning of treatment when compared

to 30 days into treatment. More specifically, the substance abuse scores decreased or improved over 30 days of treatment.

Hypothesis 8.2 (null) stated: There is no difference in the improvement of substance abuse score on the DUSI-R between the adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

Table 16: Mann Whitney Test for Ho 8.2

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Difference in Substance Abuse	11	-15.8182	28.03148	-54.00	20.00
Treatment or Control	11	1.4545	.52223	1.00	2.00

Ranks

	Treatment or Control	N	Mean Rank	Sum of Ranks
Difference in Substance Abuse	Treatment	6	4.25	25.50
	Control	5	8.10	40.50
	Total	11		

Test Statistics[b]

	Difference in Substance Abuse
Mann-Whitney U	4.500
Wilcoxon W	25.500
Z	-1.930
Asymp. Sig. (2-tailed)	.054
Exact Sig. [2*(1-tailed Sig.)]	.052[a]

a. Not corrected for ties.

b. Grouping Variable: Treatment or Control

Table 16 shows the results of the Mann-Whitney Test. With a p value of .052, which is more than .05, null hypothesis cannot be rejected. As a result, there is insignificant evidence to conclude a difference exists between the treatment group and the general correctional population group with regards to the substance abuse score on the DUSI-R. More specifically, the substance abuse scores did not show improvement by those in the treatment group when compared to those in the general correctional population. A larger sample may have revealed significance in this area.

Hypothesis 9.1 (null) stated: There is no increase in the behavior patterns score on the DUSI-R between when the adolescents enter the treatment program and 30 days into the treatment process.

Table 17: Wilcoxon Test for Ho 9.1

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Behavior Patterns Before	6	37.5000	18.64135	15.00	70.00
Behavior Patterns After	6	23.3333	16.93123	.00	45.00

Ranks

		N	Mean Rank	Sum of Ranks
Behavior Patterns After - Behavior Patterns Before	Negative Ranks	4 [a]	4.38	17.50
	Positive Ranks	2 [b]	1.75	3.50
	Ties	0 [c]		
	Total	6		

a. Behavior Patterns After < Behavior Patterns Before

b. Behavior Patterns After > Behavior Patterns Before

c. Behavior Patterns Before = Behavior Patterns After

Test Statistics[b]

	Behavior Patterns After - Behavior Patterns Before
Z	-1.476[a]
Asymp. Sig. (2-tailed)	.140

a. Based on positive ranks.

b. Wilcoxon Signed Ranks Test

Table 17 shows the results of the Wilcoxon Test. With a p value of .140, which is more than .05, the null hypothesis is rejected. As a result, there is insignificant evidence to conclude a difference exists between the behavior patterns score on the DUSI-R at the beginning of treatment when compared to 30 days into treatment. More specifically, the behavior patterns scores did not improve over the 30 days of treatment.

Hypothesis 9.2 (null) stated: There is no difference in the improvement of behavior patterns score on the DUSI-R between the adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

Table 18: Mann Whitney Test for Ho 9.2

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Difference in Behavior	11	-12.2727	18.88963	-35.00	15.00
Treatment or Control	11	1.4545	.52223	1.00	2.00

Ranks

	Treatment or Control	N	Mean Rank	Sum of Ranks
Difference in Behavior	Treatment	6	5.67	34.00
	Control	5	6.40	32.00
	Total	11		

Test Statistics[b]

	Difference in Behavior
Mann-Whitney U	13.000
Wilcoxon W	34.000
Z	-.370
Asymp. Sig. (2-tailed)	.711
Exact Sig. [2*(1-tailed Sig.)]	.792[a]

a. Not corrected for ties.

b. Grouping Variable: Treatment or Control

Table 18 shows the results of the Mann-Whitney Test. With a p value of .792, which is more than .05, the null hypothesis cannot be rejected. As a result, there is insignificant evidence to conclude a difference exists between the treatment group and the general correctional population group with regards to the behavior patterns score on the DUSI-R. More specifically, the behavior patterns scores did not show improvement by those in the treatment group when compared to those in the general correctional population.

Hypothesis 10.1 (null) stated: There is no increase in the health status score on the DUSI-R between when the adolescents enter the treatment program and 30 days into the treatment process.

Table 19: Wilcoxon Test for Ho 10.1

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Health Status Before	6	26.6667	8.16497	20.00	40.00
Health Status After	6	20.0000	16.73320	.00	50.00

Ranks

		N	Mean Rank	Sum of Ranks
Health Status After - Health Status Before	Negative Ranks	4 [a]	3.13	12.50
	Positive Ranks	1 [b]	2.50	2.50
	Ties	1 [c]		
	Total	6		

a. Health Status After < Health Status Before

b. Health Status After > Health Status Before

c. Health Status Before = Health Status After

Test Statistics[b]

	Health Status After - Health Status Before
Z	-1.414[a]
Asymp. Sig. (2-tailed)	.157

a. Based on positive ranks.

b. Wilcoxon Signed Ranks Test

Table 19 shows the results of the Wilcoxon Test. With a p value of .157, which is more than .05, the null hypothesis is rejected. As a result, there is insufficient evidence to conclude a difference exists between the health status score on the DUSI-R at the beginning of treatment when compared to 30 days into treatment. More specifically, the health status scores did not improve over 30 days of treatment.

Hypothesis 10.2 (null) stated: There is no difference in the improvement of health status score on the DUSI-R between the adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

Table 20: Mann-Whitney Test for Ho 10.2

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Difference in Health	11	-10.9091	19.72539	-50.00	10.00
Treatment or Control	11	1.4545	.52223	1.00	2.00

Ranks

	Treatment or Control	N	Mean Rank	Sum of Ranks
Difference in Health	Treatment	6	6.25	37.50
	Control	5	5.70	28.50
	Total	11		

Test Statistics[b]

	Difference in Health
Mann-Whitney U	13.500
Wilcoxon W	28.500
Z	-.283
Asymp. Sig. (2-tailed)	.777
Exact Sig. [2*(1-tailed Sig.)]	.792[a]

a. Not corrected for ties.

b. Grouping Variable: Treatment or Control

Table 20 shows the results of the Mann-Whitney Test. With a p value of .792, which is more than .05, the null hypothesis cannot be rejected. As a result, there is insignificant evidence to conclude a difference exists between the treatment group and the general correctional population group with regards to the health status score on the DUSI-R. More specifically, the health status

scores did not show improvement by those in the treatment group when compared to those in the general correctional population.

Hypothesis 11.1 (null) stated: There is no increase in the psychiatric disorder score on the DUSI-R between when the adolescents enter the treatment program and 30 days into the treatment process.

Table 21: Wilcoxon Test for Ho 11.1

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Psychiatric Disorders Before	6	40.8333	12.41639	25.00	55.00
Psychiatric Disorders after	6	26.6667	16.32993	.00	50.00

Ranks

		N	Mean Rank	Sum of Ranks
Psychiatric Disorders After - Psychiatric Disorders Before	Negative Ranks	5 [a]	3.90	19.50
	Positive Ranks	1 [b]	1.50	1.50
	Ties	0 [c]		
	Total	6		

a. Psychiatric Disorders after < Psychiatric Disorders Before

b. Psychiatric Disorders after > Psychiatric Disorders Before

c. Psychiatric Disorders Before = Psychiatric Disorders after

Test Statistics[b]

	Psychiatric Disorders After Psychiatric Disorders Before
Z	-1.913[a]
Asymp. Sig. (2-tailed)	.056

a. Based on positive ranks.

b. Wilcoxon Signed Ranks Test

Table 21 shows the results of the Wilcoxon Test. With a p value of .056, which is more than .05, the null hypothesis cannot be rejected. As a result, there is insignificant evidence to conclude a difference between the psychiatric disorder score on the DUSI-R at the beginning of treatment when compared to 30 days into treatment. More specifically, the psychiatric disorder scores did not improve over 30 days of treatment.

Hypothesis 11.2 (null) stated: There is no difference in the improvement of psychiatric disorder score on the DUSI-R between the adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

Table 22: Mann-Whitney Test for Ho 11.2

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Difference in Psychiatric	11	-12.2727	13.10794	-35.00	5.00
Treatment or Control	11	1.4545	.52223	1.00	2.00

Ranks

	Treatment or Control	N	Mean Rank	Sum of Ranks
Difference in Psychiatric	Treatment	6	5.50	33.00
	Control	5	6.60	33.00
	Total	11		

Test Statistics[b]

	Difference in Psychiatric
Mann-Whitney U	12.000
Wilcoxon W	33.000
Z	-.557
Asymp. Sig. (2-tailed)	.578
Exact Sig. [2*(1-tailed Sig.)]	.662[a]

a. Not corrected for ties.

b. Grouping Variable: Treatment or Control

Table 22 shows the results of the Mann-Whitney Test. With a p value of .662, which is more than .05, the null hypothesis cannot be rejected. As a result, there is insignificant evidence to conclude a difference exists between the treatment group and the general correctional population group with regards to the psychiatric disorder score on the DUSI-R. More specifically, the psychiatric disorder scores did not show improvement by those in the treatment group when compared to those in the general correctional population.

Hypothesis 12.1 (null) stated: There is no increase in the social competence score on the DUSI-R between when the adolescents enter the treatment program and 30 days into the treatment process.

Table 23: Wilcoxon Test For Ho 12.1

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Social Competence Before	6	18.6667	5.71548	14.00	28.00
Social Competence After	6	17.5000	9.64883	7.00	35.00

Ranks

		N	Mean Rank	Sum of Ranks
Social Competence After - Social Competence Before	Negative Ranks	2 [a]	2.00	4.00
	Positive Ranks	1 [b]	2.00	2.00
	Ties	3 [c]		
	Total	6		

a. Social Competence After < Social Competence Before

b. Social Competence After > Social Competence Before

c. Social Competence Before = Social Competence After

Test Statistics[b]

	Social Competence After - Social Competence Before
Z	-.577[a]
Asymp. Sig. (2-tailed)	.564

a. Based on positive ranks.

b. Wilcoxon Signed Ranks Test

Table 23 shows the results of the Wilcoxon Test. With a p value of .564, which is more than .05, the null hypothesis cannot be rejected. As a result, there is insignificant evidence to conclude a difference exists between the social competence score at the beginning of treatment in comparison to 30 days in treatment. More specifically, the data does not show the social competence score improved over 30 days of treatment.

Hypothesis 12.2 (null) stated: There is no difference in the improvement of social competence score on the DUSI-R between the adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

Table 24: Mann-Whitney for Ho 12.2

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Difference in Social Competence	11	-4.6364	16.88948	-43.00	28.00
Treatment or Control	11	1.4545	.52223	1.00	2.00

Ranks

	Treatment or Control	N	Mean Rank	Sum of Ranks
Difference in Social Competence	Treatment	6	7.33	44.00
	Control	5	4.40	22.00
	Total	11		

Test Statistics[b]

	Difference in Social Competence
Mann-Whitney U	7.000
Wilcoxon W	22.000
Z	-1.488
Asymp. Sig. (2-tailed)	.137
Exact Sig. [2*(1-tailed Sig.)]	.177[a]

a. Not corrected for ties.

b. Grouping Variable: Treatment or Control

Table 24 shows the results of the Mann-Whitney Test. With a p value of .177, which is more than .05, the null hypothesis cannot be rejected. As a result, there is insignificant evidence to conclude a difference exists between the treatment group and the general correctional population

group with regards to the social competence score. More specifically, the social competence did not show improvement by those in the treatment group when compared to those in the general correctional population.

Hypothesis 13.1 (null) stated: There is no increase in the family system score on the DUSI-R between when the adolescents enter the treatment program and 30 days into the treatment process.

Table 25: Wilcoxon Test for Ho 13.1

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Family System Before	6	38.8333	16.25320	14.00	57.00
Family System After	6	35.1667	19.58996	7.00	64.00

Ranks

		N	Mean Rank	Sum of Ranks
Family System After - Family System Before	Negative Ranks	2 [a]	4.50	9.00
	Positive Ranks	3 [b]	2.00	6.00
	Ties	1 [c]		
	Total	6		

a. Family System After < Family System Before

b. Family System After > Family System Before

c. Family System Before = Family System After

Test [b]

	Famil System - Syste Before
Z	-.412[a]
Asymp. Sig. (2-	.680

a. Based on positive

b. Wilcoxon Signed Ranks

Table 25 shows the results of the Wilcoxon Test. With a p value of .680, which is more than .05, the null hypothesis cannot be rejected. As a result, there is insignificant evidence to conclude a difference between the family system score on the DUSI-R at the beginning of treatment when compared to 30 days into treatment. More specifically, the family system scores did not improve over 30 days of treatment.

Hypothesis 13.2 (null) stated: There is no difference in the improvement of family system score on the DUSI-R between the adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

Table 26: Mann-Whitney Test for Ho 13.2

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Difference in Family	11	-5.2727	21.53644	-57.00	21.00
Treatment or Control	11	1.4545	.52223	1.00	2.00

Ranks

	Treatment or Control	N	Mean Rank	Sum of Ranks
Difference in Family	Treatment	6	6.00	36.00
	Control	5	6.00	30.00
	Total	11		

Test Statistics[b]

	Difference in Family
Mann-Whitney U	15.000
Wilcoxon W	30.000
Z	.000
Asymp. Sig. (2-tailed)	1.000
Exact Sig. [2*(1-tailed Sig.)]	1.000[a]

a. Not corrected for ties.

b. Grouping Variable: Treatment or Control

Table 26 shows the results of the Mann-Whitney Test. With a p value of 1.0, which is more than .05, the null hypothesis cannot be rejected. As a result, there is insignificant evidence to conclude a difference exists between the treatment group and the general correctional population group with regards to the family system score on the DUSI-R. More specifically, the family system scores did not show improvement by those in the treatment group when compared to those in the general correctional population.

Hypothesis 14.1 (null) stated: There is no increase in the school performance score on the DUSI-R between when the adolescents enter the treatment program and 30 days into the treatment process.

Table 27: Wilcoxon Test for Ho 14.1

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
School Score Before	6	50.0000	15.49193	25.00	70.00
School Score After	6	34.1667	20.35109	20.00	65.00

Ranks

		N	Mean Rank	Sum of Ranks
School Score After - School Score Before	Negative Ranks	5 [a]	3.90	19.50
	Positive Ranks	1 [b]	1.50	1.50
	Ties	0 [c]		
	Total	6		

a. School Score After < School Score Before

b. School Score After > School Score Before

c. School Score Before = School Score After

Test Statistics[b]

	School Score After - School Score Before
Z	-1.892[a]
Asymp. Sig. (2-tailed)	.058

a. Based on positive ranks.

b. Wilcoxon Signed Ranks Test

Table 27 shows the results of the Wilcoxon Test. With a p value of .058, which is more than .05, the null hypothesis cannot be rejected. As a result, there is insignificant evidence to conclude a difference exists between the school performance score at the beginning of treatment in comparison to 30 days in treatment. More specifically, we cannot conclude the social competence score improved over 30 days of treatment.

Hypothesis 14.2 (null) stated: There is no difference in the improvement of school performance scores on the DUSI-R between the adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

Table 28: Mann-Whitney Test for Ho 14.2

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Difference in School	11	-16.8182	17.06938	-45.00	5.00
Treatment or Control	11	1.4545	.52223	1.00	2.00

Ranks

	Treatment or Control	N	Mean Rank	Sum of Ranks
Difference in School	Treatment	6	6.08	36.50
	Control	5	5.90	29.50
	Total	11		

Test Statistics[b]

	Difference in School
Mann-Whitney U	14.500
Wilcoxon W	29.500
Z	-.092
Asymp. Sig. (2-tailed)	.927
Exact Sig. [2*(1-tailed Sig.)]	.931[a]

a. Not corrected for ties.

b. Grouping Variable: Treatment or Control

Table 28 shows the results of the Mann-Whitney Test. With a p value of .931, which is more than .05, the null hypothesis cannot be rejected. As a result, there is insignificant evidence to conclude a difference exists between the treatment group and the general correctional population group with regards to the school performance scores on the DUSI-R. More specifically, we

cannot conclude the school performance scores on the DUSI-R improved more so for adolescents in treatment when compared to those in the general correctional population.

Hypothesis 15.1 (null) stated: There is no increase in the work adjustment score on the DUSI-R between when the adolescents enter the treatment program and 30 days into the treatment process.

Table 29: Wilcoxon Test for Ho 15.1

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Work Score Before	6	25.0000	13.78405	10.00	40.00
Work Score After	6	15.0000	25.09980	.00	60.00

Ranks

		N	Mean Rank	Sum of Ranks
Work Score After - Work Score Before	Negative Ranks	4 [a]	2.88	11.50
	Positive Ranks	1 [b]	3.50	3.50
	Ties	1 [c]		
	Total	6		

a. Work Score After < Work Score Before

b. Work Score After > Work Score Before

c. Work Score Before = Work Score After

Test Statistics[b]

	Work Score After - Work Score Before
Z	-1.089[a]
Asymp. Sig. (2-tailed)	.276

a. Based on positive ranks.

b. Wilcoxon Signed Ranks Test

Table 29 shows the results of the Wilcoxon Test. With a p value of .276, which is more than .05, the null hypothesis cannot be rejected. As a result, there is insignificant evidence to conclude a difference exists between the work adjustment score on the DUSI-R at the beginning of treatment when compared to 30 days into treatment. More specifically, the substance abuse scores did not decrease or improve over 30 days of treatment.

Hypothesis 15.2 (null) stated: There is no difference in the improvement of work adjustment score on the DUSI-R between the adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

Table 30: Mann-Whitney Test for Ho 15.2

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Difference in Work	11	-6.3636	21.57440	-40.00	40.00
Treatment or Control	11	1.4545	.52223	1.00	2.00

Ranks

	Treatment or Control	N	Mean Rank	Sum of Ranks
Difference in Work	Treatment	6	5.75	34.50
	Control	5	6.30	31.50
	Total	11		

Test Statistics[b]

	Difference in Work
Mann-Whitney U	13.500
Wilcoxon W	34.500
Z	-.280
Asymp. Sig. (2-tailed)	.780
Exact Sig. [2*(1-tailed Sig.)]	.792[a]

a. Not corrected for ties.

b. Grouping Variable: Treatment or Control

Table 30 shows the results of the Mann-Whitney Test. With a p value of .792, which is more than .05, the null hypothesis cannot be rejected. As a result, there is insignificant evidence to conclude a difference exists between the treatment group and the general correctional population group with regards to the work adjustment score on the DUSI-R. More specifically, the work adjustment scores did not show improvement by those in the treatment group when compared to those in the general correctional population.

Hypothesis 16.1 (null) stated: There is no increase in the peer relation's score on the DUSI-R between when the adolescents enter the treatment program and 30 days into the treatment process.

Table 31: Wilcoxon Test for Ho 16.1

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Peer Relations Before	6	52.1667	13.39278	28.00	64.00
Peer After	6	54.3333	12.75408	35.00	64.00

Ranks

		N	Mean Rank	Sum of Ranks
Peer After - Peer Relations Before	Negative Ranks	2 [a]	2.50	5.00
	Positive Ranks	2 [b]	2.50	5.00
	Ties	2 [c]		
	Total	6		

a. Peer After < Peer Relations Before

b. Peer After > Peer Relations Before

c. Peer Relations Before = Peer After

Test Statistics[b]

	Peer After - Peer Relations Before
Z	.000 [a]
Asymp. Sig. (2-tailed)	1.000

a. The sum of negative ranks equals the sum of positive ranks.

b. Wilcoxon Signed Ranks Test

Table 31 shows the results of the Wilcoxon Test. With a p value of 1.0, which is more than .05, the null hypothesis cannot be rejected. As a result, there is insignificant evidence to conclude a difference exists between the peer relation's score at the beginning of treatment when compared to 30 days into treatment. More specifically, it is not clear that the peer relation's score improved with 30 days of treatment.

Hypothesis 16.2 (null) stated: There is no difference in the improvement of peer relation's score on the DUSI-R between the adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

Table 32: Mann-Whitney Test for Ho 16.2

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Difference in Peers	11	5.6364	18.85350	-22.00	36.00
Treatment or Control	11	1.4545	.52223	1.00	2.00

Ranks

	Treatment or Control	N	Mean Rank	Sum of Ranks
Difference in Peers	Treatment	6	5.42	32.50
	Control	5	6.70	33.50
	Total	11		

Test Statistics[b]

	Difference in Peers
Mann-Whitney U	11.500
Wilcoxon W	32.500
Z	-.648
Asymp. Sig. (2-tailed)	.517
Exact Sig. [2*(1-tailed Sig.)]	.537[a]

a. Not corrected for ties.

b. Grouping Variable: Treatment or Control

Table 32 shows the results of the Mann-Whitney Test. With a p value of .537, which is more than .05, the null hypothesis cannot be rejected. As a result, there is insignificant evidence to conclude a difference exists between the treatment group and the general correctional population group with regards to the peer relation's score on the DUSI-R. More specifically, the peer relation's score did not show improvement by those in the treatment group when compared to those in the general correctional population.

Hypothesis 17.1 (null) stated: There is no increase in the leisure and recreation score on the DUSI-R between when the adolescents enter the treatment program and 30 days into the treatment process.

Table 33: Wilcoxon Test for Ho 17.1

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Leisure/Recreation Before	6	42.6667	21.25716	16.00	66.00
Leisure/Recreation After	6	33.0000	25.32193	.00	58.00

Ranks

		N	Mean Rank	Sum of Ranks
Leisure/Recreation After - Leisure/Recreation Before	Negative Ranks	4 [a]	2.50	10.00
	Positive Ranks	0 [b]	.00	.00
	Ties	2 [c]		
	Total	6		

a. Leisure/Recreation After < Leisure/Recreation Before

b. Leisure/Recreation After > Leisure/Recreation Before

c. Leisure/Recreation Before = Leisure/Recreation After

Test Statistics[b]

	Leisure/Recreation After - Leisure/Recreation Before
Z	-1.841[a]
Asymp. Sig. (2-tailed)	.066

a. Based on positive ranks.

b. Wilcoxon Signed Ranks Test

Table 33 shows the results of the Wilcoxon Test. With a p value of .066, the null hypothesis cannot be rejected. As a result, there is insignificant evidence to conclude there is a difference in

the leisure and recreation score at the beginning of treatment when compared to 30 days into the treatment process. More specifically, it is unclear if the leisure and recreation score improved over 30 days of treatment.

Hypothesis 17.2 (null) stated: There is no difference in the improvement of leisure and recreation score on the DUSI-R between the adolescents involved in the substance abuse treatment program and those in the general population of the correctional facility.

Table 34: Mann-Whitney Test for Ho 17.2

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Difference in Leisure	11	-14.3636	18.18391	-58.00	.00
Treatment or Control	11	1.4545	.52223	1.00	2.00

Ranks

	Treatment or Control	N	Mean Rank	Sum of Ranks
Difference in Leisure	Treatment	6	6.50	39.00
	Control	5	5.40	27.00
	Total	11		

Test Statistics[b]

	Difference in Leisure
Mann-Whitney U	12.000
Wilcoxon W	27.000
Z	-.562
Asymp. Sig. (2-tailed)	.574
Exact Sig. [2*(1-tailed Sig.)]	.662[a]

a. Not corrected for ties.

b. Grouping Variable: Treatment or Control

Table 34 shows the results of the Mann-Whitney Test. With a p value of .662, which is more than .05, the null hypothesis cannot be rejected. As a result, there is insignificant evidence to conclude a difference exists in the leisure and recreation score on the DUSI-R between the treatment group and the general correctional population group. More specifically, the leisure and recreational scores did not show improvement by those in the treatment group when compared to those in the general correctional population.

CHAPTER 5: RESULTS, CONCLUSIONS AND RECOMMENDATIONS

Summary and Interpretation of Results

This study observed whether there were changes in risk and protective factor scores with incarcerated adolescents during substance abuse treatment. To measure possible changes, a treatment group was compared to a control group. Two standardized tests were given to both groups of adolescents, once upon entering the correctional facility and again 30 days later. Seventeen different factors were extracted and compared from the two standardized tests (BERS-2 and DUSI-R). The list of factors are as follows: interpersonal skills, family involvement, intrapersonal skills, school functioning, affective skills, substance abuse, behavior patterns, health status, psychiatric disorders, social competence, family system, school performance, work adjustment, peer relations, leisure and recreation, overall protective factor, and overall risk factor. These factors are important because they either influence maladaptive adjustment in adulthood or protect them from high-risk situations (Clingempeel & Henggeler, 2003; Search Institute, 2004).

The study consisted of 17 hypotheses. Each hypothesis consisted of two sub hypotheses. Hypothesis one applied only to the substance abuse treatment group and looked at whether there were changes in the overall protective factor score on the BERS-2 and the overall risk factor score on the DUSI-R at the beginning of treatment compared to 30 days into treatment. Hypothesis two compared differences in the overall protective factor score on the BERS-2 and the overall risk factor score on the DUSI-R between the treatment group and the general correctional population (control group) group. Next, hypotheses three through 17 summarized differences on each of the remaining 15 subscales for the treatment group by comparing scores at

the beginning of treatment to the same scores 30 days into treatment. Finally, hypotheses three through 17 compared differences in scores on the subscales between the treatment group and the general correctional population group.

The results indicate three significant findings. The treatment group showed a significant reduction of risk on three scales when the pre- and post-treatment tests were compared. The adolescents in the treatment group had a significant positive change in their overall risk factor score from the DUSI-R, the school functioning score from the BERS-2, and the substance abuse score from the DUSI-R. In other words, the adolescents in the substance abuse treatment group decreased their overall risk factor scores, improved their school functioning scores, and reduced their substance abuse scores during the first 30 days of incarceration.

The hypotheses comparing the general correctional program group and the treatment group resulted in no significant findings. In other words, there is insignificant evidence to conclude a difference exists between the treatment group and the general correctional population group based on scores obtained from the BERS-2 and DUSI-R. It is not evident whether the differences in the scores were due to the inadequate sample size or because there were no differences between the risk and protective factor scores between the treatment group and the general correctional population group.

Limitations

The most obvious limitation to this study was in the number of participants. During field studies parents appeared willing to provide parental consent and allow their adolescents to participate in the study. The incarcerated adolescents also initially appeared willing to

participate. However, once the study officially started unexpected obstacles led to a low numbers of participants. Not only was it difficult to obtain parent consent, but one adolescent choose not to participate in the study, there were a limited number of adolescent intakes to the correctional facility during the months the study was conducted, and few adolescents were assigned to the short term program at the facility for at least 30 days.

To have a larger sample size, the study could have made all adolescent intakes to the correctional facility eligible to participate rather than narrowing the sample to adolescents in the short-term program. However, the adolescents in the short program received a different treatment milieu than the adolescents in the long-term treatment program. Because the treatment group was being measured for its effectiveness it was important to have the treatment milieu be consistent across participants in the treatment group. The value of the study could have been enhanced if correctional facilities in other geographical locations were included. Again, the different treatment milieu would have been another variable. Because of the small sample size assumptions for parametric tests were not met and non-parametric tests were used.

The second limitation was the inconclusive data concerning whether treatment alone was the reason for the change in scores on overall risk, school, and substance abuse subscales. Factors such as being incarcerated, being forced to go to school, receiving negative consequences for not going to school, being on a structured schedule, or not having drugs available to them could have influenced the change in factors the participants reported. Furthermore, since 34 hypotheses were each tested at a .05 significance level (i.e., the probability of committing a type 1 error and showing a false positive), there was an 83% probability that at least one false positive would occur. Since only three of the null hypotheses were rejected, it is

possible that some or none of these rejections could have resulted from false positives. However, without knowing the probability of a type 2 error, which results in false negatives (i.e., not rejecting the null hypothesis when it should be rejected), there is no way to determine the exact probability that any of the three nulls was rejected in error. Given the small sample size in the study, it is likely that the value of the type 2 error exceeded .05 and that false negatives were more likely to occur than false positives, leading one to conclude that the three rejected null hypotheses were accurate. Even if it were possible to determine how many false positives might exist in this case, it would be impossible to determine which subscales were erroneous.

Another potential limitation to this study, inability for random group assignment, has been a problem in other research as well. Lipsey & Wilson's (1998) meta-analysis compared a variety of studies on treatment for incarcerated juveniles. Many of the research studies included in the meta-analysis discussed the inability to randomly assign the participants to a treatment or general correctional program group. These limitations to research make it difficult to determine if the change in adolescent risk and protective factors was due to the treatment or other natural changes in the adolescent's circumstances.

Future Research and Recommendations

Philosophy in Corrections

The debate between criminology and psychology impacts best practices for juvenile correctional facilities and the services they provide (Andrews, Bonta, & Hoge, 1990). There is a need for an overarching conceptual framework to organize the diverse bodies of knowledge and provide an overall best practice model to balance accountability and treatment in corrections.

Many researchers have concurred with the level of confusion in correctional facilities practice, citing the lack of conceptual framework (Cooke, 1998; Correia, 2001; Gannon, 2004). Without a philosophy of practice and a model for interventions, corrections is forced to assume clinical practice in corrections is just practicing psychology with clients who are in prison. To have a balanced approach to correctional programming, staff and administration would have to support the philosophy and carry out the interventions. Without staff and administration support, effective programming often does not take place because the philosophy is not influencing the treatment provided.

Treatment in Corrections

There is a high number, estimated at over 50%, of adolescents in juvenile corrections who suffer from mental health disorders (Boesky, 2002; (Cohen et al, 1990). Adolescents in juvenile corrections are also at higher risk of drug and alcohol abuse than adolescents not involved in the juvenile justice system (Deschenes & Greenwood, 1994; Snyder & Sickmund, 1995; Stahl, 2003). Research on the most effective interventions to address delinquent behavior, mental health, and substance abuse issues should be explored further. Research has supported the use of interventions that are task-orientated, collaborate with families and communities, and provide community based transition planning (Lipsey, Wilson, Cothern, 2000; Laws, 1999; Marlett & Gordon, 2003).

In addition, further study is necessary to determine whether/how change sustains over time. Providing follow up after treatment with the same standardized tests used in this study would provide useful information about change over time. Another option is for treatment programs to determine what factors they want to measure, and then find a reliable standardized

test to administer before treatment, during, and at follow up. Tracking this information would allow programs to see what impact they are making over time. If a treatment program does help incarcerated adolescents reduce their overall risk factors, it would be a beneficial program to implement in other correctional facilities to reduce recidivism rates (Henggeler, Brondina, Melton, Scherer, & Hanley, 1997). Ongoing exploration of treatment models through outcomes measures is essential for corrections to continue to obtain funding from state and local levels of government.

Understanding the Adolescent

Detaining less serious and chronic offenders together has the potential to create overcrowding in correctional facilities and increase aggression from the residents (McClelland, 2003). Because chronic offenders have a negative effect on less serious offenders, it is important to continue to research effective treatment programming for adolescents involved in the juvenile justice system based on the adolescent's individual characteristics (McClelland, 2003). If an adolescent is provided services that are tailored to the adolescent's specific circumstances, there will be a reduction in recidivism and relapse. Several studies have found matching service delivery with the individual's needs increases the protective factors in an adolescent's life (Austin, Johnston, & Weitzer, 2005; Dowden, Andres, 1999a; Lipsey, 1995).

In order to provide proper interventions for less serious and chronic offenders, the justice system has to have appropriate risk assessment procedures to provide meaningful information regarding the level of service that would be most beneficial to the adolescent (Austin, Johnson, & Weitzer, 2005; Dowden & Andrews, 1999a). A universal risk assessment to measure an adolescent's needs, risks, and strengths would be beneficial and could help determine what

services are appropriate for the adolescent. This risk assessment could be used not only to assess appropriate placement and treatment services for adolescents involved in the justice system but could also be used to measure outcomes of the correctional program (Andrews, Bonta, & Hoge, 1990). The risk assessment could be administered at the beginning of treatment, after treatment, and during post treatment follow-up (3, 6, 9, months), and could provide valuable information on changes in risk and protective factors.

The study of protective and risk factors for adolescents in juvenile corrections is in its infancy. More studies are needed to explore what resiliency factors impact the reduction of recidivism and relapse for adolescents involved in the justice system (Tedeschi & Kilmer, 2005). A longitudinal study conducted by Todis, Bullis, Waintrup, Schultz, & D'Ambrosio (2001) tracked follow up data for incarcerated adolescents after release. Once released most struggled with stability and many could not avoid reincarceration. Half of the adolescents participating in the study were still unstable in their early to mid 20's. Tracking the attributes of those who succeeded versus those who continued to struggle is an important investigation to conduct (Hunter & Chandler, 1999). This provides information regarding which specific risk leads to maladaptive behaviors versus adulthood adjustment. It could also shed light on specific protective factors that build resiliency and risk factors that create adversities.

Within the context of resiliency, another possibility for future research would be to look at cultural and ethnic differences (Cohen, et al. 1990). Although there is a plethora of literature on resiliency very little considers the development of resiliency with regards to racial, cultural and environmental differences (Miller, 1999). Little attention has been given to determining

unique protective factors that are culturally relevant. Both racial socialization and racial identity play a role in adolescent development and impact behaviors over time.

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APPENDIX A

NARRATIVE SCRIPT

Today you are going to complete a short questionnaire and two standardized tests. After you complete each task you will put the forms in the envelope provided. First I am going to give you a questionnaire that will ask some demographic questions. Please answer each question honestly. None of the information you provide will be shared with your staff, probation, the courts, or therapists. I will be present while you complete the questionnaire in case you have any questions.

Pass out questionnaire
Upon competition, the participant puts the questionnaire in the envelope.

Next, I am going to ask you to go through a series of yes and no questions about a variety of areas of your life. Fill in the yes or no circle for each question. Do not fill in both the yes and no circles or avoid filling in either the yes or no circle. Answer each question honestly. And remember, all your answers are private. If you are unsure what a question means, ask.

Pass out the Drug Use Screening Inventory
Upon competition, the participant puts the DUSI-R in the envelope.

Lastly, the next set of questions are going to be used to rate behavior and emotional strengths. Read each statement and mark the number that best describes how you are currently feeling. Rate each statement to the best of your knowledge. Rate all 52 items by the following criteria:

3=if the statement is very much like you
2=if the statement is like you
1=if the statement is not much like you
0=if the statement is not at all like you

If you have questions feel free to ask.

Pass out the Behavioral and Emotional Rating Scale
Upon competition, the participant puts the questionnaire in the envelope, seals the envelope and gives it to the interviewer.

APPENDIX B

QUESTIONAIRE

Date of Birth:
Age:
Date you entered the JSC:
Today's Date:
Date of release:

(Circle those that apply)
Race/Ethnicity:

- Native American/American Indian
- Asian/Pacific Islander
- Black/African American
- Hispanic
- White
- Bi-racial

What City do you live in?

- Apple Valley
- Farmington
- Burnsville
- Lakeville
- South St. Paul
- Inver Grove Heights
- Eagan
- Rosemount
- Hastings
- Other _____

Criminal History:
How many crimes have you been picked up for in your lifetime?
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 other _____

How many crimes have you been charged with in your lifetime?
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 other _____

What types of crimes have you been charged with? (circle all that apply)

- Curfew
- Truancy

Gang related
Minor consumption
Robbery
Assault
Possession of drugs/intent to sell
Auto theft
Other theft
Violent crimes against others
Other _____

Out of home placements:
How many placements have you been to? (This could include foster care, inpatient treatment, group homes, etc.)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 other _____