

**LOW INCOME URBAN YOUTH EXPOSED TO VIOLENCE WHO ARE
DIAGNOSED WITH COMORBID ATTENTION-
DEFICIT/HYPERACTIVITY
AND POSTTRAUMATIC STRESS DISORDER**

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ABSTRACT

With all of the recent chronic exposure to violence in Milwaukee, Wisconsin central city, it is becoming increasingly common for urban children to be at risk of developing psychopathology. Many of the youth victims and survivors that I work with who are exposed to chronic violence, two common diagnoses are Attention-Deficit/Hyperactivity Disorder (ADHD) and Posttraumatic Stress Disorder (PTSD). Most studies looking at the comorbidity between ADHD and PTSD have focused only on maltreated children. This is a study to look at comorbid rates of ADHD and PTSD for children exposed to chronic violence (who have witnessed or who have been a victim of a traumatic event) not limited to maltreatment. Specifically, this study evaluated rates of PTSD symptoms in children with and without ADHD, to examine the rates of ADHD and PTSD symptomatology among children from low income urban environments. Contrary to the hypothesis, children diagnosed with ADHD were not significantly more likely to meet criteria for PTSD nor did they exhibit more symptoms of PTSD than children without ADHD.

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CHAPTER I: INTRODUCTION

The most commonly diagnosed disorder in children is Attention-Deficit/Hyperactivity Disorder (Barkley, 1990). Studies investigating the prevalence of ADHD from 1990 until 2000 have found that 8.1% to 17.8% of American children suffer from this disorder (Buitelaar, 2002). ADHD is diagnosed more often in males than females and in children from lower socioeconomic status (SES) families than higher income families (Biederman, Faraone, & Monuteaux, 2002; Biederman, Milberger, Faraone, & Kiely, 1995; Gingerich, Turnock, & Litfin, 1998).

In a study done by Stevens (1981), parents, teachers, and school psychologists were more likely to report children from low SES families and ethnic minority children as clinically significant for hyperactivity and attentional problems compared to their higher income and Caucasian peers. Barkley (1990) postulates that "Social Drift" can explain the high prevalence of ADHD among low SES children. According to the theory of "Social Drift," children with ADHD do not benefit from their educational experience as much as their non-ADHD peers and subsequently do not succeed in the workforce as well. Their children, therefore, grow up in the lower SES bracket. Although Barkley's theory relies on genetics to explain the discrepancy among diagnosis across SES brackets, an adoption study found a significant correlation between adopted families' SES and the adoptee's subsequent diagnosis of ADHD (Cadoret &

Stewart, 1991).

Discrepancy between ADHD diagnoses across SES has been found both within the United States and internationally (Gingerich, Turnock, Litfin, & Rosen, 1998).

Controversy has developed around the diagnosis of ADHD due to the fact that it is highly comorbid with a variety of other psychological disorders (Biederman, Newcorn, & Sprich, 1991; Connor, Edwards, Fletcher, Baird, & Barkley, 2003). Children and adolescents with comorbid disorders often present with more severe symptoms of ADHD and have a higher risk of problems into adulthood. Biederman et al. (1991) conducted a review of studies and found that in both epidemiological and clinical samples of children and adolescents with an ADHD diagnosis, the most common comorbid disorder was conduct disorder. Specifically, for children diagnosed with ADHD, 35-50% also met diagnostic criteria for Conduct Disorder (CD), 35% were diagnosed with Oppositional Defiant Disorder (ODD), 15-75% with mood disorders, and 25% with anxiety disorders. Therefore, differential diagnosis of ADHD is complicated by this high rate of comorbidity.

For children who have witnessed or who have been a victim of a traumatic event, recent research has found significant rates of comorbidity between ADHD and Post Traumatic Stress Disorder (PTSD) (Cuffe,

McCullough, & Pumariega, 1994; Famularo, Kinscherff, & Fenton, 1996; Weinstein, Staffelback, & Biaggio, 2000; Glod & Teicher, 1996; McLeer, Callaghan, Henry, & Orvaschel, 1994). Comorbid ADHD and PTSD diagnoses have been found in maltreated children both with a primary diagnosis of PTSD as well as children with a primary diagnosis of ADHD (McLeer, Deblinger, Henry, & Orvaschel, 1992; McLeer, Callaghan, Henry, & Wallen, 1994; Merry & Andrews, 1994). Children from urban, low SES families are at a higher risk of witnessing or being a victim of one type of traumatic event, that of violence (Buka, Stichick, Birdthistle, & Earls, 2001; Fitzpatrick & Boldizar, 1993).

STATEMENT OF THE PROBLEM

The incidence of psychopathology among children has increased substantially during the past decade. For example, Costello and Mustillo (2003) conducted a longitudinal study of children from the age of 9 until they turned sixteen and found that during the course of the study, 36.7% of the children developed at least one psychiatric disorder.

PURPOSE OF THE RESEARCH

The purpose of this study is to look at the rates of ADHD and PTSD symptomatology among children from a low socioeconomic status (SES), urban environment. It compares rates of PTSD symptomatology in clinically referred ADHD children and non-ADHD children. Risk factors of PTSD, especially those experienced by urban

youth from low income families, are examined. The ADHD and PTSD literature is then tied together to discuss the comorbidity between PTSD and ADHD diagnosis for children who have experience trauma, namely violence; how these disorders can have similar profiles, and the importance of distinguishing between these disorders in treatment planning.

SIGNIFICANCE OF THE PROBLEM

Children's exposure to violence is becoming increasingly common. For example, homicide is the third leading cause of death among elementary and middle school students (Children's Defense Fund Report, 1995). Fitzpatrick and Boldizar (1993) found that among low-income inner-city African American youth ages seven to 18, 70% were victims of at least one violent act and 85% had witnessed at least one violent act. Overstreet, Dempsey, Graham, and Moely (1999) studied violence exposure among low-income children between the ages of 10 and 15 and found that 92% had heard guns fired in their neighborhood; 83% knew someone killed by violence; 55% had witnessed a shooting; 43% had seen a dead body in their neighborhood; 37% had been victims of physical violence; and 10% had been threatened with murder.

Furthermore, exposure to violent events was chronic, with over 50% of children having witnessed three or more arrests and/or assaults, over 50% having known three or more people shot or murdered, and 30% having known three or more people who had been robbed

or stabbed. Schwab-Stone and colleagues (1999) found that on average, sixth, eighth, and 10th graders in an urban school system reported witnessing three different types of violence. Such prominent exposure to violence is concerning with studies showing that 50% of children exposed to trauma before age 10 develop psychological problems in their lifetime.

For children from economically disadvantaged families, chronic exposure to violence is prevalent (Buka, Stichick, Birdthistle, & Earls, 2001; Gladstein, Slater, & Heald, 1992; Fitzpatrick & Boldizar, 1993; Berton and Stabb, 1996; Breslau et al., 1994; Moses, 1999; Schwab-Stone et al., 1995). For example, Gladstein, Slater, and Heald (1992) compared violence exposure between inner city youth and upper-middle class youth. Results indicated that inner-city youth were more likely to know a victim of a violent act or a murder victim than were the upper-middle class youth (45% and 67% respectively for the inner-city children and 25% and 14% for the upper-middle class youths respectively). Additionally, only 12% of the inner-city children denied being victims of violence, knowing victims of violence, or witnessing violence, while 25% of the upper-middle class youths denied these things. It is important to note that on average, the inner-city children were six years younger than the comparison group, meaning that they had experienced more violence

in less time than the comparison.

The impact of chronic violence exposure on the psychological functioning of exposed children is evident in the literature (Berton & Stabb, 1996; Margolin & Gordis, 2000; Singer, Anglin, Song, & Lunghofer, 1995). For example, Berton and Stabb (1995) looked at violence exposure and subsequent development of PTSD symptomatology among heterogeneous SES urban high school students and found that 29% met diagnostic criteria for PTSD, which is much higher than shown in studies of PTSD prevalence among the general population (Davidson, Hughes, Blazer, & George, 1991; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). Furthermore, the variable most predictive of PTSD development was self reported domestic or community violence. Another study of urban high school students from low income families found an even greater prevalence of PTSD. Specifically, 34.5% met full diagnostic criteria and 48.8% were symptomatic but did not meet full criteria. Although 16.7% of the sample was completely asymptomatic, none who had been exposed to trauma were completely asymptomatic.

ASSUMPTIONS

Children from a low socioeconomic status family are at a greater risk of developing psychopathology (Biederman, Milberger, Faraone, & Kiely, 1995;

Biederman, Faraone, & Monuteaux, 2002; Gingerich, Turnock, & Litfin, 1998; Linares, Heeren, Brontiman, Zuckerman, Augustyn, & Tronier, 2001). Among the violence exposed, inner-city youth of modern society, two prominent disorders are ADHD and PTSD. As studies such as McLeer, Deblinger, and Orvaschel (1992) and McLeer, Callaghan, Henry, and Wallen (1994) have shown, there is a high rate of comorbidity between these disorders for children exposed to violence. This has been especially studied among maltreated children. For example, McLeer and colleagues (1994) matched two clinical populations of children, one group who had been sexually abused and one group who had not, on demographic statistics including family income. Among the sexually abused group of children, 23.1% met criteria for both ADHD and PTSD, with a diagnosis of ADHD as the most common (46%) and PTSD as the second most common (42.3%).

Conversely, a study performed by McLeer and colleagues (1992) looked at the psychopathology of ninety-two sexually abused children and found that 54% who received a primary diagnosis of PTSD also met the diagnostic criteria for ADHD. Similar results were found in studies conducted by Famularo, Kinscherff, and Fenton (1992) and Merry and Andrews (1993), which found that maltreated children with a primary diagnosis of PTSD were likely to meet the qualification for a host of other psychological disorders, including ADHD. Merry and Andrews (1994),

for example, found that within a sample of sexually abused children, 18.2% met the diagnostic criteria for PTSD. Rates of ADHD, however, among this sample were more than double that found within the community.

A study conducted by Glod and Teicher (1995), which measured the circadian rhythm of abused children, determined that children with PTSD diagnosis exhibited rhythms comparable to levels identified with ADHD. Specifically, children with ADHD, and in this study those with PTSD, were found to have continuously high activity patterns during the day with continuously low patterns during the night. Furthermore, Glod and Teicher (1995) found that the activity levels of abused children diagnosed with ADHD were equal to the levels of abused children with PTSD, even if these children did not meet the DSM diagnostic criteria for ADHD. Unfortunately, the comorbidity between PTSD and ADHD has not been looked at closely outside of maltreated populations.

Differential diagnosis of PTSD and ADHD, however, can be difficult due to symptom overlap. Weinstein, Staffelbach, and Biaggio (2000) suggest that the overlap of symptoms might be due to three different causes. First, many symptoms of PTSD resemble those of ADHD. Second, symptoms of PTSD and ADHD may actually co-occur. Finally, there may be specific symptoms that are common to both disorders. What the

actual relationship is between PTSD and ADHD, however, has not been determined and remains a source of arguments within the literature.

How the symptoms are related to each other is also difficult to determine. Symptoms of PTSD that resemble those of ADHD occur mainly within the persistent arousal cluster. Specifically, these are sleeplessness, irritability or anger, difficulty concentrating, hyper vigilance, and exaggerated startle response (Kiser, Heston, Millsap, & Pruitt, 1991; Weinstein, Staffelbach, & Biaggio, 2000). These symptoms can be a result of the "flight or fight" mentality that may develop after experiencing a traumatic event. Specifically, those who are traumatized may become hypersensitive to their surroundings and have difficulty filtering out trivial stimuli, as much as the ADHD child who is "often distracted by extraneous stimuli" (APPA, 1994). This thought is echoed by Perry (1997) who suggests that the traumatized child diagnosed with ADHD does not truly have an internal deficit in their ability to attend to a task, but rather that they are hyper vigilant to their surroundings.

Symptom overlap, of PTSD and ADHD however, is based not only on the persistent arousal cluster. For example, Ford and colleagues (2000) found that ADHD children exposed to a traumatic event also had high scores on the intrusive re-experiencing cluster.

Generally, Weinstein, Staffelbach, and Biaggio (2000) suggest that both the inattention and hyperactivity of ADHD is associated with symptoms from each of the three PTSD symptom clusters. For example, inattention associated with ADHD is similar to PTSD symptoms such as 1) acting as if the traumatic event were reoccurring; 2) psychological distress at exposure to cues associated with the trauma; and 3) problems concentrating. For the ADHD category of inattention, this is three examples of one symptom from each PTSD that is manifested. This pattern can also be seen for the ADHD category of Hyperactivity/impulsivity.

Biologically, Glod and Teicher (1995) found that manifestation of PTSD and ADHD on the circadian rhythm of abused children is very similar. Specifically, they determined that abused children diagnosed with PTSD exhibited circadian activity levels comparable to those seen from children diagnosed with ADHD.

It is important that an accurate diagnosis between ADHD and PTSD is made, because treatments of these two disorders are vastly different (Kerig, Fedorowicz, Brown, & Warren, 2000; Pfefferbaum, 1997; Weinstein, Staffelbach, & Biaggio, 2000). Treatment of ADHD often consists of teaching skills of behavioral management, social skills training, and the use of stimulant medication (Weinstein, Staffelbach, & Biaggio, 2000). PTSD treatment, however, attempts to alleviate emotional distress and help the person

regain a sense of security through such techniques as therapeutic re-exposure to the traumatic event, systematic desensitization, play therapy, and clearing up cognitive distortions (Kerig, Fedorowicz, Brown, & Warren, 2000; Pfefferbaum, 1997). If no attention is paid to the PTSD symptoms, they are only likely to continue or increase.

DELIMITATIONS OF THE RESEARCH

The research was conducted in and through the Karrmann Library at the University of Wisconsin-Platteville. Primary searches will be conducted via the Internet through Journal of American Academy of Child and Adolescent Psychiatry. Another key search will be done by Darryl L. Hall of Children Hospital and "DSM-IV anxiety and mood disorders in a large clinical sample," Journal of Abnormal Psychology.

METHOD OF APPROACH

A brief review of literature on Attention-Deficit/Hyperactivity Disorder according to the DSM-IV-TR was conducted. A second review of literature in Posttraumatic Stress Disorder according to DSM-III was conducted.

Chapter 2: Review of Literature

ATTENTION-DEFICIT/HYPERACTIVITY DISORDER LITERATURE

According to the DSM-IV-TR, an ADHD diagnosis is warranted when the person meets either six or more symptoms of hyperactivity/ impulsivity [American Psychiatric Association (APA), 2000]. Symptoms of inattention include difficulty sustaining attention, not following through on instructions, being forgetful, being easily distracted, and having difficulty with organization. Symptoms of hyperactivity/ impulsivity include fidgeting, talking excessively, difficulty engaging in leisure activities quietly, blurting out answers, and difficulty waiting one's turn. Furthermore, these symptoms must be present before age seven and create impairment in at least two different settings.

Diagnosis of ADHD is sub typed into ADHD with predominantly hyperactive/impulsive features; ADHD with predominantly inattentive features and ADHD combined type. Buitelaar (2002) stated that, although most children who are clinically referred for ADHD meet the criteria for combined type, epidemiological studies have found that ADHD inattentive type is actually most common.

POSTTRAUMATIC STRESS DISORDER LITERATURE

The term post Traumatic Stress Disorder (PTSD) was coined in 1980 and first entered the DSM classification system with the advent of the DSM-III as an anxiety disorder (Tomb, 1994). The creation of this diagnostic category helped define the relationship between experiencing trauma and the development of subsequent psychological problems. It is a unique disorder in that it is partly defined by an etiological event, namely the trauma. Since the introduction of PTSD into the psychological lexicon, there has been a definitional shift from a focus on the severity of the event a person experiences towards a focus on the patient's reaction to the event. Currently, according to the DSM-IV-TR classification system, a person must experience actual or threatened harm and react with feelings of "fear, helplessness, or horror" to even be considered as having PTSD [American Association of Child and Adolescent Psychiatry (AACAP), 1998; APA, 2000; Tomb, 1994].

To meet diagnostic criteria for PTSD, a person must have symptoms from each of three symptom clusters: generalized psychological numbing or avoidance, physiological arousal, and symptoms consistent with the persistent re-experiencing of the traumatic event. According to the DSM-IV-TR, the person must experience three or more symptoms from the numbing/avoidance cluster that were not present before the trauma. Symptoms from this cluster include efforts to avoid thoughts of, or talk about the event;

inability to recall important aspects of the trauma; feelings of detachment; restricted affect; and a sense of a foreshortened future.

With regard to the second symptom cluster, physiological arousal, two or more symptoms must be present. These symptoms include irritability, difficulty concentrating, hyper vigilance, and sleep difficulties. One symptom from the third symptom cluster, persistent re-experiencing of the traumatic event, must be present. Symptoms in this cluster include recurrent dreams of the event, psychological or physiological distress at cues that symbolize the event, and feeling that the traumatic event is reoccurring. All identified symptoms must be present for a month or longer and must cause significant distress or impairment in social, occupational, or other important areas of functioning.

There are three subtypes of PTSD: Acute, chronic, and delayed onset. The "acute" subtype occurs when the duration of the symptoms last less than three months. The "chronic" subtype occurs when the symptoms last three months or longer. Delayed-onset PTSD occurs when the onset of symptoms begin at least six months after the traumatic event. Acute Stress Disorder was included in the DSM-IV to encompass those who have PTSD symptoms that appear within one month of the traumatic event but last less than one month; however, once symptom duration exceeds one month, the

diagnosis should be changed from Acute Stress Disorder to PTSD (APA, 2000).

Developmental Expression of PTSD

Regardless of developmental stage, Terr (1991) proposes four distinct characteristics that will be present in all children diagnosed with PTSD. These are: repeatedly perceived memories of the trauma; repetitive behavior; trauma-specific fears; and changes in attitudes about people, life, and the future. Repeated memories of the trauma can occur at any age, despite the fact that explicit, verbal memory does not develop until age five (Scheeringa, Zeanah, Drell, & Larrieu, 1995; Terr et al., 1987). This is because behavioral memory occurs due to visual rather than verbal memory. Other ways in which the trauma can be perceived include tactile, positional, or smell memories. Memories are most likely to occur when children are relaxing, such as right before bedtime, while watching TV, or during class. Repetitive behavior, however, may occur so frequently that it becomes an ingrained part of the person's personality. The fourth characteristic Terr discusses, that of a sense of foreshortened future, was observed first in children exposed to trauma before it was ever considered a symptom of adulthood PTSD.

Research has shown, however, that developmental differences exist in the expression of PTSD. For

example, Arroyo and Eth (1995) found that infants between the ages of 28 and 36 months were likely to show separation anxiety, exaggerated startle responses, nightmares, and developmental regression when exposed to trauma. Young children between the ages of three and five years, however, often present with avoidant symptoms. Specifically, they appear more withdrawn and with poor social skills. School-aged children often regressed developmentally, specifically by engaging in repetitive play, exhibiting hyper vigilance and decreased concentration, more fears, and a sense of foreshortened future.

Modifications of PTSD criteria based on a child's development are included in the DSM criteria. There are four specific areas in which the DSM-IV-TR differentiates PTSD expression between adults and children. First, the feelings of helplessness, fear, or horror are often witnessed in children as disorganized or agitated behavior. The other three child-specific criteria can be found in the re-experiencing cluster of symptoms. First, recurrent distressing thoughts of the trauma may be exhibited in children as repetitive play where themes or aspects of the trauma are expressed. Second, the presence of nightmares specific to the trauma may be expressed as nightmares without recognizable content in children. Finally, the criteria of feeling or acting as if the trauma was recurring, in young children might be

expressed as trauma-specific re-enactment.

Kerig and colleagues (2000) argue that, although some developmental modifications are made in the DSM-IV-TR, these are not broad enough. For example, they highlight that recurrent thoughts exhibited through repetitive play pertains only to young children. However, these thoughts are often present as rescue fantasies in school-aged children and adolescents. Another example Kerig and colleagues use is that distress caused by exposure to cues of the trauma, has no developmental consideration within the DSM-IV-TR. However, school-aged children and adolescents have been shown to have both trauma specific and mundane fears when presented with such a cue, while young children will often exhibit separation anxiety, stranger anxiety, and regressive fears. For symptoms within the avoidance and numbing cluster, adults will often actively avoid thoughts or feelings that are associated with the trauma. Children, however, will often "space out," thus appearing inattentive. This difference, however, is not specified in the DSM-IV-TR. Research has not indicated developmental differences for symptoms within the arousal cluster (Kerig, Fedorowicz, Brown, & Warren, 2000).

Prevalence of Post Traumatic Stress Disorder (PTSD)

Research of Post Traumatic Stress Disorder (PTSD)

among children has begun to focus on PTSD development among both maltreated and/or low-income urban youth. Giaconia and colleagues (1995) found that of adolescents who were studied longitudinally from age five to eighteen, from a predominantly white, working class environment, 6.3% met PTSD diagnostic criteria; however, for those who were exposed to a specific trauma, 14.5% developed PTSD. Prevalence increases when looking at low income, inner-city youth where prevalence has been found to be around 27-29% (Fitzpatrick & Boldizar, 1993; Wright & Stabb, 1996). Post Traumatic Stress Disorder is also believed to be a common consequence of maltreatment with estimates ranging from 18% to 62% for physically and/or sexually abused children (Merry & Andrews, 1994; McLeer, Dixon, Henry, Ruggiero, Escovitz, Niedda, & Scholle, 1998).

Diagnosing PTSD in Children

Rates of PTSD in children are considered underestimated because the "diagnostic bar" is set too high. Studies looking at the prevalence of PTSD within communities, among victims of domestic violence, witnesses and targets of violence, and victims of sexual abuse have indicated that many of these children only meet partial diagnostic criteria for PTSD (Davidson, Hughes, Blazer, & George, 1991; McCloskey & Walker, 2000; Berman, Kurtiness, Silverman, & Serafini, 1996; McLeer, Callaghan, Henry, & Wallen, 1992). For example, Berman, Kurtiness,

Silverman, and Serafini (1996) found among high school students living in urban environments, high rates of PTSD symptomatology for those exposed to traumatic events, with an average of ten symptoms; however, while 34.5% of those exposed to traumatic events met PTSD criteria, 48.8% were symptomatic but did not meet full criteria.

In considering sub threshold PTSD, McLeer, Deblinger, Henry, and Orvaschel (1992) and Silva and colleagues (2000) found that those exposed to traumatic events who did not meet the diagnostic criteria for PTSD were most likely to develop symptoms classified as cluster B, or the re-experiencing symptom cluster. However, symptoms least likely to be experienced by children exposed to trauma but who did not meet the diagnostic criteria for PTSD are inconsistent with McLeer, Deblinger, Henry, and Orvaschel (1992) finds that sexually abused children are least likely to meet full criteria for symptoms within cluster C, or avoidant behaviors. Silva and colleagues (2000) found inner-city children least likely to meet full criteria for symptoms in cluster D, or persistent arousal. Overall Tomb (1994) argues that:

The cutoff point for PTSD remains troublesome, particularly because PTSD-like symptoms are prevalent in the community at large and sub threshold PTSD is common (p. 24).

Although full diagnostic criteria are not being met among these children, the level of symptomatology

remains high. Therefore, Lubit, Rovine, Defrancisci, and Eth (2003) and Pfefferbaum (1997) suggest that it is important to consider the level of impairment both at school and at home that is a result of exposure to trauma rather than whether the child meets PTSD criteria.

Among children and adolescents, the amount of exposure to a traumatic event, as well as the subsequent development of PTSD symptomatology, varies depending on whether the reporter is the child or the parent (Buka, Stichick, Birdthistle, & Earls, 2000; Groves, 1997; Handford, Mayes, Mattison, Humphrey, Bognato, Bixler, & Kales, 1984). For example, in a NIMH Community Violence Project in 1993, Richters and Martinez found that 61% of young children reported having witnessed or been a victim of violence while only 19% of their parents reported that their children had been exposed to violence. Similarly, 72% of older children reported such violence exposure while only 32% of their parents reported that their children had been exposed.

While Wolfe, Gentile, and Wolfe (1989) found that mothers perceive their children as having more psychological problems than was reported by their children, most research has shown that adults often appear to underestimate trauma symptoms in their children (Handford et al., 1984). For example, Famularo, Kinscherff, and Fenton (1992) found that 39% of maltreated children met criteria for PTSD according to their responses; only 21% of the same children met criteria according to their parents' responses. Specifically, parents are more likely to report externalizing behavior problems with their children than internalizing problems (Lubit, Rovine, Defrancisci, & Eth, 2003); Newman, 2002). Parents are considered the best reporters of behavioral reenactments, angry behavior, hyper vigilance, sleep difficulties, or startle responses in their children (Newman, 2002). Children are often poor reporters of this information due to denial, avoidance, minimization, amnesia, or communication difficulties.

Risk Factors Associated with PTSD Development

Traumatic events that may lead to the development of PTSD in children include physical and/or sexual abuse, domestic violence, being robbed, being in a fire, witnessing a serious accident or death of parent or sibling, being present when the family home is robbed, and natural disasters (Emery & Laumann-Billings, 1998; Silva et al., 2000). Additionally, although not traditionally considered qualifying PTSD

traumatic events Giaconia and colleagues (1995) found that adolescent respondents developed high rates of PTSD when a parent is sent to jail or when a parent reveals a past suicide attempt. Specifically, these adolescents were eight times more likely to show symptoms of avoidance and numbing and seven times more likely to meet full PTSD criteria.

Research has shown that PTSD symptomatology is more severe and longer lasting when the traumatic event is by human design rather than natural disaster (Malmquist, 1986). Norris (1992) found that 7-11% of those with PTSD were exposed to violent crimes while only 5-8% of those with PTSD were exposed to environmental hazards. Similar results were found by McCluskey and Walker (2000) who found

that 83% of those diagnosed with PTSD came from violent homes.

Post Traumatic Stress Disorder has been diagnosed both in victimized children as well as children who witnessed violence. For example, McCloskey and Walker (2000) found that 38% of school aged victims of trauma developed PTSD while 21% who witnessed trauma did so. Berman et al. (1995), however, found no significant difference in PTSD development between witnesses and victims of childhood violence.

Chapter III: CONCLUSIONS AND RECOMMENDATIONS

Children from lower income families are likely to develop more psychopathology than children from families in a higher SES bracket (Gingerich, Turnock, & Litfin, 1998; Linares et al., 2001; Biederman, Milberger, Faraone, & Kiely, 1995; Biederman, Faraone, & Monuteaux, 2002). The lower a family's SES, the larger the number of stressful events a family experiences. One type of stress experienced by inner city, low-income children is that of violence.

Although parents often underestimate the extent to which their children experience daily violence, studies such as those conducted by Fitzpatrick and Boldizar (1993) and Overstreet and colleagues (2000) exemplify the reality of the scope of violence exposure. Furthermore, chronic violence exposure increases the risk of developing psychological problems (McGruder-Johnson, Davidson, Gleaves, Stock, & Finch, 2000). Studies of PTSD development among inner city, violence exposed youth indicate a substantially higher percentage than that found among children from the general population (Davidson, Hughes, Blazer, & George, 1991; Wright & Stabb, 1996).

The development of the diagnosis of PTSD was an attempt to help define the relationship between trauma and subsequent psychological problems, including generalized psychological numbing or avoidance, physiological arousal, and symptoms consistent with the persistent re-experiencing of the trauma.

However, the overlap in symptomatology between PTSD and another common diagnosis for low-income children, ADHD, makes differential diagnosis between these two disorders difficult (Weinstein, Staffelbach, & Biaggio, 2000). Accurate diagnosis, however, is extremely important as these two disorders are treated in entirely different ways.

Future studies looking at comorbid rates of PTSD and ADHD should be conducted with ample power in order to accurately determine if there are any significant relationships. Furthermore, due to the difficulty recruiting from a medical clinic during the school year, it is suggested that such studies recruit children from other venues, such as schools and after-care clinics.

In addition to the aforementioned studies and suggestions, it is recommended that parents become more actively involved in their child's education and treatment. Another suggestion is to visit the child's school regularly, become active in the Parent Teacher Association (PTA) and to volunteer with organizations that treat children with PTSD and ADHD. Finally parents should monitor what children view on the computer and watch on television. Children should be encouraged to play outside in the fresh air; parents can set the example by playing with them.

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