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Group Therapy for Children After Homicide and Violence: A Pilot Study

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Objective: This pilot study evaluated a group intervention designed to reduce posttraumatic stress among children after homicide and/or violence. *Method:* Employing a secondary data analysis of 117 participants in 21 group interventions, pretest and posttest differences in posttraumatic stress levels and between child witnesses and nonwitnesses, males and females, and younger and older children were conducted. *Results:* Analyses indicate a significant decrease in posttraumatic stress postintervention and no pretest differences between proximity status and gender and developmental status, although results suggest child witnesses and older girls do not fare as well. *Conclusion:* This intervention may be effective for children after homicide and violence; however, treatment effect needs to be strengthened, and additional research is needed. *Modifications to the intervention are suggested.*

Keywords: children; homicide; violence; posttraumatic stress; grief; group therapy

In the United States, an estimated 16,000 people die annually because of homicide. According to the U.S. Department of Justice, every 32.6 minutes someone is murdered in the United States; approximately 71% of the victims are between the ages of 17 and 44, with 8% younger than 16 (FBI, 2005). Given these statistics, there are thousands of children who have had parents, siblings, relatives, friends, and other significant people in their lives murdered. When a homicide occurs, child survivors not only are faced with the grief and ongoing adjustments because of the death and loss but often experience severe symptoms of posttraumatic stress because of the violent nature of the death (Eth & Pynoos, 1994; Freeman, Shaffer, & Smith, 1996; Malmquist, 1986; Nader, Pynoos, Fairbanks, & Frederick, 1990). The closeness of the relationship and proximity to the violence may increase a child's risk for posttraumatic stress disorder (PTSD), which may not dissipate with time alone (Nader et al., 1990). Symptoms of posttraumatic stress may include intrusive distressing thoughts about the death; recurrent distressing dreams and sleep disturbances; diminished interest in activities; avoidance of

people, places, or things that remind them about what happened; feelings of detachment; a sense of foreshortened future; desires for revenge; guilt; angry outbursts; and disturbances in impulse control (Nader, 1997).

Most homicides occur in urban areas (Fox & Zawitz, n.d.) and have been associated with various environmental factors such as poverty, unemployment, and the prevalence of firearms and drugs (Lattimore, Trudeau, Riley, Leiter, & Edwards, 1997). A high percentage of African Americans live in urban areas (Brookings Institution Center on Urban and Metropolitan Policy, 2001), and African Americans are 6 times more likely to die of homicide than White people (Fox & Zawitz, n.d.). Homicide is the leading cause of death for African American males between the ages of 15 and 34 (Centers for Disease Control and Prevention, n.d.). Furthermore, numerous studies have documented the prevalence of exposure to community violence, including witnessing homicide, among low-income African American children who live in urban and inner-city neighborhoods (Fitzpatrick & Boldizar, 1993; Hill & Madhere, 1996; Kliwer, Lepore, Oskin, & Johnson, 1998; Osofsky, Wewers, Hann, & Fick, 1993; Richters & Martinez, 1993). Researchers have found strong evidence that children who are exposed to chronic community violence are at risk for developing PTSD (Ceballo, Dahl, Aretakis, & Ramirez, 2001; Fitzpatrick & Boldizar, 1993; Nader et al., 1990; Overstreet, Dempsey, Graham, & Moely, 1999; Pynoos et al., 1987). Research has shown that children from families with lower socioeconomic status reported higher levels of violence exposure (Hill & Madhere, 1996; Schwab-Stone et al., 1995). Indeed, children who

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are exposed to violence and poverty are placed in “double jeopardy” (Guterman & Cameron, 1997, p. 502). Many children with cumulative risk factors are also witnesses of homicide, and they “are at the mercy of environmental forces” (Eth & Pynoos, 1994, p. 302). Environmental factors posthomicide, such as criminal justice proceedings, media coverage, social stigma, and changes in caregivers, homes, neighborhoods, and peer associations, can have a significant psychological and behavioral effect on the child. The environment at school, where the child spends most of his or her day, may also be a challenge, with child survivors of homicide victims being unable to concentrate and complete tasks, becoming aggressive and defiant, skipping class, being suspended, feeling shame and embarrassment, and feeling misunderstood by teachers and peers (Clements & Burgess, 2002). Clearly, low-income urban child survivors of homicide victims are faced with tremendous challenges and pain, and this group of children is often a forgotten victim population (Spungen, 1998).

To date, there are no studies exploring the effectiveness of psychotherapy with elementary-age child survivors of homicide victims or child witnesses of homicide. The purpose of this study is to attempt to fill this gap by examining the effectiveness of a grief and trauma psychotherapy group intervention with child survivors of homicide victims and/or witnesses of homicide. Because urban African American children are disproportionately affected by homicide, this study deliberately focused on low-income urban African American children who have had someone close die because of homicide and/or who have been exposed to violence that has resulted in experiencing grief and traumatic stress.

GROUP THERAPY WITH CHILDREN EXPERIENCING GRIEF AND TRAUMATIC STRESS

Experts suggest that when working with children experiencing grief and traumatic stress, the initial focus in treatment should be on reducing the traumatic symptoms, which in turn allows the bereavement process to proceed without complications from trauma (Cohen, Mannarino, Greenberg, Padlo, & Shipley, 2002; Nader, 1997). With the recognition of posttraumatic stress as a reaction to violence and death, recent outcome studies of brief group therapy that specifically focus on reducing traumatic symptoms have shown promising results with children experiencing grief and trauma, although this research is in its infancy.

Goenjian et al. (1997) evaluated the effectiveness of a school-based trauma and grief psychotherapy protocol

with sixth and seventh graders provided in Armenia about a year and a half after the 1988 Armenian earthquake. The early adolescents, who experienced serious life threats and witnessed injuries and deaths, participated in a 6-week structured protocol. Treatment focused on addressing the trauma and trauma reminders, postdisaster stresses and adversities, bereavement and the interplay of trauma and grief, and developmental progression. Youth who received the intervention reported significant decreases in posttraumatic stress symptoms and depression from pretest to 18 months later (at 3 years postearthquake), whereas youth in the comparison group did not experience decreases in symptoms. In addition, from analysis of the symptoms according to the three main symptom clusters of PTSD, the intervention group reported significant decreases in symptoms related to intrusion, avoidance, and arousal. The researchers noted that despite the significant decrease in posttraumatic stress symptoms, the preadolescents who participated in the group still exhibited moderate symptoms and might have benefited from more sessions, different interventions, or booster sessions. A study 5 years later found that youth who participated in treatment reported significantly fewer symptoms of posttraumatic stress and depression than youth not treated. Results also suggest that the proximity to the destruction was associated with higher posttraumatic stress levels, and despite the passage of time, untreated youth experienced chronic symptoms of posttraumatic stress (Goenjian et al., 2005).

Using an 18-session cognitive-behavioral group treatment protocol with children and adolescents who experienced PTSD because of various single-incident traumas occurring at different times (such as a car accident, severe illness, storms, and death from gunshot or fire), March, Amaya-Jackson, Murray, and Schulte (1998) found a reduction in PTSD symptoms and in all three PTSD symptom clusters (reexperiencing, avoidance, and hyperarousal) after treatment and 6 months later. The authors recognized that when the combination of loss and trauma is present, a more prominent grief component is indicated (March et al., 1998). In a randomized control group study with bereaved children where grief and death-related issues were a major component of the intervention, Pfeffer, Jiang, Kakuma, Hwang, and Metsch (2002) found that children (ages 6 to 15) bereaved from parental or sibling suicide who completed a time-limited structured group intervention (ten 90-minute sessions) had significantly lower levels of anxiety and depressive symptoms than those who did not receive the intervention. Traumatic symptoms were reduced but not significantly. However, this sample of suicidal-bereaved children reported low levels of posttraumatic stress prior to the intervention.

In 2002, Chemtob, Nakashima, and Hamada conducted a randomized study of a psychosocial intervention for elementary-age children (6 to 12 years) who were experiencing trauma symptoms 2 years after Hurricane Iniki. All children receiving treatment had four sessions of either individual or group therapy, which followed a developmentally appropriate manual that addressed issues of safety and helplessness, loss, competence and anger, and ending and future. Although the authors did not state if any of the children had someone close die, issues of loss were included as a theme as children lost pets, homes, and other types of property. Children in individual treatment and group treatment showed a significant decrease in posttraumatic symptoms at posttest, which remained at follow-up 1 year later.

Group outcome studies with children who have experienced community violence that address issues of loss have shown promising results (Ceballo, 2000; Murphy, Pynoos, & James, 1997; Sklarew, Krupnick, Ward-Wimmer, & Napoli, 2002), although these interventions did not specifically state the goal of reducing posttraumatic stress because of death. Nonetheless, strong evidence for group treatment for reducing posttraumatic stress for children exposed to community violence is growing (e.g., Stein et al., 2003). Pilot studies regarding the effectiveness of group therapy with adolescents experiencing traumatic stress because of death have shown promising results as an approach for reducing traumatic stress (Rynearson, Favell, Belloumini, Gold, & Prigerson, 2002; Salloum, Avery, & McClain, 2001; Saltzman, Pynoos, Layne, Steinberg, & Aisenberg, 2001), but research in this area specifically for elementary-age children is scant.

Development and Gender

Despite limited research exploring developmental status and grief and trauma group intervention outcomes, the literature suggests that developmental status is an important factor in designing and providing developmentally specific interventions (March et al., 1998). Research suggests that younger children are less likely to miss group sessions and to drop out than older children (Chemtob et al., 2002; Kataoka et al., 2003; Opie et al., 1992; Pfeffer et al., 2002). Research has differentiated the impact of development on grief reactions in school-age children (e.g., Christ, 2000); underscored the complexity of childhood bereavement because of factors such as development, gender, time since death, and culture (e.g., Worden & Silverman,

1996); and recognized the need for future research regarding developmental differences and trauma (Cohen, 1998). This warrants studying the effects between developmental status and outcomes of a grief and trauma intervention.

In addition to the developmental status of the child, gender (Worden & Silverman, 1996) and the interaction of variables such as the gender of the deceased, type of relationship to the deceased (Worden, Davies, & McCown, 1999), and type of violence exposure (Ceballo et al., 2001) may have a significant impact in determining differences between bereaved and traumatized girls and boys. However, studies have found no statistically significant differences in outcome between preadolescent (Goenjian et al., 1997) and adolescent girls and boys (Salloum et al., 2001) who participated in grief and trauma group interventions, but some studies with elementary-age children suggest that girls may not benefit as much as boys from group intervention (e.g., Kataoka et al., 2003; Schilling, Abramovitz, & Gilbert, 1992). These results are limited because of methodological limitations, such as small sample sizes (e.g., Zambelli & DeRosa, 1992), reactivity to testing by group facilitators (Schilling et al., 1992), and confounding variables such as learning disabilities and/or developmental status (Williams, Chaloner, Bean, & Tyler, 1998). Further research regarding outcome differences between girls and boys in grief and trauma group interventions is needed.

In light of research finding disproportionate effects of homicide and violence on low-income African American children; the prevalence of posttraumatic symptoms among bereaved children after homicide, especially child witnesses of homicide; the clinical treatment goal to reduce posttraumatic symptoms first among bereaved children experiencing traumatic stress and grief; evidence of time-limited group interventions as a promising practice; and the importance of considering gender and development, this study explores the following hypotheses:

Hypothesis 1: There will be a statistically significant mean decrease between pretest and posttest posttraumatic stress sum scores with the low-income urban African American child survivors of homicide victims and/or children who are exposed to violence who participate in a school-based, time-limited grief and trauma group therapy intervention.

Hypothesis 1a: There will be significant pretest to posttest changes on the means of the three posttraumatic symptom categories (reexperiencing, avoidance, and arousal) with the child group participants.

Hypothesis 1b: The change in pretest to posttest posttraumatic stress sum scores will be significantly different between

children who witnessed the homicide and/or aftermath and children who did not witness the homicide and/or aftermath.

Hypothesis 2 and 3: There will be significant mean differences between younger children and older children on the post-traumatic stress posttests, after controlling for pretest scores, and there will be a significant mean difference between boys and girls on the posttraumatic stress posttests, after controlling for pretest. Also, the interaction of gender and development at posttest will be explored.

METHODOLOGY

Overview of the Study and Design

This study involved a secondary analysis using data from child group participants' case records from Children's Bureau of New Orleans. Children's Bureau, a nonprofit agency in New Orleans, Louisiana, through its program Project Loss and Survival Team (LAST), provides therapeutic services to survivors of homicide victims and to children exposed to violence. Group psychotherapy is part of the standard services offered to child survivors of homicide victims, child witnesses of homicide, and/or children exposed to violence. All of the group interventions in this study occurred between October 1997 and December 2001. During the time frame of this study, 804 people were murdered in New Orleans, with the murder rate being more than 6 to 8 times the national average (FBI, 1998, 1999, 2000, 2001).

Prior to group treatment, each child's guardian reviewed and signed the agency's consent-to-treatment form, which includes a statement that files may be reviewed for research purposes. The Tulane University Institutional Review Board reviewed and approved this research, and permission was given by Children's Bureau to the researcher to review case files.

This study used a one-group pretest-posttest design, which included one sample that was administered a test at preintervention and at postintervention. With this type of design, there are several threats to internal and external validity (Campbell & Stanley, 1963). Although there are limitations inherent with the design, this one-group pretest-posttest study provides valuable information to the limited knowledge base of clinical interventions for child survivors and/or child witnesses of homicide victims.

Participants

Participants included low-income urban African American child survivors of homicide victims and/or children who have been exposed to violence, all of whom have received grief- and trauma-focused group therapy through the Project LAST program from October 1997 to December 2001. In this study, 21 grief and trauma groups

were conducted in 10 public schools in an urban area. Public school social workers identified the child participants for the groups and obtained informed consent from parents and/or guardians for treatment and data collection. Data regarding children who were excluded from the groups because of lack of parental consent were not collected. Criteria for inclusion in this study included being a child survivor of homicide and/or witness to extreme community violence, attending the first through sixth grade, participating in the Project LAST elementary-age grief and trauma intervention, meeting the adherence-to-treatment standards, and being African American.

From the agency case records, 117 children were identified who participated in the group interventions. However, 15 were excluded from this study because they did not meet the inclusion criteria. Of these children, 10 did not meet treatment adherence standards, and 5 Caucasian children were excluded because the research question specifically explored the effectiveness of this intervention for urban African American children.

The sample consisted of 102 African American children who ranged in age from 6 years old to 12 years old ($M = 8.83$, $SD = 1.77$). The developmental status of participants was fairly even, with 52 younger children (attending the first through the third grade) and 50 older children (attending the fourth through the sixth grade). Fifty-three of the children (52%) were female and 49 were male (48%). Sixty-one (59.8%) of the children's parents or guardians reported that they had a household income of less than \$10,000, 5 reported household income between \$10,001 and \$24,999, and 1 reported a household income of \$35,000 to \$49,999. Thirty-five (34.3%) of the parents or guardians did not report their household incomes.

Eighty-nine of the 102 children reported at least one "close" person who died because of a homicide, with the most frequently reported relationship of the deceased being an aunt or uncle. Table 1 indicates the relationship of the 89 children to the homicide victim whom the child identified as someone close. The meaning or closeness of the relationship of the death cannot be assumed from category of the relationship, because with many African American families, extended family may hold as significant a role as immediate family (Hines, 1991). Therefore analysis of relationships to deceased and the outcome variable (posttraumatic stress) was not conducted. The time since the death ranged from 1 week (2 children) to 10 years (1 child), with the average length of time since the death 2 years and 1 week.

Analysis of case records suggest that 19 children (18.6%) witnessed the homicide, 25 children (24.5%) witnessed the aftermath of the homicide (i.e., body bag, blood, crime scene, etc.), and the witness status was not recorded (unknown) for 7% of the cases. A total of 24 of

TABLE 1: Child Participant's Relationship to Homicide Victim (N = 89)

Relationship	No.	%
Uncle or aunt	21	23.60
Friend	16	17.98
Father	14	15.73
Cousin	12	13.48
Sibling	10	11.24
Mother	8	8.99
Grandparent	4	4.49
Neighbor	3	3.37
Stranger	1	1.12

the 25 child witnesses (direct witness and/or witnessed aftermath) completed the posttraumatic stress pretest and posttest and are included in the analyses for Hypothesis 1b (see Table 3 for mean posttraumatic stress scores). Of these children, 8 were young females and 6 were young males, and 7 were older females and 3 were older males.

Of the 24 child witnesses included in the analyses, 18 witnessed the same violent event, which was when four young children (some being the child witnesses' classmates, cousins, or neighbors) were burned to death in an intentional fire where the perpetrator threw a lit container into an apartment in an act of retaliation against one of the adults living in the home. Of these 18 children, case records revealed that 5 of them lived in the same apartment complex as the deceased child victims, and their apartment received considerable fire damage resulting in relocation. These children participated in three different groups, which occurred after they participated in a school-led crisis intervention session within the week of the fire-related deaths. The grief and trauma intervention occurred approximately 2 months after the intentional fire-related deaths.

Thirteen of the 102 children did not explicitly report that they had "someone close" die because of homicide, but they were included in the groups because they were exposed to severe violence (primarily to shootings and stabbings) or experienced grief because of a nonhomicidal death or other type of loss. These children were included in the Project LAST program because they had witnessed shootings and stabbings that may not have led to death but often caused trauma and grief. For example, 1 child reported that he witnessed his mother's boyfriend (his "stepfather") "get shot in the head. He is blind now." There does not appear to be significant differences in terms of demographics or level of posttraumatic stress preintervention or postintervention between those who had someone die because of homicide and those who witnessed violence, but these children may differ in other ways from the children who are survivors of homicide victims and/or witnesses of homicide.

Attrition

Of the 102 participants, 8 (7.84%) dropped out of the group intervention before completion. Therefore, 94 children completed the group intervention. Reasons for not completing the intervention included family moving to another area and thus having to change schools ($n = 5$), being suspended from school ($n = 2$), and refusing to continue to participate ($n = 1$). Although these children were similar in terms of their pretest posttraumatic stress scores, the reasons for dropping out and perhaps other unknown factors suggest that there may have been important differences between completers and noncompleters. None of the children who dropped out were children whose case records indicated that they witnessed the homicide or aftermath.

There were 5 children who completed the time-limited group intervention but did not complete the pretest and/or posttest. They were dropped from all analyses. Three of these 5 children did not complete the tests (one pretest and two posttests not completed) because they did not attend the group session when the test was administered. The social worker was to meet with these children at a later time to complete the tests but did not. The other 2 children refused to complete the tests (one at pretest and the other at posttest). Of these 2, 1 child (young male) answered the first five questions on the pretest with *much* or *most* and then had to stop because he became too distressed. The social worker stopped the test and did not return at a later time to complete it with the child. The other child would not answer the questions. Certainly there may be significant differences between the 2 children who refused to complete the tests and those who did not refuse, as these children may have been experiencing severe distress. Furthermore, differences between the 3 children who did not complete the tests and those who did not complete are unknown. With 8 children dropping out and 5 children not completing the tests, the total sample with pretests and posttests for analyses was 89.

Data Collection

This study employed a secondary data collection of case records of children who participated in the Project LAST elementary-age grief and trauma intervention. The researcher was an employee of the agency (Project LAST supervisor and director) and had access at the agency to client records. All cases were assigned an identification number, and no identifying information was gathered. The pretest and posttest Child Posttraumatic Stress Reaction Index-Revised (CPTS-RI; Frederick, Pynoos & Nader, 1992) was administered and scored by the group facilitators

and recorded in the case files. Demographics and test scores were gathered from case records.

Demographic data, such as income, and other information about the child (e.g., special education, witnessed homicide, number in the household, etc.) that were not available through the case record were coded and reported as unknown. Three cases had missing data regarding the academic grade of the child. Because these children were ages 9, 9, and 10, and the average age for fourth graders in this sample was 9.5, fourth-grade level was added in place of the missing data.

Missing items on the CPTS-RI (Frederick et al., 1992) pretests and posttests were limited and random, with only five items missing on five different tests (two items on the pretest and three items on the posttest). For the five cases with an item missing on the scale, the mean CPTS-RI subscale for that child's test (pretest or posttest) was calculated and substituted in place of the missing item. Mean substitution is a conservative approach to missing data, although mean substitution could affect the variance of the distribution. However, because the amount of missing data is minimal, the variance of the pretest and posttest distributions should not be significantly affected (Tabachnick & Fidell, 2001).

The Project LAST Elementary-Age Grief and Trauma Intervention Model

A standardized Project LAST grief and trauma group model for elementary-age children was designed by the researcher based on practice experience, trauma and bereavement research, the ecological perspective, and group therapy theory. The model included 12 session plans, with some sessions covering more than one topic for a total of 14 possible themes (see Table 2 for a list of themes). These themes, which were facilitated using developmentally appropriate approaches, such as play, drama, discussion, drawing, storytelling, and writing, were geared toward addressing the overall intervention goal to decrease post-traumatic stress symptoms. As presented in Table 2, children shared what had happened to them and what the trauma(s) and loss(es) meant. Several topics facilitated expression of thoughts and feelings surrounding the trauma and loss, and considerable attention was given to issues of safety, coping and grief, and trauma education. The three main objectives for the child participants in the groups were (a) to learn more about grief, (b) to share some thoughts and feelings about the loss, and (c) to decrease identified traumatic symptoms, which has been identified as a main goal of working with children experiencing grief and traumatic stress (Cohen et al., 2002; Nader, 1997).

The facilitators were instructed to follow the group model but were encouraged to use their own creativity

TABLE 2: Topics and Activities Addressed in the 19 Group Interventions

Topic/Activity Addressed	No. of Groups That Included Topic	% of Time Included
Introduction (purpose, rules, etc.)	19	100.00
Pre-PTSD	19	100.00
What happened/Meaning	19	100.00
Group goals	19	100.00
Enjoyed doing/Interest	5	26.32
Family	8	42.11
Grief education	18	94.73
Safety themes (at least one topic on safety, safe place, or relaxation)	16	84.00
Memories (two sessions)	9	63.16
Spirituality	6	31.58
Feelings	19	100.00
Anger management	16	84.21
Coping strategies (including supports)	17	84.00
Future	4	21.05
Post-PTSD	19	100.00
Review of goals	19	100.00
Termination	19	100.00

NOTE: PTSD = posttraumatic stress disorder.

in designing group activities for the recommended themes and to alter the format, if needed, on the basis of the group's needs. Because of school scheduling conflicts, it was often difficult to schedule 12 sessions at school within one semester. Therefore, the flexible model occurred within 8 to 10 sessions. Although group therapy was the main intervention offered to the child participants, it was provided within the context of the ecological perspective. Recognizing the environmental forces that affect children after homicide, the facilitators were encouraged to make contact with other people in the child's environment, such as parents or guardians and teachers. Parents were given information about support groups and victim services.

Instrumentation

The revised CPTS-RI (Frederick et al., 1992) was administered as a pretest and posttest measure. Project LAST staff chose the CPTS-RI instrument because it had been normed with children who had been exposed to violence that resulted in a death. This instrument is a 20-item, self-report, Likert-type scale with a frequency range from *none* (0) to *most of the time* (4). Scores on the summated scale can range from 0 to 80. The CPTS-RI does not provide a diagnosis of PTSD, but it does provide levels of severity of the posttraumatic stress reaction. A 12-to-24 score indicates a mild level of PTSD reaction; 25-to-39 score, a moderate level; 40-to-59 score, a severe

level; and greater than 60 indicates a very severe reaction. These levels were based on empirical comparisons of CPTS-RI scores and clinical assessments of PTSD severity levels (Nader, 1997). A score of 40 or greater, which falls into the severe and very severe levels, has been found to have a high level of agreement with meeting the diagnosis of posttraumatic stress as defined in the *DSM-III-R* (Goenjian et al., 1995). There is ample evidence demonstrating strong reliability and validity of the CPTS-RI with a variety of populations of children (Carlson, 1997; Ohan, Myers, & Collett, 2002). Cronbach's alpha with this sample resulted in .80 at pretest and .81 at posttest. This researcher provided training to the group facilitators about administration of the CPTS-RI, and every facilitator was provided with a copy of *Instruction Manual Childhood PTS Reaction Index, Revised* (Nader, 1993/1995).

Treatment Fidelity and Attendance

Case progress notes and summaries from the 21 groups were used to find evidence of adherence to the themes listed in the model. Evidence of a theme or topic was considered present if at least cursory coverage of the topic was included in the case record. Adherence was defined as having at least eight sessions and covering at least eight topics. The researcher and a research assistant reviewed the files independently and rated each session within the 21 groups either as having evidence that a topic from the model was covered in the group intervention (coded as 1) or not (coded as 0). Consensus about the evidence and scores was reached so that a final score for each group was recorded. Evidence of themes covered in the sessions that were not included in the group model was also collected. There was consensus between the two raters that 19 of the groups adhered to the group intervention model (91%) and that 2 group interventions did not meet the criteria for adherence. The 2 group interventions that did not follow the model consisted of a total of 10 child participants, who were omitted from the analysis. Table 2 lists the percentage of times the themes were covered.

Overall, child participants attended 88% of all scheduled sessions. Child witnesses (direct and aftermath) missed 15% of scheduled sessions, whereas children who did not witness the homicide or aftermath missed 11% of scheduled sessions. Younger children missed 10% of the scheduled sessions, with older children missing 15% of the scheduled sessions. Females missed 11% of the scheduled sessions, and males missed 15% of the sessions. The older females were the group with the highest number of sessions missed (16%), with young males and older males missing a fairly similar amount of

scheduled sessions (15% and 14%, respectively). Young females had the fewest sessions missed (6%). An analysis of the correlation between the number of sessions attended and the change from the pretest to posttest (difference score) revealed that there was not a statistically significant correlation ($r = -.082$; $N = 89$; $p > .001$, two-tailed).

Social workers conducting the groups did not consistently record the reasons why the children missed the sessions. However, data available do provide some insight as to reasons for missed sessions. The most recorded reason why a child missed a session was because he or she was absent from school (46.29%). The second-most recorded reason for missing a session was because of being suspended (21.29%).

Training of Group Facilitators

All of the group facilitators conducting the group interventions were master's-level social workers (MSW) who worked with Project LAST. All of these social workers received a Project LAST training manual, which included the group format and other information about the group model. The social workers also received ongoing weekly (at least 1-hour) supervision from the researcher while conducting the interventions. It is to be noted that when school social workers requested group services and the Project LAST social workers were not able to conduct the groups because of full caseloads, the researcher conducted the groups. Therefore, there are two groups that were facilitated by the researcher and an MSW intern.

This researcher is a Caucasian, female, licensed clinical social worker who has experience working with bereaved African American children exposed to violence. Including this researcher, there was a total of eight MSWs who facilitated the 21 group interventions. Of these eight facilitators, five were Caucasian females, two were African American females, and one was an African American male. There was a total of 12 group cofacilitators (interns), with 8 Caucasian females and 4 African American females.

RESULTS

Table 3 indicates descriptive statistics on posttraumatic stress means among children who completed the CPTS-RI pretest and posttest group intervention ($N = 89$). Prior to conducting the analyses for the stated hypothesis, the impact of time since the trauma on posttraumatic stress scores was examined. There was no significant relationship between the length of time since

the death and/or violence and the total sum score of the pretest CPTS-RI, $r = -.075$; $N = 89$; $p > .05$, one-tailed. Because conducting multiple t tests increases Type I error rate, the Bonferroni correction was applied (.05 divided by 6 = .008). To reject the null hypothesis, each t test must be significant at $p = .008$.

Hypotheses 1a and 1b

It was hypothesized that low-income urban African American child survivors of homicide victims and/or child witnesses of violence who participate in a time-limited (8 to 10 sessions) structured therapy group would report decreased posttraumatic symptoms. Results of the repeated measures t test indicate that there was a significant decrease in posttraumatic stress scores from the pretest to the posttest, $t(88) = 4.57$, $p < .001$. The correlation between the pretest and posttest scores was .484 ($p < .001$). The mean difference between the pretest scores and posttest scores was 6.69 (pretest $M = 43.91$, $SD = 13.56$; posttest $M = 37.22$, $SD = 13.62$). The standardized effect size index, d , which was calculated using the pretest mean minus the posttest mean divided by the pooled SD was $d = .49$. The mean CPTS-RI score at pretest was in the severe range of posttraumatic stress symptoms, whereas at posttest, the mean posttraumatic stress score fell below the clinical cutoff score of 40 and was within the moderate range of the degree of posttraumatic stress symptoms. Of those who completed the pretest and posttest of posttraumatic stress, 56 children (62.9%) scored within the clinical range at pretest, whereas at posttest, 37 (41.6%) scored within the clinical range, resulting in a 33.93% decrease below the cutoff score. Further analyses revealed that 15 (41%) of those children who remained in the clinical range were witness to homicide and/or the aftermath.

Hypothesis 1a stated that there would be significant pretest to posttest changes on the means of the three posttraumatic symptom categories. There was a significant decrease from pretest to posttest on the means of the posttraumatic stress symptom categories for reexperiencing ($t = 3.66$, $df = 88$, $p < .001$) and avoidance ($t = 3.61$, $df = 88$, $p < .001$), with arousal ($t = 2.67$, $df = 88$, $p = .009$) approaching significance. The standardized effect size, d , was the strongest for the avoidance ($d = .45$) category, with less of an effect occurring with the categories of reexperiencing ($d = .38$) and arousal ($d = .34$).

Hypothesis 1b explored if the change in pretest to posttest posttraumatic stress scores was significantly different between children who witnessed the homicide and/or aftermath and those who did not. As was expected, the children who witnessed the homicide and/or aftermath reported higher levels of posttraumatic symptoms

than those who did not witness the homicide (see Table 3). However, the interaction effect of time (pretest and posttest) and proximity (witness and nonwitness) was not significant, $F(1, 87) = 3.76$, $p = .056$, partial $\eta^2 = .041$, although it approached significance. Further analyses revealed that there was not a significant difference in pretest to posttest posttraumatic stress mean scores for the child witnesses ($t = .592$, $df = 23$, $p > .05$, $d = .14$), whereas there was a significant difference in pretest to posttest posttraumatic stress mean scores for the children who did not witness the homicide ($t = 5.65$, $df = 64$, $p < .001$, $d = .68$). In fact, although both groups of children reported mean scores greater than 40 on the posttraumatic stress index prior to the intervention, only the children who did not witness the homicide or aftermath fell below the clinical range at postintervention.

Hypotheses 2 and 3

ANCOVA allows one to calculate the adjusted posttest group means of the dependent variable, controlling for the effects of the covariate. With this 2×2 ANCOVA model, the controlled pretest CPTS-RI score was held constant, with a mean of 43.91. Hypothesis 2 proposed that there would be a significant mean difference on the posttraumatic stress posttest between males and females, after controlling for pretest posttraumatic stress scores. There was no statistically significant mean difference in posttest CPTS-RI scores between males and females, $F(1, 84) = .214$, $p = .645$. The gender of the child accounted for 1.8% (partial $\eta^2 = .018$) of the variance in the posttest posttraumatic stress scores. Males (adjusted $M = 35.40$) scored only slightly lower than females (adjusted $M = 38.56$) on the posttraumatic stress posttest.

Hypothesis 3 proposed that there would be a significant mean difference on the posttraumatic stress posttests between younger children and older children, after controlling for pretest posttraumatic stress scores. There was no statistically significant mean difference in posttest CPTS-RI scores between younger children and older children, $F(1, 84) = 1.542$, $p = .218$. The developmental status of the child accounted for .3% (partial $\eta^2 = .003$) of the variance in the posttest posttraumatic stress scores. Older children (adjusted $M = 36.40$) scored slightly lower (1.17 points) than younger children (adjusted $M = 37.57$) on the posttraumatic stress posttest.

Regarding the interaction effects of gender and developmental status, there was a statistically significant mean difference in posttest CPTS-RI scores, $F(1, 84) = 4.74$, $p = .032$. The effect of the gender of the child on the posttest CPTS-RI scores varied as a function of the child's developmental status, and this interaction accounted for 5.3% (partial $\eta^2 = .053$) of the

TABLE 3: Pretest and Posttest Posttraumatic Stress Means of Child Participants (N = 89)

	n	Pretest		Posttest		Difference
		M	SD	M	SD	
All children	89	43.91	13.56	37.22	13.62	6.69
Proximity						
Witness	24	46.63	16.16	44.53	14.42	2.1
Nonwitness	65	42.91	12.46	34.52	12.36	8.39
Gender						
Female	49	45.62	14.76	39.25	13.29	6.37
Male	40	41.81	11.78	34.73	13.76	7.09
Developmental status						
Young	48	44.44	13.80	37.72	14.14	6.72
Older	41	43.29	13.42	36.63	13.13	6.66
Gender and development						
Young girls	26	46.73	14.09	37.75	12.41	8.98
Older girls	23	44.37	14.88	40.94	14.31	3.43
Young boys	22	41.73	12.16	37.68	16.24	4.05
Older boys	18	41.92	11.65	31.11	9.14	10.81

NOTE: The Child Posttraumatic Stress Reaction Index–Revised (CPTS-RI; Frederick, Pynoos, & Nader, 1992) was used to measure posttraumatic stress. The clinical cutoff score is 40. *Proximity* refers to whether the child witnessed the homicide and/or aftermath or did not witness the homicide or it was unknown.

variance in the posttest posttraumatic stress scores. The adjusted posttest posttraumatic stress score mean was 37.75 for young girls and 40.94 for older girls. The adjusted group posttest mean was 37.68 for young boys and 31.11 for older boys. With this model, younger girls had a 7.51-point decrease in posttraumatic stress symptoms at posttest, whereas older girls only had a 3.19-point decrease at posttest, the smallest decrease for all groups. The younger boys had a 5.18-point decrease in posttraumatic stress symptoms at posttest, whereas the older boys had an 11.84-point decrease in posttraumatic stress at posttest, the largest decrease for all groups. The older girls were the only group where the posttraumatic stress posttest mean was not below the clinical cutoff.

Post hoc comparisons (using the Bonferroni statistical test) indicated that there were statistically significant differences between the older girls and older boys on the posttraumatic stress posttest, $F(1, 84) = 5.422, p = .022$. However, there was no statistically significant difference between young girls and young boys at posttest on the posttraumatic stress index, $F(1, 84) = .459, p > .05$.

DISCUSSION AND APPLICATIONS TO SOCIAL WORK

This study represents the first empirically based investigation of the effectiveness of a school-based, time-limited grief and trauma group intervention for elementary-age survivors of homicide victims. The findings of this pilot study suggest that low-income African American urban children who participated in the school-based grief- and trauma-focused intervention

experienced fewer symptoms of posttraumatic stress at the end of intervention primarily in the areas of avoidance and reexperiencing symptoms. Results suggest child survivors (nonwitnesses of homicide) experienced the largest treatment effect ($d = .68$) with a weak treatment effect for child witnesses ($d = .14$). There were no pretest–posttest differences in posttraumatic stress levels between males and females and between younger children and older children, but when the children's gender and developmental status were considered simultaneously, results suggest older girls would fare the worst with only a small, nonsignificant reduction in symptoms. Therefore, it may be that this grief and trauma group model is not an effective intervention for reducing posttraumatic stress for children who witnessed the homicide and/or aftermath and for older school-age girls who are survivors of homicide victims and/or witnesses to violence. Because of the exploratory nature of this finding, such assertions are not conclusive until further research is conducted.

Previous grief and trauma group outcome studies have not compared effectiveness for child witnesses of death and the aftermath and those who did not witness the death. The child witness group consisted of two main groups: multiple deaths because of an intentional fire ($n = 18$) and homicide because of shootings and stabbings ($n = 6$), and neither group reported significant improvements in posttraumatic stress symptoms postintervention. In fact, there was no decrease in the number of children who fell below the clinical range (63% of the children remained in the clinical level of posttraumatic stress at pretest and posttest). Perhaps doubly concerning for social workers is that the child witnesses of homicide

because of fire had also participated in a classroom-based crisis intervention session led by the school social worker departmental crisis intervention team prior to participating in the grief and trauma group intervention, yet this group remained severely symptomatic with posttraumatic stress (pretest $M = 49.11$, posttest $M = 46.09$). Although there are many unknown factors that may influence treatment outcome for the subgroup of child witnesses, it seems likely that the witness group may have had additional environmental factors contributing to chronic symptoms. Such factors may include media coverage, contact with the district attorney's office and legal proceedings, ongoing threat of the perpetrator or his or her associates (the perpetrator of the fire homicide was apprehended and, months after the intervention, was convicted), surrounding traumatic reminders, family stress, and additional losses (Eth & Pynoos, 1994). For example, one 10-year-old male child witness reported that he witnessed his aunt being stabbed to death by her husband, that he was the one who let him into the house, and that he testified at the trial. Another 8-year-old female reported that her uncle was shot to death in her home. It may be that parents may have been present or closer in proximity to the homicide and/or aftermath with the child witness group versus the nonwitness group, thus creating a greater impact on the parent, which in turn may impede the child's improvement. In fact, it is likely that the parents of children who witnessed the fire homicides also witnessed the four deceased children being carried out of the apartment complex. Many of these families also lost personal belongings and had to move, which may have contributed to additional parental distress. Prior research has shown that parental distress from bereavement (Dowdney et al., 1999), community violence (Dulmus & Wodarski, 2000), or home fires (Greenberg & Keane, 2001) may have a significant impact on the child's well-being.

Possible explanations for older girls not doing as well as boys or younger girls need to be examined. It does not appear that cultural influences contributed to the difference in outcome for older girls, as outcome studies with children from different cultures and ethnicities suggest similar trending results (Goenjian et al., 1997; Kataoka et al., 2003; Williams et al., 1998). It may be that the developmental preadolescent stage when puberty begins (Fechner, 2003; Kaminer, Seedat, Lockhat, & Stein, 2000) is the beginning of gender and developmental differences that have some effect on older girls' not improving as much as boys of similar age or younger children. Of course, other factors and/or the interaction of these factors, such as the relationship to the deceased, death-related factors, personal characteristics of the child and

family, belief systems, prior interpersonal violence exposure, and mental health difficulties such as depression, may also account for outcome differences. Although the number of missed sessions was not correlated with outcome, older girls missed the most sessions. The finding in this study that older children missed more sessions than young children was consistent with other studies (Chemtob et al., 2002; Opie et al., 1992; Pfeffer et al., 2002). However, the outcome results may be more influenced by the specific content missed rather than the number of times attended.

Theorists have suggested that socialization may in part account for girls being more vulnerable to posttraumatic stress, as they are more able and willing to report symptoms and they may receive less support posttrauma than boys (Kaminer et al., 2000). Socialization (and culture) that influences caretaking and support may become more salient posttrauma, and this also could account for differences in outcome. These types of factors may also depend on the gender of the deceased and the gender and developmental status of the child. For example, if a preadolescent girl's mother dies, she may take on a caretaking role for the surviving parent and siblings, whereas a bereaved preadolescent boy or younger child may not be socialized to take care of other family members and may be provided more support postdeath. This caretaking dynamic resulting from socialization may be present within the group intervention as well. It may be that group leaders, consciously or unconsciously, do not pay as much attention to the older girls in the group because of the belief that this population is able to take care of themselves more than the younger children and older boys. In a similar vein, it may be that coed groups position older girls to serve as "role models" for the boys to express feelings, which results in the girls' own particular needs not being addressed.

Varying coping strategies and strengths associated with gender and developmental status that occur over time may also account for outcome differences. Researchers are beginning to explore gender differences in the employment and efficacy of coping strategies for reducing trauma-specific stress among children. For example, Curle and Williams (1996) found that girls who were involved in a nonfatal accident on a school bus used different and more coping strategies than boys, but generally girls did not report these strategies to be extremely helpful. Further studies are needed to substantiate differences in outcome when considering development and gender.

A moderate decrease in posttraumatic stress symptoms among children who are faced with trauma because of a violent death and ongoing adjustments because of a significant loss is clinically significant.

With a decrease in posttraumatic symptoms, children may be able to concentrate and sleep better, not have as many angry outbursts or fights, feel better with fewer headaches and stomachaches, engage in interests and with others, and be better able to confront the memories of the death and cope with the loss. A moderate reduction in posttraumatic stress has implications for improved school performance, better peer and parent relationships, and better health. Clinically, if this moderate reduction in trauma is sustained in the months after the group intervention, it may be that children are better able to cope with and adjust to the loss without the intensity and disruption of trauma.

Arguably, the overall finding of a significant mean decrease in posttraumatic stress symptoms for child survivors at posttest suggests that this grief and trauma group intervention is a promising approach for providing significant help to child survivors of homicide victims. However, the number of children who remained in the severe (33 children) to very severe (4 children) range of reported levels of posttraumatic stress at posttest is concerning. Knowing that a significant number of children are still experiencing symptoms of posttraumatic stress calls for ongoing research to explore how the intervention may be strengthened and what type of characteristic may be influencing the outcome. However, it may well be that such an improvement is not possible when children continue to live in violent environments where relatives, friends, and neighbors are murdered.

There are several limitations to this study. Threats to internal validity are inherent in the one-group pretest–posttest design used in this study (Campbell & Stanley, 1963). Without a control group or comparison group, it is difficult to discern if the results occurred because of the passage of time or were influenced by the intervention. Further unknown characteristics of the children may have contributed to the outcome. For example, neither prior or concurrent life stressors nor protective factors were known about the child participants, and these factors may have had significant influences on children's levels of posttraumatic stress. Also, other possible comorbid conditions, such as depression and anxiety, that have been associated with PTSD (Foa, Keane, & Friedman, 2000) were not measured. Therefore, it is unknown how children with comorbid challenges differed from those without such conditions and if these problems affected the outcome of the intervention. Sample biases are a concern because of the school social workers' identifying the participants and because of not knowing who refused to participate in the intervention. Including only the children who return the parental

consent introduces a bias in the children who are selected for the intervention. The selection of the participants along with the interaction of other variables may pose a threat to external validity. These limitations along with the preexperimental design limit generalizations of these findings. Nonetheless, this pilot study has many strengths as well, such as a large sample, multiple groups and sites, trained facilitators, treatment adherence, manualized intervention, standardized measure, and specific targeted goals. Also, this study filled a major gap in the literature by examining the effectiveness of a grief and trauma group intervention designed specifically to reduce traumatic stress among child survivors of homicide victims. This study was conducted in a real-world setting without including strict criteria for participation, such as excluding children with prior or current diagnoses or excluding children who had been victimized by other types of violence, such as physical or sexual abuse.

Recommendations for further research include having a control or comparison group including different types of treatments; examining the influence of death-related and individual characteristics on outcomes, including follow-up assessment of sustained outcomes; examining the benefits of homogenous groups of older school-age girls; examining the predictors of improvements in outcomes, including multiple outcomes; comparing added components such as parent meetings or mentoring programs for strengthening the effect; including fidelity measures and process measures to examine the effect of specific components of the intervention; and exploring the effectiveness of this grief and trauma intervention with different types of traumatic incidents involving loss, such as accidents, war, and disasters. It is rarely the case that one specific type of psychological intervention is effective for all people because of the complexities involved. Therefore, the challenge for researchers is to tease apart what interventions may be more helpful or harmful for which groups and why.

In attempting to strengthen the effect of this intervention, the following practice modifications to the model are suggested, which are based on the literature and data from this study:

1. Include at least one meeting with parents/and or caregivers to assess the needs of the caregiver, provide education about grief and trauma with school-age children, make referrals as needed, and help caregivers with their own grief and traumatic stress.
2. Conduct pregroup individual meetings with the children to assess children's strengths, protective and risk factors, and appropriateness of group participation.
3. Consider homogenous groups for older school-age girls and individual and/or family treatment with child witnesses until further research is conducted.

4. Implement an adherence to the model procedure to ensure fidelity to the model and to continue learning about what actually occurs during group practice.
5. Redesign the model with session plans for 10 sessions instead of 12.
6. To address suspensions, include anger management earlier in the group model instead of waiting until Session 8, when the theme of feelings is addressed.
7. Because child participants missed 12% of the scheduled sessions, an individual "pull-out" session similar to the approach developed by March et al. (1998) needs to be held as a way to address the unique needs of each child and to provide additional therapeutic intervention that focuses on reducing traumatic stress. Also, given that the mean number of sessions missed was 1.28, the individual session can be used as a "make-up" session to ensure that children address all of the group model themes and attend the recommended 10 times.
8. Consider including issues pertaining to anniversaries and holidays, as this was frequently noted as an additional theme covered in the interventions.
9. To improve arousal symptoms, all three topics related to safety (ways to feel safe, creating a safe place, and teaching relaxation) are to be included in the group intervention. Also, with the discussion of safety, facilitators should discuss dreams and have an activity that is geared toward decreasing and coping with nightmares, as this was often brought up by the children in the groups.

These revisions are under way and the effectiveness of the grief and trauma elementary-age revised model will be evaluated in another outcome study.

Many social workers practice in urban areas and are in contact with child survivors of homicide victims through working in various settings (e.g., schools, community agencies, hospitals, criminal justice system, etc.). Social workers in urban areas need to be able to identify child survivors in need of mental health intervention and provide effective services. However, practice not only should include interventions for decreasing traumatic stress among child survivors but must be accompanied by proactive policy and advocacy efforts to reduce the sources of stress, such as violence, poverty, and racism, and to create healthy, safe environments for children.

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