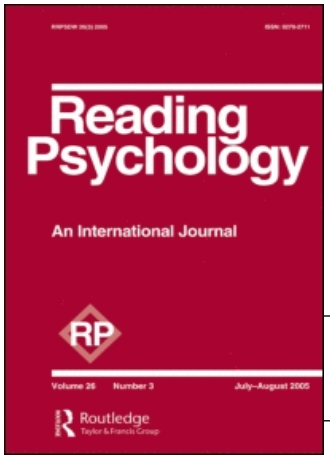

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Striking Differences: The Impact of Moderate and High Trauma on Reading Achievement

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STRIKING DIFFERENCES: THE IMPACT OF MODERATE AND HIGH TRAUMA ON READING ACHIEVEMENT

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This study explored the relationship between childhood traumatic exposure, such as violence and loss of a significant other, and reading achievement. With a sample of 163 urban elementary children (grades 2–5), the impact of traumatic events on 3 years of reading scores was examined. Results suggested that violence exposure had an adverse effect on reading scores and that there was a striking difference between students who experienced moderate exposure as compared to students with high exposure. However, both groups of students experienced a significant decrease in reading achievement. Discussion of these findings proposes an explanation for why reading achievement might be adversely affected by traumatic exposure and gives suggestions for teachers to utilize with those students identified as having been exposed to traumatic events.

Introduction

The event of September 11, 2001, notwithstanding, noted clinicians and researchers, as well as today's news reporters, informs us that our youth are being exposed to traumatic events on a daily basis, either directly or vicariously. One primary example has been the number of school-wide attacks that were orchestrated and conducted solely by their peers. Some 15 school-shootings have occurred in the United States between 1992 and 1999. Also, Richters and Martinez (1993a) surveyed 165 six- to 10-year-olds from Washington, D.C., and found that 45% of these children reported witnessing a mugging, 31% a stabbing, 27% a shooting, and 37% reported seeing a dead body. In a similar study, Uehara, Chalmers, Jenkins, and Shakoor (1996) surveyed 1,011 ten- to 19-year-olds from Chicago, Illinois, and found that 55% had witnessed someone being robbed, 35% had witnessed a stabbing, 39% had witnessed

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someone being shot, and nearly 24% had witnessed someone being killed. Moreover, approximately 4 million adolescents have been victims of a serious physical assault, and 9 million have witnessed serious violence during their lifetimes (Kilpatrick & Saunders, 1997).

In inner-cities of the United States, exposures to violence have included hearing gunshots in their neighborhoods; witnessing muggings, stabbings, or shootings; or seeing a dead body. Violence exposure has been reported for children of all ages: from 10- to 19-year-olds (Uehara et al., 1996), from 6- to 10-year olds (Richters & Martinez, 1993a), and by as young as age 5 (Taylor, Zuckerman, Harik, & Groves, 1994). Moreover, preschool educators have reported an increase in the number of children who act-out shootings, robberies, and funerals while at play in their classrooms ("Saving Youth From Violence," 1994; Wallach, 1993).

Lastly, high rates of violence exposure are not limited to inner-city neighborhoods. O'Keefe (1997) surveyed 935 urban and suburban high school students and found that over 45% of the students had witnessed a stabbing or shooting.

According to DSM-IV, *The Diagnostic and Statistical Manual of Mental Disorder* (American Psychiatric Association, 1994) the aforementioned events meet the criteria of traumatic because these events pose a serious threat to a person's physical and/or psychological well-being. The prevalence of such events compels us to question how traumatic events, such as violence exposure, might impact student learning. Yet very few studies to date have explored the relationship between the trauma of violence and student achievement and, in particular, their reading achievement (Delaney-Black et al., 2002; Randolph, Koblinsky, & Roberts, 1996).

Perspective(s) and Theoretical Framework

While there are no trauma theories that specifically address reading achievement, there is some theoretical, clinical, and empirical evidence to suggest that trauma, as defined above, does have adverse effects on some school experiences of children, on their reading achievement, and on their psychological development. First, Maslow's *Hierarchy of Developmental Needs* (1954) posits that

children whose deficiency needs (i.e., safety) are not met are unlikely to achieve to their potential (self-actualization). Second, Conte and Schuerman (1987) and Shanok, Welton, and Lapidus (1989) suggest that traumatized children direct the energy necessary for concentrating and focusing on schoolwork to suppress trauma. The constant use of emotional energy to suppress the trauma disrupts cognitive development (Conte & Schuerman, 1987). Third, numerous studies suggest that the trauma of violence has an adverse effect on school-related outcomes. For instance, violence exposure has been associated with attention problems (Pynoos et al., 1987), lower cognitive functioning (Pynoos et al., 1987), classroom behavioral problems (Dyson, 1990), decreases in school attendance (Bowen & Bowen, 1999; Hurt, Malmud, Brodsky, & Giannetta, 2001), grade repeats (Lipschitz, Rasmusson, Anyan, Cromwell, & Southwick, 2000; Schwab-Stone et al., 1995), and achievement problems (Delaney-Black et al., 2002; Duplechain, 2004; Hurt et al., 2001; Pynoos & Eth, 1984). Fourth, research has also demonstrated that the trauma of violence exposure is associated with lower reading achievement (Delaney-Black et al., 2002; Duplechain, 2004).

However, other research contradicts the adverse relationship between the trauma of violence exposure and school achievement (Attar, Guerra, & Tolan, 1994; Overstreet & Braun, 1999; Rosenthal & Wilson, 2003) and reading achievement in particular (Attar et al., 1994). Thus, the relationship between the trauma of violence exposure and achievement and, in particular, reading achievement is not yet conclusive.

Research on the psychological effects of trauma, on the other hand, is quite conclusive. A preponderance of the trauma research has linked traumatic events to a range of negative psychological consequences. When school-aged children are exposed to violence, they have been shown to experience the typical symptoms associated with trauma, posttraumatic stress disorder (PTSD; Drell, Siegel, & Gaensbauer, 1993; Overstreet, Dempsey, Graham, & Moely, 1999; Pynoos et al., 1987; Scheering, Zeanah, Drell, & Larrieu, 1997). Children exposed to violence have also been shown to suffer from many types of mental health problems such as anxiety (American Psychiatric Association, 1994; Fletcher, 1996; Garbarino, Dubrow, Kostelny, & Pardo, 1992; Martinez & Richters, 1993; Pynoos et al., 1987), high levels of fearfulness (American

Psychiatric Association, 1994; Garbarino et al., 1992; Martinez & Richters, 1993), social problems (Dyson, 1990; Gorman-Smith & Tolan, 1998; Pynoos, 1994; Pynoos & Eth, 1984), delinquency (Dyson, 1990; Pynoos & Eth, 1984), aggression (Cicchetti & Lynch, 1993; DuRant, Cadenhead, Pendergrast, Slavens, & Linder, 1994; Garbarino, 1995; Richters & Martinez, 1993b), depression (Garbarino et al., 1992; Gorman-Smith & Tolan, 1998; Martinez & Richters, 1993; Pynoos & Eth, 1984), thought problems (Pynoos et al., 1987), and somatic complaints (Pynoos & Eth, 1984). Therefore, while there is a general consensus that the effects of traumatic exposure can be seriously detrimental to the psychological functioning of children, there is no such consensus regarding the effects of traumatic exposure on the educational functioning, namely reading achievement, of children.

Objectives of the Current Study

The current study has two objectives: to (a) explore the impact of traumatic exposure on the reading achievement of children and (b) increase teacher awareness of the potential adverse effects of traumatic exposure on the reading performance of school-age children.

Methods

Participants

The sample for this study consisted of 162 elementary school students, drawn from eight inner-city elementary schools located within the Midwest region of the United States. The criteria for inclusion were the following: (a) traumatic exposure data for Year I and (b) standardized achievement scores for three consecutive school terms (Year I, Year II, and Year III). This group was further reduced by excluding those participants who were officially diagnosed with a special education status due to inadequate cognitive functioning (IEP indication of an IQ below 70).

Of these 162 students, 65 (40%) of them were second graders, 90 (56%) were third graders, and 7 (4%) were fifth graders. Eighty-five of these children (52%) were male and 77 (48%) were female.

In addition, 31 children (19%) were African American, 54 (33%) were Caucasian, 73 (45%) were Hispanic, and 4 children (1%) were Other. Lastly, social economic status was measured by the free and reduced lunch program: 62 of these students (38%) were from low SES families (those receiving free lunch), 19 (12%) were from middle SES families (those receiving reduced lunch), 55 (34%) were from high SES families (those ineligible for free or reduced lunch), and 26 (16%) were missing SES data.

Data Sources

This study was a secondary analysis of an earlier study that involved an extensive data set. This earlier study was the Metropolitan Area Child Study (MACS; see Guerra, Eron, Huesmann, Tolan, & Van Acker, 1990). Therefore, all participants, measures, and assessment procedures used in this study were those used by MACS.

MACS was a large-scale, longitudinal study conducted in selected schools located in the Midwestern United States. Participants included more than 4,000 school-age children. Focusing on high-risk urban children, MACS was designed to prevent the development of antisocial and violent behavior in children and to promote the development of social skills as a way of curbing violence. MACS was funded by grants from the National Institute of Mental Health and the Centers for Disease Control and Prevention.

This study used two measurement instruments: the Traumatic Exposure Scale and standardized achievement tests. The Traumatic Exposure Scale was used to measure the occurrence of a child's exposure to traumatic events. This scale was a subset of a previous self-report questionnaire, the Social Stress Measure (Tolan, Miller, & Thomas, 1988; see Appendix A). Of the 15 items on this social stress questionnaire, there were 7 that met the criteria as indices of traumatic events (i.e., serious threat to a child's well-being). Of these 7 items, 5 items were related to violence exposure and 2 were related to the loss of a significant other. Thus, for the purposes of this research, these 7 items were grouped to form a subscale labeled the Traumatic Exposure Scale (see Table 1). Reliability was performed on the subscale used in the study and found to be $r = .60$ (Cronbach's alpha).

TABLE 1 Traumatic Exposures Scale

DIRECTIONS: Answer the following questions by circling "YES" or "NO."

1. During the last year, has someone else you know, other than a member of your family, gotten beaten, attacked or really hurt by others?
   YES NO (Item # 7 on Appendix A)
2. During the last year, have you seen anyone beaten, shot or really hurt by someone?
   YES NO (Item # 8 on Appendix A)
3. During the last year, have you seen or been around people shooting guns?
   YES NO (Item # 9 on Appendix A)
4. During the last year, have you been afraid to go outside and play, or have your parents made you stay inside because of gangs or drugs in your neighborhood?
   YES NO (Item # 11 on Appendix A)
5. During the last year, have you had to hide someplace because of shootings in your neighborhood?
   YES NO (Item # 12 on Appendix A)
6. During the last year, did a family member die?
   YES NO (Item # 13 on Appendix A)
7. During the last year, did another close relative or friend die?
   YES NO (Item # 15 on Appendix A)

Students completed the scale by indicating whether or not they had experienced any of the traumatic events listed during the Year I. By summing the total number of "yes" responses, each child received a total score for the violence items and for the loss items separately.

In addition, students were also classified into research groups with theoretically similar amounts of traumatic exposure (Garbarino, 1994). Group 1, the nonexposure, consisted of those students who reported no violence exposure, group 2 consisted of those students who reported moderate amounts of violence exposure (either one or two events), and group 3 consisted of those students who reported high amounts of exposure (three, four, or five events). Students were similarly grouped for the total number of loss items. Table 2 contains information regarding gender, ethnicity, grade level, and social economic status (SES) for each research group. Traumatic exposure data were collected in the spring of Year I.

The second measure used in this study was one of three standardized achievement tests: the Iowa Test of Basic Skills (ITBS),

TABLE 2 Demographic Data of Sample

	Loss			Violence			
Research Groups	1	2	Total	1	2	3	Total
N =	72	90	162	49	70	43	162
Gender							
Females (%)	49	47	48	45	54	40	48
Males (%)	51	53	52	55	46	60	52
Ethnicity							
African Americans (%)	15	22	19	14	23	19	19
Asian (%)	1	1	1	0	3	0	1
Caucasians (%)	36	31	33	59	27	14	33
Hispanics (%)	46	44	45	22	47	67	45
Other (%)	1	1	1	4	0	0	1
Grade							
2 (%)	44	37	40	43	37	42	40
3 (%)	50	60	56	53	59	53	56
5 (%)	6	3	4	4	4	5	4
SES							
Low (%)	33	42	38	16	44	53	38
Middle (%)	8	14	12	4	17	12	12
High (%)	38	31	34	57	26	21	34
Missing (%)	21	12	16	22	13	14	16

Note. Based on student reports, students were classified into groups of theoretically similar amounts of traumatic exposure: 1 = Control Group; 2 = Moderately Exposed Group (either 1 or 2 reports of exposure); and 3 = Highly Exposed Group (3, 4, or 5 reports of exposure).
n = 162.
*$p < 0.05$.

the California Achievement Tests (CAT), or La Prueba de Riverside en Espanol (La Prueba). The ITBS consists of three alternate forms (Forms J, G, and H). Each form comprises three batteries: Early Primary (Levels 5 and 6), Primary (Levels 7 and 8), and Multilevel (Levels 9–14). According to Raju (1992), the test and item development requirements for Form J were analogous to those used with the development of Forms G and H, thus guaranteeing a greater proportion of parallelism among all three forms. In addition, all forms of the ITBS demonstrate good internal consistency estimates of reliability, Kuder Richardson 20 estimates in the .80s and .90s (Raju, 1992). Moreover, the content validity was reported as "generally representative of school curricula in grades 3 to 9" (Airasian, 1985, p. 719) and the criterion-related and construct validities were inferred to be acceptable (Raju, 1992).

Another battery of tests that has been highly respected is the California Achievement Test (CAT). Designed to provide a "valid measurement of academic basic skills," the CAT was found to be "strong in all areas associated with the construction of standardized achievement tests" and comparable to the ITBS (Airasian, 1989, p. 128). More specifically, the content validity was rated highly because the manual provided "detailed descriptions of the objectives and curriculum emphases that this test is designed to measure" (Airasian, 1989, p. 127). Moreover, internal consistency reliabilities were relatively high for the subtests, with Kuder Richardson 20 estimates typically ranging in the high .80s and .90s. Finally, reliabilities of test stability were reported as ranging from .80 to .95 for levels 10 to 12, and "equivalent forms reliabilities" were reported to have a median value of .85 for the subtests of Reading, Language, and Mathematics in levels 13 to 20.

Lastly, the La Prueba Riverside de Realizacion en Espanol test was used to measure the school achievement of the Spanish-speaking students. According to the information provided by the Chicago Public School (CPS) system, two versions of the La Prueba were pilot tested before it was accepted by the school district. One strong rationale for its acceptance by CPS was La Prueba's "match to CPS curriculum objectives" (CPS, 1993, p. 3). Thus, the content validity for La Prueba is excellent for consumers within the CPS district. Finally, internal consistency reliabilities for La Prueba are also very high, with Kuder Richardson 20 estimates ranging from .75 to .84 for the Reading subtests.

In the spring of each school year, each individual school site administered one of these three standardized tests. Percentile scores for the Reading subscale were obtained from each school for Year I, Year II, and Year III to measure the academic achievement in this area for each participating student.

Statistical Analysis and Results

Prevalence of Traumatic Exposure Among Sample

Demographic information for this sample was examined. Factorial analyses of variance were conducted with loss and violence as independent variables and reading as the dependent variable. Tukey post hoc comparison tests were performed in order to

further explore any main effects or interactions. Only the statistically significant demographic variables are discussed.

For those children who reported loss, none of the demographic variables were significant (see Table 3). However, for those children who reported violence exposure, main effects were revealed for ethnicity, $F = 8.25$, $df = 4, 158$, $p < 0.01$, and for family income, $F = 10.95$, $df = 2, 134$, $p < 0.01$.

TABLE 3 Demographic Variables

	Loss			Violence		
	df	F	p	df	F	p
Gender	1	.06	.80	1	.20	.65
Ethnicity	4	.33	.85	4	8.25	.00*
Grade	2	.88	.41	2	.01	.98
SES	2	1.12	.32	2	10.95	.00*

Note. n = 162.
*p ≤ 0.05.

Post hoc comparisons indicated the following: First, Hispanic (85%) and African American (77%) children reported significantly more exposures to violence than their Caucasian (46%) counterparts. No significant difference between Hispanic and African American and children was revealed (see Table 4).

TABLE 4 Tukey Comparison Between Ethnicity and Violence

	African American	Asian	White	Hispanic	Other
African American	1.00				
Asian	1.00	1.00			
White	.031*	.919	1.00		
Hispanic	.600	.988	0.00*	1.00	
Other	.246	.600	.771	.089	1.00

Note. n = 162.
*p ≤ 0.05.

Second, children from low- (87%) and middle-income (89%) families reported significantly more exposures to violence than those children from high-income (49%) families. No significant difference between the children from low- and middle-income families was revealed (see Table 5).

TABLE 5 Tukey Comparison Between Social Economic Status and Violence

	Low	Middle	High
Low	1.00		
Middle	0.889	1.00	
High	0.000*	.019	1.00

Note. n = 162.
*p ≤ 0.05.

Tests of Significance

A repeated measure GLM (general linear model) analysis was conducted to determine the relationship between traumatic exposure (Year I) and academic achievement over a 3-year period (Year I, Year II, and Year III). While exposure to loss does not seem to influence school achievement, violence exposure does affect achievement over time. A significant interaction was found when comparing the level of violence across the 3 years, F = 2.71, df = 4, 312, p ≤ 0.05 (see Table 6). This finding suggests that violence exposure does affect school achievement over time.

TABLE 6 Results of Analyses Examining the Relationship Between Traumatic Exposure and Academic Achievement (Reading)

Source	df	F	p
Between subjects			
Loss	1	0.740	
Violence	2	1.851	
Loss * Violence	2	5.000	
Error	156	(2442.488)	
Within subjects			
Achievement	1	3.787	0.053
Achievement * Loss	1	0.749	0.388
Achievement * Violence	2	0.019	0.981
Achievement * Loss * Violence	2	0.597	0.552
Error	156	(474.321)	
Time	2	2.4840.085	
Time * Loss	2	0.440	0.644
Time * Violence	4	2.717*	0.030*
Time * Loss * Violence	4	1.236	0.296
Error	312	(402.572)	
Achievement * Time	2	2.779	0.064
Achievement * Time * Loss	2	0.098	0.907
Achievement * Time * Violence	4	0.506	0.731
Achievement * Time * Loss * Violence	4	1.260	0.286
Error	312	(166.493)	

Note. Values enclosed in parentheses represent mean square errors.
n = 162.
*p < 0.05.

Second, one-way analysis results were examined to determine whether significant group effects existed. When comparing each violence exposure group (research group) to each other by year, there was only one statistical difference found among these research groups. In the third year, the average reading scores of the moderate exposure group (M = 44) was significantly lower than the average reading scores of the nonexposure group (M = 56), F = 3.27, df = 2, 160, p < .05 (see Table 7).

TABLE 7 Mean, Standard Deviation, and Comparison for Reading Achievement by Levels of Violence

	Control M (SD)	Moderate Exposure M (SD)	High Exposure M (SD)	F	P
Read Year 1	55.5 (29.5)	52.7 (24.4)	49.8 (29.0)	0.51	0.60
Read Year 2	55.5 (23.9)	52.2 (23.8)	57.5 (24.1)	.071	0.49
Read Year 3	55.7 (25.4)	43.6 (25.8)	51.3 (27.7)	3.27	0.04*

Note. n = 162.
*p ≤ 0.05.

Using t-tests to examine each group separately, significant findings were revealed for the moderate group (Group 2) and for the high exposure group (Group 3). Reading scores of the moderate exposure group dropped significantly from Year I to Year III (M = 53 and 44, respectively), $t_{(70)} = 2.96$, p < .01, and from Year II to Year III (M = 52 and 44, respectively), $t_{(70)} = 3.45$, p < .01. Reading scores for the high exposure group dropped significantly from Year II to Year III (M = 58 and 51, respectively), $t_{(42)} = 2.29$, p < .05 (see Table 8).

TABLE 8 Effects on Reading Achievement by Year and Level of Exposure to Violence

	Violence		
	Control (N = 49) M (SD)	Moderate Exposure (N = 71) M (SD)	High Exposure (N = 43) M (SD)
Read Year 1	55.59 (29.58)	55.76 (24.24)	49.84 (29.06)
Read Year 2	55.53 (23.98)	55.25 (23.81)	57.58 (24.17)
	$t_{(48)} = .02$, p = .99	$t_{(70)} = .22$, p = .83	$t_{(42)} = -1.84$, p = .07
Read Year 1	55.59 (29.58)	55.76 (24.24)	49.84 (29.06)
Read Year 3	55.78 (25.46)	43.65 (25.86)	51.40 (27.73)
	$t_{(48)} = -.06$, p = .95	$t_{(70)} = 2.97$, p = .00*	$t_{(42)} = -.34$, p = .73
Read Year 2	55.53(23.98)	55.25 (23.81)	57.58 (24.17)
Read Year 3	55.78(25.46)	43.65 (25.86)	51.40 (27.73)
	$T_{(48)} = -.08$, p = .93	$T_{(70)} = 3.46$, p = .00*	$T_{(42)} = 2.29$, p = .03*

Note. n = 162.
*p ≤ 0.05.

Discussion of Findings

There are three striking observations that can be made from the findings of this study. One observation is that all significant findings demonstrate low reading achievement. Whether we look at the moderate exposure group or the high exposure group, if there is a statistically significant finding, then lower reading achievement is associated with violence exposure. Given what is known about children who experience the trauma of violence, about the reading process, and about how reading is assessed, these findings were expected.

Standardized reading tests in the United States typically consist of reading passages of varying lengths and responding to a series of questions related to the reading passage. "Reading is comprehension ... a dynamic interactive process of constructing meaning by combining the reader's existing knowledge with the text information within the context of the reading situation" (Wisconsin Department of Public Instruction, 1986, p. 6). This process requires that students make sense of the written word based on their individual background experiences. Therefore, whether reading a work of fiction or taking a reading achievement test, the content of those readers' lives is brought into the context of each reading situation. Youngsters, especially, are not as able as adults to leave their personal lives and experiences outside the classroom.

This being said, Maslow's *Hierarchy of Needs* (1954) suggests that children are less likely to learn when they do not feel safe. Additionally, trauma research tells us that children who are exposed to traumatic events have a difficult time concentrating on their school work (Conte & Schuerman, 1987; Pynoos et al., 1987; Shanok et al., 1989), that energy needed for school tasks is diverted to suppressing a traumatic experience (Conte & Schuerman, 1987; Shanok et al., 1989). Trauma research also tells us that children who are exposed to traumatic events are anxious and fearful (American Psychiatric Association, 1994) and avoidant (Pynoos et al., 1987). Consequently, when traumatically exposed children are required to complete an academic task that is as complex as reading, they tend to lack one or more of the three major attributes that are necessary for success: (a) motivation, (b) concentration and focus, and (c) invoking personal experience. These children may not possess motivation and/or concentration and focus, or

they may fear accessing their personal experiences. Therefore, it is not surprising that students who are exposed to traumatic events, such as violence, may not be capable of attaining a high score on a standardized reading test.

Another observation that can be made from the findings of this study is the realization that the high exposure group did not fair as poorly as was expected. These findings may seem counterintuitive, suggesting that greater levels of trauma are not as "costly" as lesser levels. This finding might suggest that educators may be adept at recognizing those students who report high violence exposure and at minimizing the adverse impact of these events on their school achievement. Perhaps this is because, as teachers, we are taught to identify and to address, either directly or indirectly (referrals), school-related, at-risk types of behaviors such as low achievement, grade repeats, discipline problems, attention problems, poor school attendance, and so on that have also been associated with traumatic exposure (Bowen & Bowen, 1999; Delaney-Black et al., 2002; Duplechain, 2004; Dyson, 1990: Hurt et al., 2001; Lipschitz et al., 2000; Pynoos & Eth, 1984; Pynoos et al., 1987; Schwab-Stone et al., 1995). Therefore, it is possible that the high exposure children in this study are not fairing as poorly as expected academically because schools may be better at identifying them—because these are the students who raise a preponderance of concerns that schools traditionally target. Evidence of this can be found in the trauma literature (Dyson, 1990; Shanok et al., 1989). In each of these studies, those students who seemed the most in need were those who were referred for clinical attention.

Nonetheless, when comparing the year-to-year performance of the high exposure group, one would find an increase in reading achievement in Year II as compared to Year I (albeit not a statistically significant increase) and a significant decrease in Year III as compared to Year II. This up-and-down performance suggests, at best, that the performance of the high exposed students can be characterized as inconsistent and, at worst, as an indication that these students are beginning to lose the ability to adapt appropriately to these exposures; these students may be experiencing exhaustion. These findings may seem counterintuitive; however, they are quite consistent with the literature on adaptation and exhaustion. Adaptation suggests that children who are exposed to trauma tend to adapt. The theory of exhaustion posits that given

that "individuals do not have indefinite quantities of adaptational resources, if these children are subjected to continuous high levels of stress," they may, at some point, find themselves "short of adequate resources" (Klingman, Sagi, & Raviv, 1993, p. 87). So, while the high exposure group did not perform as poorly as expected, their long-term reading performance is also a cause for concern and teachers need to be aware of their potential vulnerability.

A final observation that can be made of the findings of this study is the realization that it is the moderate exposure group who appear to be the most at risk. These are the children who showed a steady decline in reading achievement. Indeed, these are the children whose reading achievement was significantly lower than that of the nonexposure children at Year III. These are the children whose reading achievement was significantly lower in Year III as compared to Year I and in Year III as compared to Year II. Perhaps, in the eyes of the school, these are the students who do not seem to be as "at-risk" as the high exposure students are because, possibly, the moderately exposed students do not exhibit as many school-related concerns as the high exposure students do. Consequently, because our schools do not appear to be successful at identifying these students, the reading achievement of the moderately exposed children, rather than the children who reported high exposure, is more adversely affected by the presence of violence exposure.

Significance of the Study

How can reading teachers help? Aside from referring students to school counselors, reading teachers need to be aware of the potential harm that traumatic exposure can have on the educational lives of their students (Swanson & Spencer, 1991) and to work with other school professionals to find ways to screen students for their exposure to traumatic events (Shakoor & Chalmers, 1991). Also, reading teachers can ensure that students have an adult mentor and/or a role of responsibility for a younger child, sibling, or pet (Zimrin, 1986). While a mentor can provide a sense of someone being in control, by engaging in these personal interactions, children, themselves, become accountable for another and, in doing so, regain a sense of control over their current situation.

Reading teachers can also stock the classroom library with literature of a bibliotherapeutic nature (i.e., books that show people who have overcome adversarial situations) that is appropriate to readers' maturity levels. "Books with social-emotional content present models of adults and children solving problems and interacting, and they have the potential to connect children emotionally with the experiences of the characters" (Doyle and Bramwell, 2006, p. 558). Through this personal connection, students realize that they are not the only ones who have had these life-altering experiences; they gain a vocabulary for what they are going through and are given a model for handling their circumstances.

Teachers may then provide students with opportunities to journal with an option for privacy (except in the case of harm to themselves or others), to create poems, songs, and so on in response to these texts. Teacher can also provide for the creation of other non-written responses to these texts (i.e., posters, dioramas, role play, miming, etc.). "Through the process of transmediation or moving from one sign system to another, Siegel (1995) and others (Harste, Burke, & Short, 1988; Hoyt, 1992; Piazza, 1999; Short, Kaufmann, & Kahn, 2000) have demonstrated how personal understanding deepens and increases in complexity as learners participate in the thought process of such reconfiguration" (Reigner, 2004).

Educational Importance

The educational importance of this study lies in its ability to accomplish two goals: to (a) inform reading teachers of the impact that varying amounts and types of traumatic exposure may have on their students' reading achievement and (b) demonstrate the need for working toward identifying and attending to the needs of both high and moderate exposure children. Otherwise, we may compound the adverse effects of traumatic exposure and jeopardize the reading success of the students with whom we work.

Bernard (as cited in Waxman, Gray, & Padron, 2003, p. 12) found that "turnaround teachers" are those who model resilient behaviors and establish "caring relationships, high expectations, and opportunities to participate and contribute" in the learning environment. In the atmosphere of high-stakes testing, we can only hope that reading teachers will lead the ranks of turnaround

teachers on behalf of those children who are exposed to traumatic events.

Limitations

This study collected data on the trauma of violence for a one-year period. In addition, this study collected data on two types of trauma: violence exposure (five questions were asked) and the loss of a significant other (two questions were asked). This study did not ask participants how many times they experienced these types of trauma nor did the study explore any supports that may mitigate the effects of trauma such as family or church, as these external support systems are beyond the control of a child's reading teacher. Thus, the findings of this study need to be interpreted with these limitations in mind.

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Appendix A

Things That Happen (MACS Stress Questionnaire: Tolan, Miller, & Thomas, 1988)

DIRECTIONS: Answer the following questions by circling "YES" or "NO."

During the last year,

1. did you get poor grades on your report card? YES NO
2. have you gotten into trouble with a teacher or principal at school? YES NO
3. did you get suspended from school? YES NO
4. did your family move to a new home or apartment? YES NO
5. has your family had a new baby come into the family? YES NO
6. has anyone moved out of your home? YES NO
7. has someone else you know, other than a member of your family, gotten beaten, attacked or really hurt by others? YES NO
8. have you seen anyone beaten, shot or really hurt by someone? YES NO

9. have you seen or been around people shooting guns?
   YES NO
10. did you change where you go to school?
    YES NO
11. have you been afraid to go outside and play, or have your parents made you stay inside because of gangs or drugs in your neighborhood? YES NO
12. have you had to hide someplace because of shootings in your neighborhood? YES NO
13. did a family member die? YES NO
14. has a family member become seriously ill, injured badly, and/or had to stay at the hospital? YES NO
15. did another close relative or friend die? YES NO