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THE OCCURRENCE OF MALTREATMENT AND DEPRESSION AMONG

ADJUDICATED ADOLESCENT SEXUAL OFFENDERS WITH HIGH

FUNCTIONING AUTISM OR ASPERGER'S DISORDER

A Dissertation

Submitted to the School of Education

Department of Counseling, Psychology, and Special Education

Duquesne University

In partial fulfillment of the requirements for

the degree of Doctor of Philosophy

By

Jessica Bleil Walters

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DUQUESNE UNIVERSITY

SCHOOL OF EDUCATION

Department of Counseling, Psychology, and Special Education

Dissertation

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Presented by:

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THE OCCURRENCE OF MALTREATMENT AND DEPRESSION AMONG
ADJUDICATED ADOLESCENT SEXUAL OFFENDERS WITH HIGH
FUNCTIONING AUTISM OR ASPERGER'S DISORDER

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ABSTRACT

THE OCCURRENCE OF MALTREATMENT AND DEPRESSION AMONG

ADJUDICATED ADOLESCENT SEXUAL OFFENDERS WITH HIGH

FUNCTIONING AUTISM OR ASPERGER'S DISORDER

By

Jessica Bleil Walters

December 2009

Dissertation supervised by Tammy Hughes, Ph.D.

The following study examined the presence and severity of abuse and/or neglect
and the occurrence of depressive symptomatology among adolescents with High
Functioning Autism (HFA) or Asperger's Disorder (AD) compared to adolescents
without HFA/AD who are adjudicated delinquent due to sexual offense and attend a State
Residential Sexual Offender Program. The scores of 23 adolescent sexual offenders
diagnosed with either HFA or AD were compared to 15 non-HFA/AD adolescent sexual
offenders on the Childhood Trauma Questionnaire (CTQ) as well as the Beck Depression
Inventory – Second Edition (BDI-II). An investigation of whether there is a relationship
between the severity of abuse and depressive symptomatology among adolescent sexual
offenders with HFA/AD was also conducted. Results of the present study reveal that in
regard to the occurrence of maltreatment, there are no statistically significant differences

between the two groups on any scale of the CTQ. In regard to the occurrence of depressive symptomatology, adolescent sexual offenders with HFA/AD experience statistically significantly more depressive symptomatology than non-HFA/AD adjudicated adolescent sexual offenders. Findings also reveal that adolescent adjudicated sexual offenders with HFA/AD who experience severe levels of emotional abuse and/or emotional neglect are more likely to also have high rates of depressive symptomatology. Overall, abuse and/or neglect as well as depressive symptomatology appear to be present among many adolescent sexual offenders with HFA/AD. These findings have a number of implications for treatment. Particularly, treatment programs housing adolescent sexual offenders with HFA/AD need to identify the occurrence of childhood maltreatment and depression, and create modified treatments to match the unique needs of this population.

DEDICATION

       This document is dedicated to my late father, Walter G. Bleil, who encouraged me to pursue my doctorate despite the challenges I would face. This document is also dedicated to my husband, Robert H. Walters, who stood by side and provided constant encouragement throughout my academic career.

ACKNOWLEDGEMENT

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CHAPTER I

INTRODUCTION

Studies of children who are sexually abused indicate that 23% to 26% of reported forcible rapes and molestations in the United States are committed by male adolescent sexual offenders (Allard-Dansereau, Haley, Hamane, & Bernard-Bonin, 1997; Burton et al., 2002; Snyder & Sickmund, 2006). Understanding the risk factors for adolescent sexual offending has been a high priority for The Center for Sex Offender Management, among other government programs, which has been focusing on both preventing victimization and treating sexual offenders. Emerging research suggests there may be an unrecognized presence of Autism Spectrum Disorders (ASD) among adolescent sexual offenders (Griffiths, Quinsey, & Hingsburger, 1989; Sutton et al., under review). In fact, psychiatric treatment facility rosters and some case studies have highlighted the concern that higher functioning individuals with ASD are being adjudicated delinquent and entering treatment programs for sexual offenses (Fujikawa & Mutura, 2002; Haracopos & Pederson, 1999; Haskins & Silva, 2006; Howlin, 2000; Murrie et al., 2002).

Although there are some notable differences between adolescent sexual offenders with and without ASD, many in both groups share at least one common characteristic: a history of childhood maltreatment. For example, Ryan et al. (1996) found that among 1,600 juvenile sexual offenders, physical abuse was noted in 41.8% of cases, sexual abuse was reported in 39.1% of cases, and 25.9% of the sample had a history of neglect. Similarly, recent findings suggest that sexual offenders classified as having High Functioning Autism and Asperger's Disorder (HFA/AD) also have a significant history of childhood maltreatment (Sutton, Hughes, Bleil, & Lehman, n.d.). Specifically, these

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researchers found that 28% of adolescent sexual offenders with HFA/AD in their study reported a moderate to extreme history of emotional abuse, 40% reported a moderate to extreme history of physical abuse, and 56% reported a moderate to extreme history of sexual abuse.

A number of negative outcomes of childhood maltreatment have been reported. For instance, depression has been identified as the most common effect of child sexual abuse in non-disabled populations (Briere & Runtz, 1991; Browne & Finkelhor, 1986; Mash & Barkley, 1996). High rates of depression have also been found in juvenile sexual offenders (without ASD) who have a childhood history of abuse and/or neglect (Becker, Kaplan, Tenke, & Tartaglini, 1991). However, there are limited studies that examine the presence of depressive symptomatology among children and adolescents with ASD who are victims of abuse and/or neglect. Moreover, there are no studies at the time of this writing that examine the occurrence of maltreatment and depression among adolescents adjudicated for sexual offenses who also meet the criteria for an ASD.

<center>Significance of the Problem</center>

The overall number of violent and nonviolent adolescent sexual offenders has increased over the last decade (Jonson-Reid & Way, 2001; Synder & Sickmund, 1995). As a result, researchers have begun to investigate the likelihood that some of these offenders have unidentified disabilities, such as ASD (Sutton et al., under review). Some researchers speculate that there may be more individuals with higher functioning ASD in secure settings than previously realized (Scragg & Shah, 1994; Vermeiren, 2006). This is largely due to results from research suggesting that social deficits experienced by individuals with ASD may lead them to be more susceptible to the demonstration of

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unacceptable sexual behaviors (Realmuto & Ruble, 1999; Sutton et al., under review). In addition, much like other adolescent sexual offenders, those with HFA/AD have been found to have a significant history of childhood maltreatment (Sutton et al., n.d.). Thus, it is reasonable to hypothesize that individuals with HFA/AD may also experience similar psychopathology, such as depression, found among (non-ASD) adolescent sexual offenders who have experienced abuse and/or neglect (Becker et al., 1991).

Identifying the presence of depression and a childhood history of maltreatment among adolescent sexual offenders with ASD has important implications for treatment. Traditionally, treatment programs have been somewhat generic in their programming, with interventions designed to focus only on sexual offending behaviors (Veneziano & Veneziano, 2002). However, due to the heterogeneity of juvenile sexual offenders, many researchers argue the need for programs that target the specific problems of individual offenders (Cashwell, 1997; O'Callaghan, 2006; Sutton et al., under review; Sutton et al., n.d.; Veneziano & Veneziano, 2002). For instance, some sexual offenders, such as those with ASD, may benefit from social skills training (Murrie at al., 2002; Sutton et al., under review), sex education (Konstantareas, & Lunsky 1997; Realmuto, & Ruble, 1999; Stokes, & Kaur, 2005), and empathy training (Ray, Marks, Bray-Garretson, 2004). Furthermore, adolescent sexual offenders with ASD who also have a history of childhood maltreatment and depression may need additional treatment, such as cognitive behavioral therapy, to alleviate depressive symptomatology and address unresolved issues related to past abuse and/or neglect (Sutton et al., n.d.). By matching the individual treatment needs of this group, treatment success will likely be increased (Shirk & Russell, 1996).

Theoretical Basis for the Study

Some researchers theorize that children and adolescents with ASD may be at greater risk for juvenile sexual offending due to impairments in the acquisition of sexual knowledge and development (Griffiths, Quinsey, & Hingsburger, 1989; Price, 2003; Sutton et al., under review). These deficits likely contribute to a lack of sexual knowledge (Konstantareas, & Lunsky 1997; Realmuto, & Ruble, 1999; Stokes, & Kaur, 2005) and possibly unacceptable or deviant sexual behaviors (Bleiberg, 2001; Newport, & Newport, 2002; Price, 2003; Realmuto, & Ruble, 1999; Stokes, & Kaur, 2005). Specifically, four areas have been identified as placing individuals with developmental and intellectual disabilities at higher risk for sexual offending. These include: 1) impulsivity and poor judgment, 2) aggression and acting out, 3) poor interpersonal skills, and 4) poor coping skills and self-esteem (Stinson et al., 2008).

Similarly, poor emotional regulation in adolescents with ASD may lead to the improper management of sexual arousal. Specifically, Bolton (2006) argues that it is the combination of the individual's inability to properly regulate emotions, improper management of sexual arousal, and difficulties in social interaction that results in sexual behavior and sexual relationship difficulties. Day (1994) contends that individuals with intellectual and developmental disabilities commit sexually inappropriate acts because they are making crude or imitative attempts at what they perceive as normal sexual interests. That is, because of their intellectual deficits, individuals with intellectual and developmental disabilities may not fully understand sexuality or be aware of the purpose of sexual behavior and, therefore, their attempts may fall short of what is considered normal or appropriate sexual behavior.

In addition, children and adolescents with disabilities may be at greater risk for experiencing negative outcomes of childhood maltreatment. Sobsey's (1994) integrated ecological model of abuse proposes that individuals with disabilities may experience more devastating effects of childhood abuse and neglect because of coping deficits that result from the disability (Gorman-Smith, & Matson, 1992; Mansell & Sobsey, 1996; Sobsey, 1994). Mansell and Sobsey (1996) contend that individuals with developmental disabilities have greater coping difficulties due to problems related to communication, self-esteem, problem-solving, relationship skills, limited sexual knowledge, lack of normal social sexual experiences, and susceptibility to developing psychological problems. Additionally, they note that children with developmental disabilities are less likely to possess protective factors that could potentially lessen the effects of abuse, which may contribute to worse outcomes and greater expression of symptomatology.

Some researchers have also found that children and adolescents with higher functioning ASD are at a greater risk for experiencing mood and anxiety disorders than the general population (Kim et al., 2000). There is emerging evidence that depression is the most common psychiatric disorder that occurs in individuals with ASD (Ghaziuddin, Ghaziuddin, & Greden, 2002). However, the correlates and risk factors of these comorbid problems remain largely unclear. Since depression has been the most commonly reported effect of child sexual abuse in non-disabled populations (Briere & Runtz, 1991; Browne & Finkelhor, 1986; Mash & Barkley, 1996), it is possible that a history of maltreatment may also be a risk factor in the development of depressive symptomatology among individuals with ASD and, because of the deficits related to their disability, they may have poorer outcomes. For instance, Mansell, Sobsey, and Moskal (1998) found that

sexually abused children with global developmental disabilities (i.e., intellectual

disabilities, autism, or fetal alcohol syndrome) reported more withdrawn behaviors,

hygiene issues, self-abuse, inappropriate sexual remarks or comments, inappropriate or

lack of sexual knowledge, and a poorer sense of personal safety than children without

developmental disabilities. Thus, there is both theoretical and initial empirical evidence

to suggest that individuals with ASD may be at greater risk for becoming a sexual

offender and, as a result of their deficits, may be susceptible to experiencing

psychopathology following the incidence of childhood maltreatment.

Synthesis of Relevant Literature

To date, there is limited examination of ASD characteristics reported in the sexual

offender literature. Sutton et al. (under review) found that 28 of 46 (or 61%) adjudicated

adolescent sexual offenders in a secure treatment facility presented with an ASD.

Specifically, these individuals were identified when using the diagnostic process outlined

by the *Pennsylvania Autism Assessment and Diagnosis Expert Work Group Supporting*

Quality Diagnostic Practices for Persons with Suspected Autism Spectrum Disorder

(Pennsylvania Department of Public Welfare, 2007), where symptoms of autism were

judged to be present only after confirmation by two or more data sources (e.g.,

developmental history, collateral data around past developmental functioning and

psychiatric symptoms, contact with parents, interviews with facility staff, and present

functional levels), and 100% agreement with quantitative scores on the Asperger's

Syndrome Diagnostic Scale (ASDS). Notably, these authors are the first to detail the

presence of ASD in a juvenile sexual offender program for youth. Further, they

hypothesized that the frequency of individuals with HFA/AD who are involved with

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juvenile and adult justice systems will likely increase, as the rate of ASD diagnoses continues to rise within the general population (Autism is now diagnosed 1 in every 150 births in the United States; CDC, 2007).

In regard to an abuse and neglect history, researchers have long suggested that many juvenile sexual offenders report previous maltreatment (Burton et al., 2002; Hanson & Slater, 1988; Mullen et al., 1996; Veneziano & Veneziano, 2002). However, research examining the incidence of maltreatment among sexually abusive individuals with ASD is limited. Some initial research suggests that adolescent sexual offenders with ASD may also have a significant history of childhood maltreatment. For example, Sutton et al. (n.d.) found that adolescents with HFA/AD and adjudicated for sexual offenses had abuse/neglect histories, as indicated by scores on the Childhood Trauma Questionnaire (CTQ). Specifically, 28% of the HFA/AD group reported a moderate to extreme history of emotional abuse, 40% reported a moderate to extreme history of physical abuse, and 56% reported a moderate to extreme history of sexual abuse. The results also suggested that adjudicated adolescent sex offenders with ASD experienced a more severe history of emotional ($t = -3.02$, $p < .05$) and physical abuse ($t = -2.04$, $p < .05$) than their non-HFA/AD counterparts.

Mandell et al. (2005b) evaluated the prevalence and correlates of abuse among children with a diagnosis of Autism or Asperger's Disorder in an outpatient mental health setting. When examining the bivariate associations between physical and sexual abuse, demographic characteristics, presenting problems, and psychosocial characteristics, Mandell et al. (2005b) found that children with ASD referred for mental health services were 10.8 times more likely to be sexually abusive towards others if they had a history of

physical abuse. Furthermore, the ASD group was 8.6 times more likely to present with sexual acting out or sexually assaultive behaviors if they had a history of sexual abuse. The authors hypothesized that this may be due to the existing social impairments that make individuals with ASD more vulnerable to replicating abusive sexual behaviors. They also argued for the importance of early identification of children with ASD, effective communication of sexuality and sexual development to this group, and early parent education to reduce the risk of being both a victim of abuse and/or a perpetrator of sexually inappropriate behaviors.

Research examining the effects of abuse and/or neglect among individuals with ASD is also limited. However, research suggests that depression is often comorbid in individuals with ASD (Ghaziuddin, Ghaziuddin, & Greden, 2002; Kim et al., 2000), and some have identified depressive symptomatology among individuals with a variety of disabilities, including those with ASD, who have a history of childhood maltreatment. For example, Mansell, Sobsey, and Moskal (1998), investigated the clinical symptoms of children with developmental disabilities who were sexually abused and found that individuals with developmental disabilities were significantly more withdrawn (a clinical symptom of depression) at school, work, and counseling than those without developmental disabilities. Another study examined the occurrence of maltreatment and various psychological symptoms in a group of psychiatrically hospitalized children (Ammerman et al., 1994). Twenty-two percent of the participants were identified as having an ASD. Results indicated that all participants reported mild depressive symptoms, but those with a severe history of maltreatment reported slightly more depressive symptoms.

Problem Statement

The purpose of this study then, is to identify the presence and severity of abuse and/or neglect and the occurrence of depressive symptomatology among adolescents with High Functioning Autism (HFA) or Asperger's Disorder (AD) as compared to adolescents without HFA/AD who are adjudicated delinquent due to sexual offense and attend a State Residential Sexual Offender Program. This study will also examine the relationship between childhood maltreatment and depression among adjudicated adolescent sexual offenders with HFA/AD. Analyses will explore whether there are significant differences between the extent of abuse, neglect, and depression scores between the two groups. Results will contribute to the developing literature base on sexual offending and ASD, and will begin to clarify the presence of abuse, neglect, and depressive symptomatology among adjudicated adolescents with and without a diagnosis of an Autism Spectrum Disorder.

Research Questions and Hypotheses

Research Question # 1: Do adjudicated adolescent sexual offenders with HFA/AD report a greater severity of specific types of abuse and/or neglect compared to non-HFA/AD adjudicated adolescent sexual offenders?

Hypothesis # 1: Adjudicated adolescent sexual offenders with HFA/AD will have a more severe history of childhood abuse and neglect than the non-HFA/AD group.

Research Question # 2: Do adjudicated adolescent sexual offenders with HFA/AD report a greater severity of depressive symptomatology than non-HFA/AD adjudicated adolescent sexual offenders?

Hypothesis # 2: Adjudicated adolescent sexual offenders with HFA/AD will have higher reported depression than the non-HFA/AD group.

Research Question # 3: Is there a relationship between the severities of childhood abuse (sexual, physical, emotional) and/or neglect (physical, emotional) and reported depressive symptomatology among adjudicated adolescent sexual offenders with HFA/AD?

Hypothesis # 3: The severity of abuse and/or neglect will be related to the occurrence of depressive symptomatology reported for both groups.

CHAPTER II

LITERATURE REVIEW

This chapter critically reviews the relevant literature regarding the incidence of

Autism Spectrum Disorders (ASD) among adolescent sexual offender populations, the

occurrence of abuse and/or neglect among adolescent sex offenders with and without

ASD, and subsequent depressive symptomatology, in both ASD and non-ASD

populations. Initial sections of this chapter will provide a brief historical background of

research on adolescent sexual offending and childhood maltreatment. An explanation of

theories developed to explain sexual offending among individuals with ASD, as well as

abuse/neglect outcome theories specific to children and adolescents with disabilities, such

as those with ASD, follows. The review concludes with a summary and critique of

existing literature that examines sexual offending, maltreatment, and subsequent

depression among individuals with ASD.

Brief History of Adolescent Sexual Offending Research

Sexual offenders were recognized as a unique group of individuals as early as the

19th century. Richard von Krafft-Ebing (1886/1965) published the first study detailing

case studies of pedophilia, bestiality, and sexual sadism, which sparked society's interest

in understanding the causes of these behaviors (Stinson, Sales, & Becker, 2008).

However, most of the research that followed focused on examining the adult sexual

offender. Adolescent sexual offenders received little attention in the research literature

until the 1980s (Davis, 1987; Veneziano et al., 2000).

Sexual offenses committed by adolescents were previously explained as normal

experimentation behaviors or developmental curiosity (Veneziano et al., 2000). However,

previous research examining adult sexual offenders revealed that about half of adult offenders reported their first sexual offenses were committed as adolescents, with offenses often increasing in frequency and severity over time (Becker & Abel, 1985). These early findings led to increased efforts to identify and treat adolescents who sexually abuse. These early studies also helped to distinguish this group as a distinct research population with unique characteristics (Hunter & Becker, 1994).

Research examining adolescent sexual offenders with ASD is just emerging. Although some studies have identified that individuals with disabilities may sexually offend against others (e.g., Lindsay et al., 2001; Thompson & Brown, 1997), it is unclear if any of those sexual offenders have an ASD diagnosis. This is largely because subjects within the sexual offending literature are typically categorized as having an "intellectual" or "developmental disability," rather than a specific disability such as ASD. In addition, these groups are sometimes subdivided into categories associated with IQ (e.g., borderline, mild, moderate), making it even more difficult to determine the incidence of ASD since there is variability in the IQ scores of individuals with ASD. Thus, research investigating the specific characteristics of adolescent sexual offenders with ASD is novel within the sex offending literature, and more studies are needed in order to distinguish this group from other adolescent sexual offenders.

Brief History of Sexual Offending and Child Maltreatment Research

As research on adolescent sexual offenders became more prevalent, researchers began to conclude that this population is a heterogeneous group with diverse characteristics and treatment needs (Becker, Kaplan, & Tenke, 1992; Hunter & Becker, 1994). However, despite these differences, numerous studies since the early 1990s have

found that history of childhood maltreatment is often present among juvenile sexual offenders (Burton, 2003; Burton et al., 2002; DiCenso, 1992; Garland & Dougher, 1990; Lee et al., 2002; Ryan et al., 1996; Veneziano et al., 2000). The relationship between childhood victimization and adolescent sexual offending is complex, and it is currently unknown why some victimized males later perpetrate (Veneziano et al., 2000). There is, however, general acceptance that an abuse/abuser cycle exists (Burton et al., 2002; Freeman-Longo, 1986; Hilton, 1993; Veneziano et al., 2000; Worling, 1995). Current literature is exploring the mechanisms that may contribute to this cycle (Burton, 2003; Burton et al., 2002; Veneziano et al., 2000). Many attempt to uncover reasons for subsequent offending by examining the characteristics of the abuse experience. Common characteristics evaluated in the research include duration of abuse, type of abuse, relationship of perpetrator, gender of perpetrator, age of onset, modus operandi, and type of sexual act (Burton, 2003; Burton et al., 2002; Garland & Dougher, 1990; Groth, 1978; McFarlane, 1978; Salter et al., 2003; Veneziano et al., 2000). Results of studies examining these characteristics are variable, and researchers report multiple methodological problems that make it difficult to study this population (Burton et al., 2002; Hanson & Slater, 1988).

Very few studies have examined the occurrence or effects of abuse and neglect specific to children and adolescents with ASD (Mandell et al., 2005a; Mandell et al., 2005b; Sutton et al., n.d.). Previously, much like the sexual offending literature, researchers examining childhood maltreatment grouped individuals with ASD under the general heading of "developmental disabilities" making it difficult to determine the unique characteristics of the ASD group as compared to those with other disabilities, such

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as learning disabilities or mental retardation. Furthermore, some researchers argue that the validity of abuse allegations, especially by youth with limited verbal skills (e.g., some of those with low functioning ASD), is questionable. Specifically, researchers note an ASD individual's inability to communicate independently, as well as limited understanding of the concept of "abuse," (Jones, 1994; Konstantareas, 1999) that may affect the validity of abuse allegations. Thus, communication deficits and difficulties with understanding, at times, the abstract concept of abuse also make it difficult to determine the occurrence or the effects of abuse and neglect among individuals with ASD.

Etiological Theories of Sexual Offending Among Individuals with ASD

Deficits associated with intellectual or developmental disabilities have been implicated as risk factors for sexual offending behavior. There have been two major theories that link intellectual and developmental disabilities to sexual offending (Stinson et al., 2008). The first theory emphasizes the role that mental age and skill level of the offender and the victims play in sexual offending. The second theory focuses on the significant impairments associated with intellectual and developmental disabilities, and how they contribute to sexual offending. The following section outlines these two theories.

The first theory postulates that the actual mental age and skill level of the offender cause them to commit sexual offenses. Day (1994) argues that adults with intellectual disabilities commit sexually inappropriate acts because they are making crude or imitative attempts at what they perceive as normal sexual interests. That is, because of their intellectual deficits, they may not fully understand sexuality or be aware of the

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purpose of sexual behavior and, therefore, their attempts may fall short of what is considered normal or appropriate sexual behavior.

In addition, researchers hypothesize that offenders who have intellectual disabilities may be overrepresented in sex offender populations because the offenders have the same mental age of the victims (O'Callaghan, 1998). Specifically, an adult who is mentally disabled may think in the same terms as a young child, but still have the sexual urges of an adult. As a result, the individual might relate better conceptually with small children than those their own age, and often associate with the very young. Also, because of lack of understanding regarding sexuality, the individual may act out his/her sexual urges on children (Schillings & Schinke, 1989).

However, researchers have found that this theory does not adequately explain the link between sexual offending and individuals with developmental disabilities (Stinson et al., 2008), possibly because many individuals with developmental disabilities are not mentally disabled, including those with High Functioning Autism and Asperger's Disorder (HFA/AD). Furthermore, researchers argue that the concept of mental age does not accurately represent the interpersonal or social functioning of individuals with intellectual disabilities (National Clearinghouse on Family Violence, 1998).

Researchers have also postulated that individuals with developmental and intellectual disabilities often show a number of impairments that put them at risk for becoming sexual offenders. Specifically, researchers have identified four significant deficits: 1) impulsivity and poor judgment, 2) aggression and acting out, 3) poor interpersonal skills, and 4) poor coping skills and self-esteem (Stinson et al., 2008).

Researchers conclude that the presence of these various deficits make individuals with developmental and intellectual disabilities more likely to sexually offend.

This theory is consistent with emerging research suggesting that various deficits may make individuals with ASD more susceptible to the demonstration of unacceptable sexual behaviors (Realmuto & Ruble, 1999). Specifically, researchers have found that many problems that individuals with ASD typically experience (e.g., learning social behaviors in unstructured settings, recognizing subtle affective cues, proficient communication skills, and perspective-taking ability) may significantly impede the acquisition of sexual knowledge and development (Griffiths, Quinsey, & Hingsburger, 1989; Price, 2003). In addition, poor emotion regulation in adolescents and adults with ASD may lead to the improper management of sexual arousal, also resulting in sexual behavior and sexual relationship difficulties (Bolton, 2006).

Theories of Maltreatment and Subsequent Juvenile Offending

Research suggests that sexually abused males may be more likely to sexually offend in adolescence than their non-abused counterparts, with some viewing abusive behavior as a recapitulation of the victim's own abuse (Burton, 2003; Veneziano et al., 2000). Researchers have referred to this phenomenon as the abuse/abuser cycle (Burton, 2003; Burton et al., 2002; DiCenso, 1992; Garland & Dougher, 1990; Lee et al., 2002; Ryan et al., 1996; Veneziano et al., 2000). Several theoretical formulations exist to explain the abuse/abuser cycle; as stated previously, there is currently no unified theory to explain the etiology of sexual offending. Social learning theory (SLT) has been most commonly used to explain the abuse/abuser cycle in the literature for the last 20 years, but its applicability has only recently begun to be tested in the literature. Most of the

research to date in support of SLT has examined specific characteristics of the abuse experience, such as multiple perpetrators, longer duration, coercion or force, a previously established relationship with the perpetrator, and age at the time of abuse (Burton et al., 2002; Burton et al., 2000; Stinson, Sales, & Becker, 2008).

Social Learning Theory

Within the context of sexual abuse, social learning theorists suggest that sexual behavior in an adult-child relationship is learned and reinforced (Hanson & Slater, 1988). Bandura and Walters (1963) stated that "deviant sexual responses appeared to sometimes be the result of parental encouragement and reinforcement of inappropriate sexual behaviors" (p.154). Ryan et al. (1987) proposed that the high incidence of child victimization is the result of a reactive, conditioned, and/or learned behavior pattern, and that a progression of sexual acts reflects a reinforcing pattern in the development and perpetration of sexually abusive behaviors.

SLT focuses on learning that occurs within a social context. It considers that people learn from one another, and includes such concepts as observational learning, imitation, and modeling. According to social learning theorists, cognition also plays a role in learning. Awareness and expectations of future reinforcement or punishment can have a major effect on the behaviors that people exhibit.

SLT theorists also argue that the environment itself can be reinforcing or punishing. People are often reinforced for modeling the behavior of others. Bandura suggested that the environment reinforces modeling, with this interaction occurring in several possible ways. One possible way is that the observer will be reinforced by the model. For instance, imitative sexual behavior will occur if children are given the

opportunity to witness adult sex responses (Bandura, 1963). According to Bandura (1986), when sexual behaviors that are inappropriate for the child's age are modeled and paired with positive reinforcement, the child may learn to regard these behaviors as appropriate, normal, and worthwhile. These perceived awards can be physiological, social, or psychological. Garland and Dougher (1990) also suggested a child may learn through observation that adults can sexually interact with children, and experience rewarding consequences as a result of such interactions.

Another way that the observer can be reinforced by an indirect person (e.g., actors on television) and the observer is modeling the actions of someone else. This is known as vicarious learning. Bandura (1973, 1977) claimed that the strength of observational learning depends on the "functional determinants" (i.e., rewards and punishments) received by the model, and the viewer's evaluation of the probability that the same reinforcement for performing a similar action would be attained. Bandura (1977) argued that this type of learning can sometimes be more influential than direct learning because the outcomes are unambiguous and depicted in a short, compact manner without distraction or intervening encounters.

Social learning theorists also argue that the mass media can serve as a vicarious source of reinforcement for learning appropriate and inappropriate sexual behaviors. Particularly, pornography can serve as a source of information about the legitimacy of various forms of sexual behavior and the responses of other parties (Allen et al., 1995). Research has shown that negative sexual effects are correlated with positive portrayals of sexual coercion in pornography (Bauserman, 1996), although it is important to note that not all individuals will be affected in the same way through observational learning.

Bauserman (1996) suggested that the role of pornography in the development of sex offenders may be influenced by other variables such as restrictive sexual environments, negative family attitudes toward sex, antisocial peer and family role models, and physical or sexual abuse.

Imitated behavior can also lead to reinforcing consequences. Imitation in young children is a mechanism through which many new behaviors may be acquired and maintained throughout adulthood (Fenstermacher & Saudino, 2006). Recent research suggests that learning through imitation plays an important role in cognitive development and may be more efficient than other learning mechanisms, such as learning through trial and error or independent problem solving (Fenstermacher & Saudino, 2006). Many behaviors learned through imitation can produce satisfying or reinforcing results. Research has shown that children receiving positive reinforcement for imitation consistently display moral judgments similar to those they see modeled by an adult (Bandura & McDonald, 1963). A distinction exists between an observer's "acquisition" of a behavior and "performance" of a behavior. Through observation, the observer can acquire behavior without performing it. The observer may then later, in situations where there is an incentive to do so, display the behavior.

In order for imitation to occur effectively Bandura proposes four needed conditions (Ormrod, 1999). First, the person must pay attention to the model. This process is influenced by characteristics of the model, such as how much one likes or identifies with the model, and by characteristics of the observer, such as the observer's expectations or level of emotional arousal. Then, the observer must be able to remember the behavior that has been observed. One way of increasing memory capacity is using the

technique of rehearsal. Next, the person must have the ability to replicate the behavior

that the model has just demonstrated. This means that the observer has to be able to

replicate the action, which could be a problem with a learner who is not ready

developmentally to replicate the action. The final necessary condition for imitation to

occur is motivation. Learners must want to demonstrate what they have learned.

Reinforcement can often motivate one to replicate the behavior of another. However,

since these four conditions vary among individuals, different people will reproduce the

same behavior differently.

These conditions can be directly applied within an abuse/abuser cycle context. For

instance, children who are relationally close to a perpetrator will be more likely to attend

to and learn from their abuser. Moreover, if the abuse occurs repeatedly for an extended

period of time, learning is more likely to occur (Burton et al., 2002). Subsequent abuse

may also be more likely to occur in adolescence as opposed to early childhood due to

developmental readiness, as stated in the third condition. Lastly, it is likely that many

offenders are motivated to replicate the sexual behavior of their perpetrators in order to

obtain a reward, such as sexual pleasure or fulfillment of their own sexual fantasies

involving identifying with their perpetrator.

Despite the evidence suggesting that STL plays a role in the development of

deviant sexual behaviors, many researchers argue that the theory does not adequately

explain why so many individuals who are sexually abused refrain from abusing others as

adolescents or adults if modeling does, in fact, have such a great impact on human

behavior (Stinson, Sales, & Becker, 2008). Thus, researchers caution that the focus of

research should remain on the particular offender and how one's own abuse experience was interpreted or perceived.

Theories Related to Child Maltreatment among Individuals with Disabilities and Subsequent Psychopathology

Many researchers recognize that a child's development is sequential and that problems during one developmental period may lay the groundwork for subsequent difficulties (Cicchetti et al., 1988). Disruptions, such as maltreatment, that occur during critical periods of development are likely to upset the normal developmental trajectory, often resulting in emotional or behavioral problems (Mash & Barkley, 1996). This is because disruption at one stage leads to a greater probability of failure at a subsequent stage of development. For example, Alexander (1992) proposed a developmental view that centers on the relational context of sexual abuse. He argued that the development of insecure attachment to at least one caretaker as a result of sexual abuse lead to long-term difficulties in the formation of secure relationships because of disruption at the early stages of relationship development.

A more recent developmental psychopathology model of sexual abuse, proposed by Spaccarelli (1994), also emphasizes the reciprocal nature of interactions between child characteristics, specifically coping styles, and the environment. Spaccarelli argued that individual differences in a child's response to abuse may mediate the development of symptomatology associated with the abuse. That is, negative cognitive appraisal (e.g., self-blame) and maladaptive coping styles (e.g., wishful thinking, cognitive avoidance) are predictive of poorer mental health outcomes. In this particular model, social support acts as a buffer of the negative effects of abuse. Additionally, Spaccarelli noted that other

individual factors, such as intelligence and a child's age, can influence the effects of the abuse and should be considered when trying to predict maltreatment outcomes.

Researchers postulate that the presence of a disability may directly influence the effects of childhood maltreatment and may be related to poorer psychological outcomes. In his integrated ecological model, Sobsey (1994) argues that individuals with disabilities have some characteristics that make them more vulnerable to becoming a victim of maltreatment. Such characteristics include impaired physical defenses, communication deficits, learned helplessness, learned compliance, undeveloped sense of personal space, and dependency.

Researchers also theorize that individuals with disabilities may experience more devastating effects of childhood abuse and neglect because of coping deficits that result from the disability (Sobsey & Mansell, 1997). Sobsey and Mansell (1997) argue that individuals with developmental disabilities have greater coping difficulties due to problems related to communication, self-esteem, problem-solving, and relationship skills; limited sexual knowledge; lack of normal social sexual experiences; and susceptibility to developing psychological problems. Additionally, Mansell and Sobsey (1996) noted that children with developmental disabilities are less likely to possess protective factors that could potentially lessen the effects of abuse, which may create worse outcomes and greater symptomatology.

Some researchers have found that children and adolescents with higher functioning ASD are at a greater risk for experiencing mood and anxiety disorders than the general population (Kim et al., 2000). There is also emerging evidence that depression is the most common psychiatric disorder that occurs in individuals with ASD

(Ghaziuddin, Ghaziuddin, & Greden, 2002). However, the correlates and risk factors for these comorbid problems remain largely unclear. Since depression has been the most commonly reported effect of child sexual abuse in non-disabled populations (Briere & Runtz, 1991; Browne & Finkelhor, 1986; Mash & Barkley, 1996), it is possible that a history of maltreatment may also be a risk factor in the development of depressive symptomatology among individuals with ASD. Because of the deficits related to their disability, those with ASD may have poorer outcomes.

For instance, Mansell, Sobsey, and Moskal (1998) found that sexually abused children with global developmental disabilities (i.e., intellectual disabilities, autism, or fetal alcohol syndrome) reported more withdrawn behaviors, hygiene issues, self-abuse, inappropriate sexual remarks or comments, inappropriate or lack of sexual knowledge, and a poorer sense of personal safety than children without developmental disabilities. Thus, there is both theoretical and empirical evidence to suggest that individuals with ASD are at a greater risk for experiencing childhood abuse and neglect than those without. Negative outcomes will likely be more severe due to the presence of the disability as well.

<div align="center">Definitions</div>

Childhood Abuse and Neglect

A variety of definitions have been developed to explain childhood abuse and neglect. These definitions often vary by state and are dictated by government agencies such as The National Center on Child Abuse and Neglect. This study will utilize definitions used to create the content areas of the Childhood Trauma Questionnaire

(CTQ; Bernstein & Fink, 1998), which were developed from the childhood trauma literature.

Emotional Abuse refers to verbal assaults on a child's sense of worth or well-being, or any humiliating, demeaning, or threatening behavior directed toward a child by an older person.

Physical Abuse is defined as bodily assaults on a child by an older person that poses a risk of, or results in, injury.

Sexual Abuse refers to sexual contact or conduct between a child and older person. The authors of the CTQ note that explicit coercion is a frequent, but not essential, feature of these experiences.

Emotional Neglect refers to the failure of a caretaker to provide a child's basic psychological and emotional needs, such as love, encouragement, belonging, and support.

Physical Neglect is defined as the failure of caregivers to provide a child's basic physical needs, including food, shelter, safety, supervision, and health.

Depression

In this study, depression is defined according to the Beck Depression Inventory-Second Edition (BDI-II), which is derived from the diagnostic criteria for Major Depressive Disorder as outlined in the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV-TR*). This includes both cognitive and emotional symptoms of depression.

Adolescent Sexual Offending

In this study, adolescent sexual offender refers to males, ages 14 – 20 years, who are adjudicated delinquent and are ordered by Juvenile Court of Pennsylvania into an Adolescent Sexual Offenders Program.

Autism Spectrum Disorders

Autism Spectrum Disorders (ASD) is an umbrella term that captures the diagnosis of Autistic Disorder, including High Functioning Autism (HFA), Asperger's Disorder (AD), and Pervasive Developmental Disorder, Not Otherwise Specified. These terms have been applied unsystematically in the literature and may have been used differently over the years as new data became available. At present, the distinction between AD (AKA Asperger's Syndrome) and HFA is debatable (Kasari, & Rotheram-Fuller, 2005). For example, the primary difference between AD and HFA is early language delay. However, when comparing AD and HFA groups, language differences do not consistently distinguish them (Ghaziuddin & Mountain-Kimchi, 2004), leaving authors to conclude that older children with AD and children with HFA are more similar than different (Ghaziuddin & Mountain-Kimchi, 2004; Kasari & Rotheram-Fuller, 2005). To reconcile these definitional problems, this study uses the combined definition for AD and HFA, as defined in the *DSM-IV-TR* and ICD-10, for establishing diagnostic criteria for study participants.

High Functioning Autism/Asperger's Disorder

High Functioning Autism/Asperger's Disorder (HFA/AD) includes severe and sustained impairment in social interaction, including impairment in use and understanding of non-verbal behaviors, and in recognition of social cues; failure to

establish developmentally appropriate peer relationships; and an inability to share and/or show social and/or emotional reciprocity, along with the development of restricted, repetitive behaviors and interests. In contrast to typical Autism, individuals with HFA/AD may either not display significant delays in language or appear to catch up from early language delays. Further, these individuals, particularly those with AD, often have average to above average intelligence (American Psychiatric Association, 2000). A variety of co-occurring conditions such as motor clumsiness (Gillberg & Gillburg, 1989), attention problems (e.g., ADHD), obsessions and compulsions (e.g., OCD and OCPD), tics and genetic abnormalities (Gillberg, & Billstedt, 2000; Leyfer, 2006) may also be present. Note that if current or past behaviors are consistent with Autism (particularly when there is a language delay), a diagnosis of AD is not given (Klinger, Dawson, & Renner, 2003; Volkmar, & Klin, 2005).

Literature on Sexual Offending Among Individuals with ASD

A number of studies exist that investigate the occurrence of sexual offending among individuals with disabilities. However, as stated previously, it is unknown how many of these studies included individuals with ASD. Some researchers caution that the methodologies of these studies are so different that it is difficult to draw conclusions (Lindsay, 2002). Lindsay argues that the inclusion categories and methods for determining disability are often different, as well as the sources of samples (e.g., hospitals, prisons, health service referrals). Despite these limitations, several researchers have reported relatively high rates of sexual offending among individuals with disabilities.

For instance, Gross (1985) reported that between 21% and 50% of offenders with intellectual disabilities had committed a sex crime. A more recent study indicated that offenders with disabilities were largely over represented in the criminal justice system (Holland et al., 2002). In addition, Blanchard et al. (1999) found that among 950 sexual offenders, those with intellectual disabilities were more likely to offend against younger children and male children.

Emerging research has found that data from a clinical interview and developmental history identified 28 of 46 (or 67%) adjudicated adolescent sexual offenders in a secure treatment facility as meeting the *DSM-IV-TR* criteria for HFA/AD (Sutton et al., under review). In addition, of the total participants in this study, 61% presented with an Asperger' Syndrome Diagnostic Scale (ASDS) score of 90 or greater, which suggests the presence (likely or very likely) of HFA/AD. The authors hypothesize that the frequency of individuals with HFA/AD who are involved with juvenile and adult justice systems will likely increase as the rate of ASD diagnoses continues to rise within the general population (Autism is now diagnosed 1 in every 150 births in the United States; CDC, 2007).

In addition, a small number of recent case studies have become available, documenting adolescents and adults with a HFA/AD diagnosis who have expressed inappropriate sexual behavior or who have committed sexual offenses. Inappropriate behaviors range from kissing strangers (Clements & Zarowska, 2000) and intruding upon others with whom they have become infatuated (Green, Gilchrist, Burton, & Cox, 2000; Howlin, 1997; Katz & Zemishlany, 2006) to masturbating under inappropriate circumstances (Ray, Marks, Bray-Garretson, 2004) or in public (Haracopos & Pendersen,

1992). Some of these individuals are reported to have become sexually violent (Fujikawa & Mutura, 2002; Kohn, Fahum, Ratzoni, & Apter, 1998; Murrie at al., 2002).

Consistent with theory of mind difficulties described in individuals with HFA/AD, some case studies highlight the role of delayed social functioning in the expression of inappropriate sexual behavior (Haskins & Silva, 2006). For example, Murrie et al. (2002) describe a 27-year-old individual diagnosed with Asperger's Syndrome whose sexual offense involved a teenage male. This 27-year-old reports a history of being exploited on multiple occasions during his reportedly sincere attempts at sexual contact (e.g., he reports engaging in sexual contact with dolls and other inanimate objects in front of a group of male and female neighbors, as he believed it would potentially result in actual sexual contact with the observers). Further, the 27-year-old reports retaliation (e.g., being burglarized and beaten) by individuals in whom he expressed a sexual interest, and was the victim of sexually-oriented neighborhood pranks on several occasions. He reports that after years of such activity, he allowed a homeless teenage boy to stay with him in exchange for sex. At some point in their arrangement, he declined to purchase the teen some material goods; the teenager promptly left, after stealing the young man's stereo. Unhappy about the theft, the individual with Asperger's Syndrome went to the police to report the crime. In doing so, he detailed the preceding events, for which he was arrested for the sexual assault of a minor. Murrie et al. (2002) concluded the man's lack of understanding of social situations and sexual naiveté likely made him vulnerable to mistreatment by others, and were ultimately contributors to his sexual crime.

Similarly, social misperception was highlighted by Sutton and Choutka (2007) in a report of a 12-year-old with a diagnosis of Autism who was adjudicated for a sexual offense. In this case, the boy was befriended by a small group of similarly aged peers. The 12-year-old reported that these were the first friendships that he was ever engaged in with peers his age. Reportedly, the group persuaded their new "friend" to join them in sexually assaulting another peer. This 12-year-old acknowledged that he was larger and stronger then the rest of the group, and the victim of the assault. He did not, however, recognize the harm of his actions until after he was arrested for the assault. These case studies are an important effort to document such events, yet only capture idiosyncratic behaviors and are limited in generalizability. Aggregating group data is important as researchers begin to determine the frequency of HFA/AD in a population of sexual offenders.

Literature on Childhood Maltreatment among Adolescent Sexual Offenders

There is an overwhelming amount of research to support that childhood maltreatment leads to a variety of negative outcomes including psychopathology, behavior problems, substance abuse, poor self-esteem, sexualized behavior, and interpersonal problems (Briere, 1988; Browne & Finkelhor, 1986; Kendall-Tackett et al., 1993; Lisak, 1994; Paolucci et al., 2001; Spaccarelli, 1994). Some research suggests that sexualized behavior is the most common consequence of childhood sexual abuse (Kendell-Tackett et al., 1993). For example, Freidrich et al. (1988) used the Child Behavior Checklist (CBCL) to compare the symptoms of sexually abused boys and boys diagnosed with conduct disorder or oppositional defiant disorder. There were significant score differences ($p < .01$) between the groups on Social Competence-Activities ($t = 6.4$),

Social Competence-Social ($t = 6.1$), Externalizing ($t = 8.4$), Aggressive ($t = 14.3$), and

Sex Problems ($t = 19.1$). The sexually abused group was significantly less externalizing

and aggressive, and significantly more sexualized and socially competent regarding both

peer relations and the number of activities they were involved in.

Tyler and Johnson (2006) found that childhood sexual abuse and physical abuse

predicted early sexual onset. Their sample contained 730 children and adolescents

(40.5% male). Thirty-nine percent of the males were physically abused and 14% were

sexually abused. The researchers used a path model to explain the effects of early abuse

and poor parenting on delinquency, running away, and early sexual onset. Standardized

path coefficients revealed that sexual abuse (ß = .19), physical abuse (ß = .08), and low

levels of closeness (ß = -.06) had significant direct effect on early sexual onset.

Numerous studies report a high prevalence of childhood maltreatment among

adolescent sexual offenders. For example, Worling (1995) reviewed eight studies and

concluded that of 1,268 adolescent male sex offenders, 31% ($n = 995$) reported some

form of sexual abuse. Burton et al. (2002) analyzed the rate of reported sexual

victimization among adolescent male sex offenders in several studies and concluded that

the rate is typically 40%, which is about 12% higher than the rate reported for adult male

sexual offenders, and four times higher than the 10% victimization rates reported for the

general male population. Ryan et al. (1996) analyzed data from the Uniform Data

Collection System, which provided data from 1,600 juveniles in 30 states referred for

treatment following a sexual offense, in order to identify trends among adolescent sexual

offenders. The data revealed that physical abuse was reported in 41.8% of the cases,

sexual abuse was experienced in 39.1% of the cases, and 25.9% of youth in the sample reported a history of neglect.

In their literature review, Hanson and Slater (1988) reported several methodological problems in trying to determine the prevalence of sexual victimization among sex offenders. First, they noted that different definitions of sexual abuse were used in various studies they reviewed. They stated that there was also a possibility of underreporting in the studies because males are typically reluctant to reveal sexual victimization, and this possibility would increase if they were sexually victimized by a male. Lastly, various methods of data collection were used across the studies, which may have led to differences in the reported results. Burton et al. (2002) noted that these problems should be taken into consideration when researching adolescent sex offenders as well.

Literature on Maltreatment among Individuals with ASD

At present, little research exists that examines the specific occurrence of maltreatment among children and adolescents with ASD. Furthermore, at this time, there are no known articles that identify the occurrence of emotional abuse or neglect among this population. Sullivan and Knuston (2000) reported that children receiving special education services (including those with ASD) were 3.76 times more likely to be victims of neglect, 3.79 times more likely to be physically abused, 3.14 times more likely to be sexually abused, and 3.88 times more likely to be emotionally abused than their non-disabled peers. Mandell et al. (2005a) found that in a community mental health setting of children with ASD, 10.6% of children with Autistic Disorder and 22.5% of children with Asperger's Disorder had a history of physical abuse, and 8.7% of children with Autistic

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Disorder and 13.2% of children with Asperger's had a history of sexual abuse. However, the authors note that a substantial portion of children with other diagnoses within the sample also had high rates of abuse. In a separate study, Mandell et al. (2005b) examined the prevalence of abuse among children with ASD served in a comprehensive community-based mental health setting. Caregivers of 182 children diagnosed with either Autistic Disorder or Asperger's Disorder participated in a structured clinical interview in which they were asked to answer "yes" or "no" questions. Results of the interview indicated that 14.1% of children with ASD had been physically abused, 12.2% had been sexually abused, and 4.4% had experienced both sexual and physical abuse. In both studies, Mandell et al. (2005a, 2005b) concluded that more research is needed in this area in order to better understand the relationship between maltreatment and children with ASD.

Literature on Maltreatment among Adolescent Sexual Offenders with ASD

Researchers have long suggested that inappropriate sexual behaviors may correlate with a childhood history of maltreatment among a variety of juvenile populations (Hanson & Slater, 1988; Kendell-Tackett, 1993; Mullen et al., 1996), including those with ASD (Griffiths, Quinsey, & Hingsburger, 1989; Mandall et al., 2005b; Ray, Marks, & Bray-Garretson, 2004; Sutton et al., n.d.). However, few studies exist that examine the occurrence of maltreatment among children and adolescents with ASD who sexually offend against others. To date, there have only been two identified studies that examine this relationship.

For instance, Sutton et al. (n.d.) found that adolescents with HFA/AD adjudicated for sexual offenses also had considerable abuse/neglect histories, as indicated by scores

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on the Childhood Trauma Questionnaire (CTQ). Specifically, 28% of the HFA/AD group reported a moderate to extreme history of emotional abuse, 40% reported a moderate to extreme history of physical abuse, and 56% reported a moderate to extreme history of sexual abuse. The results also suggested that adjudicated adolescent sex offenders with ASD experienced a more severe history of emotional ($t = -3.02$, $p < .05$) and physical abuse ($t = -2.04$, $p < .05$) than their non-HFA/AD counterparts. However, there was no significant difference between the groups on the occurrence of sexual abuse, and both groups reported moderate to extreme levels of childhood sexual abuse. Additionally, although scores were not in the clinical range, adolescent sex offenders with ASD also reported low to moderate levels of both emotional and physical neglect, whereas the non-ASD group reported minimal or low emotional and physical neglect.

Mandell et al. (2005b) evaluated the prevalence and correlates of abuse among children with a diagnosis of Autism or Asperger's Disorder in an outpatient mental health setting. When examining the bivariate associations between physical and sexual abuse, demographic characteristics, presenting problems, and psychosocial characteristics, Mandell et al. (2005b) found that children with ASD referred for mental health services were 10.8 times more likely to be sexually abusive toward others if they had a history of physical abuse. Further, the ASD group was 8.6 times more likely to present with sexual acting out or sexually assaultive behaviors if there was a history of sexual abuse. The researchers hypothesized that this may be due to the existing social impairments that make individuals with ASD more vulnerable to replicating abusive sexual behaviors, and argued for the importance of early identification of children with ASD, effective

communication of sexuality and sexual development to this group, and early parent education to reduce the risk of abuse.

Literature on Maltreatment and Depression among the General Population

Past research on the effects of maltreatment reveals that depression is the most commonly reported effect of childhood sexual abuse (Briere & Runtz, 1991; Browne & Finkelhor, 1986; Mash & Barkley, 1996). Browne and Finkelhor (1986) previously noted that chronic dysphoria appeared to affect many child victims of sexual and physical abuse (Kolko, 1992). In their literature review, Brown and Finkelhor (1988) cite two controlled studies in which childhood sexual abuse was related to elevated depressive symptomatology, when abused children were compared to non-abused peers. Cicchetti, Toth, and Sheree (1998) also identified childhood maltreatment as a risk factor for the development of depression in children and adolescents.

Additionally, in an analysis of autobiographical interviews of male sexual abuse survivors, Lisak (1994) found negative affective states (anger, fear, helplessness, loss, guilt, and shame), significant cognitive sequelae (inability to legitimize an experience as abuse, negative schemas about the self and about people, and self-blame), pervasive issues around gender and sexuality (homosexuality issues, masculinity issues, and problems with sexuality), and interpersonal difficulties (betrayal, isolation, alienation, and negative childhood peer relations). Although depression has been identified as a common consequence of childhood maltreatment, more studies are needed to investigate the occurrence of depression in specific populations of abused and/or neglected children and adolescents (Mash & Barkley, 1996).

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Literature on Maltreatment and Depression among Adolescent Sexual Offenders

As stated previously, adolescent sexual offenders have moderately high rates of childhood sexual and physical abuse, as well as neglect, and depression is the most commonly reported effect of child sexual abuse (Briere & Runtz, 1991; Browne & Finkelhor, 1986; Mash & Barkley, 1996). However, there are limited studies that examine the presence of maltreatment and depression among juvenile sexual offenders. In one identified study, Becker, Kaplan, Tenke, and Tartaglini (1991) investigated the occurrence of abuse (physical, sexual, or both) and depressive symptomatology using the Beck Depression Inventory (BDI) among 246 juvenile sex offenders. Of the total sample, 120 juvenile sex offenders self-reported childhood physical and/or sexual abuse. Overall results revealed that 41.9% of the juvenile sex offenders reported depressive symptomatology. Study authors also found that a history of sexual and/or physical abuse was significantly related to higher BDI scores. Particularly, abused subjects had a mean BDI score of 16.4 (moderate depression), compared to 12.3 (mild depression) for the non-abused group (Wilcoxon test: $z = 2.82$, $p < .005$). Point biserial correlations also yielded significant differences in depression scores between the groups ($r = .18$, $t = 5.02$, $df = 158$, $p < .2$).

In another identified study, Hunter et al. (2003) investigated developmental risk factors, personality mediators, and sexual and nonsexual offense characteristics of 192 juvenile sexual offenders in a juvenile sex offender treatment program. Overall results indicated that nearly one half of the juvenile offenders met assessment criterion for clinical depression and anxiety. The identified anxiety and depression in the sample was linked to both perceived psychosocial deficits and developmental trauma. Furthermore,

physically abused youth in the study were almost three times more likely than non-abused youth to meet criterion for clinical affective symptomatology in need of treatment. The authors noted the importance of the assessment of affective disorders in juveniles adjudicated for sexual offenses in order to provide better treatment for this subset of youth.

Literature on Maltreatment and Depression among Individuals with ASD

Some researchers have found that children and adolescents with higher functioning ASD are at a greater risk for experiencing mood and anxiety disorders than the general population (Kim et al., 2000), and there is emerging evidence that depression is the most common psychiatric disorder that occurs in individuals with ASD (Ghaziuddin, Ghaziuddin, & Greden, 2002). However, the correlates and risk factors for these comorbid problems remain largely unclear. Since depression has been the most commonly reported effect of child sexual abuse in non-disabled populations (Briere & Runtz, 1991; Browne & Finkelhor, 1986; Mash & Barkley, 1996), it is possible that a history of maltreatment may also be a risk factor for the development of depressive symptomatology among individuals with ASD. There have been few studies that have examined the occurrence of depression among children with disabilities who have experienced maltreatment.

One study, conducted by Mansell, Sobsey, and Moskal (1998), investigated the clinical symptoms of children with developmental disabilities who were sexually abused using the Sexual Abuse Information Record (SAIR). When compared to sexually abused children without disabilities, the researchers found that the children with developmental disabilities were significantly more withdrawn at school/work/counseling (a clinical

symptom of depression). However, they did not assess whether symptoms of withdrawal were consistent with a depressive disorder.

Another study examined the occurrence of maltreatment and various psychological symptoms in a group of psychiatrically hospitalized children (Ammerman et al., 1994). These children had a number of disabilities (multiple disabilities result in total exceeding 100%), including mental retardation (66%), pervasive developmental disorders (22%), disruptive behavior disorders (82%), and affective disorders (20%). Participants were divided into three groups based on the severity of their abuse (mild, moderate, and severe). Results from the Beck Depression Inventory (BDI) indicated that there were no significant difference in mean depression scores between the three groups (10.85 vs. 10.52 vs. 14.04, respectively). However, all three groups reported mild depressive symptoms, with the severe group reporting slightly more depressive symptoms.

Literature on Maltreatment and Depression among Adolescent Sexual Offenders with

ASD

There are no known studies, at the time of this writing, that examine the occurrence of maltreatment and depression among juvenile sex offenders with ASD. Some studies do not support the occurrence of clinical depression among adult sex offenders with intellectual disabilities. For instance, Lindsay and Lees (2003) examined the occurrence of anxiety and depression in 16 adult sex offenders with mild or borderline intellectual disability, as compared to 16 other individuals with intellectual disability. Results from slightly modified Beck Depression and Beck Anxiety Inventories revealed that the sex offender group reported significantly less anxiety ($t = 4.79$, $df = 15$,

$p < .01$) and significantly less depression than the control group ($t = 4.79$, $df = 15$, $p <$ .001). The authors concluded that these findings may be indicative of higher levels of psychopathy among these sex offenders, which can be associated with lower levels of anxiety (Nestandt et al., 1992). Nevertheless, they were unable to adequately explain why depression scores were lower among the sex offenders. Perhaps the presence of childhood maltreatment mediates the occurrence of depressive symptomatology among sex offenders. Therefore, the relationship between depression and childhood maltreatment should be examined further among this population.

The Current Study

The purpose of this study is to identify the presence and type of abuse and neglect and the occurrence of depressive symptomatology among adolescents with High Functioning Autism (HFA) or Asperger's Disorder (AD) as compared to adolescents without HFA or AD who are adjudicated delinquent due to sexual offense and attended a State Residential Sexual Offender Program. Analyses will explore whether there are significant differences between the extent of abuse, neglect, and depressive symptomatology between the two groups. Analyses will also examine whether there is a relationship between the severity of abuse and depressive symptomatology. Results will contribute to the developing literature base on sex offending and ASD, and will begin to clarify specific rates of abuse, neglect, and depression among adjudicated adolescents with a diagnosis of an Autism Spectrum Disorder. Results will also provide implications for treatment, such as identifying the appropriateness of treatments that address psycho-sexual understanding and development, long-term effects of abuse and/or neglect such as

depressive symptomatology, and the appropriateness of traditional sexual offender

treatments for this group.

CHAPTER III

METHODOLOGY

Chapter three of this dissertation focuses on the methodology employed in this study. First, the New Castle Youth Development Center is discussed. The data utilized for this study was obtained from a database developed by a research group at Duquesne University for the purpose of identifying adolescent sex offenders with Autism Spectrum Disorders (ASD) and associated symptomatology (Sutton et al., under review). This dialogue is followed by a discussion of the participants and procedure for the current study. Next, the measures used in this study will be identified and discussed. These measures include: the Asperger's Syndrome Diagnostic Scale (ASDS; Myles, Bock, & Simpson, 2001), the Childhood Trauma Questionnaire (CTQ; Berstein & Fink, 1998), and the Beck Depression Inventory, Second Edition (BDI-II; Beck, Steer, & Brown, 1996). Following a discussion of each measure, there will be a discussion of data analysis. Preliminary analyses will be outlined, followed by discussion of the statistical analyses used to investigate the specific research questions.

The New Castle Youth Development Center

The New Castle Youth Development Center (YDC) is a residential treatment facility that provides secure programming for adjudicated delinquent youth from across the state of Pennsylvania. The facility operates three specialized programs, including a secure treatment program, an adolescent sex offender program, and a specialized residential program. The minimum recommended length of stay in these programs is 18 months. Facility residents range in age from 14 to 20 years of age. Note that in

Pennsylvania, once an individual reaches the age of 21 years he/she is no longer permitted to be housed in an adolescent criminal justice facility.

Participants

The current study will examine pre-existing data that is maintained by the YDC. Any use of the past tense in this document refers to the initial data collection by the YDC. Participants chosen for inclusion in the study will be 46 males, adjudicated delinquent and ordered by Juvenile Court into an Adolescent Sexual Offenders Program. Adjudicated youth at this facility have received previous intervention placements prior to placement in the YDC sex offender program. Participants are the entire population of sexual offenders on the unit ($N = 46$), except for three individuals who ultimately withdrew their assent. Of the remaining participants, there is a small number of individuals ($n = 6$) who started the battery but were discharged before completing all of the measures. A total of 41 participants completed the CTQ and 43 participants completed the BDI-II. Of the 41 participants who completed the CTQ, 25 were previously diagnosed with an Autism Spectrum Disorder (ASD), and 16 did not meet the criteria for diagnosis and will act as the control group. Of the 43 participants for whom BDI-II data is available, 27 participants were previously diagnosed with ASD and 16 did not meet criteria for ASD. All participants ranged in age from 15 to 20 years (mean = 17.90). The ethnic makeup of the sample included Caucasian (54%), African American (35%), and Hispanic (10%).

Procedure

Consent and assent were gained for each resident to participate in a psychological assessment. The assessment battery included a variety of measures, including those to

assess trauma, internalizing and externalizing behaviors, cognitive abilities (e.g., intelligence testing), and academic achievement skills, among others. These instruments were administered by a psychologist or individuals trained in administration of the measures. Measures were administered consistent with standardized protocols.

Measures

Diagnosis of Autism Spectrum Disorders

Individuals were diagnosed with an ASD prior to this study. The previous researchers used the combined definition for High Functioning Autism and Asperger's Disorder (HFA/AD) from the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision* (*DSM-IV-TR*) and the International Classification of Diseases, Tenth Edition (ICD-10) for establishing diagnostic criteria for study participants. Consistent with the *Pennsylvania Autism Assessment and Diagnosis Expert Work Group Supporting Quality Diagnostic Practices for Person with Suspected Autism Spectrum Disorder* (Pennsylvania Department of Public Welfare, 2007) recommendations for providing standards for diagnosis and evaluation, a comprehensive evaluation was conducted for each participant. Diagnosis of an ASD was made using three pieces of data: 1) a detailed developmental history (taken from the participant, collateral data, contact with parents when possible, and facility staff when appropriate) around past developmental functioning, present functional levels, psychiatric symptoms and criminal justice histories; 2) an enhanced clinical interview assessing current symptoms to determine the presence of autism spectrum disorders (i.e., high functioning Autism and Asperger's); and 3) the Asperger's Syndrome Diagnostic Scale (ASDS), where a standard score (an Asperger's Syndrome Quotient) greater than or equal to 90

indicated the likely or very likely probability of the presence of such a disorder (Myles et al., 2007). All study participants designated as HFA/AD were selected for the diagnosis when there was 100% agreement across all three criteria established in this study. The current researcher did not determine whether a diagnosis of HFA or AD was warranted. Rather, diagnoses were determined by the original data collectors.

Asperger's Syndrome Diagnostic Scale (ASDS)

The Asperger's Syndrome Diagnostic Scale (ASDS) is a 50-item scale completed by individuals with the ample opportunity to observe the youth being assessed. The instrument includes five domains of clinical interest: Language, Social, Maladaptive, Cognitive, and Sensorimotor, as well as Key Questions related to Autism (Myles, Bock, & Simpson, 2001). The instrument was standardized on 115 children, aged 5-18, who had been previously diagnosed with Asperger's Syndrome.

Reported reliability estimates ranged from marginal to good, with an internal consistency of .83 for the overall Autism Syndrome Quotient (ASQ), and .64 to .83 for the various subscales. The Cognitive subscale produced the lowest reliability coefficient (.64), while the Sensorimotor subscale produced the second lowest reliability coefficient (.67). As a result, the confidence intervals for these subscales were computed using the procedures outlined in Onwuegbuzie and Daniel (2002). Results yielded an upper confidence interval limit of .71 for the Cognitive subscale and an upper confidence interval limit of .74 for the Sensorimotor subscale, indicating that the internal consistency for both subscales is acceptable. It should also be noted that the authors recommended that, because ASDS subscales have much lower reliability coefficients than the ASQ, the individual subscales should be used to interpret individual strengths and weakness, rather

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than to determine whether an individual has an Autism Spectrum Disorder. Additionally, the measure exhibits strong interrater reliability, with a coefficient of .93. Furthermore, a discriminant analysis study showed that the ASQ correctly identified 85% of individuals with Asperger's Syndrome (Blair & Mirenda, n.d.).

Childhood Trauma Questionnaire (CTQ)

The assessment battery included the Childhood Trauma Questionnaire (CTQ). The CTQ measures self-reported childhood history of abuse and neglect. It is a 28-item retrospective self-report that measures the extent of abuse by identifying the severity and frequency of the abuse experiences. The instrument consists of five subscales: three assessing abuse (Emotional, Physical, and Sexual) and two assessing neglect (Emotional and Physical). A Minimization/Denial subscale that tests for extreme bias and minimization of childhood abuse experiences is also included. A five-point frequency of occurrence scale is utilized: 1) never true, 2) rarely true, 3) sometimes true, 4) often true, and 5) very often true. The Minimization/Denial subscale is composed of three items; a score of one is assigned for each question that an individual answers with "very often true." A total score of three (the maximum possible) on the Minimization/Denial subscale indicates a high likelihood of extreme bias and minimization. When assessing individuals using the CTQ, cut scores are used for each type of trauma in order to detect likely cases of abuse and neglect. Each subscale score ranges from 5 (no history of abuse or neglect) to 25 (very extreme history of abuse and neglect). The scores delineate levels of maltreatment, including none (or minimal), low (to moderate), moderate (to severe), and severe (to extreme).

The norms for the CTQ were derived from six samples of adolescent psychiatric patients. The first sample contained 378 male inpatient substance abusers, the majority of whom were African American. The second sample contained 398 male and female adolescent psychiatric inpatients and the third contained 1,225 female HMO members, the majority being Caucasian. These three samples comprise 2,001 of the 2,201 individuals in the CTQ norm group. The other three samples were also from psychiatric facilities, two in New York and one in the Pacific Northwest. Although the samples are non-representative, the authors offer norms for each these sub-samples. Percentile ranks for adolescent psychiatric patients are derived from just 171 males and 227 females. The authors report that the distribution of scores was quite screwed, and that most individuals reported little or no abuse or neglect, with the average score being a seven (two points higher than the lowest possible score). These norms were also used to create the following classification categories to describe the extent of abuse experienced: 1) None or Minimal, 2) Low to Moderate, 3) Moderate to Severe, and 4) Severe to Extreme. It is unknown how these classifications apply to regional groups in the U.S., and it is recommended that these categories be used with extreme caution (Furlong, Pavelski, & Sandoval, 2004). Thus, the classifications may not be robust across regional samples.

The authors report that the internal consistency for all of the sub-samples is favorable, with the Sexual Abuse (alphas of .93 to .95) and Emotional Neglect (alphas of .88 to .92) subscales being the most reliable. The Emotional Abuse (alphas of .84 to .89) and Physical Abuse (alphas of .81 to .86) subscales have acceptable reliability, while the Physical Neglect subscale has marginal reliability (alphas of .63 to .78). Test-retest reliabilities were derived from a sample of 40 methadone-maintained outpatients who

completed the scales twice over a 3.6 month period. All stability coefficients suggested

good consistency of responses over time (at or near .80).

Beck Depression Inventory, Second Edition (BDI-II)

The Beck Depression Inventory, Second Edition (BDI-II) is a 21-item self-report

instrument intended to assess the existence and severity of symptoms of depression as

listed in the American Psychiatric Association's *Diagnostic and Statistical Manual of*

Mental Disorders, Fourth Edition (*DSM-IV*; 1994). The revised edition replaces the BDI

and the BDI-1A, and includes items intended to index symptoms of severe depression,

which would require hospitalization. Items have been changed to indicate increases or

decreases in sleep and appetite; items pertaining to body image have been added; items

addressing work difficulty, weight loss, and somatic preoccupation were replaced with

items labeled agitation, concentration difficulty, and loss of energy; and many statements

were reworded. When presented with the BDI-II, a patient is asked to consider each

statement as it relates to the way he/she has felt for the past two weeks, to more

accurately correspond to the *DSM-IV* criteria. Responses to the 21 scale items (each

corresponds to a symptom of depression) are summed to give a single score for the BDI-

II. There is a four-point scale for each item ranging from zero to three. On two items,

there are seven options to indicate either an increase or decrease of appetite and sleep.

Cut score guidelines for the BDI-II are given with the recommendation that thresholds be

adjusted based on the characteristics of the sample, and the purpose for use of the BDI-II.

A total score of 0-13 is considered minimal range, 14-19 is mild, 20-28 is moderate, and

29-63 is severe.

The BDI has been used for 35 years to identify and assess depressive symptoms, and has been reported to be highly reliable, regardless of the population. The BDI-II was published in 1996 in order to coincide with the depression criteria in the *DSM-IV*. It has a high coefficient alpha (.80), its construct validity has been established, and it is able to differentiate depressed from non-depressed patients. Coefficient alpha values for the BDI-II (.92 for outpatients and .93 for college students) were higher than those for the BDI-1A (.86). The correlations for the corrected item-total were significant at the .05 level (with a Bonferroni adjustment), for both the outpatient and college student samples. Test-retest reliability was studied using the responses of 26 outpatients who were tested at first and second therapy sessions one week apart. There was a correlation of .93, which was significant at $p < .001$. The mean scores of the first and second total scores were comparable with a paired $t (25) = 1.08$, which was not significant.

One of the main objectives of the BDI-II was to improve content validity by conforming items to the *DSM-IV* diagnostic criteria for depression. Items were added, eliminated, and reworded to allow for the specific assessment of the symptoms of depression listed in the *DSM-IV*, thus increasing the content validity of the measure. With regard to construct validity, the convergent validity of the BDI-II was assessed by administration of the BDI-1A and the BDI-II to two sub-samples of outpatients (N=191). The order of presentation was counterbalanced and at least one other measure was administered between these two versions of the BDI. The correlation between the two versions was .93 ($p<.001$); means for the BDI-1A and BDI-II were 18.92 ($SD = 11.32$) and 21.888 ($SD = 12.69$), respectively. A calibration study of the two scales was also conducted, and these results are available in the BDI-II manual. Consistent with the

comparison of mean differences, the BDI-II scores are three points higher than the BDI-1A scores in the middle of the scale. Factorial validity has been established by the inter-correlations of the 21 items calculated from the sample responses.

Beck Depression Inventory, Second Edition (BDI-II) and Individuals with Autism Spectrum Disorders (ASD). It has been asserted that the use of self-report questionnaires developed for the general population may be inappropriate for use with people with Intellectual Disabilities (ID), including those with ASD, due to difficulties with comprehension and expression (Dagnan & Lindsay, 2004). However, there has been little research on the effectiveness of using self-report measures with this population, particularly to identify the presence of depression and anxiety. Additionally, there have been few clinical instruments available that have a self-report version specifically for individuals with disabilities (Lindsay & Skene, 2007).

Despite the limited amount of research regarding the construct validity of the BDI-II with individuals who have disabilities, a number of researchers have used the BDI-II with disabled populations and found significant results. For instance, Lindsay (1999) used the BDI-II to assess the effectiveness of cognitive behavioral therapy for the treatment of depression in people with ID and found significant decreases in overall BDI scores. McCabe, McGillivray, and Newton (2006) also used the BDI-II to determine the effectiveness of a cognitive behavioral treatment program for individuals with ID. They too found considerable decreases in the self-reported level of depression among this population. In addition, McCabe et al. (2006) argued that the readability of each item on BDI-II is simple enough for use with individuals with mild/moderate ID, and thus does not require modification. In order to investigate this claim, the current researcher

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conducted a Flesch-Kincaid test of readability on all BDI-II items. Results yielded reading levels between 3rd and 4th grade for all items, indicating that these items are likely readable for individuals with mild/moderate ID, including those with HFA/AD.

A more recent study examined whether the overall symptom compositions and specific depression and anxiety dimensions that had been found by previous researchers with the Beck Anxiety Inventory (BAI) and Beck Depression Inventory, Second Edition (BDI-II) were comparable to those found with versions of the instruments adapted for individuals with intellectual disabilities (Lindsay & Skene, 2007). A joint factor analysis was used to identify distinct general factors. It was hypothesized that two factors would emerge: a depression factor and an anxiety factor. Both assessments (BAI and BDI-II) were appropriately revised for use with persons with ID, and were individually administered. A sample of 108 participants from inpatient and community settings completed the assessments. Results from the joint factor analysis of the BAI and BDI-II revealed a two factor solution, corresponding to an anxiety factor and a depression factor. Results from further factor analyses independently demonstrated that the BAI had three factors, corresponding to cognitive-subjective anxiety, somatic temperature, and somatic balance symptoms. The BDI-II exhibited a three factor structure: cognitive self, cognitive-affective/loss of functioning, and somatic symptoms. Therefore, the authors concluded that the factor structure of the BAI and BDI-II conforms specifically to those found in research with the general population, and that both assessments can be used reliably with individuals who have ID.

Thus, although a modified version of the BDI-II is emerging as the best way to assess depressive symptomatology in individuals with disabilities, there is enough

evidence to suggest that the BDI-II may be helpful in determining the presence of depression in individuals with disabilities, particularly if they have mild/moderate intellectual disability (including those with HFA/AD).

Preliminary Analysis

Prior to investigating the research questions, data screening and cleaning will be conducted in order to ensure that the main data analyses are appropriate. Data cleaning will involve inspection of univariate descriptive statistics to determine the accuracy of input. Missing data will be evaluated and dealt with by using listwise deletion, in which cases with missing data will be omitted from analyses. Pairwise plots will be examined in order to check for non-normality and heteroscedasticity. Non-normal variables and univariate outliers will be identified and dealt with. Multivariate outliers, multicollinerarity, and singularity will also be evaluated during the data cleaning process.

Research Questions

Research Question #1: Do adjudicated adolescent sexual offenders with HFA/AD report a greater severity of specific types of abuse and/or neglect compared to non-HFA/AD adjudicated adolescent sexual offenders?

Hypothesis # 1: Adjudicated adolescent sexual offenders with HFA/AD will have a more severe history of childhood abuse and neglect than the non-HFA/AD group.

This directional hypothesis will be addressed using a series of Mann-Whitney U tests, a non-parametric significance test that tests for differences between two distributions. The Mann-Whitney U test has three general assumptions. The first is that the two samples being compared are randomly and independently drawn. The second assumption is that there is independence within the samples and mutual independence

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between samples. Lastly, the measures of the two samples must have the properties of an ordinal scale of measurement.

This analysis was chosen because group differences are being investigated and the data includes two independent small samples (HFA/AD and non-HFA/AD), as well as ordinal measurement scales. Therefore, the scores of the HFA/AD group will be ranked (lowest to highest) along with scores of the non-HFA/AD group on each of the five scales of the CTQ (physical, sexual, and emotional abuse; physical and emotional neglect). The scores will then be returned to the two samples (HFA/AD and non-HFA/AD) to which they belong, with rank scores replacing raw scores. The median rank scores of the two distributions (for each of the five scales) will then be compared to determine if there are statistically significant differences ($p < .05$) between the rankings.

A priori analysis of power using the G*Power 3 program revealed that in order to produce adequate power (.80) with a moderate effect size (.50) using a one-tailed directional test (alpha = .05), a sample size of at least 114 subjects is needed. Thus, it is likely that the results of this statistical test will not have adequate power, increasing the risk of Type II error.

Research Question # 2: Do adjudicated adolescent sexual offenders with HFA/AD report a greater severity of depressive symptomatology than non-HFA/AD adjudicated adolescent sexual offenders?

Hypothesis # 2: Adjudicated adolescent sexual offenders with HFA/AD will have higher reported depression than the non-HFA/AD group.

This hypothesis will be investigated using a *t*-test for independent samples. This test is used to determine whether the difference between the means of two groups is

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statistically significant. The assumptions for the independent samples *t*-test include: 1) observations within each sample must be independent (i.e., they do not influence each other), 2) the scores in each population must be normally distributed, and 3) the two populations must have equal variances (the degree to which the distributions are spread out is approximately equal).

This analysis was chosen because group differences are being investigated and there is a quantitative dependent variable (i.e., overall BDI-II scores), as well as a dichotomous independent variable (i.e., two groups: HFA/AD and non-HFA/AD). Values that will be reported include the mean value for each group, the *t* value, degrees of freedom, and the *p* value.

As previously stated, a priori analysis of power using the G*Power 3 program revealed that in order to produce adequate power (.80) with a moderate effect size (.50) using a one-tailed directional test (alpha = .05), a sample size of at least 114 subjects is needed. Thus, it is likely that the results of this statistical test will not have adequate power, increasing the risk of Type II error.

Research Question # 3: Does the severity of childhood abuse (sexual, physical, emotional) and/or neglect (physical, emotional) account for reported depressive symptomatology among adjudicated adolescent sexual offenders with HFA/AD?

Hypothesis # 3: The severity of abuse and/or neglect will be related to the occurrence of depressive symptomatology reported for both groups.

This hypothesis will be addressed using a traditional regression, in which the independent variable (X) is the severity of abuse and/or neglect and the dependent variable (Y) is depression (i.e., overall BDI-II score). There are several important

assumptions that must be satisfied if a simple linear regression is to be used. These include:

1. Both the independent (X) and the dependent (Y) variables are measured at the interval or ratio level.

2. The relationship between the independent (X) and the dependent (Y) variables is linear.

3. Errors in prediction of the value of Y are distributed in a way that approaches the normal curve.

4. Errors in prediction of the value of Y are all independent of one another.

5. The distribution of the errors in prediction of the value of Y is constant regardless of the value of X.

This analysis was chosen because the researcher wants to examine whether the severity scores of the CTQ predict overall depression scores on the BDI-II among adolescent sexual offenders with HFA/AD (i.e., whether severity of abuse/neglect predicts level of depression). Analysis will include examination of the regression coefficient, outliers, and residuals.

A priori analysis of power using the G*Power 3 program revealed that in order to produce adequate power (.80) with a small effect size (.30), a sample size of at least 68 subjects is needed. Thus, it is likely that the results of the regression will not have adequate power, increasing the risk of Type II error.

CHAPTER IV

RESULTS

Introduction

The current study investigates the occurrence of childhood maltreatment and depression among adjudicated adolescent sexual offenders with a diagnosis of High Functioning Autism (HFA) or Asperger's Disorder (AD) compared to non-HFA/AD adolescent sexual offenders. In addition, this study examines whether there is a relationship between the severity of childhood maltreatment and reported depressive symptomatology. This chapter presents the results of data analyses in regard to the purpose of the present study. Results of preliminary analyses are presented first, followed by results of primary analyses. Demographic data for the sample are summarized in Table 1.

Table 1

Frequency Distribution

Ethnicity	N	Percent
Caucasian	25	54
African American	16	35
Hispanic	5	10

The current study examines 25 adjudicated male sexual offenders diagnosed with HFA/AD and 16 adjudicated male sexual offenders without a diagnosis. Participants ranged in age from 15 to 20 years (mean = 17.90). Roughly half of the sample was Caucasian (54%). African Americans made up approximately 35% of the sample, and Hispanics accounted for the remaining 10% of the sample.

Descriptive Statistics

Descriptive statistics, including the number of valid subjects, mean, and standard deviation, were obtained for each factor (i.e., CTQ subscale) within the study. Findings are presented below in Table 2. Table 3, which contains parallel information for the BDI-II, follows.

Table 2

Descriptive Statistics: Childhood Trauma Questionnaire (CTQ)

Scale	Mean	SD	Minimum	Maximum
EA	10.17	5.53	5	25
PA	11.02	5.87	5	25
SA	13.83	7.87	5	25
EN	10.71	5.36	5	25
PN	8.98	4.67	5	25

Note. $N = 41$. EA = Emotional Abuse; PA = Physical Abuse; SA = Sexual Abuse; EN = Emotional Neglect; PN = Physical Neglect.

Table 2 presents the mean scores and standard deviations for all scales of the CTQ for the total sample ($N = 41$). Mean scores are interpreted based on cutoff scores indicative of the severity level of maltreatment, which were derived from a randomly selected non-clinical sample of health maintenance organization members (see Table 6 for cutoff scores). The information reported in Table 2 reveals that the average scores on the Emotional Abuse, Emotional Neglect, and Physical Neglect scales for the total sample fell within the Low/Moderate range of severity. Specifically, mean Emotional

Abuse scores fell between the cutoff scores for the Low/Moderate range (9 – 12). Mean

Emotional Neglect scores also fell between the cutoff scores (10 – 14) for the

Low/Moderate range, and mean Physical Neglect scores fell between the cutoff scores for

the Low/Moderate range (8 – 9) as well. The mean score for the total sample on the

Physical Abuse scale fell within the Moderate/Severe range (10 – 12). The mean score

for the Sexual Abuse scale for the total sample fell within the Severe/Extreme range (≥

13). It should be noted that none of the subjects in this study received a score greater than

zero on the Minimization/Denial subscale, indicating that the participants were likely

responding in an unbiased manner.

Table 3

Descriptive Statistics: Beck Depression Inventory, Second Edition (BDI-II)

Mean	*SD*	Minimum	Maximum
15.74	11.91	0	47

Note. *N* = 43.

　　　　Table 3 presents the mean score and standard deviation for the total sample (*N* =

43) on the BDI-II. The mean score indicates that, on average, the total sample is

experiencing symptomatology consistent with mild clinical depression. It should be noted

that this data does not create a normal distribution because clinical depression is not

equally distributed within the population. Rather, there is a positively skewed distribution

in which there are individuals in the population with severe clinical depression (score of

29 – 63), moderate depression (score of 20 – 28), mild depression (score of 14 – 19), and

minimal depression (score of 0 – 13).

Reliability Analysis

The reliability coefficients for each of the measures or constructs were calculated by previous researchers, as reported below.

Childhood Trauma Questionnaire (CTQ)

Bernstein and Fink (1998) report that the internal consistency for all CTS subscales is favorable, with the Sexual Abuse (alphas of .93 to .95) and Emotional Neglect (alphas of .88 to .92) subscale being the most reliable. The Emotional Abuse (alphas of .84 to .89) and Physical Abuse (alphas of .81 to .86) subscales have acceptable reliability, while the Physical Neglect subscale has marginal reliability (alphas of .63 to .78). Test-retest reliabilities were derived from a sample of 40 methadone-maintained outpatients who completed the scales twice over a 3.6 month period. All stability coefficients suggested good consistency of responses over time (at or near .80). It should be noted that this data is part of a larger, secure data set which limited the current researchers' ability to access data in order to conduct a new item analysis.

Beck Depression Inventory, Second Edition (BDI-II)

The coefficient alpha values for the BDI-II (.92 for outpatients and .93 for college students) were higher than those for the BDI-1A (.86; Beck, Steer, & Brown, 1996). The correlations for the corrected item-total were significant at the .05 level (with a Bonferroni adjustment), for both the outpatient and college student samples. Test-retest reliability was studied using the responses of 26 outpatients who were tested at first and second therapy sessions one week apart. There was a correlation of .93 between scores, which was significant at $p < .001$. The mean scores of the first and second total scores were comparable with a paired $t (25) = 1.08$, which was not significant.

Correlations

In order to measure the degree of relation between each set of categorical variables, the Spearman correlation was utilized. Thus, the correlation coefficient was calculated for each pair of variables, and was organized into a correlation matrix, as presented in Table 4 below.

Table 4

Correlations

Variable	BDI-II	EA	PA	SA	EN	PN
BDI-II	---					
EA	.655**	---				
PA	.593**	.767**	---			
SA	.436**	.539**	.626**	---		
EN	.627**	.786**	.752**	.428**	---	
PN	.473**	.633**	.610**	.436**	.788**	---
HFA/AD	.415**	.382*	.288	.163	.277	.256

Note. BDI-II = Beck Depression Inventory, Second Edition; EA = Emotional Abuse; PA = Physical Abuse; SA = Sexual Abuse; EN = Emotional Neglect; PN = Physical Neglect; HFA/AD = High Functioning Autism/Asperger's Disorder. * $p < .05$; ** $p < .01$.

As can be seen in Table 4, many significant correlations were reported. These findings will be discussed in depth below.

Predicted Correlations

CTQ. High scores on a particular scale of the CTQ statistically significantly predicted high scores on the other scales of the CTQ. For instance, a high score on the

Emotional Abuse scale significantly predicts a high score on the Physical Abuse, Sexual Abuse, Emotional Neglect, and Physical Neglect scales. Therefore, these results indicate that if an individual experiences high rates of one type of childhood abuse or neglect, they likely experience other severe forms of abuse and/or neglect.

Additionally, high scores on the Emotional Abuse scale are statistically significantly associated with the presence of HFA/AD. This indicates that there is a positive relationship between high scores of Emotional Abuse and HFA/AD.

BDI-II. High scores on the BDI-II are associated with high scores on all scales of the CTQ, indicating that depressive symptomatology is positively related to severe childhood maltreatment. High scores on the BDI-II also statistically significantly correlated with the presence of HFA/AD, indicating that there is a strong positive relationship between depressive symptomatology and the presence of an Autism Spectrum Disorder (ASD).

Inferential Statistics

The following section will review the inferential statistics related to each research question being investigated in this study. It should be noted that the overall alpha level for each statistical test was adjusted based on the number of statistical tests run in order to avoid Type I error (.05/5). This resulted in an overall alpha level of .01.

Research Question # 1

In order to determine the severity of childhood maltreatment among adolescent sexual offenders with HFA/AD compared to non-HFA/AD adolescent sexual offenders, a Mann Whitney *U* Test was utilized. This statistical test was chosen because group differences are being investigated and the data includes two independent small samples

(HFA/AD and non-HFA/AD), as well as ordinal scales. Therefore, the scores of the

HFA/AD group will be ranked (lowest to highest), along with scores of the non-HFA/AD

group, on each of the five scales of the CTQ (physical, sexual, emotional abuse, physical

and emotional neglect). The scores will then be returned to the two samples (HFA/AD

and non-HFA/AD) to which they belong, with rank scores substituted for raw scores. The

median rank scores of the two distributions for each of the five scales will then be

compared to determine if there are statistically significant differences ($p < .05$) between

the rankings. It should be noted that prior to completing this analysis, all outliers were

identified and excluded from the analysis, resulting in a smaller sample size ($N = 39$).

First, the mean ranks were calculated for each of the five scales (see Table 5).

These scores were analyzed using cutoff scores for each severity level of abuse and/or

neglect (see Table 6).

Results reveal that in regard to Emotional Abuse, the mean rank for the HFA/AD

group was 23.16, which falls within the Severe/Extreme range (≥ 16), while the non-

HFA/AD group had a mean rank of 14.47, which falls in the Moderate/Severe range

(13 – 15). When the mean ranks of the Physical Abuse and Sexual Abuse scales are

compared, both groups' means fell within the Severe/Extreme range (≥ 13). For

Emotional Neglect, the HFA/AD group's mean fell within the Severe/Extreme range

(≥ 18), while the non-HFA/AD group's mean fell within the Moderate/Severe range

(15 – 17). Lastly, when comparing the mean ranks on the Physical Neglect scale, both

groups' means fell within the Severe/Extreme range (≥ 13). The sum of ranks was then

calculated for all scales, as also reported Table 5.

Table 5

Mean Ranks and Sum of Mean Ranks

	HFA/AD	*N*	Mean Rank	Sum of Ranks
ID	No	16	27.44	439.00
	Yes	22	13.73	302.00
	Total	38		
EA	No	16	14.47	231.50
	Yes	22	23.16	509.50
	Total	38		
PA	No	16	16.53	264.50
	Yes	22	21.66	476.50
	Total	38		
SA	No	16	16.94	271.00
	Yes	22	21.36	470.00
	Total	38		
EN	No	16	16.31	261.00
	Yes	22	21.82	480.00
	Total	38		
PN	No	16	17.12	274.00
	Yes	22	21.23	467.00
	Total	38		

Note. ID = Intellectual Disability; EA = Emotional Abuse; PA = Physical Abuse; SA = Sexual Abuse;
EN = Emotional Neglect; PN = Physical Neglect.

Table 6

CTQ Subscale Cutoff Scores

Subscale	Cutoff Scores			
	None/Minimal	Low/Moderate	Moderate/Severe	Severe/Extreme
EA	5-8	9-12	13-15	16+
PA	5-7	8-9	10-12	13+
SA	5	6-7	8-12	13+
EN	5-9	10-14	15-17	18+
PN	5-7	8-9	10-12	13+

Results of the Mann Whitney *U* test revealed no statistically significant differences between the severity scores of abuse and/or neglect on the CTQ among the two groups (HFA/AD and non-HFA/AD). Specifically, an analysis of the *p* statistic (using a two-tailed test) revealed that the groups did not differ on all scales of the CTQ. Table 7 outlines the results of the test.

Table 7

Mann-Whitney U Test

	EA	PA	SA	EN	PN
Mann-Whitney *U*	95.500	128.500	135.000	125.000	138.000
Wilcoxon *W*	231.500	264.500	271.000	261.000	274.000
Z	-2.419	-1.418	-1.230	-1.519	-1.155
Asymp. Sig. (2-tailed)	.016	.156	.219	.129	.248

Table 7 (continued)

	EA	PA	SA	EN	PN
Exact Sig. [2*(1-tailed Sig.)]^a	.016	.162	.234	.137	.271

Note. [a] = not corrected for ties.

Research Question # 2

In order to examine the occurrence of depression among adjudicated adolescent sexual offenders with HFA/AD compared to non-HFA/AD adjudicated adolescent sexual offenders, an independent samples *t*-test was used. This analysis was chosen because group differences are being investigated and there is a continuous dependent variable (i.e., overall BDI-II scores), as well as a dichotomous independent variable (i.e., two groups: HFA/AD and non-HFA/AD). It should be noted that prior to completing this analysis, all outliers were identified and removed from the analysis resulting in a smaller sample size ($N = 41$).

Results of the independent samples *t*-test, which compared mean scores of the experimental and control group, revealed a statistically significant difference between the means of the two groups (t (41) = 2.92, $p < .01$). The mean of the HFA/AD group was significantly higher ($M = 19.69$, $SD = 12.18$) than the mean of the non-HFA/AD group ($M = 9.71$, $SD = 8.79$). Table 8 outlines the results of the *t*-test. A post-hoc power test (two-tailed) was conducted using the G*Power 3 program. Results of the analysis revealed high power ($p = .80$, critical $t = 2.02$), which reduces the likelihood of Type II error. Effect size (two-tailed) was calculated using methods outlined by Thalheimer and Cook (2002). Results of this calculation yielded a large effect size (Cohen's $d = .93$).

Table 8

Independent Samples t-Test

	F	t	df	Sig.[a]	Mean Difference
Beck Depression Inventory					
Equal Variance Assumed	3.440	2.917	41	.006**	9.986
Equal Variance Not Assumed		3.120	40.518	.003**	9.986

Note. [a] = 2-tailed. * $p < .05$; ** $p < .01$.

Research Question # 3

In order to examine whether there is a relationship between the severity of childhood maltreatment and reported depressive symptomatology among adjudicated adolescent sexual offenders with HFA/AD, a traditional regression was utilized. This analysis was chosen because the researcher wants to examine whether the severity scores of the CTQ predict overall depression scores on the BDI-II among adolescent sexual offenders with HFA/AD (i.e., whether severity of abuse/neglect predicts level of depression). A traditional regression including all five independent variables was run (F (5, 35) = 6.36, $p < .001$), with an R^2 of .476. Thus, close to 48% of the variance in depression scores on the BDI-II can be explained by differences in severity scores on the CTQ. When effect size is calculated using the R^2 value, results indicate a large effect (.90). A post-hoc power analysis using the G*Power 3 program indicates high power ($p = 1.00$, critical $t = 2.02$), thus reducing the likelihood of Type II error.

However, results from an examination of multicollinearity reveal that the Emotional Neglect scale is highly correlated with all of the other independent variables,

with the exception of Sexual Abuse (refer to Table 4). Specifically, the Emotional

Neglect scale was highly correlated with the Emotional Abuse (.786), Physical Abuse

(.752), and Physical Neglect (.788) scales. This issue was dealt with by first re-running

the analysis and entering Emotional Neglect as the only independent variable in order to

determine how much of the variance is absorbed by Emotional Neglect alone. The results

of this analysis revealed a large R^2 (.342; see Table 9).

Table 9

Summary of Forced Regression

Model	R	R^2	Adjusted R^2	Standard Error of Estimate
1[a]	.585	.342	.313	10.062
2[b]	.655	.429	.377	9.581
3[c]	.670	.449	.370	9.634
4[d]	.670	.449	.339	9.872
5[e]	.696	.484	.348	9.803

Note. Predictors included: [a] = EN; [b] = EN, EA; [c] = EN, EA, PA; [d] = EN, EA, PA, SA; [e] = EN, EA, PA, SA,

PN. EN = Emotional Neglect; EA = Emotional Abuse; PA = Physical Abuse; SA = sexual abuse; PN =

Physical Neglect.

The researcher then ran a forced regression in order to observe the change in R^2 with the

addition of the other variables. Emotional Neglect was entered first, then Emotional

Abuse, followed by Physical Abuse, Sexual Abuse, and Physical Neglect. Results

revealed that Emotional Neglect and Emotional Abuse absorbed 43% of the variance

without multicollinearity. However, when the other variables are added, the adjusted R^2 begins to decrease as a result of multicollinearity (see Table 10).

Table 10

Summary of Multicollinearity

CTQ Subscale	Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
EA	-.180	-.475	.643	-.130	.343
PA	-.169	-.570	.579	-.156	.556
SA	.146	.616	.548	.169	.872
PN	.332	1.399	.185	.362	.772

Note. Predictor in model = Emotional Neglect. EA = Emotional Abuse; PA = Physical Abuse; SA = Sexual Abuse; PN = Physical Neglect.

Thus, Emotional Neglect and Emotional Abuse account for a significant portion of the variance in depression scores on the BDI-II. Results of the regression reveal that as the severity of emotional neglect increases, scores on the BDI-II also increase. That is, a more severe history of emotional neglect significantly predicts greater depressive symptomatology (see Table 11). Therefore, overall results reveal that high scores on the Emotional Neglect scale predict high scores on the BDI-II among adolescent sexual offenders with HFA/AD.

Table 11

Summary of Regression Analysis for Variables Predicting BDI-II Scores

Model	Predictor	*B*	*SE B*	β	T	Sig.
1	EN	1.204	.348	.585	3.456	.002**
2	EN	.469	.520	.228	.902	.377
	EA	.898	.489	.463	1.836	.080
3	EN	.300	.558	.146	.537	.597
	EA	.636	.577	.328	1.101	.283
	PA	.473	.543	.249	.870	.394
4	EN	.299	.602	.145	.497	.625
	EA	.636	.640	.328	.993	.332
	PA	.473	.616	.250	.768	.451
	SA	-.001	.391	-.001	-.002	.998
5	EN	.945	.826	.459	1.143	.267
	EA	.573	.638	.296	.897	.381
	PA	.443	.612	.234	.724	.478
	SA	.061	.392	.039	.156	.877
	PN	-.796	.703	-.349	-1.133	.271

Note. ** $p < .01$. EN = Emotional Neglect; EA = Emotional Abuse; PA = Physical Abuse; SA = Sexual Abuse; PN = Physical Neglect.

CHAPTER V

DISCUSSION

Introduction

This chapter provides an integrative summary and interpretation of results for the current study. Results related to the specific hypotheses will be presented first, as well as an explanation of individual findings. The findings will then be discussed in regard to past literature and implications. Lastly, the limitations of the study and future directions will be presented.

Summary

The current study investigates the occurrence of childhood maltreatment and depression among adjudicated adolescent sexual offenders with a diagnosis of High Functioning Autism (HFA) or Asperger's Disorder (AD) compared to non-HFA/AD adolescent sexual offenders. Results of the present study reveal that in regard to the occurrence of maltreatment, there are no statistically significant differences between the two groups on any of the forms of maltreatment assessed by the Childhood Trauma Questionnaire (CTQ). That is, both groups experience similar severity levels of abuse and/or neglect. Regarding the occurrence of depressive symptomatology, adolescent sexual offenders with HFA/AD experience statistically significantly more depressive symptoms than non-HFA/AD adjudicated adolescent sexual offenders. The magnitude of this effect is high, indicating that this difference is unlikely to be due to chance.

Additionally, this study examines whether there is a relationship between the severity of childhood maltreatment and reported depressive symptomatology among adolescent sexual offenders with HFA/AD. Findings reveal that high scores on the

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Emotional Abuse and Emotional Neglect scales of the CTQ predict a high score on the BDI-II. That is, adolescent adjudicated sexual offenders with HFA/AD who experience severe levels of emotional abuse and/or emotional neglect are more likely to also have high rates of depressive symptomatology. The magnitude of this relationship is also high, indicating that this difference is also unlikely due to chance.

<div align="center">Conclusions</div>

Occurrence of Maltreatment

Although the results of the current study pertaining to the occurrence of maltreatment among adjudicated adolescent sexual offenders with HFA/AD did not support the hypothesis, results are consistent with previous sexual offending literature. For instance, both the HFA/AD and non-HFA/AD groups report moderate/severe to severe/extreme levels of childhood sexual abuse. These results are consistent with previous findings indicating that a childhood history of sexual abuse is often prevalent among adolescent sexual offenders (Burton et al., 2002; Ryan et al., 1996; Worling, 1995). This finding can also be considered in the context of the abuse/abuser hypothesis, which states that males who are sexually abused may be more likely to sexually offend against others. Additionally, the results of the current study reveal that both groups have low/moderate to moderate/severe levels of physical abuse. This finding is also similar to previous research indicating that many adolescent sexual offenders have a history of childhood physical abuse (Ryan et al., 1996).

Overall, 28% of the HFA/AD group reported a moderate/extreme history of emotional abuse, 40% reported a moderate/extreme history of physical abuse, and 56% reported a severe/extreme history of sexual abuse. The rate of emotional abuse found in

this study is much higher than those reported among children with autism who are being

provided with special education services in schools (Sullivan & Knuston, 2000). The rate

of physical abuse reported in this study is higher than previously reported rates of

physical abuse among children with autism in a community mental health setting

(Mandell et al., 2005a; Mandell et al., 2005b), and is much greater than those reported

among children with autism who receive special education services (Sullivan & Knuston,

2000).

In addition, more than half of the adolescents with HFA/AD in this study reported

a history of sexual abuse, which is much higher than rates reported by caregivers of

children with autism being treated in a community mental health setting (Mandell et al.,

2005a), as well as rates reported among children with autism receiving special education

(Sullivan & Knuston, 2000).

Although there were no statistically significant differences between the two

groups in relation to maltreatment, there are some notable differences. For example,

adolescent sexual offenders with HFA/AD report a low/moderate history of emotional

abuse, while the non-HFA/AD group reports none/minimal history of emotional abuse.

These results are similar to those obtained by Sutton et al. (n.d.), who found that

adolescent sexual offenders with HFA/AD reported significantly more emotional abuse

than non-HFA/AD adolescent sexual offenders. This finding can be better understood

within the context of Sobsey (1994). That is, Sobsey (1994) argues that individuals with

disabilities are more vulnerable to experiencing maltreatment because of the presence of

their disability. In the case of emotional abuse, children and adolescents with HFA/AD

may be more likely to experience humiliating, demeaning, or threatening behavior

directed toward them due to a misunderstanding or impatience related to their social, communication, or behavioral deficits.

Another notable difference between the groups is that, on average, adolescent sexual offenders with HFA/AD reported low/moderate levels of both emotional and physical neglect, whereas the non-HFA/AD group reported minimal/low emotional and physical neglect. Sullivan and Knuston (2000) reported similar findings, and concluded that children with autism are at a slightly increased risk of being neglected.

Thus, the results of this analysis, although not significant, provide some important implications for the treatment of adjudicated adolescent sexual offenders. Particularly, it seems that a history of childhood maltreatment is often present among adolescent sexual offenders, regardless of whether they have diagnosis of HFA/AD. Therefore, treatment facilities should address the issue of childhood maltreatment within their programs. Treatment facilities should also develop adequate programming to address the unique needs of adolescents with HFA/AD in regard to trauma-focused treatment.

Occurrence of Depressive Symptomatology

The results of this study reveal that adolescent adjudicated sexual offenders with HFA/AD have higher rates of depressive symptomatology than their non-HFA/AD counterparts. Specifically, on average, the HFA/AD group reports moderate depressive symptomatology, while the non-HFA/AD group reports minimal depressive symptomatology. As stated previously, this hypothesis has never been tested within the literature. Findings nonetheless seem to be consistent with previous literature arguing that depression may be the most common psychiatric disorder among individuals with ASD (Ghaziuddin, Ghaziuddin, & Greden, 2002), and that individuals with higher functioning

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ASD may be at greater risk for experiencing mood and anxiety disorders than the general population (Kim et al., 2000).

However, the results of this study are inconsistent with those obtained by Lindsay and Lee (2003), who found that sexual offenders with intellectual disabilities reported significantly less depression than a control group. This finding gives further support to the argument that individuals with ASD need to be examined in the literature as a unique group, rather than under a general heading of "intellectual disability" or "developmental disability."

Furthermore, the current finding indicating that the non-HFA/AD group has minimal depressive symptomatology is inconsistent with previous research findings regarding rates of depression among adolescent sexual offenders (without HFA/AD). Particularly, Becker et al. (1991) found that 41.9% of adolescent sexual offenders (without HFA/AD) reported mild to moderate depressive symptomatology on the Beck Depression Inventory, Second Edition (BDI-II), which is considerably higher than the rates obtained in the current study. Hunter (2003) also reported that nearly one half of the juvenile offenders in his sample met assessment criterion for clinical depression and anxiety. Perhaps the results of these studies would have been different if these adolescent sexual offenders were screened for the presence of HFA/AD. Thus, it is important for researchers to assess for ASD among adjudicated adolescent sexual offenders and analyze the groups separately due to their distinctive differences.

The results of this analysis have considerable implications for treatment. Specifically, adjudicated adolescent sexual offenders with HFA/AD will be more likely to require specific treatments to address their depressive symptomatology. These

treatments will need to be sensitive to the unique needs of individuals with HFA/AD. That is, implementing therapy approaches that have been found to be effective in treating children and adolescents diagnosed with ASD will likely lead to more effective outcomes.

Relationship Between Childhood Maltreatment and Depression Among Adolescent

Sexual Offenders with HFA/AD

Results of this analysis reveal that a severe history of emotional abuse and/or emotional neglect predicts high rates of depressive symptomatology among adolescent sexual offenders with HFA/AD. As stated previously, this relationship has never been examined in the literature, but these results seem to be consistent with previous research findings revealing that children with developmental disabilities who have a history of sexual abuse report significant withdrawal (Mansell, Sobsey, & Moskal, 1998), and that children with multiple disabilities (including ASD) who have a severe history of abuse report slightly more depressive symptomatology than those who report mild or moderate abuse (Ammerman et al., 1994). This finding is also consistent with a previous study in which it was found that children with ASD who develop clinical depression have more negative life events than individuals without ASD (Ghaziuddin, Alessi, & Grenden, 1995). Additionally, this finding is similar to those obtained by Becker et al. (1991), where a history of sexual and/or physical abuse was significantly related to higher BDI scores among adolescent sexual offenders (without HFA/AD). However, the current finding that emotional abuse and/or emotional neglect account for most of the variance in the relationship between maltreatment and depression is a unique discovery. To date, there are no studies that report similar findings.

This finding supports Sobsey and Mansell's (1997) theory that individuals with disabilities may experience more devastating effects of childhood abuse and neglect because of coping deficits that result from the disability. Thus, because individuals with HFA/AD have greater coping difficulties due to problems related to communication, self-esteem, problem-solving, relationship skills, limited sexual knowledge, lack of normal social sexual experiences, as well as fewer protective factors, they may be more susceptible to developing depressive symptomatology than their non-disabled peers. Specifically, in relation to emotional abuse and/or emotional neglect, children with HFA/AD are more likely to have difficulties coping with verbal assaults and demeaning statements made by adults because of their limited social knowledge and problem-solving abilities. They also may not have protective factors such as other supportive interpersonal relationships due to their social deficits. As a result, they may resort to a state of learned helplessness or develop a low sense of self-worth, thus resulting in depression.

Additionally, these results can be understood within the context of parental stress related to having a child with ASD. Research examining the mental health of mothers suggests that mothers who have children with ASD have high levels of stress and report fair to poor mental health (Montes & Halterman, 2007). Additionally, researchers have found that a child's level of social skills is a significant predictor of child-related maternal stress (Baker-Ericzén, Brookman-Frazee, & Stahmer, 2005). That is, higher levels of maternal stress are positively related to the severity level of a child's social skills. Thus, parents, particularly mothers, may be more susceptible to emotionally abusing or neglecting their child with ASD due to high levels of stress related to their

child's deficits and, as a result, may be inadvertently contributing to the development of later depressive symptomatology among their children with ASD.

Overall, the results of this analysis have further implications for primary, secondary, and tertiary treatments. For instance, these results lend support to the need for preventative treatments to address maltreatment among children with ASD. Specifically, programs should be developed to focus on supporting parents who have children with Autism Spectrum Disorders in order to lower levels of parental stress. Support groups and parent trainings may help to lower parental stress by teaching parents how to better relate to their children with ASD. These groups and/or programs can also focus on providing parents with skills to better manage their child's behaviors and teach them how to effectively communicate with their child. By lowering parental stress, the likelihood of emotional abuse and neglect may also decrease, thus preventing the occurrence of later depressive symptomatology among adolescents with ASD.

Treatment implications at a secondary level include the development of sexual education programming for children and adolescents with ASD. As stated previously, children and adolescents with ASD may be more susceptible to engaging in inappropriate sexual behaviors due to the deficits associated with their disability. Also, since it is hypothesized that as the rate of ASD diagnoses continue to increase within the general population, the rate of individuals with this diagnosis involved in the juvenile justice system will also rise (Sutton et al., under review), programming that focuses on addressing deficits that may contribute to sexual offending behavior are greatly needed. Furthermore, since children and adolescents are at-risk for depression, programs focusing

on coping skill deficits that further exacerbate the symptoms of depression are also needed at a secondary level.

Lastly, these results have tertiary implications for treatment as well. As stated previously, treatment programs focusing on childhood maltreatment and depression are needed within treatment facilities housing adolescent sexual offenders with HFA/AD; these should be modified to match the unique needs of this population. Additionally, performing a thorough evaluation of the maltreatment histories of adolescent sexual offenders with HFA/AD may provide insight into other treatment needs, such as treatment of depressive symptomatology. That is, identifying the presence of emotional abuse and/or emotional neglect will require treatment facility staff to also screen for depression.

Limitations

There are a number of limitations that should be considered. First, the sample size in the current study is small, thus lowering the overall power and increasing the likelihood of Type II error. However, it should be noted that a large effect size was obtained for both of the significant findings in this study, which indicates that the results were unlikely to be due to chance. Secondly, the sample was from one youth development center in the state of Pennsylvania. Therefore, results of this study are unable to be generalized to all groups of adolescent sexual offenders with HFA/AD. Future studies should focus on a wider demographic area in an effort to clarify and generalize future results.

Furthermore, the results were based on a retrospective self-report of childhood maltreatment. Therefore, problems with recall and stigma associated with revealing a

history of abuse and/or neglect may have influenced responses. Subjects may also have overreported or underreported experiences of abuse and/or neglect on the CTQ. Additionally, rates of abuse/neglect were higher than rates reported among children with autism in a school or mental health setting, as opposed to rates reported among adolescent sex offenders with HFA/AD. This is because, to date, no published research is available that explicitly examines the occurrence of abuse and/or neglect among adolescent sexual offenders with HFA/AD.

Lastly, the individuals in this study with HFA/AD were diagnosed based on the methods outlined by the *Pennsylvania Autism Assessment and Diagnosis Expert Work Group Supporting Quality Diagnostic Practices for Persons with Suspected Autism Spectrum Disorder* (Pennsylvania Department of Public Welfare, 2007). The currently accepted methods for diagnosing HFA/AD may deviate from those outlined by this committee due to the development of instruments with greater reliability and validity that coincide with current research findings related to the symptomatology of HFA and/or AD. Thus, it is possible that newer diagnostic instruments may produce different results regarding the identification of individuals with HFA/AD in this study. Future studies examining the characteristics of individuals with HFA and/or AD should use the most current instruments and diagnostic guidelines to identify the presence of these disorders.

Recommendations for Future Research

As stated previously, there is very little research that examines the personal characteristics of adolescent sexual offenders diagnosed with HFA/AD. More research is needed on adjudicated adolescent sexual offenders with HFA/AD in order to further explore specific deficits and treatment needs. Due to the unique symptomatology and

behaviors exhibited by those with HFA/AD, researchers need to begin to separate

individuals with ASD from other populations that are commonly grouped together under

the heading "developmental disabilities" or "intellectual disabilities." Research on sexual

offenders should also parcel out sexual offenders with HFA/AD from non-HFA/AD

offenders due to their differing treatment needs. Rehabilitative programs will likely be

more effective if they are designed to meet the specific needs of adolescents with

HFA/AD who sexually offend (Shirk & Russell, 1996).

Additionally, studies that examine the effectiveness of treatment programs for

adolescent sexual offenders with HFA/AD are needed, such as those addressing

childhood maltreatment or depressive symptomatology. Furthermore, researchers should

consider developing prevention programs for children and adolescents with ASD that

include sex education and social skills training in order to prevent future sexual offending

behaviors.

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