ASSESSING TRAUMA SYMPTOMATOLOGY AMONG JUVENILE OFFENDERS: AN EXPLORATION OF THE BASC-2 AND TSCC

by

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(Under the Direction of Georgia Calhoun)

ABSTRACT

The purpose of this study was to identify an effective measure that accurately recognizes trauma symptomatology among juvenile offenders in the detention and community settings. The Behavioral Assessment System for Children, Second Edition (BASC-2; Reynolds & Kamphaus, 2004), a widely used tool with the juvenile offender population, and the Trauma Symptom Checklist for Children (TSCC; Briere, 1996) were the primary instruments used in this study. A total of 63 juvenile offenders (34 in detention centers and 29 in the community) participated. Findings suggest that several of the clinical scales on the BASC-2 are significantly correlated with items measuring specific trauma-related symptomatology on the TSCC. Further, multiple stepwise regression with backward elimination analyses revealed that specific elevations on the BASC-2 are predictive of specific trauma-related symptomatology as measured by the TSCC. Finally, results indicated that while community juvenile offenders scored significantly higher on the Attitude to School, Attitude to Teachers, and Locus of Control clinical scales on the BASC-2 when compared to their detained peers; there were no significant differences between detained and community juvenile offenders in their endorsement of trauma-related symptoms on the TSCC. The results of the analyses completed in this study suggest that specific trauma-related

symptomatology can be identified on the BASC-2 for adjudicated youth. Implications for clinical practice and future research are offered.

INDEX WORDS: Juvenile justice, Adjudicated youth, Juvenile offenders, Trauma, BASC-2, TSCC, Assessment, Detention, Community

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DEDICATION

I would like to dedicate this work to my dad, Ric Garnett, for his unconditional love and support. Throughout the first 29 years of my life, he was there to provide endless wisdom, optimism, and encouragement. Thank you, dad, for teaching me how to work hard and persevere through the most difficult times; and for always believing that I could grow up to be anything I wanted to be. I also want to dedicate this work to my husband, Eddie. Thank you for coming on this PhD journey with me. Your continuous humor and love has kept me pushing forward, and I am honored to be able to walk with you by my side. Finally, I must dedicate this work to the rest of my family and friends. I am incredibly thankful for your constant support and encouragement throughout the years.

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CHAPTER 1

INTRODUCTION

Statement of the Problem

Approximately 68% of adolescents, ages 12 to 17 have been exposed to traumatic events in the United States, which include experiencing sexual and physical abuse, as well as witnessing interpersonal violence (Copeland, Keeler, Angold, & Costello, 2007; Kilpatrick, Ruggiero, Acierno, Saunders, Resnick, & Best, 2003; Hanson, Borntrager, Self-Brown, Kilpatrick, Saunders, Resnick, & Amstadter, 2009). Trauma experienced in childhood can lead to various psychological disorders, such as depression and Posttraumatic Stress Disorder (PTSD) (Widom, DuMont, & Czaja, 2007). Further, childhood trauma has been shown to affect children and adolescent's cognitive functioning (i.e. memory impairment and intellectual abilities) (Armsworth & Holaday, 1993). In addition, trauma experienced in childhood often leads to behavior problems and delinquency (i.e. aggression, cruelty to animals, substance abuse, and criminal activity) (Burke, Borus, Burns, Millstein, & Beasley, 1982; Cavaiola & Schiff, 1988; Cullerton-Sen, Cassidy, Murray-Close, Cicchetti, Crick, & Rogosch, 2008; Frederick, 1985; Friedrich, Beilke, & Urquiza, 1988; Hamburger, Leeb, & Swahn, 2008).

Research indicates that the relationship between trauma and juvenile delinquency is highly correlated. Approximately two million adolescents, ages 12 to 17 are arrested each year in the United States (Puzzanchera & Hockenberry, 2013). Of those arrested, as many as 82% are diagnosed with a mental health disorder (Wood, Foy, Layne, Pynoos, & James,

2002). Further, as many as 90% have experienced one or more traumatic events prior to being arrested (Abram, Teplin, Charles, Longworth, McClelland, & Dulcan, 2004). Adolescents that enter the juvenile justice system are three times more likely to have experienced one or more traumatic events, such as community violence, sexual abuse, physical abuse, and domestic violence, than their non-offender peers (Costello, Erkanli, Fairbank, & Angold, 2002; Ford, Hartman, Hawke, & Chapman, 2008). One study showed that some juvenile offenders have experienced as many as 14 separate traumatic events in their lives (Abram et al., 2004). Most of the trauma experienced by juvenile offenders comes in the form of physical or sexual abuse, where the perpetrator is a caregiver (Johnson, Ross, Taylor, Williams, Carvajal, & Peters, 2006). Further, juvenile offenders who are detained are more likely to have experienced violence and/or victimization in their homes and communities than their non-detained peers (Abram et al., 2004).

The relationship between trauma and juvenile delinquency may be apparent for two reasons. First, in 2006, Ford, Chapman, Mack, and Pearson suggested that the link between trauma and juvenile delinquency occurs when victimized adolescents attempt to regain a sense of control. More specifically, when adolescents experience trauma, they enter a heightened state of arousal. If this state persists over a period of time, adolescents may become unable to regulate their thinking and emotions due to problematic coping strategies. As a result, youth have difficulty attaining various developmental stances, such as self-respect and self-regulation. With their interpersonal functioning halted, Ford et al. (2006) suggested traumatized youth engage in criminal behavior in order to assuage the unfairness of their victimization by engaging in survival coping. According to Kerig, Ward, Vanderzee, and Moeddel (2009), survival coping takes the form of defiance and acting-out. Acting-out

serves as a technique that traumatized youth use in order to attempt to implicitly indicate their inner suffering. If such pain is not recognized by those around them, youth who have experienced trauma attempt to avoid re-victimization by developing problems with impulse control, empathy, cognitions, and self-regulation. The result is increased emotional, behavioral and relational problems (Ford et al., 2006). A second explanation of the relationship between juvenile delinquency and trauma has to do with emotional numbing (Kerig, Bennett, Thompson, & Becker, 2012). According to Kerig et al. (2012) emotional numbing is used as a coping mechanism to protect victimized adolescents from their distress related to trauma. However, by becoming emotionally numb, youth increase their likelihood of behaving in problematic ways due to the unconscious nature of their trauma-related pain.

Although the literature indicates there is a significant relationship between trauma and juvenile delinquency, identifying traumatic symptoms among juvenile offenders remains difficult for a number of reasons (Perkins, Calhoun, & Glaser, 2014). First, trauma exposure and the psychological effects resulting from trauma are often ignored in the juvenile justice system (Newman, 2002). Second, juvenile offenders tend to underreport instances of abuse and subsequent trauma-related symptomatology, indicating that juvenile offenders may be hesitant to report instances of victimization that may be embarrassing and/or stigmatizing, such as sexual or physical abuse (Dembo, Schmeidler, & Childs, 2007; Wolpaw, Ford, Newman, Davis, & Briere, 2005). In addition, juvenile offenders may not report traumatic experiences or symptoms due to the problematic nature of the definitions associated with trauma-related measures. For example, cultural and/or language barriers may interfere with a juvenile offender's ability to articulate his/her experience in terms of typical, diagnostic nomenclature (i.e. he/she may have a different definition or understanding of abuse) (Kerig,

Moeddel, & Becker, 2011). Further, juvenile offenders may not interpret their experiences as traumatic because of coping strategies, such as emotional numbing, which can interfere with an adolescent's ability to identify specific events as traumatic (Kerig & Bennett, 2013).

In addition to the challenges associated with underreporting trauma symptomatology, identifying traumatic symptoms in juvenile offenders is difficult because of the narrowed focus of identifying symptoms related to Posttraumatic Stress Disorder (PTSD) as indicated in the 4th edition of the *Diagnostic and Statistical Manual for Mental Disorders* (American Psychiatric Association, 2000) as opposed to general trauma symptomatology. To date, the overwhelming majority of research on trauma and juvenile delinquency focuses on assessing whether or not juvenile offenders meet criteria for PTSD (Ford, Hartman, Hawke, & Chapman, 2008; Kerig, Bennett, Thompson, & Becker, 2012; Kerig, Ward, Vanderzee, & Moeddel, 2008; Perkins, Calhoun, & Glaser, 2014; Stimmel, Cruise, Ford, & Weiss, 2014). While the prevalence of PTSD among juvenile offenders is eight times greater than in community samples, assessing for trauma using instruments designated for diagnosing PTSD limits the breadth of assessing for trauma symptoms. This is particularly true for youth who do not exhibit typical symptoms of trauma that may not be associated with PTSD (Ford, Hartman, Hawke, & Chapman, 2008). To illustrate, some measures used with juvenile offenders include the *Child Posttraumatic Stress Reaction Index Revision 2* (CPTS-RI; Rodriguez, Steinberg, & Pynoos, 2002), the *UCLA Posttraumatic Stress Disorder Index* (PTSD-I; Pynoos, Rodriguez, Steinberg, Stuber, & Frederick, 1998), and the *Clinician Administered PTSD Scale for Children and Adolescents* (CAPS; Nader, Newman, Weathers, Kaloupek, Kriegler, & Blake 1998), which are based on specific DSM criteria for PTSD.

Similarly, the *Child Report of Posttraumatic Symptoms* (CROPS; Greenwald & Rubin, 1999) assesses specifically for PTSD.

An additional related issue regarding the scope of trauma instruments used with adolescents is that some instruments used to identify specific areas of trauma may fail to capture the broad range of possible traumatic events that adolescents may have experienced; and thus, symptoms related to areas not being measured may not be reported (Briere, 1996). For instance, the *Checklist of Sexual Abuse and Related Symptoms* (C-SARS; Spaccarelli, 1995) assesses for a history of sexual victimization and abuse, while the *Adolescent Dissociative Experiences Scale* (A-DES; Putnam, 1997) solely measures dissociation and depersonalization symptoms related to trauma. These measures, like the ones that evaluate PTSD symptoms, do not assess for trauma broadly enough to include all trauma symptomatology. As a result, clinicians assessing for trauma using one of the previously mentioned instruments may not accurately recognize specific traumatic symptoms in adjudicated adolescents.

Purpose of the Current Study

The purpose of this study is to identify an effective measure that accurately recognizes trauma symptomatology among juvenile offenders. This study will extend previous research by exploring the Behavior Assessment System for Children, Second Edition (BASC-2; Reynolds & Kamphaus, 2004) and the Trauma Symptom Checklist for Children (TSCC; Briere, 1996) scores for juvenile offenders. While the Behavior Assessment System for Children (BASC; Reynolds & Kamphaus, 1992) has been widely used with the juvenile offender population, it does not provide clinical information regarding trauma (Reynolds & Kamphaus, 2004). Thus, this study seeks to identify possible trauma

symptomatology on the BASC-2, which will result in more accurate, efficient diagnostic assessment of trauma symptomatology among adjudicated youth.

While Perkins, Calhoun, and Glaser (2014) showed that adjudicated youth who endorse trauma symptoms have elevations on specific scales on the BASC-2, it was the first study to date that explored the link between the BASC-2 and a trauma instrument. This study seeks to extend Perkins, Calhoun, and Glaser's (2014) research by using a more frequently cited trauma instrument – the TSCC – instead of the Child Report of Posttraumatic Symptoms (CROPS; Greenwald & Rubin, 1999) for the juvenile offender population (Newman, 2002; Wolpaw, Ford, Newman, Davis, & Briere, 2005). In addition, this study will provide a broader focus of trauma symptomatology experienced by juvenile offenders. It will explore various clusters of trauma symptoms, such as anxiety, depression, anger, posttraumatic stress, dissociation, and sexual concerns, as opposed to strictly those that are related to PTSD (Briere, 1996; Kerig, Ward, Vanderzee, & Moeddel, 2009). In doing so, specific types of trauma may be alerted to clinicians (i.e. sexual abuse via the sexual concerns score on the TSCC and the elevated clinical scales on the BASC-2). Further, this study will evaluate trauma symptomatology of adjudicated youth in both detention and community settings, rather than offenders solely in the community.

By understanding the link between the TSCC and BASC-2, mental health professionals may be able to determine whether or not a child or adolescent is experiencing trauma symptoms by giving only one instrument, the BASC-2. Accurate recognition of symptoms may lead to more appropriate diagnoses, treatment, and prevention measures for juvenile offenders.

Implications for Counseling Psychology

Although trauma and its effects have been well-documented as a major concern in the United States, understanding the role that trauma plays in the experiences of juvenile offenders is lacking (Kerig, Ward, Vanderzee, & Moeddel, 2009). Juvenile offenders are a particularly at-risk population when it comes to being exposed to traumatic events (Abram et al., 2004; Crane & Clements, 2005; Kerig, Ward, Vanderzee, & Moeddel, 2009). As such, it is imperative that counseling psychologists make every effort to understand the impact that trauma has on these youth and the behaviors that bring them in contact with juvenile justice system. In order to recognize and understand trauma symptomatology in juvenile offenders, accurate assessment is crucial so that appropriate treatment and prevention measures can be implemented.

Identifying and understanding the relationship between trauma and delinquency is significant to the field of Counseling Psychology for many reasons. First, Counseling Psychology focuses on the development of individuals across the lifespan (APA, 1999; Gelso & Fretz, 2001). The altered development of adolescents who experience trauma is related to the values of Counseling Psychology. Specifically, adolescents experience significant physical and emotional growth, and traumatic events experienced during this stage can have long-lasting impacts on brain development and socio-emotional functioning (Hales & Yudofsky, 2003; Kerig, 2014). Second, Counseling Psychology stresses the importance of social justice and advocacy (Romano & Hage, 2000). Juvenile offenders are a particularly at-risk population who have been overlooked and pathologized. As a result, the attention of counseling psychologists is required in order to treat, advocate for, and understand the influences that play a role in the development and functioning of juvenile offenders. Third,

counseling psychologists focus on the expressions of human behavior in terms of the relationship between individuals and their environments as opposed to individual deficits or pathology (APA, 1999; Gelso & Fretz, 2001). Thus, identifying and understanding trauma symptomatology and its relationship to delinquent behavior in adolescents is a critical aspect of the profession. Fourth, the field of Counseling Psychology stresses the implementation of science and practice (APA, 1999; Gelso & Fretz, 2001; Murdock, Alcorn, Heesacker, & Stoltenberg, 1998). Formulating accurate assessment of trauma symptomatology in juvenile offenders through empirical research is an important component of implementing appropriate treatment and services. Finally, an important core value in the field of Counseling Psychology stresses prevention and remediation (Gelso & Fretz, 2001; Romano & Hage, 2000). Understanding and assessing for trauma symptomatology in juvenile offenders is crucial in order to prevent mental health problems and further delinquency, as well as provide appropriate treatment services for this marginalized population (Becker, Kerig, Lim, & Ezechukwu, 2012)

Definition of Terms

Trauma

According to the American Psychological Association Task Force on Posttraumatic Stress Disorder and Trauma in Children and Adolescents (APA; 2008), trauma is defined as the resulting emotional response to events that threaten injury, death, and/or physical and emotional safety. Events that are often considered to be traumatic include, but are not limited to sexual abuse, neglect, physical abuse, domestic violence, community violence, motor vehicle accidents, terrorism, and natural disasters (APA, 2008; Briere, 1996).

Juvenile Offender

In the context of this study, juvenile offenders refer to adolescents between the ages of 12 and 16 who are involved in the juvenile justice system.

Detained Juvenile Offender

For the purposes of this study, detained juvenile offenders refer to adolescents between the ages of 12 and 16 who are confined to a juvenile detention center.

Community Juvenile Offender

In this study, community juvenile offenders refer to adolescents between the ages of 12 and 16 who are on probation.

Research Questions

The primary purpose of this study is to determine if the BASC-2 clinical scales can be used to identify juvenile offenders who endorse trauma symptomatology as measured by the TSCC. A series of bivariate correlations, six stepwise regressions with backward elimination, and two independent samples t-tests will be calculated in order to answer the following research questions:

Research Question 1

Is there a significant relationship between juvenile offenders who endorse trauma symptoms – as measured by scores on the TSCC – and the clinical scales on the BASC-2?

Null Hypothesis I: There will not be a significant relationship between juvenile offenders who endorse trauma symptoms – as measured by scores on the TSCC – and the clinical scales on the BASC-2.

Research Question 2

Do the BASC-2 clinical scales predict specific types of trauma symptoms (Briere, 1996) – anxiety, anger, depression, sexual concerns, dissociation, and posttraumatic stress – experienced among juvenile offenders?

Null Hypothesis 2: The BASC-2 clinical scales will not predict specific types of trauma symptoms (Briere, 1996) – anxiety, anger, depression, sexual concerns, dissociation, and posttraumatic stress – experienced among juvenile offenders.

Research Question 3

Is there a significant difference between detained and community juvenile offenders who endorse trauma symptoms – as measured by scores on the TSCC – and the clinical scales on the BASC-2?

Null Hypothesis 3: There will not be a significant difference between detained and community juvenile offenders who endorse trauma symptoms – as measured by scores on the TSCC – and the clinical scales on the BASC-2.

Limitations of the Study

1. A potential limitation of this study is the reliance on self-report. Multiple informants and/or confirmation of adolescents' exposure to traumatic events may provide more reliable information.
2. Another limitation of this study is sample size. A larger sample size may provide more adequate statistical significance.
3. A third limitation to this study is the geographic representativeness of the sample used. All participants in this study were juvenile offenders involved in the juvenile

justice system in a southern U.S. state. Adjudicated youth from other geographic locations were not represented.

Assumptions of the Study

1. It is assumed that participants' responses on assessment instruments were truthful.
2. It is assumed that all invalid participant responses were screened-out and removed from the sample prior to the conduction of analyses.
3. It is assumed that participants in this study were a representative sample of all adolescents in the juvenile justice system.
4. It is assumed that records obtained from the juvenile justice system are accurate.

CHAPTER 2

LITERATURE REVIEW

Prevalence of Juvenile Offending

Approximately two million adolescents, ages 12 to 17 are arrested each year in the United States (Puzzanchera & Hockenberry, 2013). In 2011, 71% of juveniles arrested were male, 27% were younger than 15 years old, and 66% were White. Further, of those arrested in 2011, 5% were suspected to have committed a violent offense, including murder, rape, robbery, and aggravated assault. Roughly 23% of juveniles were arrested for property crimes, 18% for drug offenses, and 40% for status offenses (i.e. curfew violation, truancy, and disorderly conduct). In 2011, 68% of juveniles arrested were referred to juvenile court (i.e. probation or detention), 22% were released, and 7% were transferred to superior court (Puzzanchera & Hockenberry, 2013).

Youth in Juvenile Court

The first juvenile court in the United States was formed in Illinois in 1899 in an effort to rehabilitate juvenile offenders. The purpose of the juvenile court system within the United States is to help transform juvenile offenders into law-abiding adults. In doing so, juvenile offenders are often placed on community probation or in a detention facility (American Bar Association, n.d.).

Typically youth who commit serious person offenses and/or violate probation are placed in detention facilities in order to protect the public, as well as to receive intensive supervision and intervention services (Austin, Johnson, & Weitzer, 2005; Puzzanchera &

Robson, 2014). Most youth placed in *secure detention* facilities are awaiting placement in a treatment facility or program. Such youth are held temporarily to ensure they attend all court proceedings and to protect the youth from reoffending. Youth placed in *secure confinement* facilities are youth who have been adjudicated delinquent and are committed to the Department of Juvenile Justice. Youth placed in secure confinement facilities are often in custody from a couple of months to several years. Youth that commit primarily status offenses (i.e. truancy or runaway) are not typically placed in detention facilities. Instead, such youth are placed in community-based programs, such as probation, which usually includes receiving community mental health treatment (Austin, Johnson, & Weitzer, 2005; Puzzanchera & Robson, 2014).

In 2010, 21% of juvenile offenders were placed in detention facilities, while 79% received community services (Puzzanchera & Robson, 2014). In 2011, males accounted for 86% of the population in juvenile detention centers (OJJDP, 2011). Further, African-American youth are detained five times more than Hispanic youths and two and a half times more than White youths (Desai, Falzer, Chapman, & Borum, 2012).

Introduction to Trauma

According to the American Psychological Association Task Force on Posttraumatic Stress Disorder and Trauma in Children and Adolescents (APA; 2008), trauma is defined as the resulting emotional response to events that threaten injury, death, and/or physical and emotional safety. Events that are often considered to be traumatic include, but are not limited to sexual abuse, neglect, physical abuse, domestic violence, community violence, motor vehicle accidents, terrorism, and natural disasters (APA, 2008; Briere, 1996). Trauma often takes the form of emotional or psychological responses to situations that threaten an

individual's survival and adaptation (Silove, Steel, & Psychol, 2006). Situations can be considered traumatic for some individuals, but not for others. In particular, trauma does not result from the event(s) experienced, but rather from the thoughts, feelings, perceptions, and beliefs of the person who has experienced the event (Boscarino, 1996).

Types of Trauma

Some research separates trauma into two distinct types: event trauma and process trauma. According to Shaw (2000), *event* traumas are unexpected, stressful experiences that are relatively limited in time and location (i.e. natural disasters). By contrast, *process* traumas refer to situations where exposure to a stressor is lengthier and more personally directed (i.e. sexual abuse). Other research describes trauma in terms of it being interpersonal and non-interpersonal (Nilsson, Gustafsson, & Svedin, 2012). *Non-interpersonal* trauma includes traumatic experiences wherein the victim's experience is not the direct result of another individual's actions, such as trauma resulting from natural disasters or car accidents. By contrast, *interpersonal* trauma is characterized by traumatic events involving another individual, such as physical or sexual abuse (Lim, Adams, & Lilly, 2012). Research shows noninterpersonal trauma to be more prevalent than interpersonal trauma; however, interpersonal trauma tends to result in more significant mental health problems, including PTSD (Breslau, Davis, Andreski, & Peterson, 1991; Maniglio, 2009). Moreover, interpersonal trauma that involves the betrayal of important attachments is related to the development of more severe mental health and interpersonal problems in children and adolescents (DePrince & Freyd, 2002).

Polyvictimization

Between 50 and 70% of individuals who experience interpersonal trauma, experience multiple traumas. Such individuals are referred to as polyvictims (Turner, Finkelhor, & Ormrod, 2010). Youth who experience polyvictimization, polytraumatization, or complex trauma have been victims of severe, cumulative, prolonged traumatic events, often beginning in early childhood (Wamser-Nanney & Vandenberg, 2013). Finkelhor, Ormrod, & Turner (2009) found that 22% of youth experience four or more kinds of trauma in any given year. Research shows that polyvictimization is the greatest predictor of reported trauma symptoms among youth (Gustafsson, Nilsson, & Svedin, 2009; Turner, Finkelhor, & Ormrod, 2010).

While interpersonal polyvictimization yields the greatest number of psychological, physical, and emotional problems among youth, all types of trauma may have deleterious effects on this population (Gustafsson, Nilsson, & Svedin, 2009; Merikangas, He, Burstein, Swanson, Avenevoli, Cui, Benjet, Georgiades, & Swendsen, 2010; Roberts, Attkisson, & Rosenblatt, 1998; Turner, Finkelhor, & Ormrod, 2010). Trauma experienced in childhood and adolescence can lead to mental health problems, academic issues, substance abuse, behavioral concerns, sleep and memory problems, and delinquency (Ford, Chapman, Mack, & Pearson, 2006; Kerig, Ward, Vanderzee, & Moeddel, 2009; Luecken, Roubinov, & Tanaka, 2013; Macmillan, 2001; Osofsky, 1997; SAMHSA, 2011; Terr, 1991).

Exposure to Traumatic Events in the General Adolescent Population

Youth from 12 to 15 years of age have the greatest risk of being exposed to traumatic events and/or victimized (Osofsky, 1997). The rate at which adolescent youth are victims of or witnesses to traumatic situations is two times more than any other age group in the United States. Nearly 60% of youth have experienced a traumatic event prior to the age of 17, and

50% have witnessed or been victims of two or more traumatic events (Finkelhor, Turner, Shattuck, & Hamby, 2013). Youth are at the greatest risk of experiencing sexual assault or harassment, dating and community violence, and physical assault (Finkelhor, Turner, Ormrod, Hamby, & Kracke, 2009). According to Finkelhor, Turner, Shattuck, and Hamby (2013), 25% to 39% of youth witness family or community violence in any given year. Finkelhor, Turner, Shattuck, & Hamby (2013) found that within the previous year, 42% of youths reported being the victims of physical assault, with 10% having lasting injuries. In the same study, 23% of adolescent females reported experiencing sexual victimization, and 14% of youths reported experiencing physical or emotional abuse, sexual abuse, or neglect from a caregiver (Finkelhor, Turner, Shattuck, & Hamby, 2013).

Adolescents from low socio-economic backgrounds are at a higher risk for experiencing trauma (Goodman, Miller, & West-Olatunji, 2012). Males are more likely to experience physical trauma, while females have a greater likelihood of experiencing sexual abuse (Brown & Bzostek, 2003). African-American youth have a higher risk of experiencing child abuse and neglect, as well as witnessing homicide, than White or Latino/a youth (Brown & Bzostek, 2003). Youth ages 12-13 are most likely to witness or be victims of assault with a weapon, sexual assault, kidnapping, and domestic violence. Adolescents ages 14-17 have the greatest likelihood of being physically assaulted, sexually victimized, emotionally abused, and/or exposed to shootings and community violence (Finkelhor, Turner, Ormrod, Hamby, & Kracke, 2009).

Trauma and Mental Health Concerns in Adolescents

One in five American adolescents meets criteria for a diagnosable mental health disorder (Merikangas et al., 2010; Roberts, Attkisson, & Rosenblatt, 1998). The most

common disorders seen among non-offending adolescents in the United States relate to anxiety, attention problems, and depressive symptomatology. Girls are diagnosed with mental health disorders at a higher rate than boys in the general population (Costello, Mustillo, Erklani, Keeler, & Angold, 2003).

Trauma is a significant risk factor in the development of mental health problems among American adolescents (Macmillan, 2001; Terr, 1991). Childhood physical and sexual abuse, as well as neighborhood violence has been linked to the development of internal and external socio-emotional problems in adolescence (Trickett & McBride-Change, 1995). Copeland, Keeler, Angold, and Costello (2007) found that youth who have experience traumatic events are twice as likely to develop a mental health disorder as youth who have not been exposed to traumatic events. Males are more likely to experience physical abuse or assault, while females are at a greater risk for experiencing sexual abuse (Brown & Bzostek, 2003). As a result of these traumatic experiences, adolescents are likely to experience fear, guilt, and isolation (Substance Abuse and Mental Health Services Administration; SAMHSA, 2011). Adolescents who have been victimized may develop psychological issues related to substance use, mood disturbances, avoidance, dissociation, isolation, posttraumatic stress, and/or developmental regression (Luecken, Roubinov, & Tanaka, 2013; Osofsky, 1997). Youth who have experienced more than one traumatic event are more likely to develop severe depression, substance use issues, suicide and self-harm behaviors, physical diseases (i.e. heart problems), anger problems, and academic concerns (SAMHSA, 2011). Overall, females tend to exhibit primarily internalizing disorders (i.e. major depression), while males exhibit more externalizing disorders (i.e. disruptive behavior disorders) (Leadbeater, Kuperminc, Blatt, & Hertzog, 1999).

Exposure to Traumatic Events in the Juvenile Offender Population

Adolescents that enter the juvenile justice system are three times more likely to have experienced community violence, sexual abuse, physical abuse, and domestic violence, than their non-offender peers (Costello, Erkanli, Fairbank, & Angold, 2002; Ford, Hartman, Hawke, & Chapman, 2008). Among juvenile offenders, research shows that 45-90% have witnessed or been the victim of at least one traumatic event (Abram et al., 2004; Ford, Hartman, Hawke, & Chapman, 2008). Further, 84% of adjudicated youth have witnessed or been victims of multiple traumatic experiences, with the majority experiencing six or more events (Fairbank, 2008). In a sample of detained youth, 48% experienced traumatic loss, 38% experienced accident, illness, or disaster-related trauma, and 30% experienced physical or sexual abuse, or community or family violence (Ford, Hartman, Hake, & Chapman, 2008).

Juvenile offenders who reside in the inner city are more likely to experience trauma than those who live outside of the inner city as community violence has been found to be the one of the most predominant forms of trauma exposure among adjudicated youth, particularly among males, with exposure ranging from 27-75% (Kerig, Ward, Vanderzee, & Moeddel, 2009; Wood, Foy, Layne, Pynoos, & James, 2002). Another major type of trauma experienced by juvenile offenders comes in the form of physical or sexual abuse, where the perpetrator is a caregiver (Johnson, Ross, Taylor, Williams, Carvajal, & Peters, 2006). Female juvenile offenders are twice as likely to experience physical abuse and twenty times more likely to experience sexual abuse as male offenders (Sedlak & McPherson, 2010). White adjudicated youth are more likely to report being victims of trauma than African American or Latino/a youth (Abram et al., 2004).

Trauma and Mental Health Concerns in Adjudicated Youth

Adolescents involved in the juvenile justice system experience a number of mental health problems. Nearly 66% of males and 75% of females that enter the juvenile justice system meet criteria for one or more mental health disorders, excluding conduct disorder (Shufelt & Cocozza, 2006; Teplin, Abram, McClelland, Mericle, Dulcan, & Washburn 2006). When conduct disorder is included, the number of youth that meet criteria for a mental health diagnosis increases. Between 20-27% of juvenile offenders have *severe* mental health problems that have required hospitalization (Cocozza & Skowrya, 2000; Shufelt & Cocozza, 2006). The most common mental health disorders seen amongst adjudicated youth involve substance abuse and disruptive behaviors. More specifically, Teplin et al. (2006) found that 50% of males and females involved in the juvenile justice system meet criteria for a substance use disorder, while 40% of males and females meet criteria for a disruptive behavior disorder. Approximately one-fifth of adjudicated males and one-fourth of adjudicated females meet criteria for an affective disorder (Teplin et al., 2006). More than 60% of juvenile offenders meet criteria for three or more mental health diagnoses (Shufelt & Cocozza, 2006). While both male and female youth in the juvenile justice system experience high rates of mental health problems, females experience higher rates than males, particularly with internalizing disorders (i.e. major depression). Approximately 80% of adjudicated girls and 67% of boys meet criteria for mental health disorders (Kapp, Petr, Robbins, & Choi, 2013). White adjudicated youth have the highest rates of mental health disorders, while African American youth have the lowest. Further, adjudicated youth ages 14-15 have the highest prevalence of mental health disorders. Juvenile offenders ages 16-17

are two times more likely to have a mental health disorder than adjudicated youth ages 12-13 (Teplin, Abram, McClelland, & Dulcan, 2003).

Trauma is a significant risk factor in the development of mental health problems among adjudicated youth. Juvenile offenders who experience trauma are likely to develop mental health problems and engage in risky and impulsive behaviors to cope with the trauma they have experienced (Norwood, Ursano, & Fullerton, 2000). Similar to the findings in the general population, juvenile offenders who have been victimized may develop psychological issues related to substance use, mood disturbances, avoidance, dissociation, isolation, posttraumatic stress, and/or developmental regression (Luecken, Roubinov, & Tanaka, 2013; Osofsky, 1997). However, the likelihood of developing a mental health disorder among adjudicated youth who have been traumatized is greater than in the general population due to the significant number of youth who experience polyvictimization (Fairbank, 2008; Ford, Elhai, Connor, & Frueh, 2010). More than 84% of juvenile offenders have experienced multiple traumas in their lives (Fairbank, 2008).

Trauma and Mental Health Concerns in Detained Adjudicated Youth

Detained juvenile offenders experience more emotional and behavioral problems than those placed in the community. Moreover, adjudicated youth in detention facilities suffer from greater impairment related to mental health concerns than juvenile offenders in community settings (Lyons, Royce Baerger, Quigley, Erlich, & Griffin, 2001). Grisso, Vincent, & Seagrave (2005) found that 84% of girls and 27% of boys in juvenile detention centers meet criteria for one or more mental health disorders. One study indicated that adolescents confined to detention centers shared the same severity of psychological symptoms as non-offending individuals housed in residential treatment programs (Cohen,

Parmelee, Irwin, Weisz, Howard, Purcell, & Best (1990). A large number of juvenile offenders – almost 15,000 – are placed in detention facilities in order to receive treatment for their mental health concerns, rather than their crimes committed (Feld, 1995; Grisso, Vincent, & Seagrave, 2005).

Trauma as a Risk Factor for Juvenile Delinquency

Trauma is a risk factor in the development of juvenile delinquency because it interferes with appropriate development of emotional, cognitive, and behavioral regulation (Allwood, Bell, & Horan, 2011; Kerig & Bennett, 2013). Trauma experienced by children and adolescents often results in behavior problems and delinquency, including aggression, cruelty to animals, substance abuse, and criminal activity (Burke, Borus, Burns, Millstein, & Beasley, 1982; Cullerton-Sen, Cassidy, Murray-Close, Cicchetti, Crick, & Rogosch, 2008; Frederick, 1985; Friedrich, Beilke, & Urquiza, 1988; Hamburger, Leeb, & Swahn, 2008).

More than 90% of juvenile offenders have experienced one or more traumatic events prior to being arrested (Abram, Teplin, Charles, Longworth, McClelland, & Dulcan, 2004). Abram et al. (2004) showed that several juvenile offenders have experienced more than 14 separate traumatic events prior to being arrested. Youth that enter the juvenile justice system are three times more likely to have experienced community violence, sexual abuse, physical abuse, and/or domestic violence, than their non-offender peers (Costello, Erkanli, Fairbank, & Angold, 2002; Ford, Hartman, Hawke, & Chapman, 2008). Moreover, youth who experience multiple traumas, or are victims of polytraumatization are at an even greater risk of entering the juvenile justice system (Ford, Elhai, Connor, & Frueh, 2010). In addition, youth that are victims of severe interpersonal trauma are more likely to develop oppositional defiant disorder and conduct disorder, and thus be involved with the juvenile justice system

than youth who experience non-interpersonal trauma (Price, Higa-McMillan, Kim, & Frueh, 2013). Further, detained juvenile offenders are more likely to have experienced violence and/or victimization in their homes and communities than their non-detained peers (Abram et al., 2004).

The Relationship between Trauma and Juvenile Delinquency

Several theories exist that may explain the relationship between trauma and juvenile delinquency. First, Ford, Chapman, Mack, and Pearson (2006) suggested that the link between trauma and juvenile delinquency occurs when victimized adolescents attempt to regain a sense of control. More precisely, when adolescents experience trauma, they enter a heightened state of arousal. If this state persists over a period of time, adolescents may become unable to regulate their thinking and emotions due to problematic coping strategies. As a result, youth have difficulty attaining various developmental stances, such as self-respect and self-regulation. With their interpersonal functioning altered, Ford et al. (2006) suggested traumatized youth engage in criminal behavior in order to assuage the unfairness of their victimization by engaging in survival coping. According to Kerig, Ward, Vanderzee, and Moeddel (2009), survival coping takes the form of defiance and acting-out. Acting-out serves as a technique that traumatized youth use in order to attempt to implicitly indicate their inner suffering. If such pain is not recognized by those around them, youth who have experienced trauma attempt to avoid revictimization by developing problems with impulse control, empathy, cognitions, and self-regulation. The result is increased emotional, behavioral and relational problems (Ford et al., 2006).

Similarly, traumatic stress theory has been used to explain the relationship between trauma and juvenile delinquency (Cuevas, Finkelhor, Turner, & Ormrod, 2007). Trauma

stress theory indicates that trauma experienced by children and adolescents results in the development of a heightened sensitivity to threat, which leads to a hostile attribution bias, impaired social competence, and increased aggression (Chemtob, Roitblat, Hamada, Carlson, & Twentyman, 1988; Hartman & Burgess, 1993). Further, youth may engage in aggressive, problematic behaviors in order to gain back a sense of control and/or cope with negative emotions and memories of the abuse (Cuevas, Finkelhor, Turner, & Ormrod, 2007).

A third explanation of the relationship between juvenile delinquency and trauma has to do with emotional numbing (Kerig, Bennett, Thompson, & Becker, 2012). According to Kerig et al. (2012) emotional numbing is used as a coping mechanism to protect victimized adolescents from their distress related to trauma. However, by becoming emotionally numb, youth increase their likelihood of behaving in problematic ways due to the unconscious nature of their trauma-related pain.

Trauma Assessment in Children and Adolescents

Due to the increased awareness of childhood and adolescent trauma and its lasting effects, researchers and practitioners have developed a number of various measures to evaluate trauma symptomatology among youth. Trauma assessments generally fall into three areas of measurement: (1) the impact of natural disasters, (2) the impact of interpersonal trauma (i.e. sexual abuse or neglect), and (3) the impact of community violence and war. Some trauma measures assess for specific mental health symptoms, others evaluate the occurrence of specific types of trauma, and others measure both exposure and symptomatology (Strand, Sarmiento, & Pasquale, 2005). According to Strand, Sarmiento, & Pasquale (2005), the following should be considered when evaluating and using specific trauma measures with youth: (1) type of instrument (i.e. does it measure exposure,

symptomatology, or both?), (2) construction of the instrument (i.e. does it solely assess for PTSD?), (3) psychometric properties of the instrument (i.e. does it have appropriate validity and reliability and what are the population norms?), and (4) practical issues associated with the instrument (i.e. length of time to administer the measure).

To illustrate, the Childhood Posttraumatic Stress Disorder Interview (CPTSDI; Fletcher, 1996) is a 40-minute clinical interview assessment that is used with youth to evaluate symptoms related to PTSD. The CPTSDI is used to measure both exposure to specific events and symptomatology (Carlson, 1997). By contrast, the Checklist of Sexual Abuse and Related Symptoms (C-SARS; Spaccarelli, 1995; Spaccarelli & Fuchs, 1997) is a 70-item measure that assesses for specific traumatic events (i.e. sexual abuse). The C-SARS is used to solely measure youths' history of exposure to trauma. Finally, the Trauma Symptom Checklist for Children (TSCC; Briere, 1996) is a 54-item measure that is used with children and adolescents to evaluate for trauma symptomatology that may or may not be related to PTSD. The TSCC is used to evaluate multiple symptoms of trauma, as well as specific events.

Problems with Trauma Assessment in Juvenile Offenders

Identifying traumatic symptoms among juvenile offenders is difficult for a number of reasons (Perkins, Calhoun, & Glaser, 2014). First, trauma exposure and the psychological effects resulting from trauma are often ignored in the juvenile justice system (Newman, 2002). Second, juvenile offenders tend to underreport instances of abuse and subsequent symptomatology, indicating that juvenile offenders may be hesitant to report instances of victimization that may be embarrassing and/or stigmatizing, such as sexual or physical abuse (Dembo, Schmeidler, & Childs, 2007; Wolpaw, Ford, Newman, Davis, & Briere, 2005). In

addition, juvenile offenders may not report traumatic experiences and symptoms due to the problematic nature of the definitions associated with trauma-related measures. For example, cultural and/or language barriers may interfere with a juvenile offender's ability to articulate his/her experience in terms of typical, diagnostic nomenclature (i.e. he/she may have a different definition or understanding of abuse) (Kerig, Moeddel, & Becker, 2011). Further, juvenile offenders may not interpret their experiences as traumatic because of coping strategies, such as emotional numbing, which can interfere with an adolescent's ability to identify specific events as traumatic (Kerig & Bennett, 2013).

In addition to the challenges associated with underreporting trauma symptomatology, identifying traumatic symptoms in juvenile offenders is difficult because of the narrowed focus of identifying symptoms related to posttraumatic stress disorder (PTSD) as indicated in the 4th edition of the *Diagnostic and Statistical Manual for Mental Disorders* (American Psychiatric Association, 2000) as opposed to general trauma symptomatology. To date, the overwhelming majority of research on trauma and juvenile delinquency focuses on assessing whether or not juvenile offenders meet criteria for PTSD (Ford, Hartman, Hawke, & Chapman, 2008; Kerig, Bennett, Thompson, & Becker, 2012; Kerig, Ward, Vanderzee, Moeddel, 2009; Perkins, Calhoun, Glaser, 2014; Stimmel, Cruise, Ford, & Weiss, 2014). While the prevalence of PTSD among juvenile offenders is eight times greater than in community samples (Wolpaw & Ford, 2004), assessing for trauma using instruments designated for diagnosing PTSD limits the breadth of assessing for trauma symptoms. This is particularly true for youth who do not exhibit typical symptoms of trauma that may not be associated with PTSD (Ford, Hartman, Hawke, & Chapman, 2008). To illustrate, some measures used with juvenile offenders include the *Child Posttraumatic Stress Reaction Index*

Revision 2 (CPTS-RI; Rodriguez, Steinberg, & Pynoos, 2002), the *UCLA Posttraumatic Stress Disorder Index* (PTSD-I; Pynoos, Rodriguez, Steinberg, Stuber, & Frederick, 1998), and the *Clinician Administered PTSD Scale for Children and Adolescents* (CAPS; Nader et al., 1998), which are based on specific DSM criteria for PTSD. Similarly, the *Child Report of Posttraumatic Symptoms* (CROPS; Greenwald & Rubin, 1999) assesses specifically for PTSD.

An additional related issue regarding the scope of trauma instruments used with adolescents is that some instruments used to identify specific areas of trauma may fail to capture the broad range of possible traumatic events that adolescents may have experienced; and thus, symptoms related to areas not being measured may not be reported (Briere, 1996). For instance, the *Checklist of Sexual Abuse and Related Symptoms* (C-SARS; Spaccarelli, 1995) assesses for a history of sexual victimization and abuse, while the *Adolescent Dissociative Experiences Scale* (A-DES; Putnam, 1997) solely measures dissociation and depersonalization symptoms related to trauma. These measures, like the ones that evaluate PTSD symptoms, do not assess for trauma broadly enough to include all trauma symptomatology. As a result, clinicians assessing for trauma using one of the previously mentioned instruments may not accurately recognize specific traumatic symptoms in adjudicated adolescents.

An Alternative to Assessing Trauma in Juvenile Offenders

Due to the difficulties related to the assessment of trauma symptomatology among juvenile offenders, a different measure should be considered. The Behavior Assessment System for Children, Second Edition (BASC-2; Reynolds & Kamphaus, 2004), a widely used tool in the juvenile offender population, may be an appropriate option as it may alert mental

health professionals to implicitly reported trauma symptomatology experienced by juvenile offenders. The BASC-2 was developed to assess emotional and behavioral functioning in adolescents ages 12 to 18 (Reynolds & Kamphaus, 2004). The BASC-2 is comprised of 176 items that load onto five composite scales and 16 subscales.

The 16 subscales on the BASC-2 fall into two categories: clinical and adaptive. The clinical scales include Attitude to School, Attitude to Teachers, Atypicality, Locus of Control, Social Stress, Anxiety, Depression, Sense of Inadequacy, Attention Problems, Hyperactivity, Sensation Seeking, and Somatization, which measure adolescent maladjustment across home, school, and community settings. The Adaptive scales are comprised of Interpersonal Relations, Relations with Parents, Self-Esteem, and Self-Reliance, which assess adaptive or positive emotional and behavior functioning. The 16 subscales collapse into five composite scales: School Problems, Internalizing Problems, Inattention/Hyperactivity, Emotional Symptoms, and Personal Adjustment (Reynolds & Kamphaus, 2004).

Scores on the clinical, adaptive, and composite scales are translated into T-scores on the BASC-2 (Reynolds & Kamphaus, 2004). Scores on the clinical and composite scales that fall between one and two standard deviations above the mean (T=60 to T=70) are considered at-risk, while scores that fall above two standard deviations from the mean (T=70) are clinically significant. Scores on the adaptive scale that fall between one and two standard deviations below the mean (T=40 to T=30) are considered at-risk, while scores that fall below two standard deviations from the mean (T=30) are clinically significant. In this context, clinically significant scores indicate that characteristics or symptoms related to a specific scale may be causing clinically significant distress. Individuals who do not score

within the clinically significant range does not indicate that characteristics or symptoms related to a particular scale are not present for that individual; it simply means such scores may not be causing increased difficulty in daily functioning.

The norms for the BASC-2 are based on a diverse sample of 1,900 adolescents (Reynolds & Kamphaus, 2004). The sample was representative of various gender, age, racial/ethnic, socioeconomic, parental education, and geographic backgrounds. The BASC-2 has been shown to have appropriate reliability and validity, including convergent and discriminant validities (Reynolds & Kamphaus, 2004).

Although the BASC-2 has been shown to be effective in evaluating the emotional and behavioral functioning of adolescents, the measure has not been normed in identifying trauma among youth (Reynolds & Kamphaus, 2004). While Reynolds and Kamphaus (2004) indicate adolescents who have experienced trauma may have an elevated Locus of Control scale on the BASC-2, no statistically significant evidence has been available for the instrument until recently. Specifically, one study to date has suggested that the BASC-2 may be effective in identifying trauma symptomatology among adjudicated youth (Perkins, Calhoun, & Glaser, 2014). According to Perkins, Calhoun, and Glaser (2014), juvenile offenders who have experienced trauma have distinct elevations on certain BASC-2 Clinical scales. Specifically, the authors found that youth who meet criteria for PTSD have elevations on the Anxiety, Social Stress, and Somatization subscales.

An Exploration of the BASC-2 and TSCC

In order to contribute to the effectiveness of the BASC-2 in identifying trauma symptomatology among juvenile offenders, the Trauma Symptom Checklist for Children (TSCC; Briere, 1996) may be an appropriate trauma instrument to use in evaluating the

BASC-2's clinical usefulness. In their recent study, Perkins, Calhoun, and Glaser (2014) utilized the Child Report of Posttraumatic Symptoms (CROPS; Greenwald & Rubin, 1999) in order to assess for trauma symptomatology among juvenile offenders using the BASC-2. However, despite the utility of the CROPS overall, norms do not exist for its use on the juvenile offender population. By contrast, the TSCC has been used frequently with adjudicated youth (Wolpaw, Ford, Newman, Davis, & Briere, 2005).

The TSCC assesses for symptomatology related to posttraumatic distress in children and adolescents. The TSCC is comprised of six clinical scales associated with trauma exposure (1) Anxiety, (2) Depression, (3) Anger, (4) Posttraumatic Stress, (5) Dissociation, and (6) Sexual Concerns; and four clinical subscales (1) Overt Dissociation, (2) Fantasy Dissociation, (3) Sexual Preoccupation, and (4) Sexual Distress (Briere, 1996). Since it is not unusual for juvenile offenders to exhibit trauma symptomatology that is not solely associated with PTSD, the TSCC is appropriate for the juvenile offender population because of the breadth of trauma symptomatology it recognizes (Briere, 1996; Ford, Hartman, Hawke, & Chapman, 2008).

The norms for the TSCC were based on a sample of 3,008 male and female youths from three nonclinical populations that varied in gender, age, racial/ethnic, and socioeconomic status. The TSCC has been shown to have appropriate reliability and validity. The TSCC shows good convergent and discriminant validity, as well as construct validity (Briere, 1996; Nilsson, Wadsby, & Svedin, 2008). The TSCC has been used in a number of studies to measure trauma symptomatology and treatment outcomes in adolescents (Bal, Crombez, Van Oost, & Debourdeaudhuij, 2003; Bray & Caraway, 2002; Nilsson & Wadsby, 2010).

Scores on the TSCC are translated into T-scores. Scores that are 1.5 standard deviations above the mean (T=65) on all scales except Sexual Concerns, Sexual Preoccupation, and Sexual Distress are clinically significant. Scores between 60 and 65 (T=60 and T=65) on all scales except Sexual Concerns, Sexual Preoccupation, and Sexual Distress are subclinically significant, or at-risk. Scores that are two standard deviations above the mean (T=70) on the Sexual Concerns, Sexual Preoccupation, and Sexual Distress scales are clinically significant. Similar to the BASC-2, clinically significant scores indicate that characteristics or symptoms related to a specific scale may be causing clinically significant distress. Individuals who do not score within the clinically significant range does not indicate that characteristics or symptoms related to a particular scale are not present for that individual; it simply means such scores may not be causing increased difficulty on a daily basis.

Summary

As previously mentioned, approximately two million adolescents are placed under arrest each year in the United States (Puzzanchera & Hockenberry, 2013). While 60% of adolescents in the general population have experienced one traumatic event prior to the age of 17, 90% of juvenile offenders have experienced at least one traumatic event, and more than 84% have been exposed to six or more separate traumatic events (Abram et al., 2004; Fairbank, 2008; Finkelhor, Turner, Shattuck, & Hamby, 2013). Youth who have been exposed to trauma are twice as likely to develop a mental health disorder as their non-exposed peers (Copeland, Keeler, Angold, & Costello, 2007). Alarmingly, that number is significantly higher for the juvenile offender population. More than 65% of males and 75%

of females that enter the juvenile justice system meet criteria for one or more mental health disorders, excluding conduct disorder (Shufelt & Cocozza, 2006).

Trauma is a significant risk factor in the development of juvenile delinquency. Specifically, trauma experienced in childhood and adolescence can lead to the inappropriate development of emotional, cognitive, and behavioral regulation (Allwood, Bell, & Horan, 2011; Kerig & Bennett, 2013). Additionally, research suggests that trauma exposure can lead to juvenile delinquency because of traumatized youths' attempts to regain a sense of control, heightened sensitivity to threat, and development of emotional numbing (Cuevas, Finkelhor, Turner, & Ormrod, 2007; Ford, Chapman, Mack, & Pearson, 2006; Kerig, Bennett, Thompson, & Becker, 2012).

Due to the increased awareness of the relationship between trauma and juvenile delinquency, accurate and efficient trauma evaluation in this population is necessary for treatment and prevention. However, trauma assessment in the juvenile offender population has been historically difficult for a number of reasons (Perkins, Calhoun, & Glaser, 2014). First, trauma exposure and the psychological effects resulting from trauma are often ignored in the juvenile justice system (Newman, 2002). Second, juvenile offenders tend to underreport instances of abuse (Dembo, Schmeidler, & Childs, 2007; Wolpaw, Ford, Newman, Davis, & Briere, 2005). Third, juvenile offenders may not report traumatic experiences due to the problematic nature of the definitions associated with trauma-related measures (Kerig, Moeddel, & Becker, 2011). Fourth, adjudicated adolescence may not interpret their experiences as traumatic because of coping strategies, such as emotional numbing (Kerig & Bennett, 2013). Fifth, identifying traumatic symptoms in juvenile offenders is difficult because of the narrowed focus of identifying symptoms related to

posttraumatic stress disorder (PTSD) as indicated in the 4th edition of the *Diagnostic and Statistical Manual for Mental Disorders* (American Psychiatric Association, 2000) as opposed to general trauma symptomatology. Finally, specific trauma instruments may not capture the broad range of possible traumatic events that juvenile offenders have experienced (Briere, 1996).

Thus, the current study seeks to extend previous research by exploring the Behavior Assessment System for Children, Second Edition (BASC-2; Reynolds & Kamphaus, 2004) and the Trauma Symptom Checklist for Children (TSCC; Briere, 1996) scores for juvenile offenders. While the Behavior Assessment System for Children (BASC; Reynolds & Kamphaus, 1992) has been used with the juvenile offender population to assess for personality and behavioral characteristics, it does not provide clinical information regarding trauma (Reynolds & Kamphaus, 2004). Therefore, this study seeks to identify trauma symptomatology on the BASC-2, which will result in more accurate, efficient diagnostic assessment of trauma symptomatology among adjudicated youth. Additionally, this study will extend Perkins, Calhoun, and Glaser's (2014) research by using the TSCC, which has been frequently used with the juvenile offender population (Newman, 2002; Wolpaw, Ford, Newman, Davis, & Briere, 2005). Also, the current study will provide a broader focus of trauma symptomatology experienced by juvenile offenders. In doing so, specific types of trauma may be alerted to clinical treatment providers. Finally, this study will evaluate trauma symptomatology of adjudicated youth in both detention and community settings.

By understanding the link between the TSCC and BASC-2, mental health professionals may better be able to determine youth who experience trauma symptomatology by giving only one instrument, the BASC-2. Accurate diagnosis and recognition of

symptoms may lead to more appropriate diagnoses, treatment, and prevention measures for juvenile offenders. A series of bivariate correlations, six stepwise regression with backward elimination analyses, and two independent samples t-tests will be computed.

CHAPTER 3

METHOD

The research questions in this study were designed to determine if there is a significant relationship between juvenile offenders who endorse trauma symptoms and the Behavior Assessment System for Children, Second Edition (BASC-2; Reynolds & Kamphaus, 2004) clinical scales. Further, the research inquiries in this study were explored to determine whether BASC-2 clinical scales predict specific trauma symptoms. Finally, the research questions in this study were examined to determine whether or not there is a significant difference between detained and community juvenile offenders' reports of trauma symptomatology and scores on the BASC-2 clinical scales. This study examined these questions by using the clinical scales on the BASC-2 (Reynolds & Kamphaus, 2004) and the trauma symptoms identified on the Trauma Symptom Checklist for Children (TSCC; Briere, 1996).

Data was collected from male and female adolescents involved in the Georgia Department of Juvenile Justice as part of the protocol for providing individual and group treatment services and/or obtaining information for research purposes by the Juvenile Counseling and Assessment Program (JCAP). The data used in this study was collected by JCAP – whose aim is to provide appropriate mental health services to juvenile offenders, both in the community and detention settings.

Participants

Participants in this study consisted of a sample of adjudicated adolescents who were referred for mental health services by the juvenile justice system. As part of the protocol to initiate clinical services and/or obtain information for research purposes, doctoral and masters level graduate students collected information both in the community and detention settings. Validity scores on the BASC-2 and TSCC were reviewed for each participant. Participants whose responses were deemed invalid were removed prior to performing statistical analyses.

A total of 63 subjects participated in this study. The ages of participants ranged from 13 to 16 (M = 15.13; SD = 1.04). There were 39 males and 24 females in this study. There were 34 participants in the detention sample, and 29 participants in the community sample. The racial composition of participants was 69.8% African-American, 19% White, 9.5% Latino/a, and 1.6% Multiracial. Demographic information for all participants was collected via clinical interview and/or juvenile court records.

Instruments

Trauma Symptom Checklist for Children (TSCC)

The TSCC was developed to assess for symptomatology related to posttraumatic distress in children and adolescents, ages 8 to 16 (Briere, 1996). The TSCC is comprised of two validity scales: (1) Underresponse, which measures a youth's tendency to deny trauma symptomatology and (2) Hyperresponse, which evaluates a youth's tendency to over-endorse trauma symptomatology; as well as six clinical scales: (1) Anxiety, (2) Depression, (3) Anger, (4) Posttraumatic Stress, (5) Dissociation, and (6) Sexual Concerns, and four clinical subscales (1) Overt Dissociation, (2) Fantasy Dissociation, (3) Sexual Preoccupation, and (4)

Sexual Distress. A description of each clinical scale and subscale's item content can be found in Table 1. The TSCC also contains eight critical items, which examine a youth's potential for self-harm, desire to harm others, fear of men and/or women, concern related to sexual maltreatment, fear of being harmed or killed, and tendency to fight often (Briere, 1996).

The norms for the TSCC were based on a sample of 3,008 male and female youths from three nonclinical populations. The sample is representative across various gender, age, racial/ethnic, and socioeconomic backgrounds. The gender make-up for the standardization of the TSCC is 47% male and 53% female. The age composition for the standardization of the TSCC is 17% ages 8-12 and 83% ages 13-16. The racial/ethnic configuration for the standardization of the TSCC is 44% White, 27% African-American, 22% Hispanic, 2% Asian, and 4% Other. The TSCC has been shown to have appropriate reliability and validity. Cronbach's alpha ranges from .77 to .89 across the clinical scales and from .58 to .81 across the clinical subscales, indicating moderate to high internal consistency. The TSCC shows good convergent and discriminant validity, as well as construct validity (Briere, 1996; Nilsson, Wadsby, & Svedin, 2008). The TSCC has been used in a number of studies to measure trauma symptomatology and treatment outcomes in adolescents (Bal, Crombez, Van Oost, & Debourdeaudhuij, 2003; Bray & Caraway, 2002; Nilsson & Wadsby, 2010).

The TSCC is a relatively short (i.e. 10-15 minutes to complete), self-report instrument where youth are asked to read each item and indicate on a scale from 0-3 how often each statement occurs (Briere, 1996). Youth are instructed to respond by marking 0 = *never*, 1 = *sometimes*, 2 = *lots of times*, or 3 = *almost all of the time*. The TSCC was developed to accommodate a 4th grade reading level.

Scores on the TSCC are translated into T-scores, where the mean is 50 and the standard deviation is 10. Scores that are 1.5 standard deviations above the mean (T=65) on all scales except Sexual Concerns, Sexual Preoccupation, and Sexual Distress are clinically significant. Scores between 60 and 65 (T=60 and T=65) on all scales except Sexual Concerns, Sexual Preoccupation, and Sexual Distress are subclinically significant, or at-risk. Scores that are two standard deviations above the mean (T=70) on the Sexual Concerns, Sexual Preoccupation, and Sexual Distress scales are clinically significant. Notably, clinically significant scores indicate that symptoms related to a specific scale may be causing clinically significant distress. Individuals who do not score within the clinically significant range does not indicate that symptoms related to a particular scale are not present for that individual; it simply means such scores may not be causing increased difficulty in daily functioning.

Table 1

A Description of the TSCC Clinical and Subclinical Scales

Scale	Item Content
Anxiety	Generalized anxiety; hyperarousal; specific fears (i.e. of men or women; the dark; being killed); and a sense of impending danger.
Depression	Sadness, unhappiness, loneliness, and tearfulness; depressive thoughts; and self-harm behaviors.
Anger	Angry thoughts, feelings, and behaviors (i.e. feeling mad, hating others, wanting to hurt others, frequent arguing or fighting).
Posttraumatic Stress	Intrusive thoughts, sensations, and memories of traumatic experiences; nightmares; fears; and cognitive avoidance.
Dissociation	Dissociation symptoms (i.e. derealization, mind going blank, emotional numbing, pretending to be someone else or somewhere else, daydreaming, and memory issues).
Overt Dissociation	Reduced response to the environment, emotional detachment, and avoidance of negative affect.
Fantasy Dissociation	Dissociation symptoms that emphasize daydreaming, role-playing, and/or pretending to be someone else or somewhere else.
Sexual Concerns	Atypical sexual thoughts or feelings; sexual conflicts; negative responses to sexual stimuli; and fear of being sexually exploited.
Sexual Preoccupation	Preoccupation with sexual behaviors that is unusual or unexpected (i.e. compulsive sexual behavior in inappropriate settings).
Sexual Distress	Distress related to sexual experiences (i.e. sexual fears and unwanted sexual feelings or behaviors).

Table 1 Excerpted from Briere, 1996

Behavior Assessment System for Children, Second Edition, Self-Report of Personality for Adolescents (BASC-2-SRP-A)

The BASC-2-SRP-A was developed to assess emotional and behavioral functioning in adolescents (Reynolds & Kamphaus, 2004). The BASC-2-SRP-A is one of the several forms associated with the BASC-2 instrument. Other forms include a child self-report (ages 8-11), a college self-report (18-25), a parent report, and a teacher report. For this study, the BASC-2-SRP-A, also known as the BASC-2 for the remainder of this document, was used as it measures social and behavioral functioning in adolescents ages 12 to 18. The BASC-2 is comprised of 176 statements where youths respond using both true-false and Likert ratings. Adolescents are instructed to read each item and circle "true" or "false" on some and N (never), S (sometimes), O (often), or A (almost always) – which translate to scores from 0-3 on others. Youth's responses load onto five composite scales and 16 subscales. The BASC-2-SRP-A contains four validity indices to ensure the reliability and validity of youth's responses: F Index, Consistency Index, V Index, and L Index. The F index measures a respondent's tendency to over-endorse negative items, the Consistency Index indicates whether or not a respondent responded in a consistent manner to similar items, the V index measures a respondent's tendency to endorse improbable statements, and the L index indicates whether or not a respondent attempted to respond in a socially desirable or positive manner.

The norms for the BASC-2 are based on a sample of 1,900 students, ages 12 to 18 (Reynolds & Kamphaus, 2004). The sample was representative of various gender, age, racial/ethnic, socioeconomic, parental education, and geographic backgrounds. The BASC-2 has been shown to have appropriate reliability and validity, including convergent and

discriminant validities. Cronbach's alpha ranges from .83 to .95 across clinical scales and .61 to .90 across subscales, indicating moderate to high internal consistency for the instrument. Test-retest reliability coefficients range from .61 to .84, which fall in the moderate to high range.

The 16 subscales on the BASC-2 fall into two categories: clinical and adaptive. The clinical scales include Attitude to School, Attitude to Teachers, Atypicality, Locus of Control, Social Stress, Anxiety, Depression, Sense of Inadequacy, Attention Problems, Hyperactivity, Sensation Seeking, and Somatization, which measure adolescent maladjustment across home, school, and community settings. The adaptive scales are comprised of Interpersonal Relations, Relations with Parents, Self-Esteem, and Self-Reliance, which assess adaptive or positive emotional and behavior functioning. The 16 subscales collapse into five composite scales: School Problems, Internalizing Problems, Inattention/Hyperactivity, Emotional Symptoms, and Personal Adjustment (Reynolds & Kamphaus, 2004). A description of each BASC-2 scale can be found in Tables 2-4.

Scores on the clinical, adaptive, and composite scales are translated into T-scores on the BASC-2 (Reynolds & Kamphaus, 2004). The clinical, adaptive, and composite scale scores have a mean of 50 and a standard deviation of 10. Scores on the clinical and composite scales that fall between one and two standard deviations above the mean (T=60 to T=70) are considered at-risk, while scores that fall above two standard deviation from the mean (T=70) are clinically significant. Scores on the adaptive scale that fall between one and two standard deviations below the mean (T=40 to T=30) are considered at-risk, while scores that fall below two standard deviations from the mean (T=30) are clinically significant. Notably, clinically significant scores indicate that characteristics or symptoms related to a

specific scale may be causing clinically significant distress. Individuals who do not score within the clinically significant range does not indicate that characteristics or symptoms related to a particular scale are not present for that individual; it simply means such scores may not be causing increased difficulty in daily functioning.

Table 2

A Description of the BASC-2-SRP-A Clinical Scales

Scale	Description
Attitude to School	Thoughts and feelings of discontent with school
Attitude to Teachers	Thoughts and feelings of dislike of teachers
Atypicality	Bizarre thoughts and/or behaviors
Locus of Control	The belief that rewards and punishments are controlled by external means
Social Stress	Feelings of stress in personal relationships; a feeling of being excluded from social activities
Anxiety	Feelings of nervousness, worry, and fear
Depression	Feelings of unhappiness and sadness; a belief that nothing goes right
Sense of Inadequacy	Perceptions of being unsuccessful and unable to achieve one's goals
Attention Problems	Easily distracted and unable to concentrate
Hyperactivity	Overly active, rushing through activities, and acting before thinking
Sensation Seeking	The tendency to take risks and seek excitement
Somatization	The tendency to complain about or experience minor physical problems frequently

Table 2 Excerpted from Reynolds & Kamphaus, 2004

Table 3

A Description of the BASC-2-SRP-A Adaptive Scales

Scale	Description
Interpersonal Relations	Perceptions of having good social relationships
Relations with Parents	Positive thoughts and feelings towards parents; feeling of being valued by parents
Self-Esteem	Feelings of self-esteem, self-respect, and self-acceptance
Self-Reliance	Confidence in one's ability to solve problems and make decisions

Table 3 Excerpted from Reynolds & Kamphaus, 2004

Table 4

A Description of the BASC-2-SRP-A Composite Scales

Scale	Description
School Problems	Pattern of dissatisfaction with school, teachers, and educational processes; includes the following scales: Attitude to School, Attitude to Teachers, and Sensation Seeking
Internalizing Problems	Pattern of self-directed distress; includes the following scales: Atypicality, Locus of Control, Social Stress, Anxiety, Depression, and Sense of Inadequacy
Inattention/Hyperactivity	Pattern of inattentive and hyperactive feelings, thoughts, and behaviors; includes the following scales: Attention Problems and Hyperactivity
Emotional Symptoms	Global indicator of problematic socio-emotional functioning; includes the following scales: Social Stress, Anxiety, Depression, Sense of Inadequacy, Self-Esteem, and Self-Reliance
Personal Adjustment	Patterns of positive adjustment; includes the following scales: Relations with Parents, Interpersonal Relations, Self-Esteem, and Self-Reliance

Table 4 Excerpted from Reynolds & Kamphaus, 2004

Procedure

The Behavior Assessment System for Children, Second Edition (BASC-2; Reynolds & Kamphaus, 2004) and the Trauma Symptom Checklist for Children (TSCC; Briere, 1996) were completed by juvenile offenders referred to the Juvenile Counseling and Assessment Program (JCAP) for mental health services. Participants completed the measures as part of the JCAP protocol for initiating clinical services and/or obtaining information for research purposes in detention and community settings. Appropriate consent was obtained prior to the administration of the instruments.

Research Questions

Research Question 1

Is there a significant relationship between juvenile offenders who endorse trauma symptoms – as measured by scores on the TSCC – and the clinical scales on the BASC-2?

Null Hypothesis I: There will not be a significant relationship between juvenile offenders who endorse trauma symptoms – as measured by scores on the TSCC – and the clinical scales on the BASC-2.

Research Question 2

Do the BASC-2 clinical scales predict specific types of trauma symptoms (Briere, 1996) – anxiety, anger, depression, sexual concerns, dissociation, and posttraumatic stress – among juvenile offenders?

Null Hypothesis 2: The BASC-2 clinical scales will not predict specific types of trauma symptoms (Briere, 1996) – anxiety, anger, depression, sexual concerns, dissociation, and posttraumatic stress – among juvenile offenders.

Research Question 3

Is there a significant difference between detained and community juvenile offenders who endorse trauma symptoms – as measured by scores on the TSCC – and the clinical scales on the BASC-2?

Null Hypothesis 3: There will not be a significant difference between detained and community juvenile offenders who endorse trauma symptoms – as measured by scores on the TSCC – and the clinical scales on the BASC-2?

Statistical Procedures

A descriptive analysis was completed to ascertain demographic characteristics of participants. In addition, the means and standard deviations of BASC-2 and TSCC scores were calculated. Further, to examine Research Question 1, a series of two-tailed bivariate correlations were performed to determine if there were any significant relationships between juvenile offenders who endorse trauma symptoms and the clinical scales on the BASC-2. Bivariate correlation analyses were used as they are most appropriate in determining whether or not a relationship exists between two continuous variables. To assess Research Question 2, six, separate, stepwise regression with backward elimination analyses were completed to determine if the BASC-2 clinical scales predict specific types of trauma symptoms endorsed by juvenile offenders. In general, hierarchical regression analyses were used as such statistical analyses allow one dependent variable to be predicted from two or more independent variables, where independent variables are sequentially incorporated and/or

removed (i.e. backward elimination) into the analysis to obtain an increased effect. Stepwise regression with backward elimination analyses were specifically used in this study, as only significant predictor variables (obtained via the series of bivariate correlation analyses) were used in each regression analysis. Such hierarchical regression analyses allowed for increased effect sizes. Examining Research Question 3 was done by conducting two independent samples t-tests – which examine mean differences between two groups – to establish whether or not there is a significant difference between detained and community juvenile offenders who endorse trauma symptoms on the TSCC and the clinical scales on the BASC-2.

CHAPTER 4

RESULTS

Findings

Table 5 shows overall means and standard deviations of obtained BASC-2 and TSCC scores. Table 6 displays means and standard deviations of BASC-2 and TSCC scores separated by gender (i.e. male and female). Table 7 portrays means and standard deviations of BASC-2 and TSCC scores by setting (i.e. community and detention).

Table 5

Overall Means and Standard Deviations for BASC-2 Clinical Scales and TSCC Scales

	Total	
	M	*SD*
BASC-2		
Attitude to School	48.57	10.89
Attitude to Teachers	52.40	10.60
Sensation Seeking	50.46	9.42
Atypicality	49.48	11.48
Locus of Control	51.73	10.83
Social Stress	48.89	12.02
Anxiety	51.24	11.55
Depression	53.25	12.84
Sense of Inadequacy	51.35	11.11
Somatization	47.81	9.21
Attention Problems	54.19	10.83
Hyperactivity	50.89	10.03
TSCC		
Anxiety	45.63	8.40
Depression	49.44	10.54
Anger	50.10	9.60
Posttraumatic Stress	47.65	8.44
Dissociation	47.35	7.89
Sexual Concerns	52.27	14.05

Note. $N = 63$

Table 6

Means and Standard Deviations for BASC-2 Clinical Scales and TSCC Scales by Gender

	Males		Females	
	M	*SD*	*M*	*SD*
BASC-2				
Attitude to School	47.49	11.23	50.33	10.29
Attitude to Teachers	51.77	11.41	53.42	9.26
Sensation Seeking	50.51	8.18	50.38	11.33
Atypicality	48.36	8.90	51.29	14.80
Locus of Control	50.15	10.43	54.29	11.20
Social Stress	47.56	9.66	51.04	15.10
Anxiety	47.46	9.24	57.38	12.45
Depression	50.36	9.45	57.96	16.10
Sense of Inadequacy	48.56	9.20	55.88	12.60
Somatization	47.00	8.85	49.13	9.81
Attention Problems	52.36	10.66	57.17	10.66
Hyperactivity	49.92	9.86	52.46	10.31
TSCC				
Anxiety	44.90	6.14	46.83	11.20
Depression	49.54	9.53	49.29	12.22
Anger	48.59	8.43	52.54	11.00
Posttraumatic Stress	47.51	8.25	47.88	8.92
Dissociation	47.26	7.54	47.50	8.59
Sexual Concerns	48.59	8.61	60.21	22.28

Note. $N = 39$ for the male sample; $N = 24$ for the female sample.

Table 7

Means and Standard Deviations for BASC-2 Clinical Scales and TSCC Scales by Setting

	Detention		Community	
	M	*SD*	*M*	*SD*
BASC-2				
Attitude to School	45.53	10.31	52.14	10.63
Attitude to Teachers	49.29	9.00	56.03	11.31
Sensation Seeking	49.32	8.70	51.79	10.20
Atypicality	48.06	8.24	51.14	14.37
Locus of Control	49.03	8.44	54.90	12.51
Social Stress	48.68	11.55	49.14	12.76
Anxiety	50.38	10.44	52.24	12.84
Depression	52.06	11.51	54.66	14.31
Sense of Inadequacy	48.91	9.72	54.21	12.10
Somatization	47.82	8.90	47.79	9.72
Attention Problems	52.24	8.42	56.48	12.89
Hyperactivity	50.44	9.10	51.41	11.16
TSCC				
Anxiety	45.00	7.41	46.48	9.51
Depression	48.56	10.42	50.48	10.78
Anger	50.47	9.48	49.66	9.00
Posttraumatic Stress	47.97	8.98	47.28	7.91
Dissociation	46.12	7.47	48.79	8.24
Sexual Concerns	50.41	9.50	54.45	17.94

Note. $N = 34$ for detention sample; $N = 29$ for community sample. Detention = Detained juvenile offenders; Community = Juvenile offenders on probation.

To determine if there is a significant relationship between juvenile offenders who endorse trauma symptoms – as measured by scores on the TSCC – and the clinical scales on the BASC-2, a series of two-tailed bivariate correlation coefficients (*r*) were computed. Each correlation's strength was interpreted based on Cohen's (1988) suggestions (i.e. coefficient values ranging from 0 to .10 are uncorrelated, coefficient values ranging from .10 to .30 indicate a low correlation, coefficient values ranging from .30 to .50 indicate a moderate correlation, and coefficient values .50 or greater represent a high correlation). Statistical significance for each correlation was set at $p < .05$.

For the TSCC trauma symptom Anxiety scale, the following BASC-2 clinical scales were highly correlated: Atypicality, ($r = .674$, $p < .001$), Locus of Control ($r = .522$, $p < .001$), Social Stress ($r = .674$, $p < .001$), Anxiety ($r = .676$, $p < .001$), Depression ($r = .679$, $p < .001$), Sense of Inadequacy ($r = .595$, $p < .001$), and Attention Problems ($r = .521$, $p < .001$). The Somatization ($r = .494$, $p < .001$) and Hyperactivity ($r = .398$, $p < .001$) scales were moderately correlated with the TSCC Anxiety scale. For the TSCC trauma symptom Depression scale, the BASC-2 clinical scales of Atypicality ($r = .618$, $p < .001$), Locus of Control ($r = .531$, $p < .001$), Social Stress ($r = .765$, $p < .001$), Anxiety ($r = .574$, $p < .001$), Depression ($r = .720$, $p < .001$), Sense of Inadequacy ($r = .575$, $p < .001$), and Attention Problems ($r = .503$, $p < .001$) had a high association. The Somatization scale ($r = .380$ $p = .002$) was moderately correlated to the Depression scale on the TSCC. The Anger scale on the TSCC, was highly correlated with the Social Stress ($r = .656$, $p < .001$), Depression ($r = .583$, $p < .001$), and Locus of Control ($r = .561$, $p < .001$) BASC-2 clinical scales. It was moderately associated with Atypicality ($r = .489$, $p < .001$), Anxiety ($r = .499$, $p < .001$), Sense of Inadequacy ($r = .483$, $p < .001$), Attention Problems ($r = .379$, $p = .002$), and

Hyperactivity (r = .428, p < .001). The Anger scale on the TSCC had a low correlation with the Sensation Seeking (r = .284, p = .024) BASC-2 clinical scale. For the TSCC trauma symptom scale Posttraumatic Stress, the following BASC-2 clinical scales were highly correlated: Atypicality (r = .650, p < .001), Locus of Control (r = .523, p < .001), Social Stress (r = .687, p < .001), Anxiety (r = .560, p < .001), Depression (r = .624, p < .001), and Sense of Inadequacy (r = .555, p < .001). There were moderate correlations with the Attention Problems (r = .484, p = .002) and Hyperactivity (r = .473, p < .001) BASC-2 clinical scales. Somatization (r = .248, p = .050) had a low association with the Posttraumatic Stress scale on the TSCC. The Dissociation scale on the TSCC had high correlations with the Attention Problems (r = .540, p = .002), Atypicality (r = .556, p < .001), Locus of Control (r = .538, p < .001), Social Stress (r = .641, p < .001), Anxiety (r = .524, p < .001), Depression (r = .628, p < .001), and Sense of Inadequacy (r = .548, p < .001) BASC-2 clinical scales. Attitude to School (r = .308, p = .014), Somatization (r = .351, p = .005), and Hyperactivity (r = .461, p < .001) were moderately associated with the TSCC Dissociation scale. The Sexual Concerns scale on the TSCC was highly associated with the following BASC-2 clinical scales: Atypicality (r = .678, p < .001), Social Stress (r = .505, p < .001), and Depression (r = .556, p < .001). The Sexual Concerns scale was moderately correlated with Locus of Control (r = .487, p < .001), Anxiety (r = .449, p < .001), Sense of Inadequacy (r = .404, p = .001), Attention Problems (r = .324, p = .010), and Hyperactivity (r = .372, p = .003) on the BASC-2. There were low correlations between the Sexual Concerns scale on the TSCC and the following BASC-2 clinical scales: Attitude to School (r = .257, p = .042), Attitude to Teachers (r = .255, p = .043), and Somatization (r = .283, p = .025). These statistics are shown in Table 8. Notably, all non-significant correlations are displayed

in Table 8 as well. Based on these findings, null hypothesis 1 is rejected, as there were several significant relationships between adjudicated youth who endorse trauma symptomatology, as measured by the TSCC, and the clinical scales on the BASC-2.

Table 8

Correlations for the BASC-2 Clinical Scales and TSCC Scales

	1	2	3	4	5	6	7	8	9
1	--								
2	.63***	--							
3	.13	.10	--						
4	.18	.31*	.12	--					
5	.33**	.19	.29*	.51***	--				
6	.25	.25*	.01	.60***	.69***	--			
7	.04	.02	.04	.53***	.61***	.63***	--		
8	.33**	.37**	-.09	.69***	.65***	.80***	.70***	--	
9	.42***	.31*	.09	.44***	.64***	.58***	.68***	.69***	--
10	.36**	.06	-.04	.42***	.27*	.29*	.49***	.41***	.34**

Note. $N = 63$. 1 = Attitude to School; 2 = Attitude to Teachers; 3 = Sensation Seeking; 4 = Atypicality; 5 = Locus of Control; 6 = Social Stress; 7 = Anxiety; 8 = Depression; 9 = Sense of Inadequacy; 10 = Somatization. ***$p < .001$. **$p < .01$. *$p < .05$.

Table 8

Continued

	1	2	3	4	5	6	7	8	9
11	.36**	.19	-.04	.40***	.45***	.42***	.49***	.48***	.60***
12	.06	.14	.31*	.53***	.27*	.31*	.40***	.28*	.28*
13	.25	.13	-.03	.68***	.52***	.67***	.68***	.70***	.56***
14	.15	.14	-.05	.62***	.53***	.77***	.57***	.72***	.58***
15	.24	.21	.29*	.49***	.66***	.66***	.50***	.58***	.48***
16	.10	.06	.07	.65***	.52***	.69***	.56***	.62***	.56***
17	.31*	.19	.02	.56***	.54***	.64***	.52***	.63***	.55***
18	.26*	.26*	.17	.68***	.49***	.51***	.50***	.56***	.40***

Note. $N = 63$. 1 = Attitude to School; 2 = Attitude to Teachers; 3 = Sensation Seeking; 4 = Atypicality; 5 = Locus of Control; 6 = Social Stress; 7 = Anxiety; 8 = Depression; 9 = Sense of Inadequacy; 11 = Attention Problems; 12 = Hyperactivity; 13 = Anxiety; 14 = Depression; 15 = Anger; 16 = Posttraumatic Stress; 17 = Dissociation; 18 = Sexual Concerns. ***$p < .001$. **$p < .01$. *$p < .05$

Table 8

Continued

	10	11	12	13	14	15	16	17	18
11	.31*	--							
12	.13	.42***	--						
13	.50***	.52***	.40***	--					
14	.28**	.50***	.24	.70***	--				
15	.12	.38**	.43***	.56***	.56***	--			
16	.25*	.48***	.47***	.79***	.70***	.57***	--		
17	.25**	.54***	.46***	.71***	.69***	.54***	.71***	--	
18	.28*	.32**	.37**	.65***	.47***	.50***	.62***	.46***	--

Note. $N = 63$. 10 = Somatization; 11 = Attention Problems; 12 = Hyperactivity; 13 = Anxiety; 14 = Depression; 15 = Anger; 16 = Posttraumatic Stress; 17 = Dissociation; 18 = Sexual Concerns. ***$p < .001$. **$p < .01$. *$p < .05$

In order to assess whether or not the BASC-2 clinical scales predict specific types of trauma symptoms, such as anxiety, anger, depression, sexual concerns, dissociation, and posttraumatic stress, experienced among juvenile offenders, six stepwise regressions with backward elimination were conducted. The BASC-2 clinical scales that were found to be significantly correlated to specific trauma symptoms on the TSCC were entered into separate stepwise regressions (one for each dependent variable, or TSCC symptom) to see if they were able to significantly predict trauma symptoms on the TSCC. All significantly correlated independent variables (BASC-2 clinical scales) for each dependent variable (TSCC trauma symptom) were entered for each dependent variable. Independent variables were removed from the analyses sequentially, based on the probability of F being equal to or greater than .10. For each analysis, the exclusion of variables continued through each model until the final model only contained predictor variables with a 90% confidence of contributing to the variance in the dependent variable (i.e. TSCC symptom). The assumptions for stepwise hierarchical regressions (i.e. linearity, homoscedasticity, and the absence of multicollinearity) were not violated in any of the regression analyses. Specifically, a visual analysis of the data indicated homoscedasticity and linearity. Further, the variance inflation factor (VIF) of the salient predictors for each model indicated the absence of multicollinearity, as evidenced by VIF values of less than 10. Additionally, in an attempt to locate any outliers in the data, Cook's distance for each model were rendered. All Cook's distances were less than 1.0, suggesting that there were not statistically significant outliers in the data. The significance level for all regression analyses was set at $p < .05$. The statistical findings are shown in Tables 9-14.

For the TSCC scale measuring trauma-related anxiety, the regression model containing the BASC-2 clinical scales of Atypicality, Social Stress, Anxiety, and Somatization explained 64.7% of the variance of scores (R^2 = .647, F(4,58) = 26.60, p < .001). Atypicality (β = .297, p = .006), Social Stress (β = .287, p = .012), and Anxiety (β = .257, p = .024) emerged as the unique predictors in the model, while Somatization (β = .161, p .087) was not statistically predictive of anxiety scores on the TSCC. For the TSCC scale measuring Depression, the regression model comprising the BASC-2 clinical scales of Atypicality, Social Stress, and Attention Problems explained 65.1% of the variance of scores (R^2 = .651, F(3,59) = 36.74, p < .001). Atypicality (β = .205, p = .042), Social Stress (β = .564, p < .001), and Attention Problems (β = .186, p = .035) all emerged as statistically significant predictors of trauma-related depression scores on the TSCC. Similarly, for the TSCC scale measuring anger, the regression model encompassing the BASC-2 clinical scales of Sensation Seeking, Social Stress, and Hyperactivity accounted for 53.1% of the variance of scores (R^2 = .531, F(3,59) = 22.26, p < .001). In the model, only Sensation Seeking (β = .223, p = .021) and Social Stress (β = .600, p < .001) were statistically predictive of trauma-related anger scores on the TSCC. Hyperactivity (β = .172, p = .089) was not a statistically significant predictor. For the posttraumatic stress scale on the TSCC, the regression model containing Atypicality, Social Stress, Sense of Inadequacy, and Hyperactivity explained 60.3% of the variance of scores (R^2 = .603, F(4,58) = 22.07, p < .001). Atypicality (β = .253, p = .034) and Social Stress (β = .378, p = .002) arose as significant predictors, while Sense of Inadequacy (β = .176, p = .093) and Hyperactivity (β = .173, p = .081) were not predictive of trauma-related posttraumatic stress scores on the TSCC. The regression model comprising the BASC-2 clinical scales Social Stress, Attention Problems, and Hyperactivity

accounted for 53.5% of the variance of the scores on the dissociation scale on the TSCC (R^2 = .535, $F(3,59) = 22.65$, $p < .001$). Social Stress ($\beta = .470$, $p < .001$), Attention Problems ($\beta = .257$, $p = .016$), and Hyperactivity ($\beta = .207$, $p = .041$) all emerged as statistically significant predictors of trauma-related dissociation scores on the TSCC. For the TSCC Sexual Concerns scale, the regression model containing Atypicality and Locus of Control explained 48.6% of the variance of scores ($R^2 = .486$, $F(2,60) = 28.41$, $p < .001$). In the model, only Atypicality ($\beta = .580$, $p < .001$) arose as a unique statistically significant predictor of trauma-related scores pertaining to sexual concerns. Locus of Control ($\beta = .192$, $p = .079$) was not a significant predictor. Based on these statistical findings, null hypothesis 2 is rejected, as several of the BASC-2 clinical scales predicted specific types of trauma symptoms, such as anxiety, anger, depression, sexual concerns, dissociation, and posttraumatic stress, among juvenile offenders.

Table 9

Hierarchical Regression Analysis for BASC-2 Clinical Scales Predicting Anxiety on the TSCC

	b	SE *b*	*β*
Model 1			
Atypicality	.23	.10	.32*
Locus of Control	-.09	.09	-.12
Social Stress	.23	.10	.33*
Anxiety	.15	.10	.21
Depression	-.05	.11	-.08
Sense of Inadequacy	.10	.10	.13
Somatization	.13	.09	.15
Attention Problems	.10	.08	.13
Hyperactivity	-.09	.09	-.01
Model 2			
Atypicality	.23	.08	.01**
Locus of Control	-.09	.09	.32
Social Stress	.23	.10	.03*
Anxiety	.15	.09	.11
Depression	-.05	.11	.67
Sense of Inadequacy	.10	.10	.32
Somatization	.14	.09	.12
Attention Problems	.10	.08	.22
Model 3			
Atypicality	.21	.08	.01**
Locus of Control	-.07	.09	.32
Social Stress	.22	.09	.02*
Anxiety	.14	.09	.12
Sense of Inadequacy	.09	.09	.37
Somatization	.13	.08	.12
Attention Problems	.10	.08	.20

Note. $N = 63$. ***$p < .001$. **$p < .01$. *$p < .05$.

Table 9

Continued

	b	SE *b*	*β*
Model 4			
Atypicality	.21	.08	.01**
Locus of Control	-.07	.09	.43
Social Stress	.22	.09	.01**
Anxiety	.17	.09	.05*
Somatization	.13	.08	.12
Attention Problems	.12	.07	.09
Model 5			
Atypicality	.20	.08	.01**
Social Stress	.19	.08	.02*
Anxiety	.15	.08	.07
Somatization	.14	.08	.10
Attention Problems	.12	.07	.10
Model 6			
Atypicality	.22	.08	.01**
Social Stress	.20	.08	.01**
Anxiety	.19	.08	.02*
Somatization	.15	.08	.09

Note. $N = 63$. ***$p < .001$. **$p < .01$. *$p < .05$.

Table 10

Hierarchical Regression Analysis for BASC-2 Clinical Scales Predicting Depression on the TSCC

	b	SE *b*	*β*
Model 1			
Atypicality	.15	.10	.16
Locus of Control	-.13	.12	-.13
Social Stress	.48	.12	.55***
Anxiety	-.03	.12	-.03
Depression	.09	.14	.12
Sense of Inadequacy	.10	.13	.11
Somatization	.10	.12	.09
Attention Problems	.15	.10	.15
Model 2			
Atypicality	.15	.10	.16
Locus of Control	-.13	.12	-.14
Social Stress	.48	.12	.55***
Depression	.08	.13	.10
Sense of Inadequacy	.09	.12	.09
Somatization	.09	.10	.08
Attention Problems	.14	.10	.15
Model 3			
Atypicality	.17	.09	.18
Locus of Control	-.13	.11	-.14
Social Stress	.52	.10	.59***
Sense of Inadequacy	.11	.11	.12
Somatization	.10	.10	.08
Attention Problems	.14	.10	.15

Note. $N = 63$. ***$p < .001$. **$p < .01$. *$p < .05$.

Table 10

Continued

	b	SE *b*	*β*
Model 4			
Atypicality	.20	.09	.21*
Locus of Control	-.14	.11	-.14
Social Stress	.52	.10	.59***
Sense of Inadequacy	.13	.11	.14
Attention Problems	.15	.10	.15
Model 5			
Atypicality	.20	.09	.22*
Locus of Control	-.09	.12	-.09
Social Stress	.54	.10	.61***
Attention Problems	.20	.09	.20*
Model 6			
Atypicality	.19	.09	.21*
Social Stress	.49	.09	.56***
Attention Problems	.18	.08	.19*

Note. $N = 63$. ***$p < .001$. **$p < .01$. *$p < .05$.

Table 11

Hierarchical Regression Analysis for BASC-2 Clinical Scales Predicting Anger on the TSCC

	b	SE *b*	*β*
Model 1			
Sensation Seeking	.27	.12	.26*
Atypicality	-.07	.12	-.08
Locus of Control	.00	.14	.01
Social Stress	.35	.13	.43*
Anxiety	-.01	.12	-.01
Depression	.19	.16	.25
Sense of Inadequacy	-.01	.14	-.01
Attention Problems	.06	.11	.06
Hyperactivity	.15	.12	.16
Model 2			
Sensation Seeking	.27	.12	.27*
Atypicality	-.07	.12	-.08
Social Stress	.35	.12	.43**
Anxiety	-.01	.12	-.01
Depression	.19	.16	.25
Sense of Inadequacy	-.01	.13	-.01
Attention Problems	.06	.11	.06
Hyperactivity	.15	.12	.16
Model 3			
Sensation Seeking	.27	.11	.27*
Atypicality	-.07	.12	-.08
Social Stress	.35	.12	.43**
Depression	.18	.15	.25
Sense of Inadequacy	-.01	.13	-.01
Attention Problems	.06	.10	.06
Hyperactivity	.15	.11	.16

Note. $N = 63$. ***$p < .001$. **$p < .01$. *$p < .05$.

Table 11

Continued

	b	SE *b*	*β*
Model 4			
Sensation Seeking	.27	.10	.26**
Atypicality	-.07	.12	-.08
Social Stress	.35	.12	.43**
Depression	.18	.13	.24
Attention Problems	.05	.10	.06
Hyperactivity	.15	.11	.16
Model 5			
Sensation Seeking	.26	.10	.26**
Atypicality	-.07	.12	-.08
Social Stress	.35	.12	.44**
Depression	.20	.13	.26
Hyperactivity	.17	.11	.18
Model 6			
Sensation Seeking	.26	.10	.25*
Social Stress	.35	.12	.43**
Depression	.16	.11	.22
Hyperactivity	.15	.10	.15
Model 7			
Sensation Seeking	.23	.10	.22*
Social Stress	.48	.08	.60***
Hyperactivity	.16	.10	.17

Note. $N = 63$. ***$p < .001$. **$p < .01$. *$p < .05$.

Table 12

Hierarchical Regression Analysis for BASC-2 Clinical Scales Predicting Posttraumatic Stress on the TSCC

	b	SE *b*	*β*
Model 1			
Atypicality	.24	.11	.32*
Locus of Control	-.06	.10	-.08
Social Stress	.31	.11	.44**
Anxiety	.05	.11	.07
Depression	-.08	.12	-.12
Sense of Inadequacy	.14	.11	.18
Somatization	-.08	.10	-.09
Attention Problems	.08	.09	.10
Hyperactivity	.09	.10	.11
Model 2			
Atypicality	.24	.10	.32*
Locus of Control	-.05	.10	-.07
Social Stress	.31	.11	.44**
Depression	-.07	.12	-.10
Sense of Inadequacy	.15	.11	.20
Somatization	-.07	.09	-.07
Attention Problems	.08	.09	.10
Hyperactivity	.10	.10	.12
Model 3			
Atypicality	.23	.10	.32*
Social Stress	.29	.10	.41**
Depression	-.06	.12	-.10
Sense of Inadequacy	.13	.10	.17
Somatization	-.06	.09	-.07
Attention Problems	.07	.09	.10
Hyperactivity	.12	.09	.13

Note. $N = 63$. ***$p < .001$. **$p < .01$. *$p < .05$.

Table 12

Continued

	b	SE *b*	*β*
Model 4			
Atypicality	.21	.10	.28*
Social Stress	.26	.08	.27**
Sense of Inadequacy	.11	.09	.15
Somatization	-.07	.09	-.07
Attention Problems	.07	.09	.10
Hyperactivity	.12	.09	.14
Model 5			
Atypicality	.19	.09	.25*
Social Stress	.26	.08	.38**
Sense of Inadequacy	.10	.09	.13
Attention Problems	.07	.09	.08
Hyperactivity	.13	.09	.15
Model 6			
Atypicality	.19	.09	.25*
Social Stress	.27	.08	.38**
Sense of Inadequacy	.13	.08	.18
Hyperactivity	.15	.08	.17

Note. $N = 63$. ***$p < .001$. **$p < .01$. *$p < .05$.

Table 13

Hierarchical Regression Analysis for BASC-2 Clinical Scales Predicting Dissociation on the TSCC

	b	SE *b*	*β*
Model 1			
Attitude to School	.05	.09	.07
Atypicality	.09	.11	.01
Locus of Control	.04	.10	.05
Social Stress	.21	.11	.32
Anxiety	-.06	.12	-.09
Depression	.09	.13	.15
Sense of Inadequacy	.04	.11	.05
Somatization	.11	.10	.13
Attention Problems	.12	.09	.16
Hyperactivity	.18	.10	.23
Model 2			
Attitude to School	.05	.08	.07
Locus of Control	.04	.10	.05
Social Stress	.21	.11	.32
Anxiety	-.06	.12	-.09
Depression	.10	.11	.15
Sense of Inadequacy	.04	.11	.05
Somatization	.11	.09	.13
Attention Problems	.12	.09	.16
Hyperactivity	.20	.08	.24*

Note. $N = 63$. ***$p < .001$. **$p < .01$. *$p < .05$.

Table 13

Continued

	b	SE *b*	*β*
Model 3			
Attitude to School	.06	.08	.08
Locus of Control	.04	.10	.06
Social Stress	.20	.11	.31
Anxiety	-.05	.11	-.07
Depression	.10	.11	.17
Somatization	.11	.09	.13
Attention Problems	.13	.09	.18
Hyperactivity	.19	.08	.24*
Model 4			
Attitude to School	.06	.08	.09
Social Stress	.22	.10	.34*
Anxiety	-.03	.10	-.05
Depression	.10	.11	.17
Somatization	.11	.09	.12
Attention Problems	.13	.09	.18
Hyperactivity	.18	.08	.23*
Model 5			
Attitude to School	.07	.07	.10
Social Stress	.22	.10	.33*
Depression	.09	.10	.14
Somatization	.10	.08	.11
Attention Problems	.12	.08	.17
Hyperactivity	.18	.08	.23*

Note. $N = 63$. ***$p < .001$. **$p < .01$. *$p < .05$.

Table 13

Continued

	b	SE *b*	*B*
Model 6			
Attitude to School	.08	.07	.12
Social Stress	.28	.07	.43***
Somatization	.12	.08	.14
Attention Problems	.13	.08	.18
Hyperactivity	.18	.08	.23*
Model 7			
Social Stress	.29	.07	.44***
Somatization	.11	.08	.13
Attention Problems	.17	.08	.23*
Hyperactivity	.17	.08	.21*
Model 8			
Social Stress	.31	.07	.47***
Attention Problems	.19	.08	.26*
Hyperactivity	.16	.08	.21*

Note. $N = 63$. ***$p < .001$. **$p < .01$. *$p < .05$.

Table 14

Hierarchical Regression Analysis for BASC-2 Clinical Scales Predicting Sexual Concerns on the TSCC

	b	SE *b*	*β*
Model 1			
Attitude to School	.20	.19	.15
Attitude to Teachers	-.04	.19	-.03
Atypicality	.67	.21	.55**
Locus of Control	.15	.20	.11
Social Stress	.03	.21	.03
Anxiety	.12	.24	.10
Depression	.02	.25	.02
Sense of Inadequacy	-.04	.22	-.03
Somatization	-.04	.19	-.03
Attention Problems	-.06	.18	-.05
Hyperactivity	.03	.19	.02
Model 2			
Attitude to School	.20	.19	.15
Attitude to Teachers	-.03	.18	-.03
Atypicality	.68	.19	.56***
Locus of Control	.14	.20	.11
Social Stress	.04	.18	.03
Anxiety	.12	.22	.10
Sense of Inadequacy	-.03	.22	-.03
Somatization	-.04	.18	-.03
Attention Problems	-.06	.18	-.05
Hyperactivity	.03	.18	.02

Note. $N = 63$. ***$p < .001$. **$p < .01$. *$p < .05$.

Table 14

Continued

	b	SE *b*	*B*
Model 3			
Attitude to School	.19	.18	.15
Attitude to Teachers	-.04	.18	-.03
Atypicality	.68	.18	.56***
Locus of Control	.14	.20	.11
Social Stress	.04	.18	.03
Anxiety	.11	.19	.09
Somatization	-.04	.18	-.03
Attention Problems	-.07	.17	-.06
Hyperactivity	.03	.18	.02
Model 4			
Attitude to School	.19	.18	.15
Attitude to Teachers	-.04	.18	-.03
Atypicality	.70	.17	.57***
Locus of Control	.14	.19	.10
Social Stress	.04	.17	.03
Anxiety	.12	.19	.09
Somatization	-.05	.18	-.03
Attention Problems	-.06	.16	-.05
Model 5			
Attitude to School	.19	.18	.15
Attitude to Teachers	-.03	.17	-.03
Atypicality	.71	.16	.58***
Locus of Control	.15	.18	.12
Anxiety	.13	.18	.10
Somatization	-.05	.17	-.03
Attention Problems	-.06	.16	-.04

Note. $N = 63$. ***$p < .001$. **$p < .01$. *$p < .05$.

Table 14

Continued

	b	SE *b*	*B*
Model 6			
Attitude to School	.17	.14	.13
Atypicality	.70	.15	.57***
Locus of Control	.15	.17	.12
Anxiety	.13	.18	.11
Somatization	-.05	.17	-.03
Attention Problems	-.06	.15	-.04
Model 7			
Attitude to School	.17	.14	.13
Atypicality	.69	.14	.56***
Locus of Control	.16	.17	.12
Anxiety	.11	.17	.09
Attention Problems	-.06	.15	-.04
Model 8			
Attitude to School	.15	.13	.12
Atypicality	.68	.14	.56***
Locus of Control	.16	.17	.12
Anxiety	.09	.16	.07
Model 9			
Attitude to School	.13	.13	.10
Atypicality	.71	.13	.58***
Locus of Control	.21	.15	.15
Model 10			
Atypicality	.71	.13	.58***
Locus of Control	.25	.14	.08

Note. $N = 63$. ***$p < .001$. **$p < .01$. *$p < .05$.

Two independent samples t-tests were conducted to determine if there is a significant difference between detained and community juvenile offenders who endorse trauma symptoms – as measured by scores on the TSCC – and the clinical scales on the BASC-2. The first analysis was completed to compare scores on the TSCC between detained (N = 34) and community (N = 29) juvenile offenders. Equal variances were assumed for each scale (Anxiety, Depression, Anger, Posttraumatic Stress, Dissociation, and Sexual Concerns), as the p-value for Levene's Test was greater than .05 for all scales. There were no significant differences in scores on the TSCC between detained and community adjudicated youth (Anxiety: detained (M = 45, SD = 7.41) and community (M = 46.38, SD = 9.52); $t(61) = .65$, $p = .52$; Depression: detained (M = 48.56, SD = 10.42) and community (M = 50.48, SD = 10.78); $t(61) = .72$, $p = .48$; Anger: detained (M = 50.47, SD = 9.48) and community (M = 49.66, SD = 9.90); $t(61) = -.33$, $p = .74$; Posttraumatic Stress: detained (M = 47.97, SD = 8.98) and community (M = 47.28, SD = 7.91); $t(61) = -.323$, $p = .75$; Dissociation: detained (M = 46.12, SD = 7.47) and community (M = 48.79, SD = 8.24); $t(61) = 1.35$, $p = .18$; and Sexual Concerns: detained (M = 50.41, SD = 9.50) and community (M = 54.45, SD = 17.94); $t(61) = 1.14$, $p = .26$). These findings indicate that juvenile offenders in the community do not endorse specific trauma symptoms any more or less than juvenile offenders in detention centers. The results of this independent samples t-test are shown in Table 15.

The second analysis was conducted to compare scores on the BASC-2 clinical scales between detained (N = 34) and community (N = 29) adjudicated youth. Equal variances were assumed for Attitude to School, Attitude to Teachers, Sensation Seeking, Atypicality, Social Stress, Anxiety, Depression, Sense of Inadequacy, Somatization, Attention Problems, and Hyperactivity, as the p-value for Levene's Test was greater than .05 for these scales. By

contrast, for the Locus of Control scale, Levene's Test was statistically significant, $p = .03$. As a result, equal variances were not assumed for the Locus of Control scale. The results of this analysis indicate there were significant differences between detained and community juvenile offenders' scores on the following BASC-2 clinical scales: Attitude to School: detained ($M = 45.53$, $SD = 10.31$) and community ($M = 52.14$, $SD = 10.63$); $t(61) = 2.50$, $p = .02$; Attitude to Teachers: detained ($M = 49.29$, $SD = 8.99$) and community ($M = 56.03$, $SD = 10.63$); $t(61) = 2.63$, $p = .01$; and Locus of Control: detained ($M = 49.03$, $SD = 8.44$) and community ($M = 54.90$, $SD = 12.51$); $t(61) = 2.14$, $p = .04$. These results indicate that community juvenile offenders experience greater discontent with school, more dislike and concern towards their teachers, and a higher external locus of control than their detained peers. There were no significant differences between detained and community adjudicated youth on any other BASC-2 clinical scale. The results of both significant and non-significant differences between detained and community juvenile offenders' scores on the BASC-2 clinical scales are shown in Table 16. Based on these results, null hypothesis 3 is rejected: while there were significant differences on some of the BASC-2 clinical scales between detained and community juvenile offenders, there were no significant differences between detained and community adjudicated youth who endorse trauma symptoms, as measured by the TSCC.

Table 15

Independent Samples T-Test for TSCC Scores

	Detained		Community				
TSCC Scale	*M*	*SD*	*M*	*SD*	*t*(61)	*p*	Cohen's *d*
Anxiety	45.00	7.41	46.38	9.52	.647	.52	.16
Depression	48.56	10.42	50.48	10.78	.719	.48	.18
Anger	50.47	9.48	49.66	9.89	-.334	.74	.08
Posttraumatic Stress	47.97	8.98	47.28	7.91	-.323	.75	.08
Dissociation	46.12	7.47	48.79	8.24	1.35	.18	.34
Sexual Concerns	50.41	9.50	54.45	17.95	1.14	.26	.28

Note. $N = 34$ for detention sample; $N = 29$ for community sample. Detention = Juvenile offenders in detention centers; Community = Juvenile offenders in the community. ***$p < .001$. **$p < .01$. *$p < .05$.

Table 16

Independent Samples T-Test for BASC-2 Scores

	Detained		Community				
TSCC Scale	*M*	*SD*	*M*	*SD*	*t*(61)	*p*	Cohen's *d*
Attitude to School	45.53	10.31	52.14	10.63	2.50	.02*	.63
Attitude to Teachers	49.29	9.00	56.03	11.31	2.63	.01**	.67
Sensation Seeking	49.32	8.69	51.79	10.20	1.04	.30	.26
Atypicality	48.06	8.24	51.14	14.37	1.06	.29	.26
Locus of Control	49.03	8.44	54.90	12.51	2.14	.04*	.55
Social Stress	48.68	11.55	49.14	12.76	.15	.88	.04
Anxiety	50.38	10.44	54.24	12.84	.63	.53	.16
Depression	52.06	11.51	54.66	14.31	.80	.43	.20
Sense of Inadequacy	48.91	9.72	54.21	12.10	1.9	.06	.48
Somatization	47.82	8.90	47.79	9.72	-.01	1.00	.00
Attention Problems	52.24	8.42	56.48	12.89	1.57	.12	.39
Hyperactivity	50.44	9.10	51.41	11.16	.38	.71	.10

Note. $N = 34$ for detention sample; $N = 29$ for community sample. Detention = Juvenile offenders in detention centers; Community = Juvenile offenders in the community. ***$p < .001$. **$p < .01$. *$p < .05$.

CHAPTER 5

DISCUSSION

Summary

The number of adjudicated youth have been exposed to at least one traumatic event is shocking – approximately 90%. Even more disturbing is that upwards of 80% have experienced six or more separate traumatic situations over the course of their childhood and adolescence (Abram et al., 2004; Fairbank, 2008; Finkelhor, Turner, Shattuck, & Hamby, 2013). This is concerning, as research indicates that children and adolescents who experience trauma are two times more likely to develop a mental illness than youth who are not exposed to trauma; and this rate is even higher for the juvenile offender population (Copeland, Keeler, Angold, & Costello, 2007). Specifically, approximately two-thirds of males and three-quarters of females that are involved with the juvenile justice system meet criteria for at least one mental health disorder, excluding conduct disorder (Shufelt & Cocozza, 2006).

The aforementioned information is startling as trauma is a significant risk factor in the development of juvenile delinquency (Allwood, Bell, & Horan, 2011; Cuevas, Finkelhor, Turner, & Ormrod, 2007; Ford, Chapman, Mack, & Pearson, 2006; Kerig & Bennett, 2013; Kerig, Bennett, Thompson, & Becker, 2012). Given this relationship, effective trauma assessment for the juvenile offender population is a necessity in order for mental health treatment to be more informed and effective. Unfortunately, such evaluation has been difficult for various reasons (Perkins, Calhoun, & Glaser, 2014).

As a result, the objective of the current study was to explore the BASC-2 clinical profiles, a widely used measure with adjudicated youth, and the TSCC scores of juvenile offenders (Briere, 1996; Perkins, Calhoun, & Glaser; Reynolds & Kamphaus, 2004) in order to better evaluate their trauma-related symptomatology. By understanding the link between the TSCC and BASC-2, clinical providers may be alerted to youth who have experienced trauma by giving only one instrument, the BASC-2. A more accurate recognition of symptoms may lead to more effective, informed treatment for this vulnerable population.

A total of 63 adjudicated youth residing in a southern U.S. state participated in this study. The juvenile offenders involved in this study were detained (N = 34) or on probation in the community (N = 29). The measures that were used in this study included the BASC-2 and TSCC. The participants in this study completed the BASC-2 and TSCC measures as part of the JCAP protocol for initiating clinical services and/or obtaining information for research purposes. A series of bivariate correlations, stepwise regressions with backward elimination, and independent samples t-tests were the statistical procedures utilized in this study. These analyses were used to answer the following research questions:

Research Question 1: Is there a significant relationship between juvenile offenders who endorse trauma symptoms – as measured by scores on the TSCC – and the clinical scales on the BASC-2?

Research Question 2: Do the BASC-2 clinical scales predict specific types of trauma symptoms (Briere, 1996) – anxiety, anger, depression, sexual concerns, dissociation, and posttraumatic stress – among juvenile offenders?

Research Question 3*:* Is there a significant difference between detained and community juvenile offenders who endorse trauma symptoms – as measured by scores on the TSCC – and the clinical scales on the BASC-2?

In order to examine Research Question 1, several bivariate correlations were computed. To assess Research Question 2, six stepwise regression analyses with backward elimination were completed. To evaluate Research Question 3, two independent samples t-tests was conducted.

Discussion of Findings

Given the significant prevalence of trauma, the subsequent maladaptive socio-emotional functioning resulting from traumatic experiences, and the historical problematic assessment procedures used to identify trauma and trauma-related symptomatology in the juvenile offender population; an efficient, accurate way of measuring trauma-related symptomatology experienced among this population is a necessity. As such, the primary purpose of this study was to determine whether or not the BASC-2 – a widely used clinical tool measuring socio-emotional functioning – could accurately predict trauma-related symptomatology experienced by juvenile offenders.

In order to answer whether or not BASC-2 clinical scales are predictive of trauma-related symptomatology, a series of bivariate correlations were first computed. The primary reason for conducting several correlation analyses was to ascertain which, if any, BASC-2 clinical scales were associated with the TSCC scales. This statistical procedure was substantial as it allowed for the subsequent statistical analyses, stepwise regression, to be conducted in a backward elimination fashion. This backward elimination manner allowed for increased effect sizes. The results of the correlation analyses that were conducted

revealed that several of the BASC-2 clinical scales are associated with trauma-related symptoms identified on the TSCC. In particular, the results of this study indicate that adjudicated youth endorsing greater trauma-related symptomatology were more likely to experience increased odd or bizarre behaviors (i.e. hallucinations or delusions); a higher external locus of control; increased anxiety, depression, and posttraumatic stress; greater attention difficulties; poorer attitudes toward school and teachers; heightened feelings of inadequacy; and more somatic complaints in comparison to juvenile offenders who did not endorse elevated trauma symptoms.

These correlation findings are consistent with prior research suggesting that juvenile offenders who experience trauma reactions are at an increased risk of developing problematic emotional and behavioral functioning, indicative of maladaptive mental health (Norwood, Ursano, & Fullerton, 2000; Luecken, Roubinov, & Tanaka, 2013; Osofsky, 1997). In addition, these findings are similar to those that were found in Perkins, Calhoun, and Glaser (2014), where juvenile offenders meeting criteria for PTSD were found to have experienced greater emotional and behavioral concerns, as measured by the BASC-2, than adjudicated youth who did not meet criteria for the trauma-related disorder. Further, and more importantly, these findings allowed for the primary question in this study to be answered: do the BASC-2 clinical scales predict specific trauma symptoms experienced among juvenile offenders.

In order to answer the aforementioned question, multiple stepwise regression analyses were completed. The results of these statistical procedures indicated that specific elevations across the clinical scales on the BASC-2 are predictive of specific types of trauma symptoms experienced by adjudicated youth. Specifically, this study determined that

elevations on the BASC-2 clinical scales Atypicality, Social Stress, and Anxiety are predictive of trauma-related anxiety. Although the Somatization scale is not indicative of predicting trauma-related anxiety on its own, when combined with Atypicality, Social Stress, and Anxiety, it is predictive of this symptom. These findings indicate that adjudicated youth suffering from trauma-related anxiety may be particularly experiencing increased bizarre behaviors, interpersonal difficulties, and situational tension (Reynolds & Kamphaus, 2004).

Additionally, the results of this study indicated that elevations on the Atypicality, Social Stress, and Attention Problems BASC-2 clinical scales were predictive of trauma-related depression. Youth with these clinical scale elevations likely experience increased odd behaviors, interpersonal issues, and concentration difficulties (Reynolds & Kamphaus, 2004). Further, specific BASC-2 elevations were predictive of trauma-related anger, namely Sensation Seeking and Social Stress. Although Hyperactivity was identified in the model consisting of Sensation Seeking and Social Stress, it was not a unique predictor of trauma-associated anger. As a result, youth suffering from an anger trauma reaction, experience greater impulsivity, risk taking behavior, interpersonal difficulties, and hyperactivity (Reynolds & Kamphaus, 2004). In regards to posttraumatic stress, although Sense of Inadequacy and Hyperactivity were not significant predictors on their own, when combined with Atypicality and Social Stress, they were significantly predictive. As such, youth enduring posttraumatic stress reactions experience greater bizarre behaviors, interpersonal issues, social tension, hyperactivity, and feelings of being unsuccessful and inadequate (Reynolds & Kamphaus, 2004). Similarly, this study also determined that elevations on Social Stress, Attention Problems, and Hyperactivity were significantly predictive of trauma-related dissociation. This suggests that juvenile offenders experiencing dissociative

symptomatology related to past trauma, experience social exclusion, interpersonal difficulties, concentration concerns, and hyperactivity (Reynolds & Kamphaus, 2004). Finally, while Atypicality and Locus of Control encompassed the regression model predicting trauma-related sexual concerns, Locus of Control was not found to be a sole significant predictor, whereas Atypicality was. That said, when elevated with Atypicality, Locus of Control is predictive of trauma-related sexual concerns. This finding suggests that juvenile offenders who have increased odd or bizarre behaviors, as well as beliefs that rewards and punishments are controlled by external means may be experiencing trauma-related sexual concerns (Reynolds & Kamphaus, 2004).

Notably, Social Stress was the most identified BASC-2 predictor of various types of trauma-related symptomatology. The Social Stress scale involves measuring one's feelings of stress in interpersonal situations, as well as feelings of exclusion. Further, this scale is associated with a lack of having adequate coping resources (Reynolds & Kamphaus, 2004; Perkins, Calhoun, and Glaser, 2014). Given the type of socio-emotional functioning it measures, it is not surprising that it is most predictive of trauma-related reactions experienced by adjudicated youth, as previous literature indicates that youth who experience trauma, develop relational and coping problems, which may lead to delinquent behavior (Ford et al., 2006; Kerig, et al., 2009). In addition, according to traumatic stress theory, juvenile offenders who have been traumatized, develop delinquent tendencies due to adopting a heightened sensitivity to threat. This heightened sensitivity to threat then often leads to social incompetence and/or negative coping strategies (Chemtob et al., 1988; Cuevas, et al., 2007). Further, traumatized youth may develop emotional numbing as a result of their experiences; resulting in an inability to connect with others and engage in problematic social

behaviors, such as delinquency (Kerig et al., 2012). Given this information, an elevation on the Social Stress scale on the BASC-2 is likely suggestive of trauma and subsequent related symptomatology in juvenile offenders.

An additional BASC-2 clinical scale that was found to be a significant predictor of multiple trauma-related symptoms was that of Atypicality. The Atypicality scale measures one's tendency to engage in unusual or odd behaviors, similar to those seen in psychosis (Reynolds & Kamphaus, 2004). Prior research has indicated that juvenile offenders who exhibit unusual behaviors, such as hallucinations and/or delusions, have been subjected to previous traumatic experiences (Collins, Vermeiren, Vreugdenhil, Schuten, Broekaert, & Krabbendam, 2009). Further, previous research suggests that children and adolescents who are sexually abused are five times more likely to develop non-clinical psychosis-related symptoms, such as hallucinations or delusions, than youth who were not sexually abused (Lataster, et al., 2006). Notably, this prior research is consistent with the findings from this study, as the Atypicality scale was a sole predictor of trauma reactions related to sexual concerns (which is likely indicative of sexual abuse; Briere, 1996) in juvenile offenders. As such, while it is likely that elevations on the Atypicality scale in conjunction with other scales on the BASC-2 are indicative of various trauma reactions in juvenile offenders, it is even more likely that a single elevation on this scale is indicative of prior sexual abuse and related trauma symptomatology in adjudicated youth.

All of the aforementioned findings fit well with prior literature that indicates that juvenile offenders who have experienced trauma endorse a number of socio-emotional functioning difficulties (Norwood, Ursano, & Fullerton, 2000; Teplin et al., 2006). Further, the previously mentioned results suggest that adjudicated youth experience various trauma-

related symptomatology, as opposed to only symptoms associated with PTSD. As such, the findings from this study adequately extended the results found in Perkins, Calhoun, and Glaser (2014). Moreover, this study's results are important to consider, as none of the predictive profiles that were found, matched perfectly with the primary profile obtained in Perkins, Calhoun, and Glaser (2014). Specifically, Perkins, Calhoun, and Glaser (2014) indicated that elevations on Anxiety, Social Stress, and Somatization were associated with trauma-related symptomatology, particularly symptoms meeting criteria for PTSD, among juvenile offenders. The closest profile obtained in the current study that relates to the one found in Perkins, Calhoun, and Glaser (2014) is the one associated with measuring trauma-related anxiety. This profile resembles the one found in the previously mentioned prior research; however, it also encompasses characteristics related to the Atypicality scale (which measures odd or bizarre behaviors) on the BASC-2.

In addition, a small subset of research indicates that detained juvenile offenders experience more emotional and behavioral problems than those placed in the community, as well as more victimization than their non-detained peers (Lyons, Royce, Baerger, Quigley, Erlich, & Griffin, 2001; Abram et al., 2004; Grisso, Vincent, & Seagrave, 2005. As a result, the secondary purpose of this study was to evaluate trauma symptomatology and socio-emotional concerns indicative of maladaptive mental health among detained and community juveniles offenders. Notably, the findings in this study were inconsistent with prior research. Specifically, this study did not identify significant differences in adjudicated youth's endorsement of trauma-related symptomatology. Further, the results of this study indicated that community juvenile offenders actually reported more emotional and behavioral problems

than detained juvenile offenders, including greater discontent with school, more dislike or concern for teachers, and a higher external locus of control.

The aforementioned results, found to be inconsistent with prior research, may have been obtained for a number of reasons. First, as previously mentioned, previous literature suggests that detained youth experience more victimization than their non-detained peers. Additional research also indicates that youth with increased or more severe victimization are more likely to underreport trauma reactions (Dembo, Schmeidler, & Childs, 2007; Wolpaw, Ford, Newman, Davis, & Briere, 2005). Given this information, it is not surprising, then, why detained juvenile offenders in this study may have endorsed less problematic socio-emotional functioning. A second explanation for these findings could be due to detained youth failing to interpret prior instances of trauma as just that – trauma. Specifically, Kerig and Bennett (2013) suggested that some juvenile offenders may not interpret past instances of abuse or victimization as trauma because of the development of emotional numbing. As such, it is possible that detained youth experience greater emotional numbing than their non-detained peers. A final explanation as to why detained adjudicated youth may have endorsed less mental health concerns, and similar trauma reactions as juvenile offenders in the community may be due to the sample that was obtained for this study. In particular, African American youth encompassed the overwhelming majority (69.8%) of the sample that was used in this study. Further, the majority of the youth in detention centers that participated in this study identified as African American. Research indicates that African American juvenile offenders are less likely to report symptoms related to trauma and/or mental health disorders. Moreover, such youth are more likely to underreport being traumatized (Teplin, Abram, McClelland, & Dulcan, 2003; Abram et al., 2004; Kapp, Petr, Robbins, & Choi, 2013).

Clinical Implications

As previously stated, juvenile offenders endure traumatic experiences at an astounding rate in comparison to non-adjudicated youth. Further, available literature demonstrates a link between traumatic experiences and juvenile delinquency. Although the link between trauma and juvenile delinquency has been established, assessing trauma in adjudicated youth has been difficult due to underreporting issues, as well as the lack of tools that are used with this population to evaluate a broad range of trauma-related symptoms. With an instrument that can adequately address both the underreporting and scope of evaluation concerns, mental health professionals can identify juvenile offenders experiencing trauma reactions; and thus, provide more informed, effective intervention. Based on the results of this study, the clinical implications are plentiful.

This study adequately identified an instrument that bridges the underreporting and scope of evaluation gap, when it comes to assessing trauma symptomatology in adjudicated youth. The current study identified a popular clinical tool – primarily used to assess non-trauma related socio-emotional functioning – which could be used to effectively identify experienced trauma reactions among juvenile offenders. Although the BASC-2 has been shown to be clinically useful with adjudicated youth, it was not created to measure specific trauma symptomatology (Reynolds & Kamphaus, 2004). However, given the rate at which juvenile offenders experience trauma, accurate assessment is needed in order to guide clinical interventions appropriately (Perkins, Calhoun, & Glaser, 2014).

Six, distinct BASC-2 profiles were identified in this study that are indicative of the presence of trauma-related symptomatology among adjudicated youth. By examining juvenile offenders' BASC-2 clinical profiles, clinicians may be alerted to youth who are

experiencing specific trauma symptoms. For instance, elevations on the Atypicality and Locus of Control clinical subscales may provide information to mental health professionals that the child or adolescent with whom he/she is working, may be experiencing trauma reactions related to sexual abuse. Such information is conveyed to clinical providers without explicitly requiring the report of the child or adolescent. This way of determining juvenile offenders who are experiencing trauma-related reactions assuages underreporting problems.

Further, by knowing which adjudicated youth are experiencing increased trauma symptomatology, more effective treatment approaches may be implemented, such as Trauma Focused Cognitive-Behavioral Therapy (TF-CBT) or Cognitive Processing Therapy (CPT) (Resick & Schnicke, 1992; Cohen & Mannarino, 2008). Moreover, clinicians may better understand the types of traumatic experiences that may have led to a specific juvenile offender's involvement with the legal system, allowing for a better understanding of barriers to rehabilitation, as well as advocacy for appropriate prevention measures. For instance, Smith, Swenson, Hanson, and Saunders (1994) found that elevated posttraumatic stress, dissociation, and anxiety scales on the TSCC were associated with trauma related to perceptions of life threat. As a result, clinicians observing elevated BASC-2 clinical scales that are predictive of posttraumatic stress, dissociation, or anxiety symptoms, such as Sense of Inadequacy, Hyperactivity, Atypicality, and Social Stress; Social Stress, Attention Problems, and Hyperactivity; and Atypicality, Social Stress, Anxiety, and Somatization, respectively, may be indicative of trauma experiences associated with death or dying. Recognition of the types of experiences that juvenile offenders have endured may increase empathy and compassion, and subsequently, treatment outcomes.

Further, delinquent behavior has been shown to be the related to traumatic experiences and the subsequent mental health difficulties resulting from such experiences (Norwood, Ursano, & Fullerton, 2000). Not receiving appropriate treatment for mental health difficulties related to such trauma may lead to ongoing delinquent behavior, or recidivism (Becker & Kerig, 2011). Thus, in this case, if mental health professionals appropriately understand, diagnose, and implement effective treatment interventions (i.e. TF-CBT and CPT) for juvenile offenders experiencing mental health concerns, including trauma reactions, it is possible that recidivism rates could decrease.

Recommendations for Future Research

This study highlights the need to accurately assess trauma symptomatology among juvenile offenders. Fortunately, this study lends a hand to the literature in accomplishing this need. That said, there were several limitations in this study that future research should address. First, this study relied on self-report, which can be unreliable at times. Future research should utilize multiple informants and collateral information to determine the presence of trauma symptoms among juvenile offenders. Also, although the sample size in this study was adequate in obtaining statistical results, a larger, more diverse sample would likely improve generalizability and effect sizes. In particular, the sample that was used only contained juvenile offenders in one geographic location, decreasing external validity. Further, this study did not find significant differences in the presence of trauma symptoms between detained and community youth. By contrast, this study found that non-detained juvenile offenders endorsed more problematic emotional and behavioral functioning than their detained peers, contrarily to results obtained in prior research. As a result, future research including a larger sample, with greater racial diversity should be conducted in order

to determine if there are statistical differences between detained and community juvenile offenders' endorsement of maladaptive trauma reactions and overall socio-emotional functioning. Finally, given the difference in the presence of trauma reactions and other mental health disorders in the juvenile offender population (i.e. by gender and age), future research should address understanding how the BASC-2 clinical scales indicative of trauma differ for male and female, as well as younger and older adjudicated youth (Teplin, Abram, McClelland, & Dulcan, 2003; Kapp, Petr, Robbins, & Choi, 2013).

Conclusion

Nearly all of the BASC-2 clinical scales were representative of trauma-related symptomatology when combined with other BASC-2 clinical scales. This is exciting information as it indicates that the BASC-2 is likely a good measure of assessing trauma-related symptomatology in the juvenile offender population. Moreover, the results of this study are important because they provide six distinct profiles on the BASC-2 that indicate the presence of trauma reactions in juvenile offenders. This study effectively extended previous research by Perkins, Calhoun, and Glaser (2014), where one primary profile, consisting of Anxiety, Social Stress, and Somatization was indicative of trauma. Further, this study showed that juvenile offenders experiencing varying symptoms of trauma, not just those associated with PTSD, have different distinct elevations on the BASC-2 clinical profiles. As a result, the primary goal of this study was accomplished. This research will allow clinicians to examine a broader scope of trauma-related symptomatology that juvenile offenders might be experiencing, but fail to report. Such examination may lead to more effective, informed treatment and prevention measures.

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