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The validity of the DSM-III-R posttraumatic stress disorder classification as applied to adolescents: A cross-cultural replication

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THE VALIDITY OF THE DSM-III-R POSTTRAUMATIC STRESS DISORDER CLASSIFICATION AS APPLIED TO ADOLESCENTS: A CROSS-CULTURAL REPLICATION

by

RUSSELL C. SCHWARTZ

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

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Abstract

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by

RUSSELL C. SCHWARTZ

Advisor: Professor Philip A. Saigh

The present study examined the PTSD symptomatology in a population of physically abused adolescents. The purpose of the investigation was to establish the validity of the PTSD classification as based upon the responses of American adolescents. The selected sample consisted of three groups of adolescents. The first (n=20) group presented with posttraumatic stress disorder (PTSD), the second group (n=25) presented with conduct disorder, and the third group (n=23) was made up of non-clinical controls. The subjects marked the Fear Survey Schedule (FSS), State-Trait Anxiety Inventory (STAI), Beck Depression Inventory (BDI), Reynold's Adolescent Depression Scale (RADS), and Children's Self-Efficacy Scale (CSES). Their conduct was rated using the Revised Behavior Problem checklist (RBPC). The results reveal considerable variation in anxiety, depression and misconduct amongst the three comparison groups. The PTSD cases consistently displayed higher levels of anxiety and

depression than the conduct disorder and non-clinical controls. The conduct disorder cases consistently showed higher levels of misconduct than the PTSD and non-clinical cases.

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The following dissertation would not have been possible without the support, guidance, and expertise of a number of individuals. I would like to thank my advisor, Professor Saigh, for giving me the idea for this study. In addition, I would like to thank Professor Marion Fish and Professor Barry Zimmerman for their direct and precise comments during the development of the dissertation. Professor Carol Kehr Tittle who served as an outside reader will be acknowledged for helping to bring this dissertation to completion.

There were many individuals who assisted in the selection of the subjects. Dr. William DiScipio and Dr. Jeff Atlas provided the setting, The Bronx Children's Psychiatric Center, and subjects who made up the PTSD and conduct disorder groups. Dr. Patricia Maloney and Ellen Gorman served a similar function in the selection of control group subjects. I would like to thank those staff members who assisted in the collection of data at Good Shepherd and St. Jeans parochial schools and the Bronx Children's Psychiatric Center. A special thanks is in order for Patricia Maloney whose constant support and friendship will never be forgotten.

There were many family members, friends and colleagues who provided ongoing encouragement and guidance. However, a few deserve specific mention at this time. Anna Mae Gentile has been a secretary in the

guidance office of the Monroe-Woodbury Middle School throughout the eight years I have been employed by the school district. Anna Mae served as typist throughout the dissertation process, and willingly typed the countless revisions on her own time whenever asked. It is clear that without her incredible flexibility, eagerness, and kindness this dissertation would not have been completed. Dr. Stuart Berner is another colleague at the Monroe-Woodbury Central Schools who played a crucial role. Stu provided both editorial comment and emotional support. His specific input regarding various aspects of the dissertation was readily available and offered. In addition, his support and encouragement was always timely and helped me maintain perspective and purpose. I greatly value our found friendship.

My brother Brian, the medical doctor, deserves specific mention at this time. I never thought it possible that my thoughts and feelings could change towards my brother with whom I often argued and fought as a child. Brian whose many professional accomplishments I have always admired also served an invaluable role as an extremely patient and expert consultant during the dissertation process. Subsequently, in spending more time together than we have had the opportunity to do so since childhood, I have come to increasingly respect and love him.

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During the time I have attended City University, my wife Caren and I have been blessed with two wonderful children, Leah and Reid. My children played two crucial roles which facilitated the completion of this dissertation: (1) They provided ready relief, distraction, and fun as often needed, and (2) They provided an opportunity for me to set an example that hard work and determination lead to desired goals and outcome. Caren, whose marriage to me has never been without my activities at the Graduate Center, provided loving support, guidance, and encouragement far beyond spousal expectation or tolerance. Caren, I promise that the future years will be devoted to you and our children and our family's future happiness.

Finally, I would like to thank Manny Gold. I am convinced that without his input and guidance this dissertation and degree would never have been achieved.

Lastly, I sincerely hope that my research endeavors will somehow provide helpful solutions for abused children who have not been blessed with the same loving and nurturing circumstances that I have been blessed with.

Dedication

This dissertation is dedicated to the loving memory of my grandparents Eva Schwartz, Edythe and Reuben Black, and my great aunt, Libby Glazier. They were present when I entered the Educational Psychology program but unfortunately passed away before I could receive my doctorate. They would always ask of my progress, and easily share their confidence in my ability to reach my goal. In their memory, I would just like to say: "I DID IT!!!"

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I. SELECTED REVIEW OF LITERATURE

Posttraumatic Stress Disorder

According to the American Psychiatric Association (APA) Diagnostic and Statistical Manual of Mental Disorders (DSM-III-R, 1987), Posttraumatic Stress Disorder (PTSD) is indicated by the development of discrete symptoms following a psychologically distressing event which is not commonplace to man or woman. The DSM-III-R further indicates that traumata may involve serious threat or harm to a loved one or oneself. In addition, sudden destruction of one's home or community or the witnessing of serious injury or death due to accident or physical violence constitute other forms of trauma.

Three symptom clusters are noted as diagnostic criteria for formulating an Axis I PTSD diagnosis (DSM-III-R, 1987): (1) persistent reexperiencing of the traumatic event (i.e., recurrent dreams or recollections of the event), (2) persistent avoidance of stimuli associated with the trauma or general numbing of responsiveness (i.e., feeling of detachment from others or diminished interest in major activities) and (3) persistent symptoms of increased arousal (i.e., irritability, hypervigilance or difficulty sleeping).

This selected review of the literature will consider information relating to the epidemiology of

war-related and civilian traumata. Inasmuch as the epidemiology of the disorder may vary as a function of the nature of the stressor, the epidemiological section is divided into three sections of studies involving war-related stressors, rape, and physical assault. Information relating to the etiology and validity of the disorder is also presented. At this point the purpose of the study, methodology, hypotheses, and analysis procedures are described.

II. EPIDEMIOLOGY

War-Related Studies

Examined from an epidemiological perspective, it is interesting to note that despite the abundance of war-related stress studies (Babinski & Fromet, 1918; Bourne, 1970; Glass, 1954; Keane & Fairbanks, 1983; Kettner, 1972; Lewis, 1942; Richards, 1910), epidemiologists have failed to reach an agreement regarding the prevalence of the disorder. In view of this, the war-related epidemilogical review is divided into studies that have envinced a low or high estimates of psychiatric morbidity.

Low Incidence Studies

Rachman's (1978) salient analysis of the British psychiatric literature that was published during World War II clearly concluded that "the great majority of people endured the air raids extraordinarily well, contrary to the universal expectation of mass panic. Exposure to repeated bombings did not produce a significant increase in psychiatric disorder. Although short lived fear reactions were common, surprisingly few persistent phobic reactions emerged" (p. 182). In a similar vein, Kettner (1972) analyzed the service records of 1,086 Swedish United Nations (UN) troops who saw action in the Congo (now Zaire) during 1961 and observed that only 35 soldiers succumbed to "combat

exhaustion." Four years after the events occurred in the Congo, Kettner obtained the postmilitary medical records of the Swedish combatants and compared them to the postmilitary records of 1,242 Swedes who had been stationed in the Congo and who had not experienced combat. Kettner's results indicated that "the combat veterans did not differ from the noncombat veterans in total morbidity or psychiatric morbidity after their UN service" (p. 98). Likewise, Bourne's (1970) analysis of the medical records of American servicemen who were stationed in Vietnam concluded that "the most significant finding of the conflict has been that the number of psychiatric casualties has been amazingly low" (pp. 115-125).

Examined from a different perspective, Saigh (1984a, 1984b, 1985a, 1985b) described a series of studies that charted the self-reported levels of anxiety of Lebanese students before and after the Israeli invasion of 1982. In conjunction with a test cross-validational report, three self-report anxiety measures were given to 77 Lebanese junior high school students and 128 Lebanese undergraduates at the American University of Beirut in the spring of 1982. On June 6, 1982 (57 days after the junior high school assessment and 6 days after the undergraduate assessment) Israel invaded Lebanon and by June 14 Israeli units completely surrounded West Beirut (the

areas where the junior high school and University are situated). Although many of West Beirut's civilians evacuated to Christian East Beirut, the Lebanese mountains, or other countries, a substantial number of civilians remained in West Beirut. In addition to being exposed to intermittent shelling and strafing, the subjects who remained experienced considerable environmental adversities (i.e., electricity and water were cut off at the height of the summer heat and food, medicine, and petrol were in short supply).

Following the withdrawal of Palestinian, Israeli, and Syrian forces, the Lebanese army with the aid of American, British, Italian, and French forces was able to reassert its authority over West Beirut for the first time in 8 years. Although this term of authority was limited to 15 months, the assertion of Lebanese sovereignty was associated with a drastic reduction in the level of hostilities.

Against this background, Saigh interviewed 64 junior high school students in regards to their experiences during the invasion. Sixteen reported that they had not evacuated. These 64 junior high school students went on to mark the self-report inventories 6 to 8 weeks after the withdrawal of foreign forces. Six months later, 62 students (46 evacuees and 16 non-evacuees) were contacted and retested. Similarly, 88 undergraduates (38 nonevacuees and 50 evacuees) were reassessed six

weeks after the hostilities. Fifty-five undergraduates (20 nonevacuees and 35 evacuees) were reassessed six months after the withdrawal of opposing forces.

Data results of the junior high school and undergraduate scores indicated that: (1) there were no significant differences between the preinvasion scores of the evacuees and nonevacuees; (2) there were no significant differences between the postinvasion scores of the evacuees and non-evacuees; and (3) the aggregate scores of the evacuees and nonevacuees vis a vis war related stimuli were significantly lower at post assessment. Saigh (1984b) concluded "it appears that prolonged exposures to life-threatening events that are subsequently mollified may not be associated with higher levels of delayed anxiety. It also appears that situationally specific levels of self-reported anxiety may decrease following the withdrawal of the stimuli that mediated them" (p. 682).

More recently, Saigh (1988) described the symptomology of 12 undergraduates at the American University of Beirut before and after they were directly involved in a 48 hour shelling incident. In this study, a battery of anxiety, depression, and assertion scales were administered to 25 undergraduate and 11 graduates on December 5, 1983, in conjunction with three cross-validational studies; (c.f., Mathia & Saigh, 1983; Bibi, 1986; Tabib, 1986). It should be

noted in that the Lebanese army had been in control of West Beirut and that the capital had not witnessed a military confrontation for approximately 15 months. On February 6, 1984, the militias in West Beirut launched a major offensive against those in control of the central government. In the course of the offensive, many areas in West Beirut were heavily shelled. Lebanese army units in West Beirut subsequently relinquished their positions and West Beirut fell into the hands of the militias. On February 8, 1984 the government of the United States announced its intention to redeploy its Marine contingent and similar plans were expressed by the Italian and British governments. On February 10, 1984, the British and American governments initiated a helicopter evacuation of foreign nationals because of the deteriorating situation (i.e., continued shelling and the abduction of an American professor).

In the face of these events, the University scheduled a reading period and students were given the option of sitting for or waiving their semester examinations. The University administration asked the extant faculty to maintain their office hours in order to advise students about their academic options. In the course of these consultations, Saigh met with 27 of the students who had completed the test battery two months earlier. Of these 27, 12 reported that they (a)

had been in West Beirut throughout the bombardment, (b) were forced to take shelter in apartment stairwells or basements, (c) were deprived of sleep for 36-48 hours, and (d) had never experienced a more threatening situation. Following the verbal interviews, the students marked the inventories for a second time. It should be noted that the sounds of shelling were distinctly audible as these assessments occurred.

Although sporadic artillery exchanges were evident across the "green line" (battle front) separating East and West Beirut throughout the ensuing 16 months, the intensity and duration of these events were modest as compared to the events of February 6, 1984. In keeping with these points, 12 students were assessed on March 14, 1984. Eleven of them reported that they had not encountered additional sources of traumata since the February 14, 1984 assessment. A student who lived near the green line indicated, however, that her neighborhood had been shelled on March 10 and 11, 1984. She noted that she had remained in her basement for 2 to 3 hours on those occasions and that she had experienced profound anxiety. Finally, 11 more students were located in December of 1984. All of the students reported that they had not been exposed to a significant source of stress since their previous assessment. These students went on to complete a structured interview that was developed on the basis of the DSM-III PTSD criteria. On

completion of the structured interview they marked the self-report anxiety, depression and assertion scales for the last time on December 19, 1984.

Although many of the respondents reported higher levels of anxiety and depression as well as lower levels of assertion 8 days after the trauma, the estimates that were observed 37 and 316 days after the trauma were not significantly different than the estimates that were observed before the trauma. In terms of the structured interview data, 9 of 11 students who were examined on December 19, 1984 reported that they had experienced sufficient symptoms to warrant an acute PTSD diagnosis. It was apparent that of these cases spontaneously remitted within one month of the bombardment of February 6, 1984. In contrast to this, the student who resided near the green line presented sufficient symptoms to warrant a chronic PTSD diagnosis '316 days after the events of Februay 6, 1984.

Examined in concert, the aformentioned reports clearly suggest that the incidence of psychopathology following exposures to war-related stress is relatively modest.

High Incidence Studies

Kristal (1978) compared 66 Israeli adolescents who lived in an agricultural settlement along the 1971 Israeli-Jordanian frontier to 77 matched cases who

lived in a inland settlement. The first group resided from 1968 through 1971 in an environment of "ubiquitous threat and constant danger in the form of indiscriminate shelling and terrorist attacks" (p. 47). In contrast to this, the inland controls had not experienced war-related stress as described above. Eighteen to 20 months after the 1971 Arab-Israeli cease fire, the subjects received dental exams which revealed that the shelled subjects had a higher incidence of bruxism (teeth grinding, a psychosomatic condition associated with stress). Subsequently, Kristal administered a self-report anxiety questionnaire to both groups and no significant differences were observed. At this point both groups viewed a 12 minute film that simulated an ambush of an Israeli patrol, civilians in turmoil, and shelling. Both groups proceeded to mark the self-report anxiety questionnaire immediately after the film. Data resuls determined that the anxiety estimates of the shelled adolescents significantly exceeded the estimates of the control group. Kristal suggested that war-related stimuli (e.g., bomb shelters) in the border subjects' environment were stressful enough to evoke memories of earlier traumas and that this coupled with uncertain peace prospects were inducing bruxism. In addition, Kristal stated that the shelled adolescents developed a strong disposition to respond to war-related stimuli with elevated levels of

situational anxiety.

Card (1983) compared the pre-and post-Vietnam adjustment of 481 Vietnam veterans, 502 non-Vietnam veterans, and 487 non-veterans. All of the subjects completed a battery of cognitive, general information, personality, and vocational tests in 1963 (i.e., when they were 14 to 15 years old). Two to 12 years after this assessment, the Vietnam veterans experienced different degrees of combat exposure (e.g., 12.7% never experienced combat and 4.87% experienced combat quite often). In 1974 (at the age of 29 to 30) the subjects filled out a questionnaire that measured educational experiences, career plans, family life, health, community involvement, and a number of discrete psychiatric symptoms (e.g., nightmares). Data results revealed that the Vietnam veterans reported a greater incidence and severity of physical problems than their classmates. In addition, the Vietnam veterans reported more psychophysiological disturbances involving sleep-related problems, loss of control, blunted affect, hyperalertness, anxiety, and depression.

Kinzie and his colleagues (Kinzie, Sack, Angell, & Mason, 1986; Kinzie, Sack, Angell, Clarke, & Ben, 1989) have chronicled the symptomatology of a sample of Cambodian adolescents who had immigrated to the United States following the fall of the violent and abusive Pol Pot regime (1975 - 1979). At the ages of 8 to 12

years, the subjects in Kinzie's study "suffered catastrophic trauma caused by separation from their families, forced labor, starvation, direct personal injuries, and the witnessing of many deaths and executions (Kinzie et al., 1989, p. 501). Kinzie (1986) interviewed 40 adolescents(mean age = 17 years) approximately 2.5 years after their immigration to the United States and found that 20 met DSM-III criteria for a diagnosis of PTSD. Three years later (eight to 10 years after the traumatic events in Cambodia), 27 of these adolescents sat for a follow-up battery of psychological tests (Kinzie et al., 1989). Of the 27 subjects in the follow-up, eight had PTSD at both the original assessment and after three years. Eleven of the 27 never met DSM criteria for PTSD. The remaining eight subjects in the follow-up sample showed a variable course in as much as a) three subjects who met criteria at the time of the original assessment no longer met criteria at follow-up; and b) five subjects who did not meet criteria for PTSD diagnosis were found to meet criteria at follow-up. Moreover, ten of 13 subjects with PTSD at follow-up also met criteria for a diagnosis of depression compared to only one case of depression among the 14 subjects who did not have PTSD.

In a similar vein, Roberts, Penk, Gearing, Robinowitz, Dolan, and Patterson (1982) examined the interpersonal problems of Vietnam veterans with or

without PTSD. They attempted to predict that veterans with PTSD would have higher degrees of maladjustment or indicators of family and social dysfunctioning. Thirty-eight veterans who had combat experience made up the PTSD positive sample. Forty-eight veterans who had combat experience made up the PTSD negative sample. One hundred eighty-eight veterans who did not have PTSD or combat experience were included in a control group. Each participant was given a complete battery of instruments within the first week of hospital visits. Veterans were administered the MMPI, The Raven Progressive Matrices (Raven, 1941) a biographical inventory, a chemical use questionnaire (Penk, Robinowitz, & Fudge, 1974), and the Vietnam Era Veterans Survey (VVS, Figley, 1977). In addition, the Horowitz Interpersonal Problem Inventory (Horowitz, 1979) was administered. This instrument assesses levels of intimacy, aggression, compliance, independence, and socialability. The Family Environment Scale (FES, Moos, 1974) assesses premilitary adjustment by examining relations within childhood, past family, and current family.

Results of the Horowitz Inventory indicated that PTSD veterans from a substance abusing sample differ from PTSD negative and noncombat veterans for specific types of interpersonal problems. Specifically, this PTSD group reported more difficulties in intimacy and

socialability. Degree of adjustment as measured by the MMPI also differed between PTSD and non-PTSD samples. Differences were not noted between PTSD and non-PTSD groups on current family cohesion, expressiveness, conflict, independence, achievement orientation, intellectual-cultural orientation, activity level, moral-religious emphasis, organization, or control according to the FES scales.

This Roberts et al. (1982) study, in which distinct PTSD and non-PTSD samples were selected, served to provide significant differences concerning the psychological adjustment of its participants. However, an earlier study (Penk, Robinowitz, Roberts, Patterson, Dolan, & Atkins (1981) failed to reveal these differences between combat and noncombat veteran samples.

Taken in concert, it is important to note that the epidemiological disparity may be traced in part to a number of variables. More specifically, the divergent conclusion may in part be due to variations in duration and nature of stress exposures, cultural variations with respect to coping styles, availability of support systems, as well as variations in data collection methods, and measures.

Sexual Assault Studies

A large body of research suggests that sexual assault has long-lasting psychological consequences.

Studies of individuals seeking treatment or assistance because of sexual assault report high rates of anxiety, fear, depression, social maladjustment, and sexual dysfunction. Early studies revealed many methodological shortcomings as findings were based on anecdotal information and a limited number of clinical cases. Burgess and Holmstrom, the most influential writers in the 1970's on the subject, based their epidemiological conclusions on a very limited number of rape cases. However, their early work has highly influenced later research which has compensated for such methodological shortcomings as inadequate sampling procedures, lack of appropriate comparison groups, or standardized measures of psychological response.

Several longitudinal studies have reported that sexual assault victims were significantly more depressed than nonvictimized individuals at various times after the assault (Kilpatrick, Veronen, & Resick, 1979a; Ellis, Atkeson, & Calhoun, 1982; Atkeson, Calhoun, Resick, & Ellis, 1982). The Kilpatrick et al. (1979a) study involved 46 recent rape victims who were 16 years or older. Thirty-five nonvictimized women (i.e., non-clinical controls) were matched on the basis of racial status, social class and age. The mean ages for the victims and nonvictims were 25.28 and 26.29 years. Thirty-seven percent of the victims and nonvictims were black. Sixty percent of the victims and 62 percent

of the nonvictims were white. The profile of Mood States Scale (POMS, McNair, Lorr, & Droppleman, 1971) and the Derogatis Symptom Checklist (SCL-90, Derogatis, 1977) were used to measure the level of depression. All participants were evaluated at six to ten days postrape and one, three, and six months postrape. Cross-sectional data revealed that victims differed significantly from nonvictims at the six to ten day assessment period on the SCL-90R and POMS. A significant difference was still apparent on both measures at a one month post-rape assessment. However, his difference was not apparent at the three and six month assessments.

Repeated measures ANOVAs were conducted in those cases in which data was available from the four assessment periods. Rape victims showed greatest self-reported distress as measured by the SCL-90R during only the initial period and three month assessment period. The authors concluded that "the rape experience has an immediate, profoundly disruptive effect on the mood state", but victims appear to have "largely regained their psychological equilibrium as global indices of pathology and mood disturbance have diminished" (PP.667-8).

Atkeson et al. (1982) compared the incidence, severity, and duration of depressive symptoms in rape victims to a nonvictimized control group. One hundred

fifteen female rape victims who ranged in age from 15 to 71 were included in the victim group. The mean age was 25.6 years. Sixty-three percent of the women were black and 37 percent were white. Eighty-seven nonvictims with a mean age of 38.6 were found for the comparison group. Sixty-eight percent of these women were black and 31 percent were white. All participants were assessed at two weeks, and one, two, four, eight, and twelve months postrape. Three single-testing victim groups were created to control for the effects of repeated testing. Twenty-two, 26, and 24 victims were assessed at two, four, or eight months intervals. Several standardized tests and interviews were administered to the participants.

The Beck Depression Inventory (BDI, Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) and the Hamilton Psychiatric Rating Scale for Depression (HPRS, Hamilton, 1960) were used to measure depression. A structured interview was used to assess assault trauma (e.g. amount of violence involved), assault support (e.g. responses from support network) and assault reaction (e.g. nightmares). Another structured interview assessed personal and interpersonal functioning prior to the rape (e.g. depression, phobias). Depression measures were administered during each of the assessment periods and the interviews were conducted at the first session.

Repeated measures MANOVAs were computed for 43

victims and 21 nonvictims who attended the six sessions. BDI scores showed significant differences between the victim and the nonvictim group. The victim's BDI scores were significantly higher at two weeks, one and two months. The victims HPRS scores were also significantly higher than nonvictim's scores at two weeks, one, and two months postassault.

A series of step-wise multiple regression analyses were computed to determine which variables were predictive of depressive symptoms in victims at two months post rape. Age, race, socioeconomic status (SES), assault trauma, assault support, and assault reaction were entered as predictor variables. BDI victim scores were significantly predicted by assault support at eight months. BDI victim scores were significantly predicted by assault reaction, age, and SES at twelve months. A second step-wise multiple regression analysis using 11 predicator variables from the structured interview assessing prerape functioning was computed. Victim BDI scores were used as criterion variable. Physical health problems, suicide, depression, suicide, depression, and prerape sexual adjustment predicted BDI scores at four months. Anxiety attacks and prerape obsessive-compulsive behavior predicted BDI scores at eight months. Anxiety attacks, obsessive-compulsive behavior, psychiatric treatment history, and physical health prior to the rape predicted

BDI scores at 12 months. The authors concluded that rape victims exhibit depressive symptoms following assault to a significant degree as compared to nonvictims.

In a similar vein, Ellis et al. (1982) compared the symptomology of multiple and single-incident rape victims. An individual was considered a multiple-incident victim if she had been raped at least once prior to the current rape. Twenty-five participants in the multiple-incident group had a mean age of 38.6 years. Fifty-two percent of the participants were white in the multiple-incident group and 48 percent were black. Twenty-eight percent and 72 percent were white and black, respectively, in the comparison group. A structured interview was administered to all of the participants to assess functioning prior to the current rape. Various items reflected social network, sexual adjustment, history of physical abuse or exposure to other violent crimes, phobias, anxiety attacks, obsessive-compulsive behavior, paranoia, anger and hostility, psychiatric treatment history, suicide and depression. An assault questionnaire that contained information regarding the current assault and its aftermath was also administered. A MANOVA was computed based upon data generated through the multiple and single-incident groups' responses to the structured interview. Data

analysis determined that multiple-incident group was significantly more dysfunctional in all but two areas (i.e., substance abuse and anxiety disorders). The authors also observed that there were more reports of suicide and depression among the multiple-incident group.

Another study suggests that victims experience a variety of depressive symptoms immediately after an assault such as decreased concentration, loss of interest in daily activities, and sleep or appetite disturbances (Frank, Turner, & Duffy, 1979). These investigators examined depressive symptoms in rape victims one to four weeks after the assault. Thirty-four victims went on to mark the Beck Depression Inventory. Twenty four percent of the victims exhibited mild levels of depressive symptoms. Another 24 percent displayed moderate levels, and 20 percent showed severe levels. The authors saw their findings as limited because they lacked a nonvictim comparison group and follow-up assessment sessions. However, the nature and extent of depression immediately following the incident was clearly noted.

Victims of sexual assault have also reported high levels of fear and anxiety at various times after they were assaulted. Three longitudinal studies revealed that assault victims reported higher levels of anxiety than nonvictimized individuals (Calhoun, Atkeson, & Resick, 1982; Kilpatrick, Veronen & Resick, 1979b;

Kilpatrick et al., 1979a). Participants in a study described earlier (Kilpatrick et al., 1979a) were given measures of fear and anxiety at each of four postrape intervals. The Modified Fear Survey (MFS, Veronen and Kilpatrick, 1980) was developed to assess the specific fears of sexual assault victims. The State-Trait Anxiety Inventory (STAI, Spielberger, Gorsuch, & Lushene, 1970) assessed both situational and enduring levels of anxiety. The POMS (McNair, Lorr, & Droppelman, 1971) and SCL-90R (Derogatis, 1977) were also used to assess generalized and phobic anxiety. Cross-sectional data at six to ten day assessment intervals revealed significant differences between victims and nonvictims on those dimensions of the POMS and SCL-90R tapping anxiety. The scores of the victims were significantly higher on State and Trait measures of the STAI. In addition, they were significantly higher on five of seven subscales and the overall MFS score. These findings were similar to those observed at the one month post-rape MFS assessment. Only anxiety and not the fear dimensions from the SCL-90R and the STAI Trait variable were significant at the three month period. A MANOVA with repeated measures was conducted on STAI and MFS data and it was observed that the victims presented higher levels of morbidity regardless of assessment period. STAI and MFS scores for both groups were higher during the first assessment

period as compared to the other periods. The victims STAI and MFS scores decreased more rapidly than the nonvictims' scores overtime. The authors concluded from this data that rape produces extreme trauma as shown through significantly elevated levels of anxiety across assessments.

Kilpatrick et al. (1979a) went on to analyze the MFS scores in order to test the following hypotheses: (1) rape victims are more fearful, (2) the magnitude of their fear responses will change overtime, (3) fearful situations of rape victims' will be rape related, (4) rape victims patterns of fear will change overtime. Data analysis provided support for all four hypotheses. Victims were more fearful and the magnitude of their fears changed overtime. In addition, results confirmed that rape victims fear certain situations. More specifically, content analysis revealed situations classified as rape cues, rape-precipated concerns, and attack vulnerability cues induced considerable anxiety.

Kilpatrick, Resick, & Veronen (1981) attempted to determine the course of rape victims' symptomology by collecting additional data at one year postassault (Kilpatrick et al., 1979a and b). Twenty rape victims and 20 nonvictims marked the SCL-90R, STAI, MFS, and POMS after one year after the assault. A series of repeated measures ANOVAS were conducted to determine if

groups differed across assessments. The victims presented with significantly greater estimates of morbidity on 26 of 28 dependent variables. Significant main effects for assessment period were found on 12 variables. STAI-State scores significantly differed as based upon the one month assessment. Victims' STAI-Trait scores significantly exceeded the trait scores of the controls at each assessment. Victims presented higher MFS rape scores and overall scores at each assessment session. In a similar vein, the victims' SCL-90R and POMS scores were significantly greater across assessments. According to MFS discrepancy scores, the victims identified 14 items as considerably more disturbing at the one year postassault assessment (e.g. darkness, weapons, and strangers). Investigators concluded that rape victims were significantly more anxious than the controls and that they continue to suffer from these difficulties one year after their assault.

Similarly, participants in a study described earlier (Atkeson et al., 1982) were given measures of fear at six assessment periods. Three single testing victim groups were established to control for repeated testing. All participants were given the Modified Fear Survey Schedule (MFS,Veronen and Kilpatrick, 1980) and pre- and postrape functioning was assessed through interviews. A MANOVA with repeated measures revealed

that the victims' MFS scores were significantly greater than the MFS scores of the controls. The social-interpersonal subscale was significantly higher for rape victims at the two week and one month assessments. Additional analysis with discrepancy scores proved that rape and attack vulnerability cues were significantly higher for rape victims at early assessment periods. Rape-precipitated concerns and classical fears (e.g. heights) were higher at later periods. The investigators concluded that victims' fears are more severe and long-lasting than the fears of nonvictims (Atkeson et al., 1982).

Few studies have examined the long term effects of sexual assault on social adjustment (Calhoun, Resick, & Ellis, 1981). In a study described earlier (Atkeson et al., 1982; Calhoun et al., 1982), participants were given the Social Adjustment Scale-Self Report (SAS-SR, Weissman and Paykel, 1974) at six different assessment periods. Three additional rape victim groups were given the SAS-SR at separate periods to control for repeated testing. The SAS-SR assesses previous two week adjustment and overall adjustment (e.g. work, social and leisure, family unit). A structured interview which assessed information concerning the assault and its aftermath was given at the first assessment period. In addition, another structured interview which assessed premorbid adjustment (e.g.

health, interpersonal relations) was administered at that time.

A MANOVA determined that the SAS-SR profiles of victims and nonvictims SAS-SR scores across all six sessions were not significantly different. A second MANOVA revealed that both profiles decreased over time. A third MANOVA revealed no group differences for either victims or nonvictims across all six sessions. These analyses were repeated across five sessions, four sessions, and so on because of sample attrition. Results revealed victims and nonvictims differed in terms of their social adjustment at two weeks and at two and three months. Single testing victim scores at two, four, and eight months differed significantly in terms of total social adjustment. Newman-Keuls comparisons indicated that single testing and victim groups were significantly more impaired in their overall social adjustment than nonvictims.

Profile analysis comparing victim and nonvictim groups were conducted on the following social adjustment subscales: work, economics, social and leisure, extended family, and combined marital parental, and family unit subscales. The two groups differed significantly for the first eight months on the work subscale. On the economic and social and leisure subscales, the groups differed only at the first two months. The combined marital, parental, and family unit score failed to

reveal significant differences. The victim group showed more impaired relations with extended family only at one month postrape. The authors concluded that victims initial problems in overall social adjustment changed in a positive direction over time. However, the victims day-to-day functioning is impaired for a longer period of time. Social relations concerning immediate family and other relatives showed the least disruption.

Female victims of child sexual assault have evidenced sexual disturbance such as sexual dysfunction and infrequent orgasms (Tsai, Feldman-Summers, and Edgar, 1979). Three groups of women, two of which had been sexually molested as children, were included. First, a clinical group seeking therapy for problems associated with the molestation was created. Second, a nonclinical group of women who had been molested and who were considered as being well-adjusted were included. Third, a control group who had not been molested was established. Most participants were white, and ranged in age from 18 to 65 years. The MMPI was administered to assess overall adjustment. A sexual experience questionnaire was administered in order to examine for molestation variables, prepubescent sexual acts, and current psycho-sexual functioning. Statistical analysis of MMPI scores indicated that not all individuals who were molested as

children experienced adult maladjustment. The MMPI also revealed that the clinical group had a history of poor family relations, poor social intelligence, difficulty in making emotional attachments, distrust towards the world, low self-concept, and negative that women who were molested as children may differ from others in terms of adult adjustment. These differences appear to be mediated by emotional responses evoked at the time of the incident.

Two recent large scale studies attempted to examine the relation between assault and psychopathology in representative samples of victims and nonvictims (Kilpatrick, Best, Veronen, Amick, Villeponteaux, & Ruff, 1985; Burnam, Stein, Golding, Sarenson, Forsythe, & Telles, 1988) Burnam et al. (1988) examined the association between reported sexual assault and prevalence of nine specific mental disorders. These disorders included several that have been commonly associated with sexual assault in previous studies (e.g. depression and anxiety). In addition, these investigators included several disorders which have not been previously associated with sexual assault in the literature (e.g. mania, schizophrenia and antisocial personality). The second general purpose of this study was to examine certain personal characteristics (e.g. gender, age cohort, educational level, ethnic background) of assault victims which would predict

development of subsequent disorders. Three thousand one hundred and thirty adults from two Los Angeles neighborhoods completed an initial interview. Subsequently, two groups of 432 individuals were created representing assault and nonassault groups. Each assault and nonassault individual was matched on gender, age, ethnicity, and educational level using a multivariate matching technique. Both groups had a mean age of 36 years, and had completed an average of 14 years of education. The investigators sought to compare sexually assaulted and nonassaulted individuals in terms of prevalence of disorder preceeding and following the age of first sexual assault. Thus, individuals in the nonassault group were matched with assaulted individuals based on age at initial sexual assault.

Psychiatric disorders that were indicative of DSM-III (American Psychiatric Association, 1980) criteria were assessed by using the National Institute of Mental Health's Diagnostic Interview Schedule (DIS, Robins, Helzer, Croughan, & Ratcliffe, 1981). The following 10 DIS DSM-III disorders were included: major depressive episode, manic episode, schizophrenia or schizophreniform disorder, alcohol abuse, drug abuse, antisocial personality, phobia, panic disorder, and obsessive-compulsive disorder.

A questionnaire was devised to assess history of sexual assault and its circumstances. Results on the prevalence of assault revealed that 13.2 percent of the total Los Angeles household population reported a lifetime incident involving a sexual assault. Lifetime sexual assault was more frequently reported by women, non-Hispanic whites, and younger age cohorts. Lifetime prevalences in the full household sample of affective disorders, drug abuse, and three anxiety disorders (phobia, panic, obsessive-compulsive disorder) were significantly higher among the sexually assaulted individuals.

In regards to demographic predicators, men were more likely to develop drug abuse as compared to obsessive-compulsive disorder for adult victims. Educational level, gender or ethnic background did not predict the likelihood of developing a disorder at postassault. The authors concluded that sexual assault was associated with increased risk for later onset of major depression, substance abuse, phobia, panic disorder, and obsessive-compulsive disorder.

Kilpatrick et al. (1985) attempted to interview a representative sample of adult women who had experienced a variety of victimization experiences (including sexual assault). In this instance the authors sought to study the mental health consequences of these experiences and to determine the effects of

victimization as a function of demographic characteristics (e.g., age, race, income). The subjects were 2,004 female residents who were 18 years or older. Respondents were classified and placed in one of six mutually exclusive victimization groups: attempted molestation (N=37), completed forcible rape (n=140), attempted rape (n=79), completed sexual molestation (n=55), attempted robbery (n=33), aggravated assault (n=48), and nonvictims (n=1,568). A survey interview was used to gather information concerning the criminal victimization, biographic and demographic characteristics, victims' age at time of incident, victims' disclosure of incident, victims' help seeking behavior, and victim's mental health history. In addition, participants were asked three mental health questions (e.g. "Have you ever had a nervous breakdown?", "Have you ever felt so hopeless that you thought seriously of killing yourself?", Have you ever attempted suicide?").

Log-linear analyses were used to assess potential significant main effects of victim status, age, race, and income on mental health variables. These analyses comparing all victims with the nonvictim group on each of three mental health problems yielded significant results for nervous breakdown, suicidal ideation, and suicide attempts. Analysis of individual victim groups revealed that victims of completed rape and attempted

rape were more likely to report nervous breakdowns. In addition, victims of completed rape, attempted molestation, attempted rape, completed molestation, and aggravated assault were two to six times more likely to report suicidal ideation. Victims of completed rape, attempted robbery, attempted rape, and attempted molestation were more likely to report suicide attempts. The two groups (completed and attempted rape) which showed significant effects for victimization and nervous breakdown were compared to nonvictims on demographic characteristics. This revealed no significant main effects for race or income. Age was significantly related to the incidence of nervous breakdown. There was a significant interaction between victimization and demographic characteristics for those reporting suicidal ideation except for race. The authors concluded at this point that overall the effects of income, age, and race minimally mediate a significant relation between victimization and mental health problems.

A comparison of attempted and completed crimes revealed significance only for completed rape as these individuals reported higher rates of all three mental health problems. An analysis of nervous breakdowns and suicide attempts among sexually assaulted victims indicated that these problems often occurred after the assault. For example, victims of completed rape were 14 times more likely to report postassault problems.

Similar results were seen for attempted rape and attempted molestation victims. The researchers concluded that it is highly likely that victims of sexual assault will develop mental health problems after the assault. The victims' status was a primary determinant of mental health problems as opposed to age, income, or race.

Examined in toto, the aforementioned rape-related studies clearly indicate that rape victims experience higher levels of self-reported anxiety and depression than nonvictimized women. In addition, victims evinced poorer social adjustment and a greater incidence of sexual dysfunction. Finally, rape was found to be associated with long term mental health related problems.

Physical Assault Studies

The DSM-III-R PTSD criteria states that physical trauma can produce symptomology in those individuals who have experienced serious threat or harm to oneself, a loved one, or another person either through direct involvement, observation, or by verbal communication. The research on the incidence and prevalence of physical trauma and psychological disturbance in children and adolescents is sparse and mostly confined to cases in which the physical trauma was witnessed and not experienced directly.

Joffe, Wolfe, Wilson, and Zak (1986) attempted to

investigate the range of behavioral and social adjustment problems that were presented by children who observed their mothers being physically abused. Fifty-eight children who saw their mothers being abused were compared to 68 children from nonviolent homes. Thirty-six boys and 22 girls were in the former group, and 33 boys and 35 girls were in the latter group. The children ranged in age from six to eleven, and there was no previous history of psychiatric treatment. There was no significant differences between these groups in terms of mean age, family income, and number of children in the family. A history and description of the family was obtained through the mothers during an interview. The mothers completed the physical aggression subscale of the Conflict Tactics Scale (Straus, 1979) which assesses the child's exposure to family violence. In addition, mothers completed the Achenbach Child Behavior Checklist (Achenbach & Edelbrock, 1981) to assess the child's adjustment in terms of competence (e.g. school performance) and behavior problems (e.g. withdrawal). Joffe et al. (1986) observed a significant relationship between the child behavior problems and amount of family violence as reported by the mother for the total sample. Although this relationship was highly significant for the boys, a non-significant correlation was observed for the girls.

According to the authors, girls exposed to violence were more likely to display internalized and social competence problems. Boys differed from the control group on externalized and internalized behavior and social competence. The investigators concluded that a significantly higher level of maladjustment is often present in children from violent families. The overall adjustment of the boys was found to be significantly related to the degree of violence witnessed.

In a similar vein, Rosenbaum and O'Leary (1981) attempted to assess the immediate behavioral and emotional impact of spouse abuse on their children. They predicted that children of an abused parent would evidence more behavioral and emotional problems than a non-abused comparison group. An abused sample (AB) consisted of 52 women who were self-referred victims of physical marital violence. The mean age of this group was 33.01 years, and they had an average of 2.6 children. The first comparison group consisted of 20 women who were selected at random from the phone book. They reported no violence and satisfactory marriages (SC-satisfied couples). The mean age of this group was 37.8, and they had an average of 2.89 children. The second comparison group consisted of 20 women who reported marital discord in the absence of violence (NV-nonviolent group). The mean age of this group was 35.10 and they had an average of 2.67 children.

All groups completed the Peterson-Quay Behavior Problem Checklist (BPC, Quay, 1977) which examines four factors of children's misbehavior: conduct disorder, personality disorder, inadequacy-immaturity, and subcultural delinquency. A personal data questionnaire (PDQ) assessed information concerning family background, family history of physical abuse (husband and wife's families of origin) and if they were physically abused as children.

Results revealed that the three groups did not differ significantly on BPC factors. A non-significant difference was observed between AB group and the two other groups in conduct disorder and personality disorder factors. The AB wives were no more likely than the NV or SC wives to have marital violence within their present family if spousal abuse had been present in their family of origin. However, the impact of spousal abuse in the husband's family of origin was more likely to lead to marital violence in their present family. Eighty-two percent of the husbands who witnessed parental abuse were victims of child abuse. Forty-four percent of the abusive husbands came from families in which they witnessed physical abuse of their mother by their father. This latter finding was true for only 7.5 percent of the nonabusive husbands. The researchers conclude that the subjects who witnessed parental spouse abuse were likely to physically abuse their own

families.

Pynoos and Eth (1984) in a non-experimental (i.e., psychoanalytic case study) report attempted to examine the post-traumatic characteristics of children and adolescents who had witnessed a homicide. Forty child witness cases were examined in which a parent (35%), friend or other relative (30%), or stranger (35%) had been murdered. Interviews were conducted within weeks of the homicide and for an undisclosed period of time afterwards. These interviews obtained information regarding details of the homicide, the child's coping and defensive maneuvers in light of traumatic anxiety, the "trauma phase" (e.g. child's affective and perceptual experience of the violent event), and the "closure phase" (e.g. child's present and future concerns). The symptomology of the children was characterized by irritability, rudeness and argumentative behavior, passivity, inhibition, and rigidity. Loss of control, distrust, themes of death, and somatic complaints were also noted. The interview data also suggested that the posttrauma behavior of adolescents paralleled adult PTSD symptomology. Rage, shame, betrayal, rebellion, or antisocial behavior were witnessed initially. The authors also suggested that traumatized children might take illicit drugs to relieve depression.

Arthur Green (1989) recently completed a study of

approximately 50 abused children and their families to assess the psychological impact of physical abuse. An additional 30 abused infants and preschoolers participated in the study. The demographic characteristics of the sample revealed that most of the families lived in inner city, one-parent homes. Sixty-five percent of the families were black, 25 percent were Hispanic, and ten percent were white. One half of these participants had been removed from the home at least one time. In a non-experimental fashion, data was collected through psychotherapy and play therapy sessions. On the basis of "clinical observations" Green reported that one half of all participants met PTSD criteria. Green went on to speculate that the acute effects of PTSD involved damage to those ego structures involved in the reception, processing, and integration of information. He further proposed that this contributed to a repetition and reenactment of the traumatic event. The ego functions involved with self-preservation, the establishment of object relationships, and identification were also said to be impaired over time. Taken collectively it is apparent from the four studies that were considered herein that profound psychological problems are frequently associated with physical abuse.

Etiology

Freudian Model

Freud's concepts of traumatic neurosis and the stimulus barrier presented in Beyond the Pleasure Principle (Freud, 1920/1955) and Inhibitions, Symptoms, and Anxiety (Freud, 1926/1955) can be applied to the traumatic situation resulting from sexual or physical assault. Freud believed that traumata were impressions experienced at an early age and forgotten later. A great deal of importance was attributed to these traumata in the etiology of neuroses. An experience could acquire traumatic characteristics if it evoked unusual pathological reactions by placing too many demands on one's personality. Constitutional factors appear to interact with these experiences in leading to the development of neuroses. Freud placed all traumata within the period of early childhood or from birth to age five. A traumatic experience presented excitation which was powerful enough to break through a protective shield or stimulus barrier. The traumatic situation led the ego to experience helplessness in the face of this powerful excitation (Eth & Pynoos, 1985). Freud believed that the individual was most sensitive to these traumatic impressions between the ages of two and four when he or she was learning how to speak (Freud, 1939/1955). Subsequently, these traumatic experiences would become forgotten or remain inaccessible to memory. Freud placed

greatest concern upon those early impressions which were of a sexual or aggressive nature or represented early injuries to narcissisim or to the self.

In Moses and Monotheism (1939), Freud noted the importance of the interaction between constitutional factors and experiences and contrasted the positive and negative effects of traumata. These positive effects were seen as attempts to repeat the painful trauma or to remember the forgotten experience. Fixations to the trauma or repetition-compulsions represented these positive endeavors which would become immutable character traits of the neuroses. The repetition-compulsion, a manifestation of the death instinct, takes over as the individual needs to repeat the painful traumatic event. The negative effects were the defensive reactions designed to avoid the traumatic experience. This avoiding contributed considerably to the formation of character but, could also culminate into inhibition or phobia. Both positive and negative effects could occur in the same individual with either one or the other component being predominant. The presence of the opposite reactions within the same individual often created unsolvable conflict. Freud saw the neuroses as the attempts to cure the illness created by traumata (Freud, 1939). The neuroses

represented an endeavor to reconcile a "divided ego" so that the individual could cope with the outer world.

Behavioral Model

The behavioral model commonly used in conceptualizing PTSD is based on two-factor learning theory. The model incorporates both classical and instrumental/operant conditioning theories. In classical conditioning, involuntary responses are elicited by inherently neutral stimuli (conditioned stimuli, CS) through the repeated pairing of the neutral stimuli with stimuli that naturally elicit the reflexive response (unconditioned stimuli, UCS). The textbook example of this is Pavlov's conditioning of salivary responses in dogs. By sounding a bell (CS) each time he gave meat (UCS) to the dogs, Pavlov developed a conditioned response in the dogs, such that they salivated whenever they heard the bell, even if no food was present. The behavioral model of PTSD postulates that similar classical conditioning takes place when an individual is traumatized. The individual is reflexively distressed by the threatening aspects of the traumatic event (UCS). Other inherently neutral cues (CS) present at the time of the trauma become classically conditioned such that they too come to elicit anxiety, even though they represent no

inherent danger. Thus, if a girl is attacked in the woods by a middle-aged male stranger, she may become anxious whenever near any wooded areas or when approached by any middle-aged man, since these cues are now associated with the traumatic event.

The second of the behavioral theory's two factors incorporates instrumental/operant conditioning, in which the individual learns to voluntarily behave in such a way as to bring about a desired consequence. In PTSD, the desired consequence is usually relief from anxiety. The individual learns that avoidance of or escape from the trauma-associated cues minimizes anxiety level. In the example above, the little girl might change her route to school to avoid going near the woods and might try to avoid contact with her father and uncles. Such actions take her away from the trauma-related cues and thereby reduce her anxiety. In summary of the behavioral model, some symptoms (e.g., sleep disturbance, startle response) are viewed as involuntary anxiety responses associated with the UCS/CS whereas other symptoms (e.g., behavioral avoidance) are seen as instrumentally conditioned avoidance responses.

Validation of the PTSD Classification

Although PTSD symptomatology has been recorded

for hundreds of years (c.f., Saigh, 1985), it is interesting to note that the extant classification was intuitively established by an APA task force (Cerney, Himidi & Barlow, 1984) and that a series of comparative studies were conducted to test the validity of the classification. Viewed along these lines, Penk, Robinowitz, Roberts, Patterson, Dolan and Atkins (1981) compared the MMPI scores of a sample of Vietnam veterans who had been in combat to the MMPI scores of a sample of Vietnam veterans without combat experience. Although the combat veterans reported more psychosocial problems pursuant to their military service, no significant differences were apparent when the MMPI scores of the two groups were examined.

Roberts, Penk, Gearing, Robinowitz, Dolan and Patterson (1982) divided a sample of Vietnam veterans into two sub-samples (viz., high or low incidence of PTSD symptoms). Roberts, et al. (1982) subsequently observed that the veterans with high PTSD ratings put forth elevated scores on scales 0, 4 and 6 of the MMPI.

Fairbank, Keane, and Malloy (1983) compared the discriminant validity of the classification by administering a series of self-report inventories to three groups of Vietnam veterans. The first group was composed of veterans who were enrolled in a stress management program for PTSD patients. The second group

was made up of patients who did not have psychiatric morbidity. Fairbank and his colleagues observed that the PTSD patients put forth higher ratings on all of the MMPI scales than the relevant comparison groups. In addition, it was revealed that the PTSD cases presented elevated scores on the State Trait Anxiety Inventory, Beck Depression Inventory, and the Zung Depression Inventory than the clinical and nonclinical cases.

Examined from a psychophysiological perspective, Blanchard, Kolb, Pellmeyer and Geradi (1982) created an experimental protocol to discriminate between Vietnam veterans with PTSD and a non-veteran control group. Both groups listened to recordings of combat sounds as their blood pressure, skin temperature, forehead muscle activity and skin resistance were monitored. Blanchard, et al. (1982) later reported that "only the PTSD group's heart rate, systolic blood pressure, skin temperature and forehead muscle activity consistently differed from the control group's" (p. 217).

Blanchard, Kolb, Geradi, Ryan and Pallmeyer (1986) compared a group of Vietnam combat veterans with PTSD to a group of Vietnam veterans without psychiatric mobidity. The heart rate of each group was checked as a recording of "emotionally meaningful combat sounds including helicopters, AK47s firing, mortars and screaming wounded was played" (p. 597). Blanchard, et al. (1986)

subsequently indicated that the PTSD cases put forth more heartbeats per minute than the non-traumatized controls.

Viewed from a child-clinical perspective, Saigh (1987a, 1987b) examined the validity of the classification as it applies to children and adolescents. Saigh (1987a) administered the Revised Children's Manifest Anxiety Scale (RCMAS, Reynolds & Richmond, 1978), Children's Depression Inventory (CDI, Kovacs, 1981), Test Anxiety Inventory (TAI, Spielberger, 1980), and Conners Teacher Rating Scale (CTRS, Conners, 1969) to three groups of adolescents. The first group presented with chronic PTSD and the second group presented with simple phobia (i.e., test phobia). The third group consisted of non-clinical controls. Saigh (1987a) reported that the PTSD cases presented higher levels of morbidity on the RCMAS, CDI, and CTRS than the clinical and non-clinical controls. It was also apparent that the phobia cases put forth appreciably higher TAI scores than their counterparts.

In a follow-up study, Saigh (1987b) administered the RCMAS, CDI and CTRS to three groups of children (i.e., PTSD, simple phobia and controls) whose ages ranged from 9 to 13 years. Saigh subsequently observed that the RCMAS and CTRS scores of the PTSD cases were notably greater than the RCMAS and CTRS scores of their phobic peers. Although the CDI scores of the male PTSD and phobia cases were significantly different, the CDI

scores of the female PTSD cases were appreciably greater than the CDI scores of their phobic counterparts. The PTSD cases also presented significantly greater RCMAS, CDI and CTRS scores than the controls. In contrast to this, only half of the phobia-control group comparisons were significantly different.

Purpose and Rationale

Although the aforementioned studies speak well for the validity of the classification, a number of concerns were apparent. More specifically, only three reports (Saigh, 1988, 1989) considered the validity of the classification as it applies to school-age children. It should be noted, however, that Saigh's subjects consisted of Lebanese nationals and that information relating to the validity of the classification as it applies to American children had not been explored. In addition to this, it should be emphasized that Saigh examined war-related stressors and the present study attempted to reveal the impact of civilian trauma
namely, physical assault. It is also important to note that a psychiatric classification should be "empirically validated by determining its relationship to other variables. Of particular concern is differential validity, two putatively separate disorders ought not to be related in the same way to the same variables" (Quay, 1986, P. 37). In a similar vein, Van Praag (1990)

recently observed "there is nothing wrong with basing the first draft of an operational taxonomy on expert opinions. However, once having postulated a taxonomy, experts should be honorably discharged and replaced by researchers to study the merits of the system" (p. 149).

In view of these points and as PTSD symptoms may vary cross-culturally (Escobar et al., 1983), the purpose of this investigation was to establish the validity of the PTSD classification as based on the responses of American adolescents. More specifically, this report compared the anxiety, depression, self-efficacy and misconduct parameters of three groups of adolescents (i.e., PTSD, conduct disorder, and non-clinical controls). In so doing, it was hypothesized that the PTSD cases by virtue of the nature of the impairment would present with higher estimates of anxiety and depression and that the conduct disorder cases would evince elevated misconduct and self-efficacy estimates.

III. METHOD

Instrumentation

Inasmuch as the diagnostic criteria and associated features of PTSD reflect a number of symptoms (Barlow, 1988; Saigh, 1989), a multiple component assessment package was used. Appendix A contains a listing of publishers for each outcome measure.

Adolescent Trauma Inventory (ATI, Saigh, 1988). The Adolescent Trauma Inventory (ATI) was developed on the basis of the discrete symptoms that are listed for the PTSD classification in the DSM-III-R. The inventory presents four subtests which are scored on a dichotomous basis (i.e., o for absence of symptoms and 1 for presence). The first subtest assesses trauma through experiential, vicarious, or verbal mediation, (e.g., "Did you see someone else having a very bad experience?"). The second subtest examines unwanted trauma-related thoughts (e.g., "Are you having a lot of bad dreams about the experience that you described?"). The third subtest examines one's general affect (e.g., "Since your experience, do you feel detached or different from others?"). The final subtest assesses a variety of diverse symptoms (e.g., "Since your experience has it been difficult to concentrate?") that were not apparent before the trauma. The ATI received a test-retest reliability coefficient of .90

(Saigh, 1988). The ATI correlates highly (.80) with clinical psychiatric ratings (Saigh, 1988).

Diagnostic Interview for Children-2 (DISC-2, Shaffer, Fisher, Piacentini, Schwab-Stone, & Weeks, (1989). [1] The Diagnostic Interview for Children-2 was designed to provide a comprehensive diagnostic profile of the more common psychiatric disorders of childhood described in DSM-III-R. The instrument is divided into modules which provide interview items and scoring algorithms. For the purposes of the present study, the Disruptive Behavior Disorders module of the DISC-2 was utilized in order to obtain a DSM-III-R Axis I Conduct Disorder diagnosis. The DISC-2 Disruptive Behavior module is presented as Appendix B. The reliability of the subtest is quite high based on a Kappa coefficient of .87 (Shaffer et al., 1989). Validity ratings are lower based on a Kappa coefficient of .60 (Shaffer et al., 1989).

Children's Self-Efficacy Scale (CSES, Bandura, 1990). The Children's Self-Efficacy Scale consists of 50 items regarding examinees' self-efficacy (e.g. "How well can you resist peer pressure to do things in school that can get you into trouble?"). Examinees are required to rate each item on a 7-point Likert-type scale. A

Note. From Diagnostic Interview Schedule for Children by D. Shaffer, P. Fisher, J. Piacentini, M. Schwab-Stone and J. Wicks, 1989, New York: New York Columbia University/New York State Psychiatric Institute. Reprinted by permission.

reliability coefficient of .87 was obtained for the measure (Bandura, 1990). The CSES correlated moderately (.57) with a self-efficacy scale for academic achievement (Bandura, 1990).

Fear Survey Schedule (FSS, Wolpe & Lang, 1969). The FSS consists of an index of anxiety that encompasses a wide range of situationally specific items (e.g., "Failure and feeling rejected by others"). Examinees are required to rate each item on a 5-point Likert-type scale. Test-retest reliability of the FSS was found to be .72 (Suinn, 1969). In terms of the validity of the measure, correlation between the FSS and measures of anxiety (e.g. Manifest Anxiety Scale) have ranged from .46 to .80 (Lang & Lazovik, 1963; Grossberg & Wilson, 1965; Suinn, 1969).

State Trait Anxiety Inventory (STAI, Spielberger, Gorsuch, & Lushene, 1970). The STAI consists of a State anxiety scale that is made up of 20 statements and reflects global feelings of situational anxiety (e.g. "I feel secure. I am tense."). In addition, the Trait anxiety scale also consists of 20 statements and measures cross-situational levels of consistently experienced anxiety (e.g., "I feel pleasant. I feel like a failure."). Median reliability coefficients for secondary level students for the State and Trait scales

are .695 and .33, respectively (Spielberger et al., 1970). Validity ratings for the State and Trait scales are .86 and .90, respectively (Spielberger et al., 1970).

Beck Depression Inventory (BDI, Beck, 1978). The BDI consists of 21 depression-related items (e.g., "I do not feel sad. I feel sad. I am sad all the time and I can't snap out of it. I am so sad or unhappy that I can't stand it."). A four alternative forced choice format is used wherein items are scored on 0, 1, 2, or 3 point basis. Test-retest reliability for nonpsychiatric patients has ranged from .60 to .90 (Beck, Steer, & Garbin, 1988). In contrast, the range for psychiatric patients is .48 to .86 (Beck et al., 1988). Validity ratings are high when correlations are made with other measures of depression (e.g. Hamilton Psychiatric Rating Scale - .73) (Beck et al., 1988).

Reynolds Adolescent Depression Scale (RADS, Reynolds, 1986). The RADS consists of 30 depression-related items (e.g., "I feel lonely"). Examinees are required to rate each item on a 4-point Likert-type scale. Internal consistency of the RADS is quite high as reliability coefficients by grade range from .91 to .94 (Reynolds, 1986). Median validity ratings of .73 arise when correlations are made with other self-report measures (Reynolds, 1986).

Revised Behavior Problem Checklist (RBPC, Quay, 1979). The RBPC presents 89 items (e.g., "Fights. Feels Inferior. Restless, unable to sit still"). A 3-point scale is used wherein items are scored on a 0, 1 or 2 point basis by an adult who is familiar with the examinee (e.g., therapist, teacher). Reliability coefficients are calculated for each of the six scales and range from .68 to .95 (Quay, 1979). Validity ratings range from .77 to .88 when comparisons are made with behavioral observations and peer nominations (Quay, 1979).

Subjects

PTSD Twenty subjects between the ages of 11 years 3 months and 18 years 2 months (x age = 14.55 years, SD = 1.82) were selected from a referral pool of inpatients diagnosed as having PTSD by the mental health practitioners at the Bronx Children's Psychiatric Center and found to meet specific criteria for physical abuse. Physical abuse was perpetrated by a range of individuals including strangers, neighbors, parents, and other relatives. Physical abuse was defined herein as "inflicting injury such as bruises, burns, head injuries, fractures, internal injuries, lacerations, or any other form of physical harm who's effects last for at least 48 hours" (National Center for Child Abuse and Neglect, 1981).

After obtaining the informed consent of the participating adolescents, their parent(s), and the Center (see Appendix C), an examiner, Russell C. Schwartz, M.S., administered the ATI and Disruptive Behavior Disorder module to the subjects at the Psychiatric Center. These assessments were tape recorded, and a second independent examiner, Jeff Atlas, Ph.D., rated (i.e., diagnosed) each tape and written protocol. The first consent was secured on June 15, 1990 and the last consent was obtained on May 3, 1991. The first assessment took place on June 19, 1990 and the last assessment took place on May 3, 1991. Through this process, subjects were first selected by the mental health practitioners. These subjects then received two independent Axis I PTSD diagnoses and did not meet criteria for conduct disorder diagnosis. All subjects who were seen as meeting study definition agreed to participate in the study. In so doing, 20 subjects (3 males 17 females) were identified for the study. Examined for ethnic affiliation, 10 Hispanics, 5 Blacks, 3 Asians, and 2 Caucasians were included in the PTSD group. Table 1 reveals age, sex, and ethnic group data. The observed male-female ratio for the PTSD subjects is not indicative of the observed rates in the literature (Kulka, Fairbank, Jordan, Weiss, Schlenger, Hough, Marmar, & Grady, 1990).

Table 1: Demographic Characteristics of Study Subjects by Study Group

Characteristic	Study Group		
	Controls (N = 23)	PTSD (N = 20)	Conduct (N = 25)
Age, mean + SD	13.61 + 1.41	14.55 + 1.82	13.80 + 1.44
range	11y 8m - 17y 1m	11y 3m - 18y 2m	12y 2m - 17y 3m
Sex, N (%)			
Male	12 (52)	3 (15)	18 (72)
Female	11 (48)	17 (85)	7 (28)
Ethnic group, N (%)			
Hispanic	14 (61)	10 (50)	17 (68)
Black	6 (26)	5 (25)	7 (28)
Asian	2 (9)	3 (15)	0 (0)
Caucasian	1 (4)	2 (10)	1 (4)

Conduct Disorder Twenty-five subjects between the ages of 12 years 2 months and 17 years 3 months (x age = 13.80 years, SD = 1.44) who were diagnosed as having conduct disorder by mental health practitioners were selected from an inpatient unit at the Bronx Children's Psychiatric Center. As in the case of the PTSD group, informed consent was obtained from the adolescents, their parent(s), and the center. The first consent was obtained on August 28, 1990 and the last consent was secured on April 15, 1991. It is important to note that these cases did not meet criteria for physical abuse as based on the National Center on Child Abuse and Neglect's definition. An examiner, Russell C. Schwartz, M.S., administered the ATI and Disruptive Behavior Disorder module to the adolescents at the Psychiatric Center. The assessment process was tape recorded and a second examiner, Jeff Atlas, Ph.D., rated the written and tape recorded protocols. The first assessment occurred on August 29, 1990 and the last assessment took place on April 25, 1991. Through this process, 25 consecutive admissions (18 males 7 females) who received two independent Axis I DSM-III-R conduct disorder diagnoses and who did not meet criteria for PTSD were identified. Examined for ethnic affiliation, 17 Hispanics, 7 Blacks, and 1 Caucasian were included in the conduct disorder group.

Control Twenty-three subjects between the ages of 11 years 8 months and 17 years 1 month (x age - 13.61 years, SD - 1.41) who were enrolled at the Good Shepherd and St. Jeans parochial schools in the metropolitan area were selected for the control group. School personnel were provided with the age, sex and ethnicity of the previously selected PTSD and conduct disorder subjects. Subsequently, these personnel attempted to select students who could be matched on these three characteristics. The first twenty-five students from a pool of 255 who agreed to participate and met the matching criteria were then included in the study. Informal interviews were then conducted by Patricia Maloney, Ph.D. and Ellen Gorman, M.S.W. to rule out the presence of physical abuse, traumatic experiences or behavioral difficulties. These individuals had not been exposed to physical abuse according to the National Center on Child Abuse and Neglect criteria. After obtaining the informed consent of the participating adolescents, their parent (s), and their schools, an examiner, Russell C. Schwartz, M.S., administered the ATI and Distruptive Behavior Disorder subtest to the adolescents at either Good Shepherd or St. Jeans School. In order to assure quality control, these assessments (interviews) were tape recorded. A second independent examiner, Jeff Atlas,

Ph.D., who was familiar with the ATI and DISC-2 administration and scoring procedures checked the tape recorded and written protocols for accuracy. The first consent was obtained on October 2, 1990 and the last consent was secured on April 17, 1991. The first assessment occurred on October 2, 1990 and the last assessment took place on May 6, 1991. In so doing, 23 consecutive cases (12 males 11 females) that received two independent negative diagnoses for PTSD and conduct disorder, were identified for the control group. Examined for ethnic affiliation, 14 Hispanics, 6 Blacks, 2 Asians, and 1 Caucasian were included in the control group.

Data Collection Pursuant to establishing the sample, six outcome measures excluding the RBPC, were administered in random order. The six measures (i.e., FSS, STAI-State, STAI-Trait, BDI, RADS, CSES) were numbered one to six and then a random number generator was used to output a random sequence of the six digits from one to six. This was carried out for each subject. For example, the random number generator provided for subject number one was the following sequence: 6,2,5,1,3,4. This meant that the test administration order was CSES, STAI-State, RADS, FSS, STAI-Trait, BDI. Figure 1 presents a schematic representation of the study groups and dependent measures.

Figure 1

Schematic representation of the study

Dependent Measures	Groups: PTSD	CD	Control
Fear Survey Schedule (FSS)			
STAI State			
STAI Trait			
Beck Depression Inventory (BDI)			
Reynolds Adolescent Depression Scale (RADS)			
Revised Behavior Problem Checklist (RBPC)			
Children's Self-Efficacy Scale (CSES)			

Procedures

PTSD Russell C. Schwartz, M.S., collected all dependent measures except the RBPC. The data was collected from June 19, 1990 until May 3, 1991. All subjects were seen on house eight at Bronx Children's Psychiatric Center. RBPC data was collected by Lydia Sessions, M.S., from June 20, 1990 to May 3, 1991. Please see Appendix D which lists dates on which dependent measures and RBPC were obtained.

Conduct Disorder Russell C. Schwartz, M.S., obtained all dependent measures except the RBPC. The data was obtained from August 29, 1990 until April 25, 1991. Subjects were seen on house eight at Bronx Children's

Psychiatric Center. RBPC data was obtained by Lydia Sessions, M.S., from August 29, 1990 to April 25, 1991.

Control Russell C. Schwartz, M.S., secured all dependent measures except the RBPC. The data was secured from October 2, 1990 until May 6, 1991. Subjects were seen at Good Shepherd or St. Jeans Parochial schools. RBPC data was secured by Ellen Gorman, M.S.W., Matthew Gaynord, B.A., James Winkle, B.A., Hermingildo Santos B.A., Theresa Gaynord, B.A., Walter Tyszka, M.S., Thomas Higgins, B.A., John O'Rourke, M.S., or Aeoli Borja, B.A., from October 3, 1990 to May 14, 1991.

Hypotheses

The following hypotheses will be tested:

H_1: The mean FSS scores of the PTSD cases will significantly exceed the mean FSS scores of the conduct disorder and control cases.

H_2: The mean STAI-State scores of the PTSD cases will significantly exceed the mean STAI-State scores of the conduct disorder and control cases.

H_3: The mean STAI-Trait scores of the PTSD cases will significantly exceed the mean STAI-Trait scores of the conduct disorder and control cases.

H_4: The mean BDI scores of the PTSD cases

will significantly exceed the mean BDI scores of the conduct disorder and control cases.

H_5: The mean RADS scores of the PTSD cases will significantly exceed the mean RADS scores of the conduct disorder and control cases.

H_6: The mean RBPC scores of the conduct disorder cases will significantly exceed the mean RBPC scores of the PTSD and control cases.

H_7: The mean self-efficacy scores of the conduct disorder cases will significantly exceed the mean self-efficacy scores of the PTSD and control cases.

IV. RESULTS

Initially, inter-rater diagnostic reliability was caluclated for each comparison group. Interobserver comparisons were first made between the mental health practitioner or school personnel who identified subjects and the first examiner, Russell C. Schwartz, M.S., who conducted structured interviews. Subsequently, comparisons for measure of agreement were made between the first examiner, Russell C. Schwartz, M.S., and the second examiner, Jeff Atlas, Ph.D., who checked the tape recorded and written protocols for accuracy. The first set of comparisons yielded kappas of .933, .911 and .938 for the PTSD, conduct disorder and control groups, respectively. The second set of comparisons yielded kappas of 1.0 for each group. The reliability findings reveal that cases which did not meet subject definition were not selected for final inclusion in the study.

FSS, STAI-State, STAI-Trait, BDI, RADS, self-efficacy, and RBPC means and standard deviations were initially calculated. Table 2 presents the relevant data by group. A MANOVA was performed to test for group differences and a significant main effect was observed $F(7,56) = 9.15$ $p < .001$.

Table 2

Means and standard deviations by diagnostic category

	Comparison Group					
	PTSD		CD		Control	
Measure	X	SD	X	SD	X	SD
FSS	106.80	70.63	93.64	70.39	112.35	60.14
STAI-State	49.35	13.46	36.20	9.51	38.52	7.50
STAI-Trait	48.70	11.88	41.08	9.54	44.44	6.10
BDI	24.65	13.39	14.64	12.25	11.87	5.86
RADS	73.85	18.71	61.65	14.29	62.48	11.52
CSES	50.00	13.34	50.88	13.54	53.83	9.77
RBPC	61.95	25.66	89.76	17.09	13.96	18.47

X = Mean

SD = Standard deviation

The following hypotheses were tested by using univariate F tests. Table 3 presents F tests and P values for each outcome measure. When significant values were observed Bonferroni post hoc analyses were carried out. Table 4 present the results of these analyses.

Hypothesis #1. the mean FSS scores of the PTSD cases will significantly exceed the mean FSS scores of the conduct disorder cases as well as the mean FSS scores of the control cases. A univariate F test did not reveal a significant group difference for FSS $F(2,65) = .49$ $p > .05$. As such, H_1 was not supported.

Hypothesis #2. The mean STAI-State scores of the PTSD cases will significantly exceed the mean STAI-State scores of the conduct disorder cases as well as the mean STAI-State scores of the control cases. A univariate F test revealed a significant group difference for STAI-State $F(2,65) = 10.01$ $p < .001$. Bonferroni post hoc analysis determined that the STAI-State means of the PTSD cases significantly exceeded the STAI-State means of the conduct disorder cases $t(65) = 3.69$ $p < .001$ and control cases $t(65) = 3.19$ $p < .01$. In contrast to this, the STAI-State means of the conduct disorder cases were not significantly greater than the means of the control cases $t(65) = -.94$ $p > .05$. As such H_2 was supported.

Table 3

Results of univariate F tests for outcome measures

Measure	F test	F test P Value
FSS	.49	NS
STAI-State	10.01**	<.001
STAI-Trait	3.69*	< .05
BDI	7.98**	<.001
RADS	4.44*	< .05
CSES	.59	NS
RBPC	84.01**	<.001

NS = Not Significant

* = P <.05

** = P <.001

Table 4

Results of Bonferroni post hoc analyses for outcome measures

	PTSD vs CD		PTSD vs Control		CD vs Control	
Measure	T value	P value	T value	P value	T value	P value
FSS	--	--	--	--	--	--
STAI-State	3.69***	<.001	3.19**	< .01	-.94	NS
STAI-Trait	2.33*	< .05	1.45	NS	-1.46	NS
BDI	2.59*	< .05	3.95***	<.001	1.01	NS
RADS	2.41*	< .05	2.36*	< .05	-.22	NS
CSES	--	--	--	--	--	--
RBPC	4.16***	<.001	6.95***	<.001	14.72***	<.001

NS = Not Significant

* = P <.05

** = P <.01

***= P <.001

Hypotheses #3. The mean STAI-Trait scores of the PTSD cases will significantly exceed the mean STAI-Trait scores of the conduct disorder cases as well as the mean STAI-Trait scores of the control cases. A univariate F test revealed a significant group differences for STAI-Trait $F(2,65) = 3.69$ $p < .05$. Bonferroni post hoc analysis determined that STAI-Trait means of the PTSD cases significantly exceeded the STAI-Trait means of the conduct disorder cases $t(65) = 2.33$ $p < .05$ but not the control cases $t(65) = 1.45$ $p > .05$. In a similar vein, the STAI-Trait means of the conduct disorder cases did not significantly exceed the means of the control cases $t(65) = -1.46$ $p > .05$. Given these results, H_3 was not fully supported.

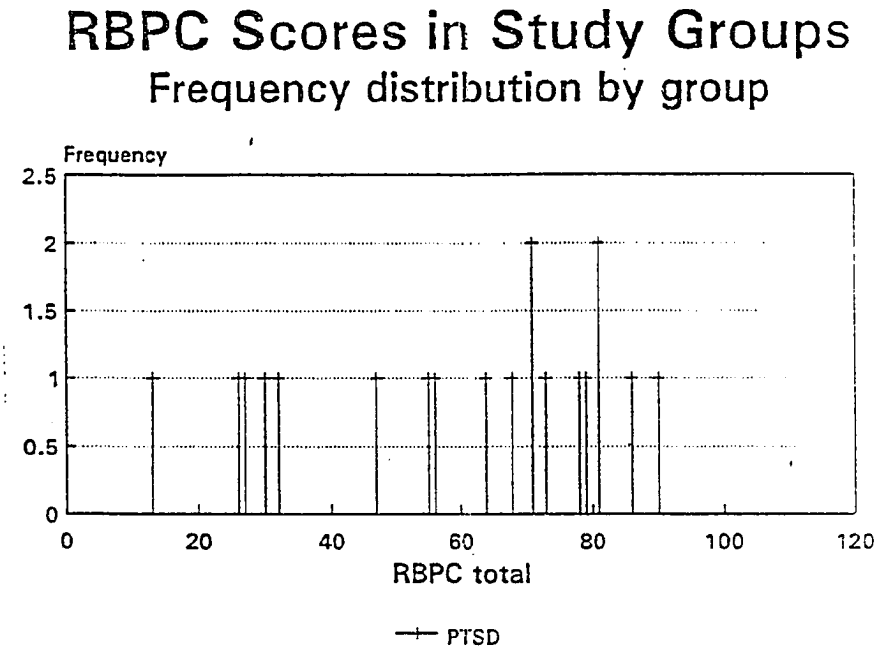
Hypothesis #4. The mean BDI scores of the PTSD cases will significantly exceed the mean BDI scores of the conduct disorder cases as well as the mean BDI scores of the control cases. A univariate F test revealed a significant group difference for BDI $F(2,65) = 7.98$ $p < .001$. Bonferroni post hoc analysis showed that the BDI means of the PTSD cases significantly exceeded the BDI means of the conduct disorder cases $t(65) = 2.59$ $p < .05$ and control cases $t(65) = 3.95$ $p < .001$. In contrast to this, the BDI means of the conduct disorder cases did not significantly exceed the means of the control cases $t(65) = 1.01$ $p > .05$. Given these results, H_4 was supported.

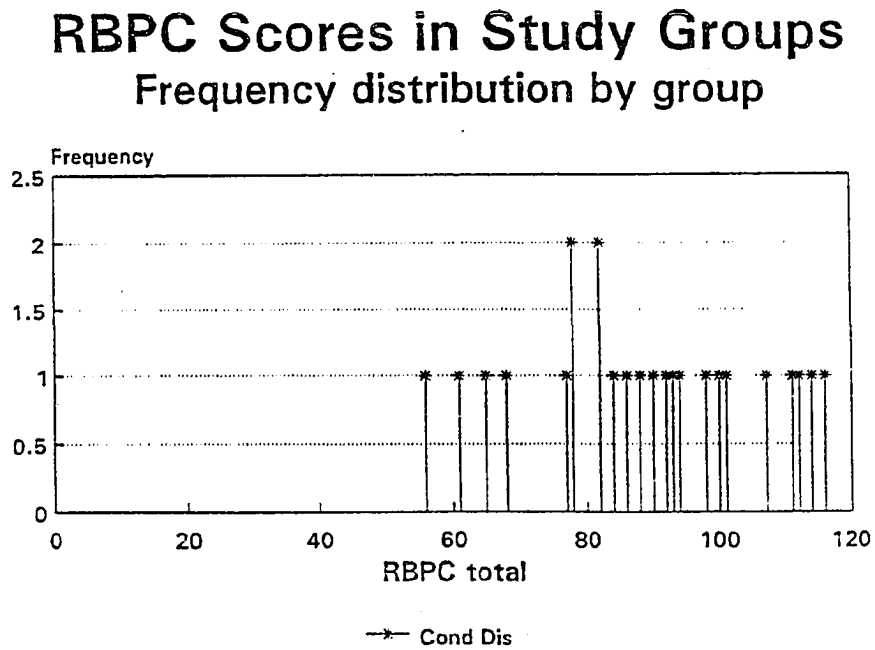
Hypothesis #5. The mean RADS scores of the PTSD cases will significantly exceed the mean RADS scores of the conduct disorder cases as well as the mean RADS scores of the control cases. A univariate F test revealed a significant group difference for RADS $F(2,65) = 4.44$ $p < .05$. Bonferroni post hoc analysis determined that the RADS means of the PTSD cases significantly exceeded the RADS means of the conduct disorder cases $t(65) = 2.41$ $p < .05$ and control cases $t(65) = 2.36$ $p < .05$. In contrast to this, the RADS means of the conduct disorder cases did not significantly exceed the means of the control cases $t(65) = -.22$ $p > .05$. Therefore, H_5 was supported.

Hypothesis #6. The mean RBPC scores of the conduct disorder cases will significantly exceed the mean RBPC scores of the PTSD cases as well as the mean RBPC scores of the control cases. A univariate F test revealed a significant group difference for RBPC $F(2,65) = 84.01$ $p < .001$. Bonferroni post hoc analysis determined that the RBPC means of the conduct disorder cases significantly exceeded the RBPC means of the PTSD cases $t(65) = 4.16$ $P < .001$ and control cases $t(65) = 14.72$ $p < .001$. In a similar vein, the RBPC means of the PTSD cases exceeded the RBPC means of the control cases $t(65) = 6.95$ $p < .001$. Figure 2 displays the frequency distributions of

Figure 2

Frequency data for the RBPC





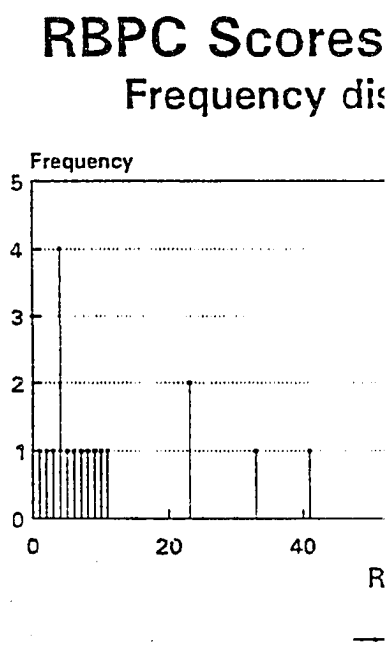
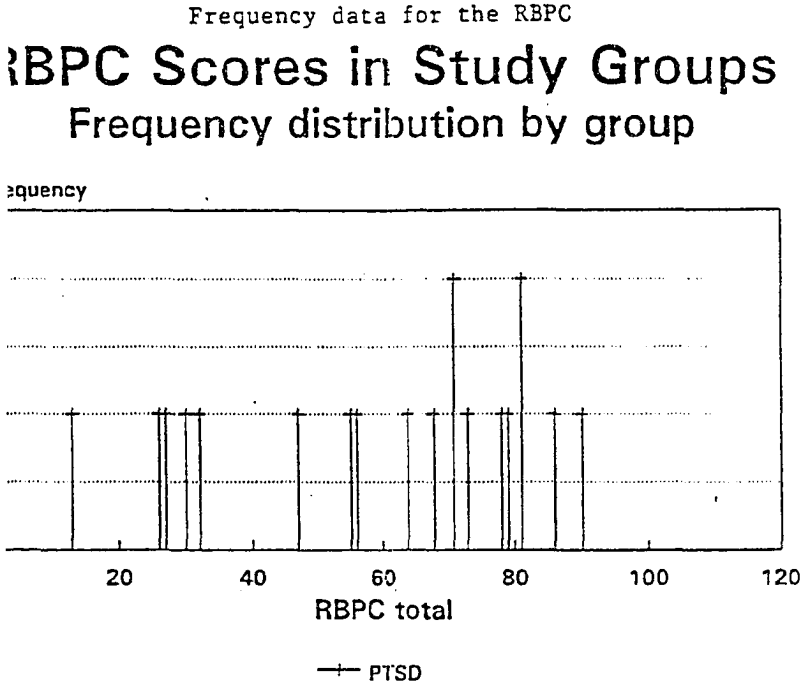
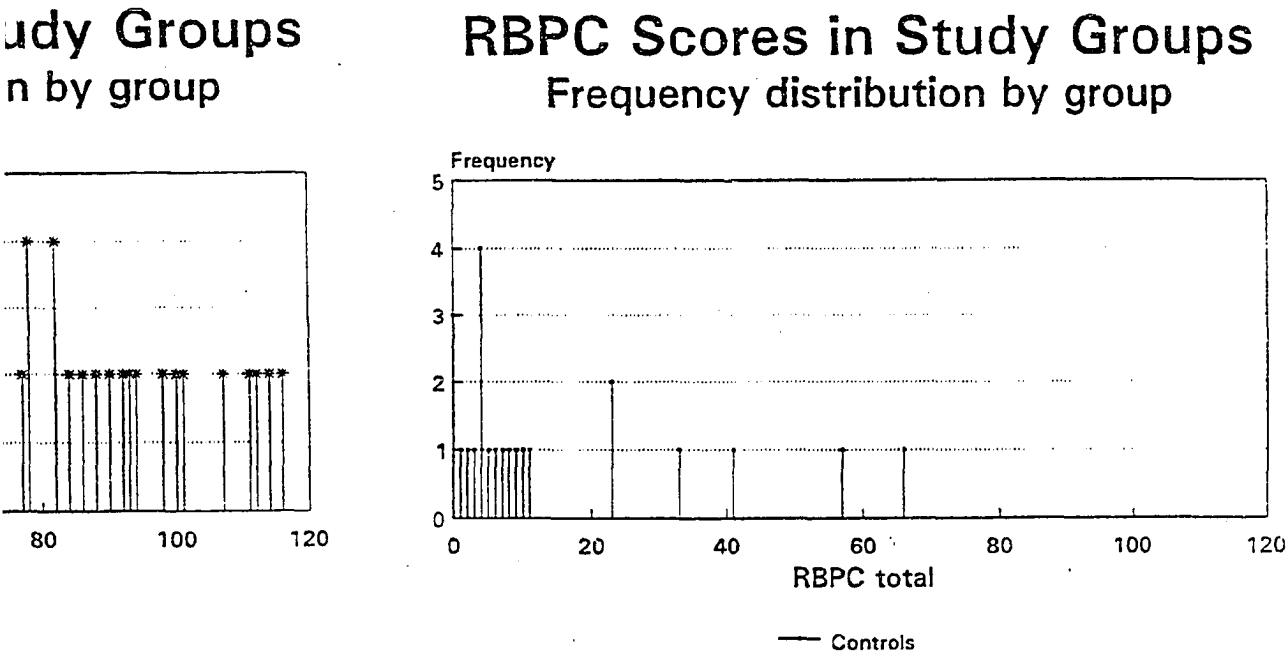


Figure 2

Frequency data for the RBPC





RBPC scores for PTSD, conduct disorder, and control groups. This data serves to pictorially reveal the disparity in outcomes between the three groups. As such, H_6 was fully supported.

Hypothesis #7. The mean self-efficacy scores of the conduct disorder cases will significantly exceed the mean self-efficacy scores of the PTSD cases as well as the mean self-efficacy scores of the control cases. A univariate F test did not reveal a significant group difference for self-efficacy $F(2,65) = .59$ $p > .05$ and H_7 was not supported.

V. DISCUSSION

General summary

The present study examined the PTSD symptomatology in a population of physically abused adolescents. The purpose of the investigation was to establish the validity of the PTSD classification as based upon the responses of American Adolescents. In so doing, comparisons were made between three groups of adolescents (i.e., PTSD, conduct disorder and non-clinical controls). These comparisons were made by examining levels of anxiety, fear, depression, self-efficacy and misconduct. More specifically, it was hypothesized that fear, anxiety and depression estimates of the PTSD group would exceed those estimates of the conduct disorder and control groups. In addition, it was hypothesized that misconduct and self-efficacy estimates of the conduct disorder group would exceed those estimates of the PTSD and control groups.

The PTSD group consisted of 20 individuals who received two independent Axis I DSM-III-R PTSD diagnoses. The conduct disorder group consisted of 25 individuals who received two independent Axis I DSM-III-R conduct disorder diagnoses. The control group consisted of 23 individuals who received two independent negative diagnoses for PTSD and conduct disorder. Once selected for the appropriate group, individuals proceeded to mark the Fear Survey Schedule, State-Trait

Anxiety Inventory, Beck Depression Inventory, Reynolds Adolescent Depression Scale and Children's Self-Efficacy Scale. Their conduct was rated by teachers or clinicians who were familiar with the subject using the Revised Behavior Problem Checklist.

Results and implications for education

The results reveal considerable variation in anxiety, depression and misconduct amongst the three comparison groups. The PTSD cases consistently displayed higher levels of anxiety and depression than the conduct disorder and non-clinical controls. The conduct disorder cases consistently showed higher levels of misconduct than the PTSD and non-clinical cases. In addition, the PTSD cases exhibited higher levels of misconduct than the non-clinical controls.

The FSS which assesses anxiety which is situationally-specific did not reveal significant differences amongst the comparison groups. In contrast to this, the STAI which assesses global indices of anxiety did reveal appreciable differences amongst the groups. These results suggest that PTSD patients who have been physically abused experience global feelings of anxiety. Another alternative is that the type of anxiety experienced does not manifest itself as a fear to neutral items or events.

An assessment of the levels of self-efficacy did not reveal appreciable differences amongst the three groups. A perusal of the data reveals a small range of scores. The

CSES appears not to have shown appropriate sensitivity to measure self-efficacy in this study. It is also possible that the wording was difficult to understand for the subject or that these subjects actually engage infrequently in these activities (i.e., study skills).

Examined conceptually, variations in anxiety, depression and misconduct generally support the validity of the classification as it applies to a sample of physically abused adolescents with clearly defined PTSD. Earlier data suggested that PTSD symptomatology may vary cross-culturally (Escober, Randolph, Puente, Spiwak, Asaman, Hill, & Hough, 1983). It is interesting to note that Saigh's validation studies consisted of Lebanese children (Saigh, 1988, 1989a, 1989b). The present study serves to establish the validity of the PTSD classification as based on the responses of American adolescents. In addition, it should be noted that Saigh examined war-related stressors and the current study was based on the responses of an urban sample of physically abused adolescents in New York.

Viewed from a clinical perspective, the ATI may serve to supplement the psychiatric interview conducted by clinicians when making a PTSD diagnosis. The STAI-State, STAI-Trait, BDI, and RADS may be useful in gauging the value of intervention programs for traumatized inner city adolescents inasmuch as they may measure a reduction of

associated features of PTSD.

Further validation of the PTSD classification will serve to assist the school psychologist by providing a means by which to identify adolescents who have experienced traumatic events. For instance, the history of students referred because of anxiety, depression or symptoms related to PTSD may reveal a recent traumatic event such as the experiencing of abuse or witnessing of a death. Knowledge of the diagnosis and understanding of the course and treatment of PTSD would provide a framework from which the school psychologist could counsel parents, educators and students.

As school populations are increasingly faced with coping with the aftermath of crime, natural disaster and other known stressors, the school psychologist's knowledge of PTSD would be useful in creation of district-wide crisis response plans. The school psychologist could offer a means by which to identify traumatized students to the appropriate intervention programs and assist educators in determining the most appropriate educational services. For instance, the ATI could have been administered to the students who were in the cafeteria of the Coldenham Elementary School where a wall had collapsed in November, 1990 after a tornado struck the building. Those students who received a diagnosis of PTSD could have been directed to the most immediate and intensive forms of intervention.

Limitations of the study

The data was collected through consecutive sampling. This procedure did not allow for the control of possible confounding variables such as age, sex or race. Future research should focus upon this design limitation to control for these confounding variables.

In the present study, 85% of the PTSD group contained female subjects, and 15% of the PTSD group consisted of male subjects. In contrast to this, 72% of the conduct disorder group contained male subjects, and 28% of the conduct disorder group consisted of female subjects. The question is raised whether the observed male-female ratios are indicative of the observed base rates in the literature. DSM-III-R contains no information regarding sex ratios within PTSD populations. According to test norms, females have appreciably higher levels of anxiety and depression in comparison to males (Wolpe & Lang, 1969; Beck, 1978; Reynolds, 1986). DSM-III-R states that 9% of the conduct disorder population based on field trials N=130) contained male subjects and 2% contained female subjects under 18 years of age. In keeping with this, the literature and test norms reveal that males experience elevated levels of misconduct in comparison to females (Joffe, Wolfe, Wilson & Zak, 1986; Quay, 1986). Subsequently, the observed study findings may be due to the

fact that gender differences exist when measuring anxiety, depression and misconduct.

A perusal of the literature reveals few studies reporting the incidence of PTSD with gender ratios in abused children and adolescents. In a study of 80 infants, preschool and school aged children, Arthur Green (1985) who examined the psychological impact of physical abuse found no sex differences amongst the clinical cases that maintained the PTSD diagnosis. In another study of PTSD in abused children, Allen, Gaines and Pawl (1993) reported that seven of thirteen abused male children received a DSM-III-R diagnosis of PTSD. Similarly, twelve of twenty-one abused female children received a DSM-III-R diagnosis of PTSD. In this study, subjects were identified as physically abused, sexually abused or both. The reported gender differences were not found to be statistically significant.

In a study which examined sexual abuse and PTSD in young children, the sample included five boys and five girls with a mean age of 4.2 years (Kiser, Ackerman, Brown, Edwards, McColgan, Pugh and Pruitt, 1988). Subsequently, no gender differences were observed. In contrast to this, 25 females and six males with a median age of 8.4 years were the subjects in another study of PTSD and sexual abuse (McLeer, Deblinger, Atkins, Foa, and Ralphe, 1988). This sex difference is statistically significant.

This review of observed male-female ratios amongst PTSD subjects who have been abused reveals significant gender differences in only one of four studies. The authors of these reviewed studies concluded that further research with larger samples are necessary to accurately determine gender differences in PTSD populations that have experienced abuse.

Recommendations for future research

Future studies may include physiological measures or overt behavioral ratings within the assessment package. Comparative information involving these parameters would be of value in corroborating the validity of the classification. In addition to this, measures of self-esteem could be added to the assessment package because of the negative impact of physical assault upon an individual's self-image.

In the present study only one of three comparison groups contained subjects who had experienced physical abuse. In addition to this, subjects in the PTSD group differed from the other two groups because they maintained a diagnosis of PTSD. These differences limited the number of comparisons which could be made between the groups. Future studies should attempt to select comparison groups which share the characteristics of physical abuse and/or PTSD symptomatology. Clinical and non-clinical control groups which meet a definition of physical abuse will allow

statements to be made regarding the associated features of physical abuse as it appears with different psychiatric and nonpsychiatric conditions. In a similar vein, comparison groups that contain subjects who have been diagnosed with PTSD and who have experienced stressors other than physical abuse (e.g. sexual abuse, natural disaster) will allow statements regarding different conceptualizations of PTSD.

Further validation of the PTSD classification would occur if researchers compared subjects with PTSD to subjects who maintain closely related psychiatric conditions. A selection from one of the group of simple phobias or anxiety disorders may yield a clinical control group which is more closely related to PTSD than conduct disorder. Subsequently, differences in outcome measure (i.e., anxiety, depression) would better serve to isolate PTSD as a unique diagnostic entity. In keeping with this, comparison with other non-clinical control groups such as medical hospital inpatients may offer further differences amongst groups.

It should be noted that many children from violent surroundings have suffered other stressors apart from being physically abused. In many circumstances, these adolescents have experienced several crises of parental separations, found their prime caretakers in poor emotional or physical health and had to cope with a number of social and financial hardships. Future

research needs to isolate these other factors in order to identify a casual relationship between physical abuse and additional stress factors. Following from this, researchers could examine how these factors interfere ultimately with children's development and adjustment.

Appendix A

Listing of Publisher for each Outcome Measure

FSS	Edits San Diego, California 92107
STAI	Consulting Psychologist Press, Inc. 577 College Avenue Palo Alto, California 94306
RADS	Psychological Assessment Resources, Inc. P.O. Box 998 Odessa, Florida 33556
BDI	The Psychological Corporation Harcourt Brace Jovanovich, Inc. 555 Academic Court San Antonio, Texas 78204-2498
RBPC	Herbert Quay, Ph.D. Department of Psychology University of Miami Coral Gables, Florida 33124
CSES	Albert Bandura, Ph.D. Department of Psychology Jordan Hall Stanford University Stanford, California 94305

Appendix C
Consent Letter

The purpose of the present study is to explore the feelings and behavior of individuals who have experienced physical abuse. This will be accomplished by making comparisons with individuals who have severe behavior problems. In so doing, individuals will mark questionnaires that reflect fear, anxiety, and depression. In addition, a Behavior Problem Checklist will be completed by a coordinator or teacher who is familiar with the individual. This information (i.e. self-report measures, behavior problem checklist, structured interview) is confidential and will be kept in the medical records. Structured interviews have been scored. If this information is shared with other professionals, there will be no mention of the individual's name, or any information that would identify the individual. Please note that this study will not effect the course of treatment while the individual is in the program now or in the future if he or she chooses to withdraw from the study.

If you have any questions or concerns, I would be glad to answer them.

Sincerely yours,

_____
Date

Russell C. Schwartz
Certified School Psychologist
914-928-2321 (Ext. 246)

This study has been explained to me and I voluntarily consent to participate in this activity. I have had an opportunity to ask questions and understand that future questions that I may have about this project or the rights of participants will be answered by Mr. Schwartz or Dr. William DiScipio (430-7207).

Signature of Participating Patient	Date
Signature of Parent/Legal Guardian	Date
Signature of Witness	Date

Appendix D

Dates for Consents, Interviews, Dependent Measures and RBPC

Dates

Subject	Groups	Consent	Interviews	Dependent Measures	RBPC
1	1	6/15/90	6/18/90	6/19/90	6/20/90
2	1	7/12/90	7/12/90	7/12/90	7/17/90
3	2	8/28/90	8/29/90	8/29/90	8/29/90
4	2	9/6/90	9/6/90	9/6/90	9/7/90
5	1	9/28/90	10/2/90	10/2/90	10/2/90
6	2	9/28/90	10/2/90	10/2/90	10/2/90
7	1	10/1/90	10/2/90	10/2/90	10/2/90
8	3	10/2/90	10/2/90	10/2/90	10/3/90
9	3	9/26/90	10/2/90	10/2/90	10/3/90
10	2	10/6/90	10/9/90	10/9/90	10/10/90
11	1	10/15/90	10/15/90	10/15/90	10/15/90
12	2	10/16/90	10/18/90	10/18/90	10/18/90
13	2	10/28/90	10/31/90	10/31/90	11/1/90
14	3	10/31/90	11/15/90	11/15/90	11/7/90
15	3	10/9/90	11/5/90	11/5/90	11/7/90
16	3	11/6/90	11/6/90	11/6/90	11/14/90
17	3	11/14/90	11/14/90	11/14/90	11/14/90
18	3	11/2/90	11/5/90	11/5/90	11/5/90
19	3	10/26/90	11/5/90	11/5/90	11/6/90
20	2	11/9/90	11/13/90	11/13/90	11/14/90
21	2	11/14/90	11/14/90	11/14/90	11/16/90
22	2	11/16/90	11/16/90	11/16/90	11/19/90
23	1	11/19/90	11/21/90	11/21/90	11/26/90
24	2	11/29/90	11/29/90	11/29/90	11/30/90
25	1	12/2/90	12/4/90	12/4/90	12/4/90
26	2	12/5/90	12/6/90	12/6/90	12/7/90
27	1	12/13/90	12/13/90	12/13/90	12/12/90
28	3	11/21/90	12/18/90	12/18/90	1/9/91
29	3	12/4/90	12/18/90	12/18/90	1/9/91
30	3	11/9/90	12/18/90	12/18/90	1/4/91
31	3	12/18/90	12/18/90	12/18/90	1/4/91
32	3	12/4/90	12/18/90	12/18/90	1/9/91
33	3	12/13/90	12/18/90	12/18/90	1/4/91
34	3	12/17/90	12/18/90	12/18/90	1/6/91
35	3	12/18/90	12/18/90	12/18/90	1/6/91
36	3	12/17/90	12/18/90	12/18/90	1/6/91
37	1	12/21/90	12/26/90	12/26/90	1/2/91
38	2	12/21/90	12/26/90	12/26/90	1/2/91
39	2	12/30/90	1/1/91	1/1/91	1/2/91
40	2	1/14/91	1/14/91	1/14/91	1/17/91
41	2	1/10/91	1/14/91	1/14/91	1/14/91
42	1	1/25/91	1/25/91	1/25/91	1/25/91
43	2	1/24/91	1/29/91	1/29/91	1/30/91

44	1	1/29/91	1/31/91	1/31/91	1/31/91
45	1	12/10/90	1/31/91	1/31/91	1/31/91
46	1	1/31/91	1/31/91	1/31/91	1/31/91
47	2	2/1/91	2/5/91	2/5/91	2/6/91
48	1	2/8/91	2/8/91	2/8/91	2/11/91
49	2	2/5/91	2/8/91	2/12/91	2/13/91
50	1	2/11/91	2/12/91	2/12/91	2/13/91
51	2	2/26/91	2/26/91	2/26/91	2/27/91
52	2	3/4/91	3/5/91	3/5/91	3/5/91
53	2	3/5/91	3/5/91	3/5/91	3/5/91
54	2	3/15/91	3/15/91	3/15/91	3/18/91
55	2	4/2/91	4/5/91	4/5/91	4/10/91
56	1	4/11/91	4/12/91	4/12/91	4/15/91
57	2	4/12/91	4/12/91	4/12/91	4/15/91
58	1	4/25/91	4/25/91	4/25/91	4/25/91
59	1	4/25/91	4/25/91	4/25/91	4/25/91
60	2	4/15/91	4/25/91	25/91	4/25/91
61	1	5/1/91	5/1/91	5/1/91	5/2/91
62	1	5/3/91	5/3/91	5/3/91	5/3/91
63	3	2/19/91	5/6/91	5/13/91	5/14/91
64	3	4/11/91	5/6/91	5/6/91	5/15/91
65	3	5/5/91	5/6/91	5/6/91	5/14/91
66	3	2/19/91	5/6/91	5/6/91	5/14/91
67	3	2/5/91	5/6/91	5/6/91	5/15/91
68	3	4/17/91	5/6/91	5/6/91	5/14/91

Group: 1 - PTSD 2 - CD 3 - Control

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