A COMPARATIVE ANALYSIS OF THE SOCIAL SKILLS OF NEW YORK CITY PRESCHOOL CHILDREN FOLLOWING SEPTEMBER 11, 2001

by

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A dissertation submitted to the Graduate Faculty in Educational Psychology in partial fulfillment of the requirements for the degree of Doctor of Philosophy, The City University of New York

2005

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Abstract

A COMPARATIVE ANALYSIS OF THE SOCIAL SKILLS OF NEW YORK CITY PRESCHOOL CHILDREN FOLLOWING SEPTEMBER 11, 2001

by

Pamela Mitchell

Adviser: Professor Philip A. Saigh

This study sought to determine if preschool children who were personally exposed to the September 11, 2001 attack on New York City evidenced social skill deficits and behavior problems relative to a group of non-trauma-exposed children. Measures included the *Preschool Trauma Questionnaire* (PTQ), which identified exposure to the September 11, 2001 attack and the *Social Skills Rating System* (SSRS), which assessed social skills and behavior problems. Fifty-eight children between the ages of 2.72 and 4.43 years participated in the study. The trauma-exposed group (n = 32) directly experienced the events of September 11 whereas the non-trauma-exposed group (n = 26) was not directly exposed. Data analyses determined that the mean SSRS social skills score of the trauma-exposed group was significantly higher than the mean of the non-trauma exposed group. Additional analyses failed to identify significant differences between the trauma-exposed and non-trauma-exposed groups on all of the SSRS subscales.

ACKNOWLEDGEMENTS

First and foremost, I would like to thank my advisor and mentor, Professor Saigh. Since beginning the Ph.D. program in 1998, Professor Saigh has provided me with wonderful opportunities to develop and enhance my research and clinical skills. Throughout the years, he continued to guide me and support my career development. Despite his move to a new university, he spent countless hours working with me on this project. For that, I am indebted to him. I thank Professor Saigh for his continued support and encouragement throughout my doctoral studies.

I would like to thank Professor Tryon, Professor Fish, Professor Gross, Professor LiPuma, and Rhonda Palant for providing me with support and guidance as I progressed through the graduate program. I would like to extend a special thank you to Professor Anastasia Yasik who has been a major source of support throughout my doctoral studies. In the process, she has become a very close friend and colleague.

I would also like to thank my colleagues at the Graduate Center for their support, with special thanks to Rebecca Oakes for her encouragement. I would also like to thank my colleagues at South Huntington School District for their encouragement. Finally, I would like to thank my parents, sister, in-laws, and other close family and friends for their continued encouragement and assistance as I completed the dissertation. I am most grateful to my husband Marcus for his support and encouragement throughout my schooling. I could not have completed this program without his unconditional belief in me that I could succeed.

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Posttraumatic Stress Disorder (PTSD) was recognized as an independent psychiatric disorder in the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed.; DSM-III) in 1980. However, prior to its formal introduction into the psychiatric nomenclature, conditions resembling PTSD were frequently described in the literature (Eth, 1990; Saigh & Bremner, 1999). Terms such as "shell shock," "traumatic neurosis," "rape trauma syndrome," and "gross stress reaction" have been used to describe physiological and emotional reactions to traumatic events (Davidson & Foa, 1993; Saigh & Bremner, 1999). Early literary representations of PTSD have also been noted. For example, Shakespeare's *Henry IV* displayed the characteristics of intrusive features, avoidance, and hyperarousal, that are considered the main symptom clusters of PTSD (Davidson, 1995).

PTSD symptoms have been reported as early as the 1600's. Six months after the Great Fire of London, Samuel Pepys (1666, as cited in Daly, 1983) recorded re-experiencing, phobic avoidance, emotional constriction, and hyperarousal symptoms following the fire (Daly, 1983; Saigh & Bremner, 1999). An early medical reference to traumatic stress was reported by Silas Weir Mitchell during the American Civil War (n.d., as cited in Davidson, 1995). Mitchell observed traumatic stress responses in male veterans and female civilians. He also represented that these cases self-medicated with opiates and alcohol in order to manage their symptoms (Davidson, 1995).

Historically, interest in traumatic stress reactions occurred in response to wartime (Davidson & Foa, 1993). During World War I, the term "shell shock" was used to explain the symptoms associated with PTSD. It was originally believed that symptoms

(e.g., hyperarousal) were due to neurological damage caused by exploding ammunition shells. However, the disorder was eventually renamed "combat neurosis" when it was determined that symptoms were psychologically rather than physiologically based (Cohen, 1998).

Interest in traumatic stress waned after World War I; however, it increased during World War II (Cohen, 1998). Survivors of concentration camps reported symptoms of anxiety, motor restlessness, hyperapprehensiveness, difficulty sleeping, night terrors, fatigue, phobic reactions, and recurrent thoughts of persecutory experiences (Frankl, 1959). The constellation of symptoms shared by so many survivors caused this disorder to be named "concentration camp syndrome" (Davidson, 1995).

Although the majority of the literature during the war focused on adults, there were significant efforts to document traumatic stress reactions of children (Saigh & Bremner, 1999). For example, children who survived concentration camps displayed traumatic reactions, including sleep disorders, somatic complaints, panic attacks, and hypervigilance (Friedman, 1948). Freud and Burlingham (1943) provided observations and in-depth case studies of children who lived through wartime in England in their book *War and Children*. They also documented the psychological reactions of British children to war, including anxiety and "cranky" behavior. Brander (1943) reported the reactions of Finnish children during the Russo-Finnish war. According to Brander, many of these children exhibited traumatic stress reactions, including fears, avoidance, and reactivity to war-related stimuli. These effects were still present 1 year after the war ended.

Following World War II, the American Psychiatric Association published the first edition of *Diagnostic and Statistical Manual of Mental Disorders* (1952). "Gross stress

reaction" was included as a classification, subdivided into two subtypes: civilian and combat types. Gross stress reaction was considered a transient situational personality disorder and was intended to cover acute responses to stress (APA, 1952; Fletcher, 1996). No operational criteria were provided for this diagnosis, and children were not mentioned (Saigh, Green, & Korol, 1996).

In 1968, the American Psychiatric Association published the second edition of the *Diagnostic and Statistical Manual of Mental Disorders*. The classification of "gross stress reaction" was omitted and instead a category entitled "transient situational disturbance" was included (APA, 1968, p. 48). This category included disorders "that occur in individuals without any apparent underlying mental disorders and that represent an acute reaction to overwhelming environmental stress" (APA, 1968, p. 49). Disorders were classified according to individuals' developmental level, such as "adjustment reaction of childhood" and "adjustment reaction of adult life" (APA, 1968, p. 49). The latter classification provided three examples, one of which was "fear associated with military combat and manifested by trembling, running and hiding" (APA, 1968, p. 49). No diagnostic criteria were provided.

In the 1970's there was a renewed interest in posttraumatic stress studies. Many Vietnam War veterans reported PTSD symptoms and activist groups demanded greater attention to the psychological damage caused by the war (Cohen, 1998). Large-scale empirical studies were commissioned by the Veterans Administration to address these issues. In addition to war-related posttraumatic stress, there was a movement to treat "rape trauma syndrome" (Burgess & Holmstrom, 1974) experienced by victims of childhood sexual abuse, rape, or domestic violence. Individuals with rape trauma

syndrome were said to suffer from acute effects (e.g., tension headaches and anger) as well as long-term effects (e.g., rape-related nightmares and thoughts, avoidance behaviors, and subjective fears) (Burgess & Holmstrom, 1974). These historical events led to empirical research that examined traumatic stress reactions (Cohen, 1998). Subsequently, the American Psychiatric Association included the diagnosis of Posttraumatic Stress Disorder and its identifying criteria in the third edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-III; APA, 1980).

According to the DSM-III, PTSD was indicated by the "development of characteristic symptoms following a psychiatrically traumatic event that is generally beyond the realm of normal human experience" (APA, 1980, p. 236). The diagnostic criteria for PTSD included the re-experiencing of symptoms (e.g., recurrent and intrusive recollections of the event), numbing/avoidance symptoms (e.g., constricted affect), and two additional symptoms (e.g., hyper-alertness or exaggerated startle response) (APA, 1980).

Although the DSM-III indicated that PTSD can occur in childhood, doubts were raised about whether or not children could develop the disorder. The prevailing view throughout history has been that children are not greatly affected by traumatic events (Coromina, 1943). It was believed that children are too young or developmentally immature to be traumatized (Cohen, 1998).

Concurrent with the publication of DSM-III, noteworthy qualitative studies on childhood PTSD also were published. For example, Terr (1979) conducted a landmark study on childhood PTSD in Chowchilla, California. Terr examined the posttraumatic reactions of 23 children (ranging from ages 5 to 14 years) who were kidnapped from a

school bus and imprisoned for 27 hours. Terr conducted extensive interviews with the children and their parents, 6 to 10 months after the kidnapping. Terr (1979) reported that many children re-experienced traumatic events through dreams, behaviorally re-enacted the events through play, experienced personality changes (i.e., became more irritable or regressive), had difficulty in school, and developed intense fears. Many of these post-traumatic symptoms persisted for 4 years after the event (Terr, 1983).

More systematic and empirical PTSD research was conducted in the 1980s. Overall, research indicated that children might exhibit posttraumatic stress responses when confronted with a stressor (Fletcher, 1996). Saigh (1989b) examined the validity of the DSM-III posttraumatic stress disorder classification as applied to children. A case-control design was utilized to compare three groups of children: children with PTSD, children with simple phobia, and a control group of children who had not been diagnosed with PTSD or a simple phobia. The study found that children who presented with PTSD had higher levels of anxiety, depression, and misconduct than the phobic and non-clinical groups. This study supported the validity of the PTSD classification for children between the ages of 9 and 13 years (Saigh, 1989b).

The revision of the third edition of the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders* (DSM-III-R; APA, 1987) included contributions by clinical experts in childhood PTSD, which resulted in notes to the criteria for variations of symptom presentation in children (Cohen, 1998). For example, "repetitive play" and "loss of recently acquired developmental skills" were indicated as potential symptoms in children (APA, 1987, p. 250).

Saigh (1991) provided empirical evidence for the development of childhood

PTSD following four different types of traumatization. Specifically, he demonstrated that PTSD can occur in children as a result of direct exposure, observation, verbal mediation, and a combination of these methods. *The Children's PTSD Inventory* (Saigh, 1989a) was used to identify 230 Lebanese children with PTSD (ages 9 to 12 years 11 months). It was determined that 58 of these cases were traumatized through direct experience, 128 were traumatized through observation, 13 were traumatized through verbal mediation, and 31 were traumatized by a combination of methods. The children with PTSD, regardless of the method of traumatization, evidenced higher depression, anxiety, and conduct problems than a non-clinical control group (Saigh, 1991). These empirical studies provided evidence for the discriminant validity of childhood PTSD.

Saigh, Mroueh, and Bremner (1997) demonstrated that scholastic impairment might be associated with child-adolescent PTSD. Saigh et al. (1997) compared the performance of Lebanese adolescents on the *Metropolitan Achievement Test* (MAT; Prescott, Balow, Hogan & Farr, 1988). The sample included three groups of participants: a PTSD-positive group (exposed to war and met diagnostic criteria for PTSD), a PTSD-negative group (exposed to war but did not meet diagnostic criteria for PTSD), and a non-traumatized control group. The study indicated that PTSD-positive subjects evidenced more scholastic impairments than the PTSD-negative and control groups. The PTSD-negative group and the non-traumatized control group did not differ on the measure of achievement (Saigh et al., 1997).

In contrast to earlier editions, the fourth edition of the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV; APA, 1994) relied on empirical findings based on field trials and extensive literature reviews

(Saigh & Bremner, 1999). According to the DSM-IV, PTSD is indicated by traumatic stress exposure and a number of symptoms that were not evident before traumatization. The initial criterion (criterion "A") states that an individual must have been exposed to a traumatic event in which both of the following occurred: "the person experienced, witnessed, or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others" and "the person's response involved intense fear, helplessness or horror" (APA, 1994, p. 427-428). The DSM-IV posits that in children, this response may be expressed by "disorganized or agitated behavior" (APA, 1994, p. 428).

The DSM-IV includes the following three clusters: re-experiencing, avoidance/numbing, and increased arousal. Individuals must evidence at least one re-experiencing symptom, three avoidance/numbing symptoms, and two arousal symptoms for more than 1 month. In addition, the disturbance must cause clinically significant distress or impairment in functioning (APA, 1994). DSM-IV includes examples of how PTSD symptoms may present in children. For example, traumatic play, dreams without recognizable content, and trauma-specific re-enactment are included as examples of how traumatized children's re-experiencing symptoms may be displayed (APA, 1994).

A recent study has provided support for the differential validity of the DSM-IV PTSD classification as applied to youth. Saigh, Yasik, Oberfield, Halamandaris, and McHugh (2002) compared parent-rated *Child Behavior Checklist* (CBCL; Achenbach, 1991) scores of three groups of urban youth. The first group included participants who were exposed to an extreme stressor (e.g., physical assault, sexual assault) and met criteria for PTSD as diagnosed by *The Children's PTSD Inventory* (Saigh, 1998) and

clinical diagnostic interviews. The second group included participants that were exposed to extreme stress but did not meet criteria for PTSD (i.e., PTSD negative group), and the third group included non-traumatized controls. The study determined that CBCL scores of the PTSD positive group were significantly higher than the CBCL scores of the PTSD negative group and the control group. Specifically, PTSD positive participants scored higher on the Total, Internalizing, Withdrawn, Somatic Complaints, Anxious/Depressed, Thought Problems, Attention Problems, and Aggressive Problems scales than the other two groups. The other two groups did not differ significantly from each other (Saigh, Yasik, Oberfield, et al., 2002).

Although the criteria set forth by DSM-IV are accepted by most researchers and clinicians, some professionals have questioned the validity of the DSM-IV criteria used to diagnose PTSD in children younger than 48 months old. The limited research in the area of preschool traumatic stress indicates that traumatized preschool children frequently do not evidence PTSD as indicated by the DSM-IV criteria (Scheeringa, Zeanah, Drell & Larrieu, 1995). Scheeringa et al. (1995) suggested that DSM-IV criteria for PTSD are not sensitive to the developmental considerations of young children. They posit that the limited cognitive and expressive language skills of preschool children make it difficult to infer young children's thoughts and feelings. Therefore, the authors proposed alternate diagnostic criteria for young children that focus on observable behaviors.

The alternative criteria retained the primary diagnostic criterion of the DSM-IV that states that "the person experienced, witnessed, or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others" (APA, 1994, p. 427). DSM-IV criterion A2

("reaction involved intense fear, helplessness or horror") (p. 427) was deleted. The alternative criteria requires one "re-experiencing" item, (e.g., posttraumatic play, nightmares), one "numbing" item (e.g., constriction of play, socially withdrawn), one "increased arousal" item (e.g., night terrors, hypervigilance), and one "new fears and aggression" item (e.g., new separation anxiety, fear of the dark). As described in the DSM-IV, duration of symptoms must be more than 1 month. The criterion of "clinically significant distress or impairment" has been deleted from the alternative criteria (Scheeringa et al., 1995).

In 2001, Scheeringa, Peebles, Cook, and Zeanah examined the discriminant validity of the proposed alternative criteria. Fifteen traumatized preschool children and 12 at-risk preschool children (a comparison sample) were assessed with a standardized observation procedure and a semi-structured caregiver interview. The traumatized children showed significantly more posttraumatic symptoms using the alternative criteria of PTSD relative to the DSM-IV criteria of PTSD (Scheeringa et al., 2001).

Research indicates that young traumatized children may manifest a variety of behavioral problems such as fear of separation, increased dependence, marked startle reactions, and sleep problems (Zahr, 1996). Certainly, more empirical research is needed to fully understand the symptom expression of young traumatized children.

Summary

Overall, research on PTSD emphasized adults' responses to traumatic events. However, research efforts since the 1970's have demonstrated that children may experience posttraumatic reactions when confronted with a stressor. The inclusion of children's reactions in the DSM acknowledge the diagnosis of PTSD as applied to youth.

Chapter II: Epidemiology of Child-Adolescent Post-Traumatic Stress Disorder

The American Psychiatric Association's *Diagnostic and Statistical Manual* (DSM-IV; APA, 1994) reported that 1–14% of community based samples met criteria for PTSD at some time in their life. The prevalence rate for at-risk individuals (e.g., accident victims or combat veterans) was reported to be between 3% and 58% (APA, 1994). However, prevalence estimates reported in DSM-IV cannot be generalized to children due to the fact that the DSM-IV field trials did not involve participants younger than 15 years old (Saigh & Bremner, 1999; Saigh, Yasik, Oberfield, et al., 2002).

Community studies have been conducted to examine the prevalence of PTSD in adolescents. For example, a 1995 study by Giaconia and colleagues found that 6.3% of the 18 year olds sampled met DSM-III-R criteria for PTSD at some time in their life. A study by Kilpatrick, Saunders, and Resnick (1998) reported that 8.1% of a sample of adolescents (12–17 years old) met DSM-IV criteria for PTSD at some time in their life.

One published study reported prevalence rates of PTSD in a community sample of preschool children. Lavigne et al. (1996) reported that .1% of a sample of 3,860 preschool children (ages 2-5) met DSM-III-R criteria for PTSD. However, to date, there have been no large scale community studies that examined the prevalence of PTSD using DSM-IV criteria among children younger than 12 years old (Saigh, Yasik, Sack, & Koplewicz, 1999; Yule, 2001).

Most epidemiological research has focused on the prevalence of PTSD in clinic-referred samples of children, following exposure to specific stressors (e.g., criminal victimization, disasters) (Saigh et al., 1999). The following sections review the prevalence of child-adolescent exposure to traumatic events, as well as the reported

prevalence of PTSD among samples of traumatized children, who experienced: a) criminal victimization, b) war, c) natural disasters, and d) terrorism.

Exposure to Traumatic Events

Numerous studies have been conducted to examine the prevalence of child and adolescent exposure to traumatic events (Saigh et al., 1999). A longitudinal study of 1,420 North Carolinian children and adolescents found that 25% of the sample experienced at least one "high magnitude" stressor (e.g., sexual abuse, fire, serious illness, disaster) by age 16 (Costello, Erkanli, Fairbank, & Angold, 2002). Six percent of the sample witnessed a high magnitude stressor in the past 3 months (Costello et al., 2002).

Many studies that have examined the prevalence of child and adolescent exposure to traumatic events have focused on criminal victimization (Costello et al., 2002; Saigh et al., 1999). For example, Bell and Jenkins (1993) surveyed 1,035 middle and high school students in Chicago. Eleven percent of the sample reported being shot at, 3% reported that they had been shot, 4% reported being stabbed, and 2.5% reported they had been sexually assaulted. More than 75% of respondents reported witnessing one or more violent crimes.

Boney-McCoy and Finkelhor (1995) conducted a nationally representative survey of 2,000 children between the ages of 10 and 16. More than 40% of the sample reported being victims of violent and/or criminal acts at some point in their lives. Schwab-Stone and colleagues (1995) surveyed middle and high school students in an urban public school system. They found that 41% of their sample witnessed a shooting or stabbing within the past year.

A community study of adolescents conducted by Kilpatrick et al. (1998) reported that 8% of their sample had been sexually assaulted, 17% had been physical assaulted, and 39% had witnessed violent acts. Shahinfar, Fox, and Leavitt (2000) surveyed the parents of 155 preschool children attending Head Start in Washington, DC. Seventy eight percent of the children were exposed to community violence, either as a victim or as a witness.

In addition to criminal victimization, children may also be exposed to accidents and disasters. Crash data from the Department of Transportation indicated that approximately 242,000 children under the age of 15 were injured in Motor Vehicle Accidents in 2001 (National Highway Traffic Safety Administration, 2002). Natural disasters are considered relatively common events that affect "millions of adults and children annually" (Garrison et al., 1995, p. 1193).

In summary, the literature reports that children may be exposed to a variety of traumatic events, including criminal victimization, war, disasters, and accidents. Although prevalence estimates vary among studies and type of trauma, research indicates that many children are likely to be exposed to traumatic events at some point in their childhood.

PTSD Prevalence in Clinical Samples

Children Who Experienced Criminal Victimization

Child Abuse

McLeer and colleagues published a series of studies regarding the prevalence of PTSD among sexually abused youth. In 1988, McLeer, Deblinger, Atkins, Foa, and Ralphe assessed a sample of 31 sexually abused children between the ages of 3 and 16

years (mean age = 8.4 years). Within their sample, 48.4% met DSM-III-R criteria as measured by an author devised PTSD symptom checklist. McLeer, Deblinger, Henry, and Orvaschel (1992) reported that 43.9% of a sample of 92 sexually abused children between the ages of 3-16 years (mean age = 8.9 years) met criteria for PTSD. However, it should be noted that time interval was not reported between abusive incident and assessment for PTSD in either study.

Famularo, Kinscherff, and Fenton (1992) assessed 61 maltreated children and 35 control children between 5 and 10 years of age (mean age = 7.77). Type of abuse and time interval between abusive incident and assessment was not reported (Saigh et al., 1999). Famularo et al. reported that 21.3% of the maltreated children and 0% of the control children met DSM-III-R criteria for PTSD as measured by the PTSD module of the *Diagnostic Interview for Children and Adolescents-Revised 6th Version* (DICA-6-R; Reich & Welner, 1988).

Merry and Andrews (1994) examined the prevalence of PTSD among a sample of 95 sexually abused children in New Zealand 12 months after disclosing abuse. Children ranged between the ages of 4 through 16 years (mean age = 7.87). The authors indicate that 18.2% of the sample met DSM-III-R criteria for PTSD as measured by an author devised semi-structured interview (Merry & Andrews, 1994). Diamond (1995) used the DSM-III based *Children's PTSD Inventory* (Saigh, 1989a) to assess a sample of 24 documented or suspected cases of physical abuse of preschool children (mean age=4.98 years). The author reported that 70.8% of the sample met criteria for PTSD. Assessment occurred, on average, 6 months after trauma exposure.

Community Violence

Fitzpatrick and Boldizar (1993) surveyed 221 low income African American youth between the ages of 7 and 18 years old (mean age = 11.9) who had been exposed to chronic community violence. Twenty-seven percent of the sample met DSM-III-R criteria for PTSD using a revised version of the *Purdue Post-Traumatic Stress Scale* (Figley, 1989) that closely matches DSM-III-R criteria. No time interval between exposure and assessment was reported.

Magwaza, Killian, Petersen, and Pillay (1993) reported that preschool children who were exposed to chronic violence in South Africa suffered from posttraumatic symptoms. One hundred and forty-eight children between ages 2 and 7 years were rated by their teachers on *The Post Traumatic Stress Questionnaire for Children* (Middleton, Stavrou, Buys, & Soloman, 1988). This questionnaire is a DSM-III-R based semi-structured symptom checklist that screens for PTSD symptoms. The authors reported that 90 children (60% of the sample) displayed 4-6 symptoms of PTSD and 18 children (12% of the sample) displayed 7 or more symptoms (Magwaza et al., 1993).

Berman, Kurtines, Silverman, and Serafini (1996) assessed 96 high school students who had been exposed to crime and violence. Students ranged in age from 14 to 18 years (mean age = 16.4 years). *The Posttraumatic Stress Disorder Reaction Index* (PTSD-RI) (Frederick, 1985) was used to assess PTSD symptomotology as per DSM-III criteria. More than 93% of the sample reported witnessing or being a victim of a violent event. Of the adolescents exposed to a violent event, 18.6% fell within the "severe" range of posttraumatic symptomotology, using the Frederick scoring criteria (Berman et al., 1996). Scoring within the "severe" and "very severe" range on this scale may predict

a PTSD diagnosis (Koplewicz et al., 2002).

School Violence

Pynoos and colleagues (1987) also used the *PTSD Reaction Index* (PTSD-RI; Frederick, 1985) to sample 159 children between the ages of 5 and 13 (mean age = 9.2) who witnessed a sniper attack at their school. Exposure to the attack varied from direct (e.g., on the playground at the time of shooting) to indirect (e.g., out of vicinity at time of shooting). The number of posttraumatic symptoms increased as the degree of exposure increased. According to PTSD-RI scoring criteria, 38.4% of the total sample had either moderate or severe PTSD 1 month after the event (Pynoos et al., 1987). Specifically, 48% of the children with direct exposure exhibited severe PTSD at 1 month follow-up. A follow-up study (with 100 of the subjects) found that 74% of the students with direct exposure continued to report PTSD symptoms one year post-attack (Nader, Pynoos, Fairbanks, & Frederick, 1990).

Children Who Experienced War-Related Traumas

Numerous studies have been conducted to determine PTSD reactions of children and adolescents who have been exposed to war. For example, Kinzie, Sack, Angell, Manson, and Rath (1986) administered standardized interviews based on DSM-III PTSD criteria to 40 Cambodian refugee high school students who were exposed to war (and subsequently emigrated to the United States). Students ranged from 14-20 years (mean age = 17 years). Fifty percent of the students met DSM-III criteria for PTSD 4 years after leaving Cambodia (Kinzie et al., 1986).

Saigh (1989b) assessed 840 Lebanese children who were exposed to war-related stressors. The participants ranged between the ages of 9 and 12 years. Two hundred and

thirty one of the children (27.5% of the sample) met criteria for chronic PTSD as measured by the DSM-III based *Children's PTSD Inventory* (Saigh, 1989a).

Nader, Pynoos, Fairbanks, Al-Ajeel, and Al-Asfour (1993) surveyed 51 Kuwaiti children between the ages of 8 and 21 following the Gulf crisis. The authors indicate that the sample had "primarily mid-range exposure to the atrocities of war" (p. 409). Using the DSM-III-R based *Child Post-Traumatic Stress Disorder Reaction Index* (CPTSD-RI; Pynoos et al., 1987), 31 % reported severe posttraumatic stress reactions. Children with greater levels of exposure had more PTSD symptoms (Nader et al., 1993).

Saigh et al. (1997) examined the prevalence of PTSD in a sample of 95 Lebanese adolescents (mean age = 17.5) using the DSM-III based *Children's PTSD Inventory* (Saigh, 1989a). Approximately 15% of the sample (14 adolescents) met criteria for PTSD. In addition, the children who met criteria for PTSD evidenced more scholastic impairments than two comparison groups (a stress exposed PTSD negative group and a nonclinical control group) (Saigh et al., 1997).

Researchers have also examined the prevalence of PTSD in Iranian preschool children who were exposed to war traumas. Almqvist and Brandell-Forsberg (1997) examined 50 Iranian children between the ages of 3 and 8 years (mean age = 5 years, 10 months) who were living as refugees in Sweden. Children were assigned to three groups based on the degree of exposure to war-related events: unexposed, moderately exposed (through air raids or similar events), and severely exposed (eyewitnesses or within 40 meters of a bomb explosion). On average, the assessment occurred one year after exposure to war-related incidents. Parents were interviewed about their child's posttraumatic symptoms using DSM-III-R criteria for PTSD (APA, 1987). In addition,

children were directly assessed using observations and interview questions.

Data analysis indicated that only one child met DSM-III-R criteria for PTSD based on the parent interview. After including information obtained from the child assessments, an additional 8 children met DSM-III-R criteria for PTSD. In terms of exposure, 38% of the children in the severely exposed group met criteria for PTSD, whereas 11% of the children in the moderately exposed group met criteria for PTSD. None of the children in the unexposed group met criteria for PTSD (Almqvist & Brandell-Forsberg, 1997).

Smith, Perrin, Yule, Hacam and Stuvland (2002) surveyed 2,976 war exposed Bosnian children between the ages of 9 and 14. *The Revised Impact of Event Scale* (RIES; Dyregrov & Yule, 1995) was used to measure PTSD symptomotology. Using the recommended cutoff score, 52% of the children evidenced a high degree of PTSD symtomotology (Smith et al., 2002).

Children Who Experienced Natural Disasters

Increasing empirical evidence indicates that children who are exposed to traumatic events during natural disasters may evidence trauma related symptomotology (Vernberg, 2002). A review of the literature by LaGreca and Prinstein (2002) reported that approximately 30-50% of youth exposed to devastating hurricanes will evidence moderate to severe symptoms of PTSD. LaGreca and Prinstein (2002) also indicated that approximately 5-10% of adolescents sampled after hurricanes and earthquakes may meet full diagnostic criteria for PTSD.

One and one half years after the 1988 earthquake in Armenia, 111 children from various cities were randomly selected (from a sample of 231 war exposed children) to

respond to a clinical diagnostic interview based on DSM-III-R criteria. Seventy-eight (70%) met criteria for the diagnosis of PTSD. Children who were closer to the epicenter evidenced more PTSD symptoms (Pynoos et al., 1993).

Two and one half years after the Armenian earthquake, Najarian, Goenjian, Pelcovitz, Mandel, and Najarian (1996) used the PSTD module of the *Diagnostic Interview for Children and Adolescents-Revised* (DICA-R; Kaplan & Reich, 1991) to screen for PTSD in 74 children between the ages of 11 and 13. Two-thirds of the sample were exposed to the earthquake and one-third of the sample were not exposed to the earthquake. Approximately 30% of the exposed group met diagnostic criteria for PTSD, whereas 4% of the unexposed group met diagnostic criteria.

Shannon, Lonigan, Finch, and Taylor (1994) surveyed 5,687 children and adolescents 3 months after Hurricane Hugo struck South Carolina. The children ranged between the ages of 9 and 19 years (mean age = 14.02 years). Self-reports of PTSD symptoms were obtained using the DSM-III based PTSD-RI (Frederick, 1985). The authors mapped on symptoms to DSM-III-R criteria and reported that 5.42% of the total sample met criteria for PTSD.

Studies were also conducted following Hurricane Andrew, which occurred in 1992 in Florida. Shaw et al. (1995) used *Pynoos' Post Traumatic Stress Disorder Index* (Pynoos et al., 1987) to ascertain the prevalence of posttraumatic symptomotology in 106 children between the ages of 6 and 11 years (mean age = 8.2 years). Eight weeks after the hurricane, 56.4% of the high impact group (in the pathway of the hurricane) evidenced "severe" or "very severe" PTSD symptomotology, compared to 38.6% of the low impact group (north of the exposed area) (Shaw et al., 1995). Garrison et al. (1995)

surveyed 378 adolescents in Florida 6 months after the hurricane using a structured telephone interview based on the *Diagnostic Interview Schedule* (Kilpatrick, Resnick, Saunders, & Best, 1989). Three percent of male adolescents and nine percent of female adolescents met DSM-III-R criteria for PTSD.

Children Who Were Exposed to Terrorism in the USA

Pfefferbaum and colleagues (1999) conducted a clinical needs assessment seven weeks after the 1995 Oklahoma City bombing. Their sample included 3,218 middle and high school students. Their posttraumatic stress measure was adapted from the *Impact of Events Scale-20* (Weiss & Marwar, 1997). Although PTSD prevalence rates were not reported in the study, the authors report that children with greater exposure to the event (e.g., knowing someone injured or killed or exposure through television viewing) had higher rates of posttraumatic symptoms (Pfefferbaum et al., 1999).

Koplewicz et al. (2002) surveyed 22 second, third, and fifth grade children who were in the World Trade Center during the 1993 bombing and compared them to a group of 27 nontraumatized children. Assessment occurred at both 3 and 9 months after the attack. The DSM-III-R based children's *Posttraumatic Stress Reaction Index* (Frederick et al., 1992) was used to measure symptomotology. Three months after the incident, 23% of the exposed group fell within the "severe" range and 4% of the exposed group fell within the "very severe" range. This contrasts with the comparison group in which 7% fell within the "severe" range and 0% fell within the "very severe" range. However, using DSM-IV criteria, only 3 of the exposed children met full diagnostic criteria for PTSD (Koplewicz et al., 2002). Nine months after the attack, 14% of the exposed group fell within the "severe" range and 11% of the control group fell within the "severe" range.

None of the children from either group fell within the "very severe" range. At 9 months, only one child met full DSM-IV criteria for PTSD (Koplewicz et al., 2002).

Six months after the September 11, 2001 terrorist attacks, a needs assessment survey was conducted on a representative sample of 8,266 New York City public school students in grades 4-12 (Applied Research and Consulting (ARC), Columbia University Mailman School of Public Health, & New York State Psychiatric Institute, 2002). PTSD was measured by the *Diagnostic Predictive Scales* (DPS; Lucas et al., 2001), a questionnaire which screens for probable psychiatric disorders. The study indicated 10.5% of New York City students met criteria for PTSD (ARC et al., 2002).

More recently, Saigh, Yasik, Armenian, et al. (2002) assessed 45 New York City preschool children for PTSD. Approximately half of the children were directly exposed to the terrorist attacks of September 11th. Specifically, children in the exposed group witnessed the attacks (e.g., planes hitting one of the towers, burning buildings). The remaining half of the sample consisted of preschool children who did not directly witness the events of September 11th. Using the DSM-IV based *Preschool Trauma Questionnaire* (PTQ; Saigh, 2001), none of the children from either group met DSM-IV diagnostic criteria for PTSD. However, children in the exposed group exhibited re-experiencing symptoms significantly more often than children in the unexposed group (Saigh, Yasik, Armenian, et al., 2002).

Risk Factors for PTSD

Saigh et al. (1999) conducted an epidemiological review that examined potential risk factors for childhood PTSD. Specifically, intensity of stressor, time interval, type and mode of exposure, duration and number of exposures, pre- and post-trauma

exposures, resettlement/relocation stress, relationship between victims and perpetrators, and parental psychopathology have all been suggested as potential risk factors for PTSD. These investigators also reported that age, ethnicity, and resettlement stress are inconclusive risk factors and vary across studies.

Summary of the Child-Adolescent PTSD Prevalence Findings

Overall, research suggests that children may develop PTSD as a result of exposure to many different types of stressors, including abuse, criminal victimization, war, natural disasters, accidents, and terrorism. However, there is much variability in reported prevalence of childhood PTSD in these studies. An epidemiological review of the child-adolescent PTSD literature reported PTSD prevalence estimates ranging from 0%-95% for victims of accidents or disasters, 18.2%-53.8% for victims of sexual assault and/or abuse, and 11.1%-70.8% for physical assault and/or abuse (Saigh et al., 1999). This variability may be due to type and intensity of stressor, diagnostic criteria utilized, and sampling techniques (Saigh et al., 1999). In addition, the time interval between the traumatic event and data collection may impact prevalence rates as PTSD tends to remit over time (Saigh et al., 1999). It should also be noted that there is very limited information regarding the prevalence of PTSD in young children.

Chapter III: Effects of Trauma on Young Children

Although a well-developed body of research has examined the expression and course of PTSD in older children and adults, there is very little objective information involving the effects of traumatic stress on children below the age of 48 months (Scheeringa et al. 1995). Prior to 1995, most published research regarding traumatized preschoolers consisted of qualitative case reports (Scheeringa & Zeanah, 1995). These reports indicate that traumatized preschoolers may manifest a variety of behavioral problems such as fear of separation, increased dependence, marked startle reactions, and sleep problems (Zahr, 1996).

Recent empirical studies have demonstrated that traumatized preschoolers may evidence a number of posttraumatic symptoms, including posttraumatic play and hypervigilance (Scheeringa et al., 1995). In addition, some studies suggest that traumatized children may evidence behavior problems, including internalizing and externalizing behaviors (Shahinfar et al., 2000). The following sections review the research regarding the effects of trauma on samples of preschool children who experienced: a) criminal victimization, b) war, c) disasters, and d) terrorism.

Children Who Experienced Criminal Victimization

Eiden (1999) examined the relationship between child behavior problems and exposure to community violence. She assessed 61 children who ranged in age from 24 to 69 months (mean age = 43.21 months). Exposure to violence was measured by a modified version of the *Survey of Exposure to Community Violence* (Richters & Saltzman, 1990). Children's behavior problems were measured by the CBCL. The author divided children into two groups based on their CBCL score: "high risk" (met or

exceeded cutoff score) or "low risk" (did not meet cutoff score). Multivariate analyses confirmed that children in the high risk group witnessed violent events more frequently than children in the low risk group.

A recent study conducted by Shahinfar et al. (2000) assessed 155 low-income preschool children in Washington, DC. Parents completed the *Violence Exposure Scale for Children-Preschool Version* (VEX; Fox & Leavitt, 1995). In addition, parents completed the CBCL, a questionnaire that assesses behavior problems of children and adolescents. The authors reported that children who witnessed mild violence were more likely to display internalizing problems than children who did not witness mild violence. In addition, children who were victims of mild violence evidenced more externalizing problems than their non-victimized peers (Shahinfar et al., 2000).

Linares et al. (2001) examined the link between community violence and early child behavior problems. The authors assessed 160 children between the ages of 3 and 6 years. Exposure to violence was measured by an author-devised questionnaire, which included items from the *Community Survey Questionnaire* (Earls, 1994). Behavior problems were measured by the parent version of the CBCL. A measure of maternal distress was also administered. The study demonstrated a link between exposure to community violence and child behavior problems. Structural equation modeling indicated that maternal distress mediates this link (Linares et al., 2001).

Levondosky, Huth-Bocks, Semel, and Shapiro (2002) examined trauma symptoms among 62 preschool children who had been exposed to domestic violence. Domestic violence was assessed by the *Severity of Violence Against Women Scale* (SVAWS; Marshall, 1992). The CBCL was used to assess the children's behavioral

functioning. The extent of trauma symptoms was measured with a subset of CBCL items that reportedly correlate with PTSD diagnoses (Wolfe, Gentile, & Wolfe, 1989) and the PTSD-PAC (Levondosky et al., 2002), a DSM-IV based measure of PTSD. The PTSD-PAC also includes additional posttraumatic symptoms relevant to young children.

The authors reported that most of the children who witnessed domestic violence evidenced PTSD symptoms. The authors also reported that traumatized preschool children most frequently evidenced re-experiencing symptoms and hyperarousal (Levondosky et al., 2002). In terms of behavioral functioning, the sample had elevated CBCL externalizing behavior scores relative to the standardization cohort. Specifically, 42% of the sample had elevated T-scores and 29% had scores that fell within the clinical range. In contrast, the sample did not have elevated CBCL internalizing scores relative to the Achenbach standardization sample (Levondosky et al., 2002).

The majority of research that examines the effect of trauma during early childhood has been conducted with samples of maltreated children. Published studies indicate that maltreated children may have difficulties in affect regulation, self-development, and interpersonal relationships (Kaufman & Henrich, 2000). Research by Crittenden (1992) demonstrated that abused children were more aggressive than non-abused children when interacting with their siblings during a free play activity. In addition, abused children spent more time fighting with their siblings than the non-abused children did.

Difficulties in peer interaction are evident in early studies conducted with young abused children. George and Main (1979) assessed 20 children (10 abused and 10 controls) with continuous narrative accounts of children's behaviors made by trained

observers. The authors reported that the abused children physically assaulted the other children more than twice as often as the control children. Five of the abused children were physically aggressive (or threatened to be physically aggressive) towards caregivers, whereas none of the control children assaulted or threatened to assault caregivers.

In 1991, Haskett and Kistner examined the social behaviors of 14 physically abused preschool children and compared them to 14 non-abused preschool children (who were closely matched on demographic variables). Children ranged in age from 39 to 78 months (mean age = 54 months). Trained observers conducted behavioral observations and recorded behaviors such as "social initiation" and "hostile aggression." The authors reported that abused children initiated fewer positive interactions with peers and demonstrated a higher proportion of negative behavior than non-abused children.

In addition, teachers were asked to rate children's behavior using the *Preschool Behavior Questionnaire* (PBQ; Behar & Stringfield, 1974). The authors reported that the abused cases scored significantly higher on the two externalizing subscales (Hostile-Aggressive and Hyperactive-Distractable) relative to the non-abused children. Nonsignificant differences were observed on the CBCL Anxious-Withdrawn subscale.

Diamond (1995) utilized the teacher form of the CBCL to examine the behavior ratings of 15 special education preschool children who met criteria for PTSD after being exposed to alleged abuse. PTSD diagnoses were ascertained by the *Children's Posttraumatic Stress Disorder Inventory* (CPTSDI; Saigh, 1989a). CBCL scores of the PTSD group were compared to CBCL scores of an ADHD group and a non-clinical control group. The author reported that the PTSD group evidenced significantly higher

internalizing scores on the CBCL than the children in the ADHD group. A nonsignificant difference was reported between the internalizing scores for the PTSD and non-clinical control group (Diamond, 1995).

Children Who Experienced War-Related Traumas

Studies have also examined the effects of war-related traumas on young children. For example, during the Gulf War, many young children were exposed to war-related precautions, including being placed in sealed cots (which contained air-filtering devices), wearing gas masks, and hearing loud sirens. Rosenthal and Levy-Shiff (1993) surveyed 99 Israeli mothers of young children between the ages of 4 to 36 months (mean age = 22.92 months). A semi-structured interview was administered to the mothers of these children in order to assess children's distress and "adjustment disturbances." Examples of adjustment disturbances included prolonged crying, sleep disturbances, severe stomachaches, and temper tantrums. Approximately 58% of mothers reported adjustment disturbances in their children. Moreover, children in "high proximity" areas (i.e., areas of missile attacks) evidenced significantly more adjustment disturbances than children in "low proximity" areas (i.e., areas which were not hit by missiles) (Rosenthal & Levy-Shiff, 1993).

Similar results were found in a sample of Lebanese preschool children who were exposed to war-related traumas. Zahr (1996) assessed 100 children between 3 to 6 years old (mean age = 4.2 years). Assessment occurred approximately two years after a period of heavy shelling. One group of children was exposed to heavy shelling, whereas the second group of children lived in an area in which there was no shelling. Parents marked an Arabic version of the *Eyberg Child Behavior Inventory* (ECBI; Robinson, Eyberg, &

Ross, 1980) that assesses behavioral problems of children between the ages of 2 to 16 years. An interview was also administered to identify any additional posttraumatic stress reactions. The authors reported that children in the exposed group had significantly higher scores on the ECBI than children in the unexposed group. In addition, children in the exposed group evidenced significantly more behavioral problems (including thumbsucking, overdependency on parents, and sleep problems) than children in the unexposed group (Zahr, 1996).

Laor et al. (1996, 1997) examined posttraumatic reactions of Israeli preschool children who were exposed to Scud missiles. The first phase of the study was conducted 6 months after the end of the war and consisted of 230 preschool children between the ages of 3-5 years old. The second phase occurred 30 months after the war, and included 107 children from the original sample. The exposed group consisted of children who were displaced after their homes were destroyed by Scud missiles whereas the control group consisted of children who were not displaced. Six months after the war, children in the displaced group evidenced significantly more externalizing problems and stress reactions relative to the control group as measured by the CBCL and the *Preschool Children's Assessment of Stress Scales* (Mayes & Cohen, 1990). In contrast, no significant differences were observed between the groups 30 months after the war (Laor et al., 1997).

Although most studies report behavioral problems that are associated with war traumas, a study by Raboteg-Saric, Zuzul, and Kerestes (1994) reported contrary findings. The authors reported that Croatian preschoolers evidenced increased prosocial behavior and no changes in aggressive behavior following exposure to war traumas.

Their study utilized a combined longitudinal-cross-sectional design to examine the behavior of two groups of children (five and six year olds) both before and after the war. Teachers rated children's behavior on the *Children's Aggressive and Prosocial Behaviour Rating Scale* (Zuzul, Kerestes, & Vlahovic-Stetic, 1990, as cited in Raboteg-Saric et al., 1994). Results indicated that children's prosocial behavior had increased relative to their prewar functioning.

Children Who Experienced Natural Disasters

Sullivan, Saylor, and Foster (1991) assessed 278 preschool children between the ages of 1 year 11 months and 6 years 3 months (mean age = 4 years 2 months) approximately 8 weeks after exposure to Hurricane Hugo in South Carolina. Parents were instructed to answer 50 questions from the CBCL in regard to two points in time: prior to the hurricane and six weeks following the hurricane. Results indicated that children displayed a significant increase in the number of problem behaviors following the hurricane. Most frequently reported problem behaviors included dependent and demanding behavior, frustration and irritability, temper tantrums, and sleep difficulties. Many parents reported additional problems not assessed by the CBCL including posttraumatic play and new fears, including fears of storms, thunder, and animals. However, the authors indicated that "behavior did not ascend to the clinical range" (Sullivan et al., 1991, p. 171).

One year later, Saylor, Swenson, and Powell (1992) distributed follow-up questionnaires to examine the additional problems that parents reported in the previous study. Thirty-seven percent of parents reported that their children continued to evidence fears and posttraumatic play. However, the authors reported that most children were

well adjusted and well functioning, despite these behaviors (Saylor et al., 1992).

Fourteen months after Hurricane Hugo, Swenson et al. (1996) compared behavior ratings of preschoolers who experienced the hurricane to preschoolers who did not witness the hurricane. The exposed group consisted of 161 children between 2 and 6 years old (mean age = 42 months). The control group consisted of 170 children between 2 and 10 years old who were not traumatized (mean age = 72 months). As the control group was significantly older than the exposed group, age was used as a covariate in the analyses (Swenson et al., 1996). The *Pediatric Emotional Distress Scale* (Saylor, Swenson, & Stokes, 1994) was used to assess behavioral problems and trauma-related symptoms. Results indicated that the children in the exposed group evidenced significantly higher anxiety and withdrawal symptoms and more behavior problems than children in the control group. However, mothers reported that behavioral problems decreased steadily over the 6 months following the storm (Swenson et al., 1996).

Kitayama et al. (2000) examined the reactions of Japanese preschoolers' following the Hanshin-Awaji earthquake. The exposed group contained 133 children who lived in severely damaged areas. The control group consisted of 125 children who lived in mildly damaged areas. An author-devised survey assessed PTSD symptoms. One year after the earthquake, children in the exposed group experienced more re-experiencing symptoms than children in the control group. Two years after the earthquake, children in the exposed group experienced more re-experiencing, avoidance, and increased arousal symptoms than children in the control group (Kitayama et al., 2000).

Children Who Were Exposed to Terrorism in the USA

Following the Oklahoma City bombing of 1995, Gurwitch, Pfefferbaum, and Leftwich (2002) evaluated 11 children between the ages of 2 and 6 years who attended a day care center adjacent to the bomb site. Mothers completed questionnaires, including the *Structured Clinical Interview for DSM-IV* (Spitzer, Gibbon, & Williams, 1997, as cited in Gurwitch, Pfefferbaum, et al. 2002) that assessed PTSD symptoms. Play observations were also conducted. Mothers reported few PSTD symptoms in their children, however signs of traumatic stress, including startle reactions and posttraumatic play, were observed during play observations.

Saigh, Yasik, Feinberg, et al. (2002) assessed 45 New York City preschoolers 8 months after the terrorist attacks of September 11, 2001. One group of children was directly exposed to the events of that day, whereas children in the control group were not directly exposed to the attacks. Teachers completed the *Behavioral Assessment System for Children* (BASC; Reynolds & Kamphaus, 1992) to assess internalizing behaviors, externalizing behaviors, other behavior problems, and adaptive skills. The authors reported that there were no significant differences between the two groups in terms of behavioral functioning.

Summary and Conclusion

Of the 18 studies reviewed, 14 indicated that traumatized preschool children evidenced a variety of posttraumatic reactions, including post-traumatic play, internalizing behaviors and externalizing problems. However, 4 of the 14 studies suggest that some behaviors may remit over time and that some behaviors may not ascend to the clinical range of functioning. Four studies reported that traumatized preschool children

did not evidence behavior problems relative to non-traumatized children. Certainly, there are inconsistencies in the literature. The limited amount of empirical information in this area clearly indicates that more research is needed to understand the psychological expression of distress among very young children who are exposed to traumatic events.

Chapter IV: Methodology

This chapter presents the statement of the problem and purpose of the study. It also includes a description of the research design, participants, measures, procedures, and hypotheses.

Statement of the Problem

The review of the literature suggested that preschoolers who witness traumatic events may evidence increased internalizing and externalizing behaviors as measured by behavior rating scales such as the CBCL (Eiden, 1999; Levondosky et al., 2002; Shahinfar et al., 2000). The literature also indicates that traumatized preschoolers may evidence difficulties in peer interactions as measured by classroom observations (George & Main, 1979; Haskett & Kistner, 1991). On the other hand, comparative information involving the social skills of trauma-exposed and non-trauma-exposed preschool youth as measured by a standardized norm referenced index of social skills has not been reported.

Need for the Study

Social skill development is considered to be one of the most critical accomplishments of childhood. The literature suggests that problems with social competence may affect social, psychological, and educational functioning (Gresham & Elliott, 1990). Given that social skills are important determinants of psychological functioning, comparative information involving the *Social Skills Rating System* (SSRS; Gresham & Elliott, 1990) scores of preschool children who were or were not directly exposed to the events of September 11, 2001 represents a significant public health issue.

Purpose of the Study

The purpose of this study was to determine if traumatized children experience

social skill deficits relative to children who were not traumatized. More specifically, this investigation sought to determine if the *Social Skills Rating System* (SSRS; Gresham & Elliott, 1990) scores of preschoolers who were directly exposed to the September 11, 2001 attack on New York significantly differ from the scores of preschoolers who were not directly exposed to the attack.

Research Design

A case-control design was used to compare the SSRS ratings of New York City preschool children who were directly exposed to the September 11, 2001 attack (referred to hereafter as the trauma-exposed group) relative to the SSRS scores of children who were not exposed to the attack (referred to hereafter as the non-trauma-exposed group). Table 4.1 presents a schematic representation of the research design.

Table 4.1

Schematic Representation of the Research Design

	Diagnostic Groups	
	Trauma-Exposed	Non-Trauma-Exposed
Social Skills Rating System	(n = 32)	(n = 26)
Total Social Skills		
Cooperation (subscale)		
Assertion (subscale)		
Self-Control (subscale)		
Total Problem Behaviors		
Internalizing (subscale)		
Externalizing (subscale)		

Selection Process

Parents who had their children enrolled in one of two downtown Manhattan preschools that were .45 and .65 miles from the World Trade Center respectively, were invited to participate in the study. In addition, parents who had their children enrolled in one midtown and three uptown Manhattan preschools (5.98, 6.78, 7.16, and 7.61 miles from the World Trade Center) were also invited to participate. The sample was limited to children between the ages 2 years 6 months and 5 years 11 months, who attended the aforementioned New York City preschools before September 11, 2001 and who attended the same preschools 6 to 8 months after the attack.

One hundred parents of children in the downtown sample were invited to participate. Thirty-four parents (34%) agreed to participate. Out of the 34 potential participants, five were excluded due to incomplete parent packets. One participant was excluded due to significant concerns regarding his social-emotional development prior to September 11, 2001, as his school director reported that he was autistic. One hundred and fifty-nine parents in the midtown and uptown sample were invited to participate. Thirty-eight (24%) agreed to participate. Out of the 38 potential participants, eight were excluded due to missing data. Therefore, the current study included 58 participants. Based on parents' responses to questions on the *Preschool Trauma Questionnaire* (PTQ; Saigh, 2001), children were assigned to a trauma-exposed or a non-trauma-exposed group. The PTQ makes special reference to the September 11, 2001 attack on New York through a series of nine questions.

Trauma-Exposed Participants

Thirty-two children (age range 2.72 - 5.35 years) were included in the trauma-exposed group. For a child to be included in this group, one of his or her parents must have endorsed at least one of nine trauma-exposure items on the PTQ (see Table 5.2.) It should be noted that the PTQ trauma exposure items reflect the DSM-IV PTSD A1 criterion. This definition indicates that trauma exposure is when "the person experienced, witnessed, or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others" (APA, 1994, p. 427). Table 4.2 presents the frequency in which items were endorsed.

Table 4.2

Frequency of Exposure Items Endorsed Among Trauma-Exposed Group

Item	Number of Children	Percent
Observed burning buildings	32	100%
Directly observed airplane hit a building	10	31.3%
Directly observed people jumping from building	5	15.6%
Directly observed the building collapse	17	53.1%
Directly exposed to the smoke cloud	18	56.3%
Child physically injured	0	0.0%
Directly observed injured people	7	21.9%
Directly saw people killed	0	0.0%
Lost mother, father, or significant other	0	0.0%

Non-Trauma-Exposed Participants

Twenty-six children (age range 3.28 – 5.43 years) were included in the non-trauma-exposed group. For a child to be included in the non-trauma-exposed group, one of his or her parents completed the PTQ and she or he must not have endorsed any of the trauma exposure items.

Demographic Information

Table 4.3 presents the means and standard deviations for the comparison groups by age, as well as information regarding the gender and ethnicity of the child participants.

Table 4.3

Age, Gender, and Ethnicity of Child Participants by Comparison Group

	Group	
	Trauma-Exposed ($n = 32$)	Non-Trauma-Exposed ($n = 26$)
	Mean SD	Mean SD
Child's Age	3.98 .59	4.35 .65
Child's Gender	*n* (%)	*n* (%)
Male	22 (68.8%)	11 (42.3%)
Female	10 (31.3%)	15 (57.7%)
Child's Ethnicity	*n* (%)	*n* (%)
African American	0 (0.0%)	2 (7.7%)
Asian	1 (3.1%)	2 (7.7%)
Caucasian	29 (90.6%)	19 (73.1%)
Hispanic	1 (3.1%)	2 (7.7%)
Other	1 (3.1%)	1 (3.8%)

A t-test revealed that the non-trauma-exposed group was significantly older than the trauma-exposed group, $t(56) = 5.04, p = .029$. A chi-square analysis revealed that there were significantly more males in the trauma-exposed group, $\chi^2 (1, N = 58) = 4.09, p = .04$. Nonsignificant differences were found between groups with regards to ethnicity, $\chi^2 (4, N = 58) = 4.17, p = .38$.

Table 4.4 presents socioeconomic status of the participants based on responses to the Hollingshead demographic questionnaire. A chi-square analysis revealed nonsignificant differences between the two groups in regards to SES strata, χ^2 (2, N =58) = 2.24, p = .07. Non- significant differences were also found when SES was treated as a continuous variable, t(56) = 1.51, p = .22.

Table 5.4

SES of Participants by Comparison Group

	Group	
	Trauma-Exposed (n = 32)	Non-Trauma-Exposed (n = 26)
	n (%)	n (%)
Class I	16 (50.0 %)	19 (73.0 %)
Class II	16 (50.0 %)	6 (23.1%)
Class III	0 (0.0%)	1 (3.8 %)

Tables 4.5 and 4.6 present the means and standard deviations for the age, gender and ethnicities of the parents and teachers who completed the questionnaires.

Table 4.5

Age, Gender, and Ethnicity of Parents by Comparison Group

	Group			
	Trauma-Exposed		Non-Trauma-Exposed	
	Mean	SD	Mean	SD
Parents' Age	39.1	5.8	38.5	5.4
Parents' Gender	*n* (%)		*n* (%)	
Male	6 (18.8 %)		1 (3.8 %)	
Female	26 (81.2 %)		25 (96.2 %)	
Parents' Ethnicity	*n* (%)		*n* (%)	
African American	0 (0%)		2 (7.7%)	
Asian	1 (3.1%)		2 (7.7%)	
Caucasian	29 (90.6%)		19 (73.1%)	
Hispanic	1 (3.1%)		2 (7.7%)	
Other	1 (3.1%)		1 (3.8%)	

Table 4.6

Age, Gender, and Ethnicity of Teachers by Comparison Group

	Group			
	Trauma-Exposed		Non-Trauma-Exposed	
	Mean	SD	Mean	SD
Teachers' Age	34.0	6.7	35.8	8.6
Teachers' Gender	*n* (%)		*n* (%)	
Male	4 (12.5 %)		1 (3.8 %)	
Female	28 (87.5 %)		25 (96.2 %)	
Teachers' Ethnicity	*n* (%)		*n* (%)	
African American	0 (0.0%)		0 (0.0%)	
Asian	0 (0.0%)		0 (0.0%)	
Caucasian	32 (100%)		20 (77.0%)	
Hispanic	0 (0.0%)		2 (7.7%)	
Other	0 (0.0%)		1 (3.8%)	
Not Reported	0 (0.0%)		3 (11.5%)	

Apparatus

Trauma Exposure Measure

The *Preschool Trauma Questionnaire* (PTQ; Saigh, 2001) presents a series of questions that reflect DSM-IV PTSD criteria for traumatic exposure ("Did your child directly observe the burning buildings?"), situational reactivity ("Did it appear that your child felt very scared, shocked, or helpless at the time?"), re-experiencing ("Has your child been having nightmares about the attack?"), avoidance and numbing ("Has your child lost interest in activities that he or she used to enjoy before the attack?"), increased arousal ("Has your child had more difficulty falling or staying asleep than he or she used to before the attack?"), and significant impairment ("Has your child lost previously acquired toileting or self-care skills that he or she developed before the attack?") An analysis of the parental ratings of 62 participants indicated that the PTQ has high internal consistency, with a coefficient alpha of .82 (Saigh, Yasik, & Mitchell, 2004). With reference to content validity, three senior mental health scientists who served on the committee that established the DSM-IV PTSD diagnostic criteria independently evaluated the PTQ items and their ratings consistently indicated that the items reflect the current criteria for PTSD.

Dependent Measure

The *Social Skills Rating System* (SSRS; Gresham & Elliott, 1990) is a nationally standardized, norm-referenced questionnaire that provides information about the social behaviors of preschool children. The preschool version of the SSRS contains a teacher and a parent form. For the purposes of this study, only the teacher form was used.

Teachers indicated the frequency of various behaviors on a 3-point Likert-type scale (e.g., "Never," "Sometimes," and "Very Often").

The SSRS has two scales (e.g., Social Skills and Problem Behaviors). The Social Skills scale is composed of three subscales. The subscales include a 10-item Cooperation subscale that consists of items that reflect classroom rule compliance (e.g., "Follows your directions"), a 10-item Assertion subscale that consists of statements that denote initiating behaviors (e.g., "Invites others to join in activities"), and a 10-item Self-Control subscale that requires descriptions of responses to conflict and nonconflict situations (e.g., "Responds appropriately to teasing by peers"). The SSRS yields an overall Social Skills score, as well as an individual score for each subscale. Gresham and Elliott (1990) reported mean alpha coefficients of .94, .90, .90, and .91 for the overall Social Skills, Cooperation, Assertion, and Self-Control scales, respectively. A test-retest correlation of .85 over a four-week interval was reported for the total Social Skills score.

The Problem Behaviors scale consists of two subscales. These subscales include a 6-item Externalizing subscale denoting "acting out" behaviors (e.g., "Has temper tantrums") and a 4-item Internalizing subscale reflecting symptoms of sadness and anxiety (e.g., "Acts sad or depressed") The SSRS yields an overall Problem Behaviors score as well as scores for the Externalizing and the Internalizing subscales. Gresham and Elliott (1990) reported mean alpha coefficients of .82, .85, and .74 for the overall Problem Behaviors, Externalizing, and the Internalizing scales, respectively.

The content validity of the SSRS was established by conducting a comprehensive literature review on social skills, as well as having experienced researchers nominate a pool of items. Final items were selected by having teachers rate the importance of

various items in the classroom setting. Moderate to high correlations between the SSRS and the *Social Behavior Assessment* (SBA; Stephens, 1978) scores were reported by Gresham and Elliot (1990), providing evidence of criterion-related validity. It should also be noted that in a review article that considered the merits of six social skill scales, Demaray et al. (1995) reported that the SSRS was the most comprehensive index relative to the other published scales that were reviewed.

Socioeconomic Status Measure

The *Hollingshead Four Factor Index of Social Status* (Hollingshead, 1975) is used to determine socioeconomic status (SES). The status score is calculated by combining information regarding education, occupation, and marital status. Based on their status score, participants fall within one of five classes. According to the Hollingshead interpretive guidelines, individuals within Class I have a higher socioeconomic status relative to the other classes. Hollingshead reports that reliability and validity estimates are based on data scores derived from the 1970 census and the National Opinion Research Center (NORC), respectively. A correlation of $r = .927$ was reported between the occupational scale in the Hollinghead and the prestige scores developed by NORC (Hollingshead, 1975). In a review article, Gottfried (1985) reports that the *Hollingshead Four Factor Index of Social Status* is a highly reliable measure and is a valid measure of socioeconomic differentiation in the United States.

Procedure

Parents were invited to have their children participate in the study. Letters and consent forms explaining the purpose of the study (see Appendixes A and B) were sent to the parents and teachers of children attending the participating preschools. Parents and

teachers who wished to participate were required to sign and return the consent forms to Professor Saigh. After parental informed consent forms were obtained, research assistants hand-delivered packets to the respective preschools and school personnel distributed the packets to the parents. The packets included a cover letter, the PTQ, the Hollingshead, and directions for marking the protocols. The packets also included directions for returning the protocols and self-addressed stamped envelopes.

Given the informed and written consent of parents or guardians, the preschool teachers of the children in question marked the SSRS and returned the protocols to the research team in sealed envelopes. Teachers who completed rating forms received a modest honorarium for the time they devoted to the investigation. After the protocols had been scored, Professor Saigh provided written feedback to the parents regarding their children's test results via certified mail.

Rationale and Hypotheses

Inasmuch as a number of studies have suggested that preschool children who experienced or witnessed traumatic events experience a variety of externalizing and internalizing behavior problems relative to non-traumatized preschool children (Eiden, 1999; Levondosky et al., 2002; Shahinfar et al., 2000) it was expected that the social skills of the trauma-exposed children would be significantly poorer than the social skills of the non-trauma-exposed group. As such, the following hypotheses were predicted:

HO 1: The SSRS Total Social Skills scores of the exposed children will be significantly lower than the Social Skills scores of the non-trauma-exposed children.

HO 2: The SSRS Cooperation scores of the exposed children will be significantly lower than the Cooperation scores of the non-trauma-exposed children.

HO 3: The SSRS Assertion scores of the exposed children will be significantly lower than the Assertion scores of the non-trauma-exposed children.

HO 4: The SSRS Self-Control scores of the exposed children will be significantly lower than the Self-Control scores of the non-trauma-exposed children.

HO 5: The SSRS Problem Behaviors scores of the exposed children will be significantly higher than the Problem Behaviors scores of the non-trauma-exposed children.

HO 6: The SSRS Externalizing scores of the exposed children will be significantly higher than the Externalizing scores of the non-trauma-exposed children.

HO 7: The SSRS Internalizing scores of the exposed children will be significantly higher than the Internalizing scores of the non-trauma-exposed children.

Chapter V: Results

This chapter presents the data analysis procedures and results. Descriptive information regarding the two groups is provided, as well as results from the ANOVA and MANOVA analyses.

Initially, the PTQ protocols were scored and it was established that 66% of the traumatized children evidenced situational reactivity when they were exposed to the events of September 11. These reactions are consistent with the DSM-IV PTSD Criterion A2, which specifies that: "The person's response involved intense fear, helplessness, or horror, or in children, this may be expressed as disorganized or agitated behavior" (APA, 1994, p. 428). Table 5.1 presents a breakdown of the reported reactions at the time of the attack on New York. It is important to note in this context that earlier research determined that PTQ ratings indicated that none of the children warranted a PTSD diagnosis (Saigh, Yasik, Feinberg, et al., 2002).

Table 5.1

Traumatic Exposure and Situational Reactivity of the Trauma-Exposed Group

Item	Criterion A1 *n*	Criterion A2 *n*	Criteria A1 and A2 (% of Trauma-Exposed Group)
Observed burning buildings	32	16	50%
Observed airplane hit a building	10	6	60%
Observed people jumping	5	2	40%
Observed the building collapse	17	10	58.8%
Exposed to the smoke cloud	18	10	55.6%
Observed injured people	7	4	57%

Statistical Analyses

The SSRS includes three subscales that measure social skills (i.e., Cooperation, Assertion, and Self-Control), as well as two subscales that measure problem behaviors (i.e., Internalizing and Externalizing). Following the scoring procedures in the SSRS manual (Gresham & Elliott, 1990), the raw scores of the three social skill subscales were summed to create a total social skills raw score. Similarly, the raw scores of the two subscales measuring problem behaviors were summed to create the total problem behaviors raw score. The total raw scores were converted to standard scores using the tables provided in the SSRS manual. According to the SSRS manual, the total Social skills standard score and the Total Problem Behaviors standard score have mean scores of 100 and standard deviations of 15. A higher score on the Total Social Skills is indicative of higher (better developed) social skills. A lower score on the Total Problem Behaviors scale is indicative of fewer problem behaviors relative to the standardization sample.

As the SSRS does not provide standard scores for the five subscales, raw scores were used in some of the analyses. Potential scores on each of the Social Skills subscales (i.e., Cooperation, Assertion, and Self-Control) range from 0 to 20, with higher scores indicating higher social skills. Potential scores on the Externalizing subscale range from 0 to 12, with higher scores indicating more externalizing problems. Scores on the Internalizing subscale may range from 0 to 8, with higher scores indicating more internalizing problems. Mean scores are presented in Table 5.2.

Table 5.2

Means and Standard Deviations for SSRS Scores by Group

	Trauma-Exposed (n = 32)		Non-Trauma Exposed (n = 26)		Difference Between Trauma-Exposed and Non-Trauma-Exposed Ratings
	Mean	SD	Mean	SD	
Total Social Skills	111.84	11.26	101.12	14.54	10.72
Assertion	15.28	4.24	12.50	4.40	2.78
Cooperation	16.50	2.62	14.54	3.39	1.96
Self-Control	15.66	3.89	13.81	4.12	1.85
Total Problem Behaviors	94.97	9.87	98.00	12.23	-3.03
Internalizing	.75	1.14	1.15	1.38	-0.4
Externalizing	2.47	2.59	2.38	2.71	0.09

As age and gender significantly differed between the two groups, Pearson product moment correlations were calculated to determine if there was a relation between age, gender, and the dependent variables. The results of these analyses are presented in Table 5.3. It is evident that none of the coefficients reached the point of statistical significance.

Table 5.3

Correlations Between Age, Gender, and Dependent Variables[1]

SSRS scores	Child's Age	Child's Gender
Cooperation	.127	.005
Assertion	.192	.025
Self–Control	.084	.055
Total Social Skills	.151	-.231
Internalizing	-.052	.104
Externalizing	-.076	-.251
Total Problem Behaviors	-.065	.095

[1] All coefficients were not statistically significant at the $p < .05$ level.

As age and gender did not significantly correlate with the dependent variables, they were not used as covariates in the analyses. Two independent ANOVA analyses and two MANOVA analyses were conducted based on the data in Table 5.2. The first ANOVA utilized the Total Social Skills score as the dependent variable and trauma exposure status (as operationally defined in the previous section) as the independent variable. The ANOVA determined that the trauma-exposed group had significantly better overall social skills relative to the non-trauma exposed group ($F(1, 56) = 10.03, p = .002$.) This finding was not in line with expectations. Therefore, Hypothesis 1 was not supported.

The first MANOVA used the Social Skills subscales (i.e., Cooperation, Assertion, and Self-Control) as dependent variables and exposure status relative to the September 11, 2001 attack as the independent variable. No significant differences were found

between the groups across the SSRS social skills subscales, based on a Wilks' Lambda test, $F(3, 54) = 2.62, p = .06$. As such, Hypotheses 2, 3, and 4 were not supported.

The second ANOVA utilized the Total Problem Behaviors score as the dependent variable with exposure to the events of September 11, 2001 as the independent variable. The analysis determined that there were no significant group differences on the SSRS Problem Behaviors standard scores ($F(1, 56) = 1.09, p = .30$). Accordingly, Hypothesis 5 was not supported. The second MANOVA utilized the Problem Behaviors subscales (i.e., Internalizing and Externalizing) as dependent variables. Exposure to the events of September 11, 2001 served as the independent variable. No significant differences were found between the two groups across the SSRS problem behavior subscales, based on a Wilks' Lambda test, $F(2, 55) = .86, p = .43$. Based on this information, Hypotheses 6 and 7 were not supported.

In summary, the Total Social Skills standard scores of the trauma-exposed group significantly exceeded the total scores of the non-trauma-exposed group. On the other hand, nonsignificant differences were observed across the SSRS subscales.

Chapter VI: Discussion

This chapter presents a discussion of the observed results. The theoretical and clinical significance of this study are addressed. Limitations of the study and suggestions for future research are also provided.

Summary

This study sought to determine if preschool children who were personally exposed to the September 11th attack on New York evidenced social skill deficits and behavior problems relative to a group of non-trauma-exposed children. It was hypothesized that preschool children who were directly exposed to the events of September 11, 2001 would exhibit lower social skills scores and higher problem behavior scores on the teacher rated *Social Skills Rating System.*

Fifty-eight children between the ages of 2.72 and 5.43 years participated in the study. Parents completed the *Preschool Trauma Questionnaire* to assess the children's exposure to events that were associated with the attack. Based on these ratings, 32 children were included in the trauma-exposed group and 26 children were included in the non-trauma-exposed group. Contrary to the proposed hypothesis, the mean total Social Skills score of the trauma-exposed group was significantly higher than the score of the non-trauma exposed group. Additional analyses failed to identify significant differences between the trauma-exposed and non-trauma-exposed groups on all of the SSRS subscales.

Discussion

Contrary to expectations, the aggregate social skill ratings of the participants who were directly exposed to the events of September 11, 2001 significantly exceeded the

ratings of children that were not directly exposed. Although this finding contradicts studies where traumatized preschoolers evidenced difficulties in peer interactions as measured by classroom observations (e.g., George & Main, 1979; Haskett & Kistner, 1991), this finding is in keeping with the results of an investigation that involved war-exposed Croatian preschoolers (Raboteg-Saric, Zuzul, & Kerestes, 1994). In this study, prosocial behaviors were measured before and after the war in the former Yugoslavia. Raboteg-Saric et al. reported that their sample evidenced increased prosocial behaviors (e.g., sharing, comforting others, helping others) following the war.

Raboteg-Saric et al. (1994) suggest that children may have experienced empathy and sympathy towards others as a result of war, which is positively associated with moral and prosocial behavior. The authors report that a sense of connectedness with others may increase sympathy. Furthermore, they report that "shared-fate groups enable mutual identification and can become a source of support" (Raboteg-Saric et al., 1994, p. 202). The authors also suggest that significant others may have affected the children's prosocial behavior by serving as models of altruistic behavior. It is of some interest to note that anecdotal information from a mother of a trauma-exposed child indicated that she intentionally prevented her child from seeing the events of September 11, 2001, by "gently turning him away and pointing out objects in shop windows and at times actually covering his eyes with her hands." This woman also reported that she and her husband did not watch newscasts regarding the attack if their son was with them. The mother also advised Professor Saigh that she consistently tried to speak to the child in a very calm and reassuring way during and after the attack. She also represented that she never let her child know that she was distraught about what had happened.

It is of interest to note that Klingman (2002) suggested that "war stress" may have a positive effect on children's reactions to subsequent stressful situations. He indicated that family cohesiveness may be enhanced as a result of war. Cohen and Wills (1985) also indicated that a greater network of social support may ameliorate the negative effect of stressful life events. Accordingly, it may be argued that there was increased family and community support among the trauma-exposed children in New York. Contrary to expectations, there were no differences between groups on the individual subscales of the SSRS. Furthermore, there were no differences between groups on the aggregate Problem Behaviors Scale. These findings are supported by research that examined the effects of cognitive development on young children's reactions to traumatic stress. Vernberg and Verela (2001) posited that young children may derive some "protection" during traumatic exposure due to their inability to comprehend the significance of some aspects of the event. Because memory and language change dramatically as children develop, this may lead to age-related variability relative to the ability to encode, evaluate, and represent traumatic events.

Keppel-Benson and Ollendick (1993) and Osofsky (2004) have highlighted the importance of understanding developmental issues when examining traumatized young children. Milgram (1998) indicated that young children may be less aware of the realistic threat of harm during stressful situations. These authors also maintained that the reactions of traumatized children vary at different ages because children process their experiences in different ways as a function of their developmental level. Therefore, it may be hypothesized that the trauma-exposed children did not fully understand the meaning and consequences of the September 11, 2001 attack in the same way that older children and

adults may have understood the event.

Although all of the trauma-exposed children met the American Psychiatric Association's (1994) definition for exposure to a traumatic event (Criterion A1), only 66% of the traumatized sample experienced situational reactivity at the time (Criterion A2). It is particularly relevant to note that none of the children were physically injured as a result of the event. It is also relevant to note that Saigh, Yasik, Feinberg, et al. (2002) determined that none of the participants met DSM-IV criteria for PTSD as indicated by parental ratings on the PTQ. This absence of psychiatric morbidity among the trauma-exposed PTSD negative youth is supported by research studies which indicate that traumatized youth without PTSD did not differ from non-traumatized youth on measures of academic achievement, intelligence, behavioral functioning, anxiety, and depression (Saigh, 1989b; Saigh, Mroueh, & Bremner, 1997; Saigh, Yasik, Oberfield, Halamandaris, & McHugh, 2002).

Examined in this context, Saigh et al. (1997) reported that children and adolescents with PTSD had significantly lower scores on the *Metropolitan Achievement Test* (MAT; Prescott, Balow, Hogan, & Farr, 1988) relative to traumatized PTSD negatives and controls. These authors also reported that the MAT scores of the traumatized PTSD negatives and controls were not significantly different. In a similar vein, Saigh, Yasik, Oberfield, et al. (2002) established that the CBCL ratings of children with PTSD were significantly greater than the ratings of traumatized PTSD negatives and controls. Saigh, Yasik, Oberfield, et al. also established that the CBCL scores of the traumatized PTSD negatives and controls were not significantly different. Saigh (2002) determined that the *Wechsler Intelligence Scale for Children-III* (WISC-III; Wechsler,

1991) Verbal and Full Scale IQs of children with PTSD were significantly lower than the IQs of traumatized PTSD negatives and controls. Saigh also determined that there were no significant differences between the WISC-III scores of traumatized PTSD negatives and controls.

The 8-10 month interval between traumatic exposure and data collection may have also diminished the differences between groups, as the literature clearly indicates that psychological reactivity to traumatic events appreciably remits over time (Saigh et al., 1999). For example, Swenson et al. (1996) conducted a longitudinal study with preschool students who directly experienced Hurricane Hugo. Immediately following the hurricane, 38% of the children exhibited significant emotional and/or behavioral concerns. However, the authors report that "behavioral problems decreased steadily" (p. 122) with only 9% of the children exhibiting behavioral problems 6 months after the storm and 6% of the children exhibiting behavioral problems 14 months following the storm.

In a similar vein, Sack et al. (1993) conducted a study with adolescents who were exposed to war traumas in Cambodia and subsequently emigrated to the United States. The authors collected data at multiple time intervals up to 12 years after the war. The authors reported that symptoms of PTSD and major depression significantly decreased over time. The authors also indicated that the subjects appeared to be functioning quite well in academic and business endeavors (Sack et al., 1993).

Significance of the Study

This study explored posttraumatic symptom presentation with regards to social skills and problem behaviors in preschool children. Currently, there is limited empirical

research on posttraumatic symptom presentation in young children. The results of this study offer preliminary evidence that social skill deficits may not be part of the symptom presentation of traumatized preschool-age children.

Within a clinical context, the results of this study have immediate and long-term implications. Norm-referenced assessment information regarding their child's behavioral and social functioning was provided to the parents in a report that was prepared by a licensed psychologist. Parents were also provided with names and phone numbers of licensed psychiatrists who specialize in working with traumatized children if they felt their child needed a professional follow-up.

In regard to future clinical practice, clinicians may want to reassure parents that young children may derive some protection from exposure to a traumatic event due to their inability to fully comprehend the significance of some aspects of the event. It should also be noted that research indicates that children tend to demonstrate more resiliency if parents are close by, make them feel safe, maintain some day-to-day routines, and project high morale (Klingman, 2002). Therefore, clinicians may want to focus on providing family and social support after a trauma as a way to intervene with trauma-exposed preschoolers.

Limitations

This study consisted entirely of urban preschool children. In addition, all of the trauma-exposed children were exposed to the September 11, 2001 attack. As previously noted, none of the children were physically hurt as a result of the attack. Therefore, the external validity of the study may be limited to preschool children with similar demographic and traumatic and posttraumatic experiences.

Another limitation may include the social skills measure included in the study. It may be hypothesized that the SSRS may not have been sensitive enough to measure the expression of psychopathology in preschool children. Other measures, such as the *Connor's Teacher Rating Scale-Revised* (Connors, 1997) or the CBCL, may have been more effective to fully assess prosocial and problem behaviors. Furthermore, observations of play and more detailed questioning may have yielded additional information regarding post-trauma functioning. Also, different results may have been evident if the parent version of the SSRS was used rather than the teacher version. As such, future studies should examine both parent and teacher ratings.

Also, it may be hypothesized that we may have had different responses if the parent version of the SSRS was used rather than the teacher version. If possible, future studies should utilize multiraters to obtain information by both parents and teachers.

Furthermore, our low response rate (34% of parents from the downtown sample; 24% of parents from the midtown and uptown sample) may have led to a biased sample. The highly sensitive and traumatic nature of the terrorist attack may have limited the number of potential participants. Parents may have chosen to not participate in the study in order to protect themselves and their children from any intrusions during this time. It may be considered that the parents of some of the more severely impaired children may have chosen not to participate in the study. The possibility exists that there may be differences regarding the social skills of the children who participated in the study relative to the social skills of children whose parents chose not to participate in the study. Therefore, our sample may not fully reflect the New York traumatized preschool population.

Future Research

The results of this investigation and the limited number of empirical studies on traumatized preschool children suggest that additional research is needed. Future studies should attempt to employ larger samples in order to generate greater statistical power. In addition, investigations may wish to utilize behavioral observations and other measures of social functioning as the SSRS may not have been sensitive enough to denote meaningful differences between groups.

More information regarding parental reactions may also be important to fully understand preschool children's reactions to traumatic events. Research suggests that parental reaction to stress may influence a child's reaction to stress. For example, Linares et al. (2001) found that maternal distress mediated the link between child exposure to community violence and behavior problems (Linares et al., 2001). McFarlane (1987) reported that parental reactions to trauma are considered the best predictor of child adjustment. Social support has also been found to minimize the negative effects of a traumatic event (Cohen & Wills, 1985; Keppel-Benson & Ollendick, 1993). Therefore, future research should examine the role of these factors in relation to preschool children's reactions. Furthermore, it would be advantageous to study preschool students who have experienced serious injuries as a result of trauma. Most importantly, future research should include longitudinal studies to determine the impact of traumatic exposure on future social development. For example, it would be interesting to compare the social skills of the trauma-exposed children relative to the non-trauma-exposed children at a later point in development.

Appendix A

The Graduate School and University Center
The City University of New York
365 Fifth Avenue
New York, NY 10016-4309

PARENT/GUARDIAN CONSENT INFORMATION

My name is Philip Saigh and I am a Professor of Educational Psychology at the City University of New York's Graduate Center. I am also a licensed psychologist. Given the events that occurred on September 11, there is a great need to objectively determine how children, parents, and teachers are coping. This information is of exceptional importance to parents, teachers, national policy makers, and mental health practitioners.

I am the Principal Investigator of a study that is called "The Psychological Adjustment of New York City Preschool Children, Primary Care Givers, and Teachers Following the Events of September 11, 2001". This study is intended to: a) provide parents/guardians and teachers with information about the psychological adjustment of preschool children, b) provide primary caregivers and teachers with information about their personal levels of anxiety, depression, posttraumatic reactions, and anger, c) provide primary caregivers and teachers with referral information on an as needed basis, and d) compare the psychological ratings of children, primary caregivers, and teachers who were directly exposed to the World Trade Center attack to the ratings of children, primary caregivers, and teachers who reside in an area that was not directly exposed to the attack.

Primary caregivers and teachers will be asked to rate children with regard to a wide range of developmental skills, potential problems, and adaptive behaviors. Primary caregivers and teachers will be asked to fill out a brief questionnaire involving demographic information and information about what they and their child experienced on September 11. They will also be asked to fill out questionnaires that reflect their current feelings of anxiety, depression, posttraumatic reactions and anger. The results of the evaluations that pertain to a child's adjustment will only be communicated to parents or guardians. Likewise, the results of the evaluations that reflect the anxiety, depression, and anger estimates of primary caregivers will be independently sent to the primary caregivers. The names and telephone numbers of board certified child and adult psychiatrists with experience in treating traumatized patients will be provided to parents or guardians when they receive the feedback. The board certified psychiatrists have private practices in Manhattan and charge for their services.

All of the information that is collected will be confidential and stored in a locked cabinet. Only the Principal Investigator will have access to this cabinet. Your child's school will not have access to these materials and test results will not be communicated to the school unless a parent or guardian requests this in writing.

Your child will not be directly involved in this project and will not be exposed to risk. Parents or primary care takers may experience a degree of temporary distress when they complete the questionnaires that are intended to determine what they and the child in question experienced on September 11. It is expected that this distress will be short lived. Any parent or guardian may contact the Principal Investigator or a psychiatrist from Saint Vincents Medical Center by telephone to discuss any distress that may be experienced. The Principal investigator and the St. Vincents psychiatrist will not charge participants who wish to discuss distress that was experienced when they marked the questionnaires. Telephone contact numbers will be forwarded to participating primary caregivers.

(page 1 of 3)

It will take approximately 40-60 minutes for the parents or primary caregivers to complete the child ratings. It is also expected that it will take approximately 20 minutes for the primary caregivers to complete the demographic, anxiety, depression, posttraumatic reactions, and anger questionnaires and the questionnaire involving what they and the child in question experienced on September 11.

Participation is completely voluntary. You may withdraw from the project at any time or refuse to complete the questionnaires. Refusal to participate or a decision to withdraw from the study will not affect a child's standing in the school.

The immediate benefit of this study involves the notification of parents or guardians about the current psychological adjustment of their children. A second benefit involves advising parents/primary care takers about their own current levels of anxiety, depression, posttraumatic reactions, and anger. A third benefit of the study involves the provision of referral information on an as needed basis. A fourth benefit of the study involves advising federal officials about the overall adjustment of New York City preschool children and their parents or guardians. It is expected that information from this study will be reported to the office of the Assistant US Surgeon General and the National Institute of Mental Health. This information may be used to formulate policies and recommendations for intervention. The fifth benefit of this study involves informing the mental health community about the overall psychological adjustment of preschool children and their parents/guardians and teachers following the events of September 11, 2001. It is anticipated that this information may facilitate a better understanding of the scope and correlates of exposure to exceptional stress.

I may publish results of this study, but the names of people, or any identifying characteristics, will not be used in any of the publications. If you would like a copy of the study, please provide me with your address, and I will send you a copy in the future.

If you have any questions about this research, you may call me at (212) 817-8292, pasaigh@aol.com. If you have questions about your rights as a participant in this study, you can contact Hilry Fisher, Sponsored Research, The Graduate Center/City University of New York, (212) 817-7523, hfisher@ gc.cuny.edu.

I have read and understand the consent form. I have had the opportunity to ask questions. If I asked questions about the study, I believe that my questions were answered to my satisfaction. I understand that participation is voluntary. I agree to complete demographic and psychological questionnaires regarding my child and myself.

Child's name_____

Parent/Primary Care Giver Signature_____ **Date**_____

Principal Investigator's Signature _____ **Date**_____

Ph.D. Program in Educational Psychology

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Parent/ Guardian Consent for Teachers To Evaluate Their Child

I understand that if I do not want my child's teacher to complete the psychological rating questionnaires as based on his/her observations of my child, I can refuse to consent and that this decision will not be associated with any repercussions. I understand that if I agree to participate and subsequently change my mind, I can ask my child's teacher not to complete the psychological rating questionnaires based on his/her observations of my child without reprimand or negative repercussions. It is also understood that a decision to participate, not participate, or withdraw from the study will not affect my child's standing in the school.

I hereby grant permission to my child's teacher _____ (name of teacher) to complete the psychological rating questionnaires as based on his/her observations of my child _____ (name of child).

Parent/Guardian Signature _____ **Date**_____

Principal Investigator's Signature _____ **Date**_____

Graduate School & University Center / CUNY
IRB
Approved
3-04-12-01
Approved: 12/17/04 Expired: To 12/16/05

Appendix B

The Graduate School and University Center
The City University of New York
365 Fifth Avenue
New York, NY 10016-4309

TEACHER CONSENT INFORMATION

My name is Philip Saigh and I am a Professor of Educational Psychology at the City University of New York's Graduate Center. I am also a licensed psychologist. Given the events that occurred on September 11, there is a great need to objectively determine how children, parents, and teachers are coping. This information is of exceptional importance to parents, teachers, national policy makers, and mental health practitioners.

I am the Principal Investigator of a study that is called "The Psychological Adjustment of New York City Preschool Children, Primary Care Givers, and Teachers Following the Events of September 11, 2001". This study is intended to: a) provide parents/guardians and teachers with information about the psychological adjustment of preschool children, b) provide primary caregivers and teachers with information about their personal levels of anxiety, depression, posttraumatic reactions, and anger, c) provide primary caregivers and teachers with referral information on an as needed basis, and d) compare the psychological ratings of children, primary caregivers, and teachers who were directly exposed to the World Trade Center attack to the ratings of children, primary caregivers, and teachers who reside in an area that was not directly exposed to the attack.

Teachers will be asked to rate children with regard to a wide range of developmental skills, potential problems, and adaptive behaviors. Teachers will be asked to fill out a brief questionnaire involving demographic information and information about what they and the child experienced on September 11. They will also be asked to fill out questionnaires that reflect their current feelings of anxiety, depression, posttraumatic reactions and anger. The results of the evaluations that pertain to a child's adjustment will only be communicated to parents or guardians. The results of the evaluations that reflect the anxiety, depression, posttraumatic reactions, and anger estimates of teachers will be sent to the participating teachers. The names and telephone numbers of board certified child and adult psychiatrists with experience in treating traumatized patients will be provided to teachers when they receive the feedback. The board certified psychiatrists have private practices in Manhattan and charge for their services.

All of the information that is collected will be confidential and stored in a locked cabinet. Only the Principal Investigator will have access to this cabinet. Your school will not have access to these materials and test results will not be communicated to the school unless you request this in writing.

Children will not be directly involved in this project and will not be exposed to risk. Teachers may experience a degree of temporary distress when they complete the questionnaires that are intended to determine what they and the child in question experienced on September 11. It is expected that this distress will be short lived. Any teacher may contact the Principal Investigator or a psychiatrist from Saint Vincents Medical Center by telephone to discuss any distress that may be experienced. The Principal investigator and the St. Vincents psychiatrist will not charge participants who wish to discuss distress that was experienced when they marked the questionnaires. Telephone contact numbers will be forwarded to participating teachers.

It is expected that it will take approximately 40 minutes to rate each child. It is also expected that it will take approximately 20 minutes to complete the demographic, anxiety, depression, posttraumatic reactions, and anger questionnaires and the questionnaire involving what you and the child in question experienced on September 11.

Participation is completely voluntary. Anyone may withdraw from the project at any time or refuse to complete the questionnaires. Refusal to participate or a decision to withdraw from the study will not affect your standing in the school. Likewise, teachers who decide against participating or who withdraw from the study will not be penalized.

The immediate benefit of this study involves the notification of parents or guardians about the current psychological adjustment of their children. A second benefit involves advising teachers about their own current levels of anxiety, depression, posttraumatic reactions, and anger. A third benefit of the study involves the provision of referral information on an as needed basis. A fourth benefit of the study involves advising federal officials about the overall adjustment of New York City preschool children and their parents or guardians. It is expected that information from this study will be reported to the office of the Assistant US Surgeon General and the National Institute of Mental Health. This information may be used to formulate policies and recommendations for intervention. The fifth benefit of this study involves informing the mental health community about the overall psychological adjustment of preschool children and their parents/guardians and teachers following the events of September 11, 2001. It is anticipated that this information may facilitate a better understanding of the scope and correlates of exposure to exceptional stress.

I may publish results of this study, but the names of people, or any identifying characteristics, will not be used in any of the publications. If you would like a copy of the study, please provide me with: your address, and I will send you a copy in the future.

If you have any questions about this research, you may call me at (212) 817-8292, pasaigh@aol.com. If you have questions about your rights as a participant in this study, you can contact Hilry Fisher, Sponsored Research, The Graduate Center/City University of New York, (212) 817-7523, hfisher@ gc.cuny.edu.

I have read and understand the consent form. I have had the opportunity to ask questions. If I asked questions about the study, I believe that my questions were answered to my satisfaction. I understand that participation is voluntary. I agree to complete demographic and psychological questionnaires regarding myself.

Teacher Signature_____ **Date**_____

I agree to complete the psychological rating questionnaires as based on my observations of the children that I teach. It is understood that I will only evaluate children whose parents/guardians have signed the "Parent/Guardian Consent for Teachers to Evaluate Their Child" forms.

Teacher Signature_____ **Date** _____

Principal Investigator's Signature_____**Date**_____

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