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Trauma- and Grief-Focused Intervention for Adolescents Exposed to Community Violence: Results of a School-Based Screening and Group Treatment Protocol

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This study assessed the prevalence of trauma exposure among middle school students and evaluated the effectiveness of a school-based, trauma- and grief-focused group psychotherapy protocol in treating a subset of students with severe exposure, posttraumatic stress disorder (PTSD), and functional impairment. Using a stratified screening procedure, 812 students completed a screening survey; 58 students (7.1% of those surveyed) met criteria for group treatment, and 26 students participated in the group. Group participation was associated with improvements in posttraumatic stress and complicated grief symptoms and in academic performance. Results suggest that students who are exposed to severe levels of community violence often may not be identified or treated. The findings also suggest that severe PTSD in adolescence may be associated with impaired school functioning, and that a reduction in PTSD symptoms may be related to academic remediation.

Although overall rates of violent crime in the United States have diminished in recent years, levels of exposure to violence among adolescents continue to be high. Juveniles are two times more likely than adults to be victims of serious violent crime and three times more likely to be victims of simple assault (Sickmund, Snyder, & Poe-Yamagata, 1997; Snyder, 1998). A national survey of adolescents found that 23% reported having been both a victim of assault and a witness to violence and that over 20% met lifetime criteria for posttraumatic stress disorder (PTSD; Kilpatrick, Saunders, Resnick, & Smith, 1995).

Of particular concern to educators and health professionals is the considerable evidence indicating that adolescents exposed to violence are at increased risk for a spectrum of adverse psychosocial difficulties and functional impairments. These difficulties include reduced academic achievement; aggressive, delinquent, or high-risk sexual behaviors; and substance abuse and dependence (Cavaiola & Schiff, 1988; Collins & Bailey, 1989; Farrell & Bruce, 1997; Kilpatrick, Aciermo, Saunders, Resnick, & Best, 2000; Saigh, Mroueh, & Bremner, 1997). Trauma in adolescence has been linked with long-term developmental disturbances, including disrupted moral development, missed developmental opportunities, delayed preparation for professional and family life, and disruptions in close relationships (Goenjian et al., 1999;

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Layne, Pynoos, & Cardenas, 2001; Malinkosky-Rummell & Hansen, 1993; Pynoos, Steinberg, & Piacentini, 1999; Pynoos, Steinberg, & Wraith, 1995).

Moreover, the high rates of traumatic deaths found in inner U.S. cities associated with gang violence, domestic violence, fatal accidents, and other traumatic losses create additional risks for those adolescents who suffer the violent death of a family member or friend. Such traumatic losses impose a dual burden of posttraumatic stress reactions and bereavement, the interplay of which may complicate grief reactions (Pynoos, 1992). In particular, intrusive, distressing memories and emotions linked to the violent circumstances of the death, avoidance of cues linked to the death or to the deceased, and numbing of responsiveness may disrupt critical adaptive grieving processes. These processes include reminiscing, participating in grief rituals, processing painful emotions associated with accepting and adapting to the loss, and making meaning of the death (Jacobs, 1999; Pynoos, 1992; Pynoos, Steinberg, & Goenjian, 1996; Rando, 1993; Saigh, Mroueh, & Bremner, 1997).

These findings point to a need to provide trauma-exposed adolescents with access to specialized mental health services, especially given the recent trend toward developing trauma-focused and empirically validated treatment protocols (see Foa, Keane, & Friedman, 2000). Growing evidence supports the effectiveness of group-based therapeutic approaches for the treatment of traumatized individuals because of the benefits that this modality confers (Foa et al., 2000; see also Foa & Meadows, 1997; Goenjian et al., 1997; Murphy, Pynoos, & James, 1997; March, Amay-Jackson, Murray, & Schulte, 1998). Group approaches for adolescents may have special advantages. They make use of the adolescent peer group to help with appraisal and response to danger, motivational explanations of behavior, misattributions about severity of response and course of recovery, sensitivity to peer approval, self and other judgments about normality, emotional support and affect regulation, problem solving current difficulties, and promotion of developmental recovery (Pynoos & Nader, 1992; Layne, Pynoos, & Cardenas, 2001; Yule & Canterbury, 1994).

The challenge to providing appropriate services to adolescents exposed to community violence has two major aspects. The first involves the need for a systematic, accurate, and efficient means of identifying youths with histories of severe trauma or loss who currently experience distress and functional impairment. Traumatized youths do not generally seek professional assistance, and recruiting school personnel to refer trauma-exposed students to school counselors can also leave many of these students unidentified (Layne, 1996). Many studies have used self-report instruments to estimate the prevalence of trauma exposure and PTSD among youths (Bell & Jenkins, 1993; Kilpatrick, Saunders, Resnick, & Smith, 1995; Osofsky, Wewers, Hann, & Fick, 1993). These findings suggest that a more comprehensive assessment of exposure parameters, associated distress, and impairment in function is needed to make informed treatment decisions, especially given the possibility of inaccuracies in child and adolescent reports of the degree of exposure (Richters & Martinez, 1993) and the great variability in responses to similar traumatic events observed among survivors (Asarnow et al., 1999; Garmezy, 1993).

The second aspect to providing appropriate services to adolescents exposed to community violence is to recruit and retain traumatized youths in appropriate treatment. Services must be easily accessible, engage the adolescent, and minimize attrition. According to school counselors and community mental health providers, as many as one half of the students referred by schools for mental health services in the community do not present for treatment, and those who do present frequently terminate prematurely (Saltzman, 2001). These results are consistent with the general psychotherapy outcome literature, which indicates that most clients do not receive a sufficient number of psychotherapy sessions to produce clinically significant change (Hansen, Lambert, & Forman, in press).

This article describes the results of a school-based trauma- and grief-focused group psychotherapy program designed to address these two challenges. The primary tools used by this program included (a) a methodology for systematically screening for trauma exposure and distress among large groups of public school students and (b) a specialized school-based trauma- and grief-focused treatment protocol designed to reduce distress in targeted trauma-related outcomes, promote retention, and im-

prove academic performance. The site selected for program implementation consisted of a secondary school cluster (a senior high school and two feeder junior high schools) located within a community characterized by chronic economic disadvantage and violent gang activity. Twenty-six percent of the households in the community are below the poverty level, and 18% receive public assistance (Pasadena City Police, 1996). A prior large-scale survey of violent victimization among ninth graders from the community revealed that 22% reported having been shot at, 8% reported having been stabbed, 20% reported having been badly beaten, 9% reported having been sexually assaulted, 48% reported that they had a friend who was injured or killed by gunshot, and 28% reported that they had a relative who was injured or killed by gunshot (Rohrbach, Mansergh, Fishkin, & Johnson, 1997).

Trauma- and Grief-Focused Treatment Protocol

The program described herein was adapted from intervention programs developed by members of the University of California, Los Angeles (UCLA) Trauma Psychiatry Service and used in Armenia following the 1988 earthquake (Goenjian et al., 1997), in Southern California with adolescents traumatized by community violence (Layne et al., 2001), and in post-war Bosnia with severely war-exposed secondary school students (see Layne, Pynoos, Saltzman, et al., 2001). The program consists of four primary components. The first and second components constitute a multistep screening approach to enhance identification and accurate characterization of exposure, distress, and adaptation. The first is a triage self-report survey of community violence exposure and posttraumatic stress, depression, and grief symptoms.

Students who endorse significant exposure and concurrent distress are then invited to participate in the second component, which consists of an individual screening interview. This interview is designed to verify the survey results; to explore functional impairments at school, home, and with peers; and to assist in determining appropriateness for individual or group psychotherapy.

A pregroup clinical interview is a critical third component. This interview provides in-depth information about objective and subjective features of the referent traumatic experience, a hierarchy of trauma and loss experiences, identification of key negative emotions (e.g., guilt, shame, rage, revenge), an inventory of trauma reminders, and a description of developmental disturbances and current psychosocial adversities. The interview provides psychoeducation about traumatic stress and complicated bereavement, initiates the construction of a shared vocabulary about the trauma or loss, and prepares the adolescent for group participation (Layne, Pynoos, & Cardenas, 2001).

The fourth component consists of a manualized trauma- and grief-focused group psychotherapy protocol that is based on five treatment foci developed by Pynoos and his colleagues (Pynoos et al., 1995; see Layne et al., 2001, for a more detailed review of the treatment foci and manual). The five foci include traumatic experiences, reminders of trauma and loss, the interplay of trauma and grief, posttrauma adversities, and developmental progression. The group psychotherapy protocol consists of 20 semistructured sessions, which are divided into four modules. These modules are designed to successively build a foundation of group cohesion and coping skills, process traumatic experiences, promote adaptive grieving, and promote normal developmental progression, respectively. The format for all sessions consists of a check-in activity, review of the practice exercise assigned the previous week, presentations of information and skills coupled with a group activity, assignment of a practice exercise, and a check-out exercise. Module I is dedicated to building group cohesion, providing psychoeducation regarding trauma and loss, normalizing members' distress reactions, and developing specific skills to cope with trauma-related distress. Module II focuses on the therapeutic processing of selected traumatic experiences, which entails selecting a focal traumatic experience, conducting trauma narrative exposure work, exploring the worst moments to increase tolerance, and identifying and restructuring maladaptive cognitions associated with extreme negative emotions. The primary goal of Module III is the therapeutic management of the interplay between trauma, loss, and complicated bereavement. Activities include psychoeducation about grief symptoms and loss reminders, the processing of angry reactions to losses, and the reconstruction of a nontraumatic image of the

deceased to promote healthy grieving. Module IV is devoted to problem solving current adversities, identifying and challenging maladaptive core life beliefs, and taking steps to restore or initiate normal developmental progression.

Study Questions

This study addressed basic questions related to the identification and treatment of students with histories of community violence exposure and associated distress. The first question explored the extent to which trauma and traumatic loss constitute a clinically significant problem among the general population of students attending the schools: What are the prevalence rates of different forms of trauma and traumatic loss exposure reported by students who participated in the screening survey? Related questions explored the magnitude of the mental health problem associated with community violence exposure (What percentage of the students surveyed were considered appropriate candidates for specialized trauma- and grief-focused psychological services?) and the extent of mental health service coverage among those judged to need it (How many students appeared to be in need of specialized mental health services but did not access it?). The last question addressed the degree to which the mental health services provided were effective in achieving their targeted outcomes: Was participation in trauma- and grief-focused group psychotherapy associated with significant improvements in posttraumatic stress, depression, complicated grief symptoms, and academic performance?

Method

Participants

Participants consisted of 812 students who were surveyed for trauma exposure and distress and 26 students who participated in the trauma- and grief-focused group psychotherapy program. Group participants consisted of 61% boys and 39% girls, ranging from 11 to 14 years of age (M = 12.58, SD = .99). The ethnic composition of the group members was 68% Hispanic, 28% African American, and 4% Caucasian.

Measures

Community Violence Exposure Survey (CVES; Saltzman, Layne, & Steinberg, 1998). The CVES is a 25-item self-report inventory of community violence exposure adapted from the widely used Survey of Exposure to Community Violence (Richters & Saltzman, 1989). CVES items assess exposure to a range of violent events within the community through the channels of direct exposure, witnessing, and verbal mediation. Violent events include serious accidents, homicides, being threatened with a weapon, shootings, kidnappings, beatings, and attempted or completed suicide. The instrument is scored by identifying endorsements of one or more forms of trauma exposure, with particular emphasis given to events involving physical injury, direct life threat, and life loss.

UCLA PTSD Reaction Index—Adolescent Version (RI–R; Rodriguez, Steinberg, & Pynoos, 1999). The RI–R is a revised version of the widely used UCLA Reaction Index (Pynoos et al., 1987), which is based on the *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed.; *DSM–III*; American Psychiatric Association, 1980). The RI–R is a 22-item self-report measure of the frequency with which posttraumatic stress symptoms have been experienced during the past 4 weeks. Symptoms are rated on a 5-point Likert scale ranging from 0 (*none of the time*) to 4 (*most all the time*). Twenty of the 22 items assess core *DSM–IV* (4th ed. of the *DSM*; American Psychiatric Association, 1994) PTSD symptoms; two additional questions assess associated features, including fear of recurrence and trauma-related guilt. Kutlac et al. (2000) reported a Cronbach's alpha of .92 and evidence of good convergent validity. Cutoff scores of 30–39, and 40 and above, respectively, are associated with "moderate" and "severe to very severe" levels of PTSD symptomatology (Pynoos, 1992).

Reynolds Adolescent Depression Scale (RADS; Reynolds, 1987). The RADS is a 30-item self-report measure of depressive symptoms among adolescents. Items are scored on a scale ranging from 0 (*almost never*) to 3 (*most of the time*). The instrument uses cutoff scores to categorize severity levels of clinical depression and has excellent validity and reliability with diverse adolescent populations. Internal

consistency coefficients range from .91 to .94, and test–retest coefficients range between .79 and .80.

Grief Screening Scale (GSS; Layne, Steinberg, Savjak, & Pynoos, 1998). The GSS is a 10-item self-report screening inventory of grief symptoms in adolescents and adults. The scale is a revised version of the UCLA Grief Inventory (Pynoos, Nader, Frederick, & Gonda, 1987) and is composed of two factor-analytically derived subscales containing five items each: One subscale measures symptoms of normal grief, and the other measures symptoms of complicated grief. Symptoms experienced during the past 4 weeks are measured on a 5-point scale ranging from 0 (*none of the time*) to 4 (*most of the time*). Layne et al. (2000) reported a full-scale Cronbach's alpha of .86 and good convergent validity.

The UCLA Trauma–Grief Screening Interview (Layne, Saltzman, & Woods, 1999). This semistructured individual interview is designed for administration by a trained clinician. The interviewing clinician reviews the student's survey responses and asks for clarifications and examples of endorsed traumatic experiences and symptoms to verify the presence of clinically significant trauma exposure and current psychological distress. Additional questions then assess the interviewee's current level of psychosocial functioning with respect to school performance, family relationships, and peer relationships. The last portion of the interview consists of a criterion-based scoring and decision-making protocol that assists the interviewer in determining the type or degree of services that the student should receive (instrument is available on request).

Grade point average (GPA). GPA was used to assess school performance. At the participating schools, grades for each class are reported at the end of every 20 weeks of instruction. GPA is the average of overall class grades based on the following weights: A = 4, B = 3, C = 2, D = 1, F = 0. Pre- versus posttreatment GPA was calculated by calculating each student's overall GPA obtained during the 20-week period immediately prior to the intervention and his or her overall GPA obtained during the 20-week period during which the group treatment was implemented.

Procedure

Letters were sent home to all parents describing the program and requesting active written consent for (a) the student's participation in the screening survey and (b) if appropriate, a follow-up screening interview. Students with parental consent then completed the screening measures in groups of approximately 30 under the direction of trained clinicians following a written protocol. To ensure test comprehension, the group leaders read all printed directions and individual items. Groups of Hispanic students with limited English proficiency were administered a backward- and forward-translated translated version of all measures; all directions and items were read by a bilingual group leader. A second method of identifying appropriate candidates for treatment consisted of referrals from students, school staff, and parents.

Students were selected for an individual screening interview if they met either of two criteria: (a) reporting one or more forms of significant exposure to trauma, violence, or loss as a victim, witness, or friend or family member of a victim *and* scoring 30 or higher on the RI–R; or (b) reporting the death of a close friend or family member *and* scoring 45 or higher on the RADS *and/or* scoring 8 or higher on the Complicated Grief subscale of the GSS. Students meeting these criteria were then invited to participate in an individual screening interview.

In accordance with the individual screening interview protocol, the interviewing clinician referred students to the treatment program who met the following four criteria: (a) one or more significant trauma or loss-related experiences (e.g., accidental injury; assault, death of a parent); (b) current posttraumatic stress symptoms or grief symptoms, as defined by the cutoff scores listed above; (c) significant functional impairment related to trauma or loss in the domains of school performance, family relationships, or peer relationships (e.g., drop in GPA subsequent to the trauma; marked conflict in family relationships; estrangement in relationships with friends involved in the traumatic experience); and (d) assent of student and active consent of parent or guardian for participation in the treatment program.

Once a student was invited to participate in the group psychotherapy program, the clinician contacted the student's parents or guardians in

order to further explain the program to them and to obtain their consent for the student's treatment. Students identified by these procedures as having serious psychological disturbances, having substance abuse problems, or being at significant risk for harming self or others were referred to appropriate local agencies. Cases of suspected child abuse or neglect were reported to the appropriate authorities in accordance with state mandatory laws (Steinberg, Pynoos, Goenjian, Sossanabadi, & Sherr, 1999). In recognition that group therapy was not an appropriate treatment modality for all students, a procedure was established for referring students to individual rather than group treatment on the basis of one or more of the following criteria: (a) report of a very recent trauma or loss experience (e.g., less than 3 months previous), (b) report of exposure to a very severe trauma or loss experience (e.g., parental suicide), (c) demonstration of a need for immediate stabilization to ensure personal safety, (d) parental preference for individual treatment, or (e) expressions of strong discomfort by the student when invited to participate in a group.

Five trauma-focused psychotherapy groups were then formed, each of which was composed of five to seven students and two group leaders. In assigning students to groups, efforts were made to maximize the homogeneity of the groups (see Burlingame, Fuhriman, & Johnson, in press) according to whether the primary treatment issue centered on trauma versus traumatic death, the severity of the trauma or loss, and the student's general developmental level. Groups met once a week on the school grounds in a room designated for the program's use and generally lasted one class period (approximately 50 min). Group sessions were held during regular school hours; special effort was given to schedule meetings during elective classes and to rotate meeting times to avoid missing the same classes each week. The groups met for approximately 20 consecutive weeks during a single term.

Results

Results of the screening survey revealed high base rates of multiple forms of community violence exposure (see Table 1). Of the 812 students who participated in the school survey (41% of the school population), 22% endorsed one or more items measuring direct exposure to violence, 37% endorsed one or more incidents of witnessing severe violence, and 58% endorsed one or more items indicating that a close friend or family member had been either badly hurt or killed in an accident or a violent incident. On the basis of the selection criteria described above, 75 (9.2%) of the students surveyed were administered individual screening interviews, and 58 (7.1%) of the student's surveyed met criteria for inclusion in the treatment program. It was notable that only 14 (24%) of these students had previously been referred for mental health services. Of the 26 students who participated in the trauma- and grief-focused group psychotherapy program, 14 had initial levels of PTSD in the severe to very severe range (scores of 40 and above on the RI–R). The mean pretreatment GPA of this severe- to very-severe PTSD group fell in the D range ($M = 1.77$, $SD = 0.53$) and was significantly lower than the mean pretreatment GPA of the other 12 group members, whose PTSD symptom scores fell in the moderate range (RI–R scores below 40) and whose GPAs fell in the C range ($M = 2.31$, $SD = .63$), $t(22) = -2.30$, $p < .05$.

To answer the question of how many traumatized students were not identified and offered specialized mental health services, the base rate of 7.1% was applied to the remainder of the student population not screened. This calculation suggested that an additional 83 significantly traumatized, distressed, and impaired students may have been present in the student population.

We examined the last study question (Was participation in trauma- and grief-focused group psychotherapy associated with significant improvements in posttraumatic stress, depression, complicated grief symptoms, and academic performance?) using a series of dependent-sample t tests using pre- versus posttreatment scores on the RI–R, the RADS, and the GSS and on GPA. Means and standard deviations for all variables are found in Table 2. Posttraumatic stress scores decreased significantly pre- to posttreatment, $t(25) = 3.53$, $p < .001$. Of greater clinical relevance, the posttreatment mean PTSD score (36.8) fell below the clinical cutoff of 40. In contrast, depressive symptoms did not significantly decrease pre- to posttreatment, $t(25) = 1.81$, $p = .08$. In addition, of the seven students

Table 1
Prevalence of Exposure to Trauma and Traumatic Loss (N = 812)

Type of exposure	% endorsed
Direct victimization	
Badly hurt in violent incident (needed to see a doctor)	17
Stabbed or attacked with knife or sharp object	6
Shot at with a gun	18
Shot with a gun	3
Choked, strangled, or smothered (not playing)	12
Tried to (or did) kidnap me	5
Been badly hurt in an accident (needed to see a doctor)	19
Witnessing	
Seen someone badly hurt or killed in a violent incident	22
Seen someone stabbed to attacked with a knife or sharp object	19
Seen someone shot or shot at with a gun	28
Seen someone choked, strangled, or smothered (not playing)	15
Seen someone kill someone else (on purpose)	3
Seen someone attempt or commit suicide	2
Family member or close friend victimized	
Family member was badly hurt in an accident	47
Family member was badly hurt in violent accident	21
Close friend was badly hurt in an accident or violent incident	51
Family member was killed in an accident	14
Family member was killed in a violent incident	10
Close friend was killed in an accident or violent incident	15
Family member or friend committed suicide	6
Threatened	
Been threatened with serious physical harm	46
Been threatened with a weapon	38
Natural disasters and wars	
Lived in a war where there was fighting, people hurt, or dead bodies	4
Been in a big earthquake that badly damaged the building I was in	64
Been in another kind of disaster like a fire, hurricane, or flood	7

reporting histories of significant loss, complicated grief symptoms decreased significantly pre- to posttreatment, $t(7) = 3.38$, $p = .015$. GPA also improved significantly pre- to posttreatment, $t(25) = 4.19$, $p = .0003$. There was no attrition among group members over the 20-week treatment period.

In addition, we calculated a series of exploratory correlations to examine the relationship between pre–post change scores and GPA.

Table 2
Means and Standard Deviations for Outcome Measures

			Pretest		Posttest	
Measure	Respondents	*n*	*M*	*SD*	*M*	*SD*
RI–R	All group members	26	42.38	11.58	36.81**	12.33
RADS	All group members	26	54.42	18.06	52.38	19.47
GPA	All group members	26	2.02	0.57	2.29***	0.50
GSS	Group menbers with traumatic loss	7	11.00	3.37	8.57*	3.50

Note. RI–R = Reaction Index—Revised; RADS = Reynolds Adolescent Depression Scale; GPA = grade point average; GSS = Grief Screening Scale (Complicated Grief subscale score).
* $p < .05$. ** $p < .01$. *** $p < .001$.

Change scores for posttraumatic stress (using the RI–R), depression (using the RADS), and GPA were calculated by subtracting pretreatment from posttreatment scores. The correlations revealed that pre–post reduction in posttraumatic stress symptoms was associated with improvement in GPA ($r = -.48$, $p < .01$); on the other hand, pre–post depression change scores were not significantly associated with improvement in GPA ($r = -.19$, $p > .05$).

Discussion

This study represents a preliminary field trial of a program designed to identify and treat traumatized youths in a secondary school setting. It addressed questions related to the prevalence of violence and loss exposure among a student population, the number of students who require specialized mental health services, the number of traumatized students who do not access specialized services, and the effectiveness of a trauma-focused group psychotherapy program in reducing targeted symptoms. The prevalence of trauma exposure and loss found in this population is comparable to that found in a national survey of adolescence (Kilpatrick et. al., 1995) and in a communitywide survey of adolescents in the host city (Rohrbach, Mansergh, Fishkin, & Johnson, 1997), but it is somewhat less than that reported among youths living in high-crime, inner-city neighborhoods (Bell & Jenkins, 1993; Osofsky et al., 1993). Of those surveyed, 7.1% (58 students) met stringent selection criteria for participation in trauma- and grief-focused group treatment. On the basis of this observed base rate, we estimated that an additional 83 students from the unscreened group would have qualified for treatment had they been appropriately assessed.

Finally, the results of this study, based on 26 group participants, suggest that participation in trauma- and grief-focused group treatment is associated with significant improvements in posttraumatic stress symptoms, complicated grief symptoms, and GPA. Of particular clinical significance, pre–post reduction in PTSD symptoms was significantly correlated with pre–post improvement in GPA. Although depressive symptoms were targeted as an outcome, pre–post tests revealed no significant changes in them.

Before discussing the implications of these findings, it is important to describe the methodological limitations inherent in this study. First, the participant sample was relatively small and nonrepresentative, in that 59% of the student body was not screened. Second, control groups with randomized assignment were not used, making it impossible to rule out the effects of history, maturation, and regression to the mean. Third, a limited battery of treatment outcome measures was used that may not have captured important dimensions of change. For example, school staff noted reductions in disruptive and inappropriate behaviors among some of the participants in the program. Furthermore, administration of outcome measures at only pre- and posttreatment also provided insufficient data to understand the trajectory of change during and after the course of treatment.

On the other hand, this study possesses a number of strengths. First, the study contains a number of features that characterize well-controlled treatment outcome studies (see Foa, Keane, & Friedman, 2000), including clearly defined target symptoms, the use of reliable and valid measures, and the use of a manualized and replicable treatment program. Second, group attendance was consistently high and there was no attrition of group members. Third, the intervention provided services to a heterogeneous participant group in a natural setting. This feature is noteworthy given that many studies of trauma treatment efficacy stringently delimit the participant group to individuals who have been exposed to single acute traumas while excluding individuals with comorbid conditions and individuals who report continuing exposure to threat, trauma, and other complex and destabilizing conditions (e.g., March, Amaya-Jackson, Murray, & Schulte, 1998, Foa & Meadows, 1997). In contrast, many group members in this study reported multiple exposures to trauma or loss and face adverse life circumstances characterized by chronic family dysfunction, parental substance abuse, severe economic hardship, frequent relocations, and changes in caretakers. Several members also possessed extensive histories of behavioral and psychological problems. Although the inclusion of such students in this study probably introduced considerable error variance, their participation was essential to providing an ecologically valid and welcome mental health service to the schools. In light of

these observations, we suggest that the significant pre–post reduction in PTSD and complicated grief symptoms, in combination with the significant correlation observed between PTSD and GPA change scores, may constitute a clinically significant set of outcomes rather than solely experimental artifacts.

The results of the screening survey and screening interview provide some evidence that a significant number of secondary school students may need mental health services focusing specifically on trauma and loss. It is notable that previous studies have reported the prevalence of exposure and estimates of lifetime and current PTSD (e.g., Christoffel, 1990; Kilpatrick et al., 1995; Osofsky, 1995). The results of this study may complement and extend the findings of previous studies by providing an index of current need in a focal population by means of using a combination of self-report measures and a structured clinical screening interview. We view the finding that over 7% of the students screened met criteria for receiving specialized trauma and grief services, in combination with the finding that fewer than one quarter had been previously referred for services, as suggesting a need for a systematic, accessible, and specialized set of mental health services among this population of students.

One of the most notable findings of this study was its identification of significant barriers to receiving appropriate mental health services. These barriers existed at multiple levels, including at the school district level, which was reluctant to grant permission to survey students regarding potentially sensitive issues, such as sexual abuse or exposure to domestic violence. In addition, less than one half (41%) of all parents gave consent for their children to participate in the screening survey, and a number of parents (up to 16%) who consented to the initial screening then refused to give consent for their child to receive specialized mental health services. A possible contributing factor to parents' reticence about involving their children in trauma-focused screening and treatment services may be their lack of knowledge concerning their children's traumatic exposure and related difficulties. In individual clinical interviews, almost half the students invited to participate in the group psychotherapy program reported that they had never disclosed their traumatic experiences to their parents. They cited various reasons for not doing so, including not wanting to worry their parents or fearing that their parents would learn that they had been exposed to a traumatic event in a forbidden place or in the company of people with whom they had been forbidden to associate. Efforts to counter this problem may take the form of outreach and education to parents and students focusing on the prevalence of traumatic exposure among youths in the community and the importance of seeking appropriate support and services.

A second important finding, although tentative, suggested that participation in trauma- and grief-focused group psychotherapy is linked to improvements in posttraumatic stress symptoms, complicated grief symptoms, and academic performance. It is notable that these improvements were observed among youths who presented with chronic PTSD (i.e., duration of over 3 months), more than half of whom reported symptoms falling in the severe to very severe range. These improvements are not as large as those reported by an efficacy study of group treatment for single-incident trauma involving youths with moderate PTSD and satisfactory academic functioning (March et al., 1998). However, of particular clinical relevance, the reduction of PTSD symptoms observed in this study moved students from the severe to very severe level to a moderate level of distress. Moreover, the current intervention program was designed to treat students with severe to very severe levels of trauma exposure, associated distress, and functional impairment. Thus, one possible explanation for the more modest improvement in PTSD symptoms observed herein is that the group members had histories of multiple trauma or loss exposures, were exposed to ongoing community violence, and experienced chronic and adverse living circumstances. A second explanation is that, as noted above, students with ongoing conduct problems were not excluded and may have introduced additional error variance.

Two preliminary findings suggested that PTSD severity and school performance may be linked. First, group members whose PTSD scores fell in the severe to very severe range had a significantly lower mean GPA than members whose PTSD scores fell in the moderate range. Second, pre–post reduction in PTSD was correlated with pre–post improvement in GPA for all group members. These exploratory findings are

consistent with observations that traumatized youths may experience breakdowns in key attentional and task-related skills that can jeopardize academic performance (Dyson, 1990; Gardner, 1971; van der Kolk et al., 1996). Improvement in specific PTSD symptoms, including in sleep disturbance, reactivity to reminders, intrusive thoughts and images, hypervigilance and exaggerated startle, and avoidant behavior, may all contribute to increased attention and concentration, improved school attendance, increased classroom participation, less disruptive behavior, and less distraction in completing homework assignments. It is important to note that the improvement in GPA to a C range among many group members permitted them to resume participation in many school activities—including field trips and recreational activities—available only to students receiving passing grades. This improvement in functioning and consequent resumption of normal interpersonal and enrichment activities has important implications for promoting long-term development and adaptation (Pynoos et al., 1995).

The lack of reduction of depression scores is a complex issue. Comorbid chronic depression is a common feature of chronic PTSD among adolescents (Angold & Costello, 1993; Goenjian et al., 1995). The treatment protocol did not include a specific depression module that may be necessary when comorbid depression is severe and chronic, as in the current treatment cohort. The persistent depressive symptoms may have been linked to ongoing adverse circumstances in the students' lives (Beck, 1972). Shalev and colleagues (Shalev, Friedman, Foa, & Keane, 2000) recommended that additional treatment for depression should be added after a primary PTSD intervention is completed. In cases of chronic PTSD and complicated bereavement, comorbid depression may also be related to the risk of depression associated with loss (Clark, Pynoos, & Goebel, 1994). In this cohort, for example, there was a significant reduction in complicated grief symptoms without a concomitant reduction in level of depression. Reduction of complicated grief reactions reduces preoccupation with the traumatic circumstance of the death and initiates an active grieving process that includes positive reminiscing. Posttreatment measures of depression may be confounded by their similarity to normal grief reactions (Weller, Weller, Fristad, & Bowes, 1991).

An example of the way in which traumatic exposure can interfere with academic performance is provided by a group member named Hector. Hector was standing next to a friend when the friend was killed in a drive-by shooting. Hector was typically a quiet boy and did not relate his experience to teachers or peers. Following his friend's murder, Hector's grades dropped sharply and his level of participation in school activities declined. He was afraid to leave the house or to ride his bicycle by the park or liquor store where his friend was gunned down. Hector experienced increasing difficulty with going about his daily activities. He startled whenever there were loud noises, he had difficulty sleeping, and he had intrusive images of his wounded friend. In school, he began to have increasing test-taking anxiety and panic when called on to speak. When Hector began treatment, he had never spoken in detail to anyone about his experience. In the therapy group with other students who had similar experiences, Hector was able to share his experience, participate in narrative exposure exercises, and use a number of cognitive–behavioral strategies to reduce his reactivity and exposure to trauma and loss reminders. As a result, his overall anxiety diminished and his grades returned to pretrauma levels. One of his teachers noted, "Hector always used to seem so distracted, and he rarely completed his assignments. He got so nervous when I called on him that I stopped doing so. Now, he seems much more relaxed and present."

An important way in which the trauma groups may help members to return to more normal developmental trajectories is by reducing trauma-avoidant behaviors that curtail normal activities. This principle is illustrated by the case of Julia, a group member who expressed the intention that she would not attend her graduation because of her belief that "bad things happen to the people around me." Group discussion centered on this belief as a traumatic expectation or distorted view born out of her repeated traumatic experiences in which people around her were injured or killed (see Pynoos et al., 1995). It became apparent that graduation served as a strong trauma reminder because Julia witnessed her uncle being fatally stabbed at a family birthday party after arguing with a

family friend. The group then supportively challenged the accuracy of her belief and, through a structured exercise, explored the worst, best, and most likely outcome if her family members attended her graduation. Julia then shared her fears with her family, elicited their support, and made plans to attend her graduation. Overcoming her trepidation, she celebrated the event with her friends and family.

This field-trial study suggests that there is a sizable group of young adolescents with chronic severe PTSD and comorbid depression from severe trauma or loss experiences who are not typically identified or given appropriate therapeutic services. The results provide very preliminary support for a school-based model of case identification and trauma treatment that may reduce symptoms of distress and enable students to perform better at school. Future studies should include random assignment to wait list and standard-of-care treatment control conditions. The design of future studies should include longitudinal follow-up and expansion of screening and evaluation tools to assess group process variables, the impact of combined treatment modalities, and a broader range of family–contextual variables and psychosocial outcomes. The need for rigorously controlled studies of program efficacy, however, should be balanced against the need for the development of empirically based treatment programs that can be effective in a natural setting in which students are contending with complex histories of trauma, loss, and current adversities.

References

American Psychiatric Association. (1980). *Diagnostic and statistical manual of mental disorders* (3rd ed.). Washington, DC: Author.

American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.

Angold, A., & Costello E. J. (1993). Depressive comorbidity in children and adolescents: Empirical, theoretical and methodological issues. *American Journal of Psychiatry, 150*, 1779–1791.

Asarnow, J., Glynn, S., Pynoos, R. S., Nahum, J., Guthrie, D., Cantwell, D., & Franklin, B. (1999). When the earth stops shaking: Earthquake sequelae among children diagnosed for pre-earthquake psychopathology. *Journal of the American Academy of Child and Adolescent Psychiatry, 38*, 1016–1023.

Beck, A. T. (1972). *Depression: Causes and treatment.* Philadelphia: University of Philadelphia Press.

Bell, C. C., & Jenkins, E. J. (1993). Community violence and children on Chicago's Southside. *Psychiatry: Interpersonal and Biological Processes, 56*, 46–54.

Burlingame, G., Fuhriman, A., & Johnson, J. (in press). Cohesion in group psychotherapy. In J. C. Norcross (Ed.), *A guide to psychotherapy relationships that work.* Cambridge, England: Oxford University Press.

Cavaiola, A., & Schiff, M. (1988). Behavioral sequelae of physical and/or sexual abuse in adolescents. *Child Abuse and Neglect, 12*, 181–188.

Christoffel, K. (1990). Violent death and injury in U. S. children and adolescents. *American Journal of Diseases of Children, 144*(6), 697–706.

Clark D. C., Pynoos, R. S., & Goebel A. E. (1994). Mechanisms and processes of adolescent bereavement. In R. J. Haggerty, N. Garmezy, & L. Sherrod (Eds.), *Stress, risk, and resilience in children and adolescents: Process, mechanisms and interventions* (pp. 100–146). Cambridge, England: Cambridge University Press.

Collins, J. J., & Bailey, S. L. (1989). Traumatic stress disorder and violent behavior. *Journal of Traumatic Stress, 3*(2), 203–221.

Dyson, J. (1990). The effects of family violence on children's academic performance and behavior. *Journal of the National Medical Association, 82*, 17–22.

Farrell, A., & Bruce, S. (1997). Impact of exposure to community violence on violent behavior and emotional distress among urban adolescents. *Journal of Clinical Child Psychology, 26*, 2–14.

Foa, E. B., Keane, T. M., & Friedman, M. J. (2000). Introduction. In E. Foa, T. Keane, & M. Friedman (Eds.), *Effective treatments for PTSD* (pp. 359–379). New York: Guilford Press.

Foa, E. B., & Meadows, E. A. (1997). Psychosocial treatments for posttraumatic stress disorder: A critical review. *Annual Review of Psychology, 48*, 449–480.

Gardner, G. (1971). Aggression and violence—The enemies of precision learning in children. *American Journal of Psychiatry, 128*, 445–450

Garmezy, N. (1993). Children in poverty: Resilience despite risk. *Psychiatry: Interpersonal and Biological Processes, 56*, 127–136.

Goenjian, A. K., Karayan, I., Pynoos, R. S., Minassian, D., Najarian, L. M., Steinberg, A. M., & Fairbanks, L. A. (1997). Outcome of psychotherapy among pre-adolescents after the 1988 earthquake in Armenia. *American Journal of Psychiatry, 154*, 536–542,

Goenjian, A. K., Pynoos, R. S., Najarian, K., Asarnow, J., Karayan, D., Ghurabi, M., & Fairbanks, L.

(1995). Psychiatric comorbidity in children after the 1988 earthquake in Armenia. *Journal of the American Academy of Child and Adolescent Psychiatry, 34*, 1174–1184.

Goenjian, A. K., Stilwell, B. M., Steinberg, A. M., Fairbanks, L. A., Galvin, M., Karayan, I., & Pynoos, R. S. (1999). Moral development and psychopathological interference with conscience functioning among adolescents after trauma. *Journal of the American Academy of Child and Adolescent Psychiatry, 38*, 376–384.

Hansen, N. B., Lambert, M. J., & Forman, E. M. (in press). The psychotherapy dose-response effect and its implications for treatment delivery services. *Clinical Psychology: Science and Practice.*

Jacobs, S. (1999). *Traumatic grief: Diagnosis, treatment, and prevention.* New York: Brunner/Mazel.

Kilpatrick, D., Aciermo, R., Saunders, B., Resnick, H., & Best, C. (2000). Risk factors for adolescent substance abuse and dependence: Data from a national sample. *Journal of Consulting and Clinical Psychology, 65*, 1–12.

Kilpatrick, D. G., Saunders, B. E., Resnick, H. S., & Smith, D. W. (1995). *The national survey of adolescents: Preliminary findings of lifetime prevalence of traumatic events and mental health correlates.* Charleston: Medical University of South Carolina, National Crime Victims Research and Treatment Center.

Kutlac, M., Layne, C. M., Wood, J., Saltzman, W. S., Stuvland, R., & Pynoos, R. S. (2000, July). Psychological adjustment in war-exposed secondary school students two years after the war: Results of a large-scale risk screening survey. In R. Stuvland & M. Black (Chairs), *UNICEF psychosocial projects in Bosnia & Herzegovina 1993–1999.* Symposium conducted at the conference "Psychosocial Consequences of War: Results of Empirical Research from the Territory of Former Yugoslavia," University of Sarajevo, Bosnia-Herzegovina.

Layne, C. M. (1996). *Effects of community violence on minority adolescents.* Unpublished doctoral dissertation, University of California, Los Angeles.

Layne, C. M., Pasalic, H., Katalinski, R., Djapo, N., Arslanagic, B., Black, T., Davis, S., Jenkins, A., Saltzman, W., & Pynoos, R. (2000, March). Contextual influences on the long-term adjustment of war-exposed Bosnian adolescents: Preliminary research findings and treatment implications. In R. Wraith (Chair), *Contextual influence on the development of children's post-trauma responses.* Symposium conducted at the third world conference for the International Society for Traumatic Stress Studies, Melbourne, Australia.

Layne, C. M., Pynoos, R. S., & Cardenas, J. (2001). Wounded adolescence: School-based group psychotherapy for adolescents who sustained or witnessed violent injury. In M. Shafii & S. Shafii (Eds.), *School violence: Contributing factors, management, and prevention* (pp. 163–180). Washington, DC: American Psychiatric Press.

Layne, C. M., Pynoos, R. S., Saltzman, W. R., Arslanagic, B., Black, M., Savjak, N., Popovic, T., Durakovic, E., Music, M., Campara, N., Djapo, N., & Houston, R. (2001). Trauma/grief-focused group psychotherapy: School-based postwar intervention with traumatized Bosnian adolescents. *Group Dynamics: Theory, Research, and Practice, 5*, 277–290.

Layne, C. M., Saltzman, W. R., & Woods, J. (1999). *UCLA Trauma–Grief Screening Interview.* (Available from William R. Saltzman, Department of Educational Psychology, Administration, and Counseling, California State University at Long Beach, 1250 Bellflower Boulevard, Long Beach, CA 90840–2201)

Layne, C. M., Steinberg, A., Savjak, M., & Pynoos, R. S. (1998). *Grief Screening Scale.* Unpublished psychological test, University of California, Los Angeles.

Malinkosky-Rummell, R., & Hansen, D. (1993). Long-term consequences of childhood physical abuse. *Psychological Bulletin, 114*, 68–79.

March, J., Amaya-Jackson, L., Murray, M., & Schulte, A. (1998). Cognitive–behavioral psychotherapy for children and adolescents with posttraumatic stress disorder following a single incident stressor. *Journal of the American Academy of Child and Adolescent Psychiatry, 37*(6), 585–593.

Murphy, L., Pynoos, R. S., & James, C. B. (1997). The trauma/grief-focused group psychotherapy module of an elementary school-based violence prevention/intervention program. In J. D. Osofsky (Ed.), *Children in a violent society* (pp. 223–255). New York: Guilford Press

Osofsky, J. D. (1995). The effects of exposure to violence on young children. *American Psychologist, 50*, 782–788.

Osofsky, J. D., Wewers, S., Hann, D. M., & Fick, A. (1993). Chronic community violence: What is happening to our children? *Psychiatry, 56*, 36–45.

Pasadena City Police. (1996). *Statistical reports on violent crimes in Pasadena.* (Available from the Pasadena Police Department, 207 North Garfield Ave., Pasadena, CA 91106)

Pynoos, R. S. (1992). Grief and trauma in children and adolescents. *Bereavement Care, 11*, 2–10.

Pynoos, R. S., Frederick, C., Nader, K., Arroyo, W., Steinberg, A. M., Eth, S., Nunez, F., & Fairbanks, L. (1987). Life threat and posttraumatic stress in school-age children. *Archives of General Psychiatry, 44*, 1057–1063.

Pynoos, R. S., & Nader, K. (1992). Post-traumatic stress disorder. In E. McAnarney, R. Krelpe, D. Orr, & G. Comerci (Eds.), *The textbook of adoles-*

cent medicine (pp. 1003–1009). Philadelphia: W. B. Saunders.

Pynoos, R. S., Nader, K., Frederick, C., & Gonda, L. (1987). Grief reactions in school age children following a sniper attack at school. *Israel Journal of Psychiatry and Related Sciences, 24,* 53–63.

Pynoos, R. S., Steinberg, A. M., & Goenjian, A. (1996). Traumatic stress in children and adolescents: Recent trends and current controversies. In B. van der Kolk, A. C. McFarlane, & L. Wiesaeth (Eds.), *Traumatic stress: The effects of overwhelming experience on mind, body, and society* (pp. 331–358). New York: Guilford Press.

Pynoos, R. S., Steinberg, A. M., & Piacentini, J. C. (1999). Developmental psychopathology of childhood traumatic stress and implications for associated anxiety disorders. *Biological Psychiatry, 46,*1542–1554.

Pynoos, R. S., Steinberg, A. M., & Wraith, R. (1995). A developmental model of childhood traumatic stress. In D. Cicchetti & D. J. Cohen (Eds.), *Developmental psychopathology: Vol. 2. Risk, disorder, and adaptation* (pp. 72–95). New York: Wiley.

Rando, T. A. (1993). *Treatment of complicated mourning.* Champaign, IL: Research Press.

Reynolds, W. M. (1987). *Reynolds Adolescent Depression Scale.* Washington, DC: Psychological Assessment Resources.

Richters, J. E., & Martinez, P. (1993). The NIMH Community Violence Project: Vol. 1. Children as victims of and witnesses to violence. *Psychiatry, 56,* 7–21.

Richters, J. E., & Saltzman, W. R. (1989). *Survey of children's exposure to community violence.* Bethesda, MD: National Institute of Mental Health.

Rodriguez, N., Steinberg, A. M., & Pynoos, R. S. (1999). *UCLA PTSD Reaction Index—Adolescent Version.* Unpublished psychological test, University of California, Los Angeles.

Rohrbach, L., Mansergh, G., Fishkin, S., & Johnson, C. A. (1997). *Survey of alcohol, tobacco, and other drug use, and violence among Pasadena/Altadena youth.* Los Angeles: University of Southern California, Institute for Health Promotion & Disease Prevention Research.

Saigh, P. A., Mroueh, M., & Bremner, J. D. (1997). Scholastic impairments among traumatized adolescents. *Behavior Research and Therapy, 35,* 429–436.

Saltzman, W. R. (2001, June). *Progress report to the California Governor's Office of Criminal Justice Planning.* (Available from William R. Saltzman, Department of Educational Psychology, Administration, and Counseling, California State University at Long Beach, 1250 Bellflower Boulevard, Long Beach, CA 90840–2201)

Saltzman, W. R., Layne, C. M., & Steinberg, A. M. (1998). *Community Violence Exposure Survey (CVES).* Unpublished psychological test, University of California, Los Angeles.

Shalev, A. Y., Friedman, M. J., Foa, E. B., & Keane, T. M. (2000). Integration and summary. In E. Foa, T. Keane, & M. Friedman (Eds.), *Effective treatments for PTSD* (pp. 359–379). New York: Guilford Press.

Sickmund, M., Snyder, H., & Poe-Yamagata, E. (1997). *Juvenile offenders and victims: 1997 update on violence.* Washington, DC: Office of Juvenile Justice and Delinquency Prevention.

Snyder, H. (1998). Juvenile arrests 1997. *Juvenile Justice Bulletin.* Washington, DC: Office of Juvenile Justice and Delinquency Prevention.

Steinberg, A. M., Pynoos, R. S., Goenjian, A., Sossanabadi, H., & Sherr, L. (1999). Are researchers bound by child abuse reporting laws? *Child Abuse and Neglect, 23,* 771–777.

van der Kolk, B. A., Pelcovitz, D., Roth, S., Mandel, F., McFarlane, A., & Herman, J. L. (1996). Dissociation, affect dysregulation and somatization. *American Journal of Psychiatry, 43,* 1536–1540.

Weller, R. A., Weller, E. B., Fristad, M. A., & Bowes, J. M. (1991). Depression in recently bereaved prepubertal children. *American Journal of Psychiatry, 148,* 1536–1540.

Yule, W., & Canterbury, R. (1994). The treatment of posttraumatic stress disorder in children and adolescents. *International Review of Psychiatry, 6,* 141–151.