Gender Differences in Adolescents' Reactions to the Murder of Their Teacher

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One month following the murder of their teacher, 63 adolescents responded to a questionnaire concerning different aspects of the event. Those adolescents who learned about the murder from siblings and friends reported suffering from more intrusive images and depressive thoughts than those adolescents who learned about the event from parents. Girls reported reacting more strongly and talking more with both their friends and their parents about the event than did boys. Differing explanations regarding the observed gender differences are suggested. Correlations in the data indicate that those students who reported being the most depressed and anxious were those who talked with their friends about the event. Talking with one's parents was associated with less depressive thinking and less avoidance.

Background

In May 1987, in a small community in western Norway, a 20-year-old man shot and killed his mother, father, sister, and her fiancee. The murderer was considered a loner, who kept to himself. He occupied himself with hunting and fishing. Before the incident, no one would have believed that he was capable of such a horrible crime. The valley is known for its beauty and tranquility. The crime rate in the area is low, and violence is a rare phenomenon. Many of the young people in the locality are trained to handle weapons at an early age. Hunting in the valley has enjoyed a long tradition.

The murdered mother was a teacher and held primary responsibility for a ninth-grade class. She was well liked and respected by the students as well as by colleagues. The family members were well respected in the community.

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On the morning of the second day of school following the murders, two of the authors met with representatives of the school to discuss how the situation could best be managed to help the adolescents cope with the event. The teachers were given assistance in acknowledging their own reactions. They were also given advice about coping with their own shock and grief as well as the reactions of their students. General information about adolescents' reactions in such situations and various practical strategies that the teachers could use to help their students were discussed. Follow-up consultations to the school were provided also. The intervention following the event is described in greater detail in Dyregrov (1988). The current article reports findings based on a questionnaire administered to students as part of the follow-up intervention.

Introduction

Knowledge about children's and adolescents' reactions to traumatic events is still fairly limited. However, studies carried out within the last decade indicate that young children and adolescents directly exposed to disastrous events suffer both short- and long-term psychological effects (i.e., Ayalon, 1982; Ayalon & Soskis, 1986; Dollinger, O'Donnell, & Staley, 1984; Pynoos et al., 1987; Terr, 1979, 1983). Short-term reactions include: intrusive thoughts about the event, sleep disturbances (nightmares), fear of recurrence, hyperalertness, avoidance of stimuli that remind one of the event, difficulty concentrating, diminished interest in play, emotional construction, and psychophysiological disturbances. Long-term consequences include: a more pessimistic view of the future, the experience of trauma-specific and mundane fears, nightmares, feelings of shame, depression, and psychophysiological disturbances. Adolescents may engage in acting-out behaviors (Pynoos & Eth, 1984). They also may be engaged in a conflict in which they struggle to behave in a more adultlike, controlled fashion (Raphael, 1986). Generally, reactions to traumatic events in adolescence tend to more closely resemble posttraumatic reactions in adults.

Little research has been conducted concerning indirect exposure to traumatic events, such as the event described in this article. Even less emphasis has been placed on the question of gender differences in most studies concerning children's and adolescents' reactions to traumatic situations.

Outside the field of trauma, females generally report more psychological distress than do males (Almqvist, 1986; Baron & Perron, 1986; Franko, Powers, Zuroff, & Moskowitz, 1985; Kashani et al., 1987; Walker & Greene, 1987). Males, on the other hand, display more antisocial behaviors (Almqvist, 1986; Horwitz & White, 1987). From research on adults, it is

known that men generally experience and express less emotions than do women (Allen & Haccoun, 1976; Notarius & Johnson, 1982; Dosser, Balswick, & Halverson, 1983).

Research on gender-role relations has shown that males may have more difficulties than women in asking for intimate emotional help or in being open to such help (Gourash, 1978). Females seek out personal support from close friends (Funabiki, Bologna, Pepping, & FitzGerald, 1980), and they emphasize talking, emotional sharing, and discussion of personal problems with their same-sex friends (Aukett, Ritchie, & Mill, 1988). Friendships between males more often lack intimacy and emotional expressiveness (Fox, Gibbs, & Auerbach, 1985)—they emphasize sharing of activities with their male friends (Aukett, Ritchie, & Mill, 1988; Camarena, Sarigiani, & Petersen, 1990).

Terr (1988), in a follow-up study of 20 children who suffered psychic trauma before age 5, found that girls were better able than boys to verbalize aspects of traumas that occurred between 28 to 36 months of age. Terr stated that this finding is consistent with studies that indicate that female subjects are better able to organize verbal skills at an earlier age than are male subjects. Whether adolescents differ in these areas, is largely unknown.

Pennebaker (1985) and Pennebaker and Beall (1986) have conducted studies in which they found that writing about a traumatic event serves the same fundamental function as talking about it. One area of concern in understanding adolescents' reaction to trauma is to determine to what extent boys and girls differ in their written responses to open questions concerning the traumatic event.

In this report the following questions will be discussed: (a) How did the adolescents learn about the traumatic event (i.e., the murder of their teacher)?; (b) What was their first reaction, and to what degree did they report emotional distress related to the event?; (c) To what extent did they confide in others, and were there distinct gender differences regarding the degree to which adolescents confided in others?; (d) To what extent did the two sexes differ in their reactions following the event?; and (e) Did girls and boys differ in the degree to which they put their thoughts and feelings into written responses?

METHOD

Procedure and Response Rate

Data in the study were collected at the affected school as part of the clinical follow up. A questionnaire was administered by the teachers to the three

classes in the ninth grade. The murdered teacher had primary responsibility for one of those classes. As a consequence of the fact that the event took place in a small community, several of the students knew one or more of the victims, as well as the murderer.

A letter stating the purpose of the study and a copy of the questionnaire were distributed to the three ninth-grade classes. The purpose, as explained to the students, was an attempt to further increase teachers' and mental health professionals' knowledge about adolescent reactions to traumatic events. The students were advised that their responses would help teachers and mental health professionals to handle similar events in the future. The students individually filled in their questionnaires in the classroom with their teacher present. The questionnaires were filled in anonymously. The primary author in this study was present at the school to talk with students who requested this, to assist the teachers, and to take appropriate action if any unforeseen reactions should occur. One girl requested to speak with the researcher instead of filling out the questionnaire. She had arrived at the scene of the murder shortly following the murders. At the time, she was accompanying one of two surviving sons in the family. She did not complete the questionnaire.

A group of 63 of the 66 students completed the questionnaire. The response rate was 95.5%.

The Questionnaire

The questionnaire was four pages in length and included both structured and semistructured questions. Three questions covered gender, grade, and living distance from the murder scene. Other areas covered were: (a) how well the students knew the teacher and the other victims, (b) how they were informed of the event, (c) and to what degree they had talked about the event in their class and with their families or friends. The questionnaire also included a list of posttraumatic symptoms (32 items, i.e., When thinking back on the weeks following the event, have you experienced: that you have expected something dreadful to happen, that you have kept thoughts about the event at a distance, that you have had difficulties concentrating). The students were asked to indicate on the list the degree to which they had experienced the symptoms following the event. The list was based on common posttraumatic symptoms reported in the literature (Raphael, 1986; Wilkinson, 1983).

ANALYSIS

The data from the questionnaires were coded and entered on a permanent file, SPPS X (SPSS Inc., 1983), which was used for the statistical computations. The following analyses were used: frequency analysis, Student's *t* test, Pearson's *r* correlation, partial correlation, multiple regression analysis, and reliability analysis (Cronbach's alpha).

RESULTS

The Sample

The students were all in ninth grade (with 20, 21, and 22 students representing each class). The three nonresponding students came from two of the classes. Two of those students were from the murdered teacher's class. In Norway students at this grade level are 15 to 16 years of age. Of the students, 52% were boys.

Relation to the Victims

All students indicated that they knew the murdered teacher: 19% knew her very well, and 44% knew her well. Of the students, 41% knew one or more of the other victims. However, relatively few lived close to the murder site (14%).

Learning About the Event, First Reaction to Event

Most of the students reported being told of the event by their parents (29%), siblings (14%), or friends (29%). The remainder of the students heard of the event through radio or television (21%), or, were informed by other means (8%). The most commonly reported first reaction to the event (described by 83.3% of the students to an open-ended question) was shock; that is, they could not understand, they felt disbelief or unreality, or they felt it could not be true:

> "I was shocked, I could not understand what had happened." (boy)

> "First I kept staring at the wall, without thinking. Then I started crying. I cried and cried, until I got sick. Then I thought that somebody had misunderstood, that they were not murdered, just wounded. I was sure she would return." (girl)

Talking With Others About the Event

The students reported talking more about the event with friends than they did with parents or other adults. Out of the 81% of the students that felt they had talked enough with their friends, two out of three students felt that their friends had been of great support. The school personnel and their class also were reported as helpful and two out of three students felt that they had talked sufficiently about the event in the classroom, and that the class received sufficient information. Fewer (47%) felt that they had talked sufficiently with their parents. Nearly one fourth (22%) lacked someone with whom to talk, and 13% reported that adults had been directly evasive.

Differences Between Boys and Girls

Girls talked significantly more with their friends about the event than did boys ($\overline{X} = 2.25$, $SD = 0.51$ for boys, $\overline{X} = 1.80$, $SD = 0.61$ for girls, $t = 3.16$, $df = 1/61$, $p < .001$).[1] Nearly three times as many boys as compared with girls reported that they had talked too little with their friends about the homicides (28% vs. 10%). Girls reported significantly more often that their friends had been of help and support ($\overline{X} = 1.62$, $SD = 0.49$ for boys, $\overline{X} = 1.04$, $SD = 0.20$ for girls, $t = 5.62$, $df = 1/53$, $p < .001$).[2] Of the girls, 83% reported such support, as compared with 38% of the boys.

Boys used fewer words to answer open-ended questions. A simple word count of the words used to answer the two open-ended questions: "Can you describe how you reacted when you first learned about what happened?" and "What made the greatest impression on you in relation to what happened?," revealed that for the first question boys used 19 words compared to 43 words for girls. For the second question, the mean values were 8 and 35 words respectively. Boys from the most affected classes (the class whose teacher had been murdered, and the class that had the highest number of students who knew one or more of the victims) used the least words to describe their reactions on both questions.

Posttraumatic Reactions

Almost all adolescents, regardless of gender, reported feeling very upset by the event. The students' reported experience of different posttraumatic symptoms are listed in Table 1. Symptoms were grouped under 5 main areas: general anxiety (7 items), specific anxiety (3 items), intrusive thoughts and images (4 items), depression (4 items), and anxiety (4 items). The symptoms listed under each area correlated.[3]

Table 1. Reported After-Effects in 63 School Children After Their Teacher Had Been Murdered

	Boys (n = 33)			*Girls* (n = 30)			
	%	*Much + Very Much*[a] $\bar{X}$	(SD)	%	*Much + Very Much* $\bar{X}$	(SD)	*Difference* t *Test*
General anxiety							
Prefer not being alone	6.1	1.39	(0.60)	56.7	2.49	(1.25)	–4.51***
More jumpy than usual	0.0	1.27	(0.44)	40.0	2.07	(1.08)	–3.91***
More anxious about things than usual	9.1	1.55	(0.67)	30.0	2.23	(0.94)	–3.39***
Difficulties sleeping	3.0	1.27	(0.52)	20.0	1.87	(0.90)	–3.28**
Upset stomach, other bodily complaints	0.0	1.04	(0.20)	10.0	1.53	(0.86)	–3.16**
Expecting something dreadful to happen	3.0	1.39	(0.56)	16.7	1.93	(0.91)	–2.87**
Anxious that something will happen to parents	6.1	1.48	(0.62)	26.7	1.97	(1.00)	–2.32*
Specific anxiety							
Jumpy at loud noises	6.1	1.12	(0.49)	27.7	1.87	(1.04)	–3.70***
Locking doors, closing curtains and so forth	3.0	1.09	(0.38)	6.7	1.33	(0.61)	–1.91
Afraid the killer will come back to kill	9.1	1.33	(0.74)	23.4	1.72	(1.00)	–1.75
Intrusive thoughts							
In periods difficult to stop talking about the event	9.1	1.59	(0.83)	53.3	2.57	(1.07)	–4.09***
Bad dreams/nightmares	0.0	1.06	(0.24)	16.6	1.57	(0.86)	–3.25**
Thoughts about the event continues	9.1	1.73	(0.71)	43.3	2.38	(1.09)	–2.82**
Images of event in front of inner eye	39.4	2.25	(0.85)	56.7	2.84	(0.95)	–2.56*
Depression							
Easily starts crying, feels like crying	3.0	1.27	(0.52)	50.0	2.50	(1.04)	–6.00***
Feels sad	21.2	1.94	(0.70)	66.7	2.87	(0.73)	–5.13***
Lacks initiative	9.1	1.67	(0.65)	60.0	2.67	(1.03)	–4.70***
Pessimistic about the future	3.0	1.18	(0.47)	20.0	1.87	(0.82)	–4.13***

continued

Table 1. continued

	Boys (n = 33)			*Girls* (n = 30)			
	%	*Much + Very Much*[a] $\bar{X}$	(SD)	%	*Much + Very Much* $\bar{X}$	(SD)	*Difference* t *Test*
Avoidance							
Kept thoughts about the event at a distance	33.4	2.23	(0.80)	20.0	1.77	(0.86)	–2.25*
Everything seems unreal	75.8	3.11	(1.00)	80.0	3.47	(0.82)	–1.52
Avoids contact with others	3.0	1.09	(0.38)	6.6	1.27	(0.69)	–1.26
Avoids everything that reminds about the event	12.2	1.72	(0.84)	13.3	1.63	(0.81)	0.42
Other Reactions							
Difficulties concentrating	9.1	1.82	(0.68)	56.7	2.70	(1.09)	–3.89***
Life changed meaning	6.1	1.38	(0.60)	30.0	2.14	(0.94)	–3.87***
The strongest reaction came after awhile	24.3	1.85	(1.00)	66.7	2.80	(1.00)	–3.79***
Many unexpressed thoughts and feelings	3.0	1.56	(0.66)	33.4	2.17	(0.88)	–3.14**
Difficult starting schoolwork again	30.3	2.18	(0.95)	60.0	2.87	(1.10)	–2.64**
More irritable	0.0	1.27	(0.44)	10.0	1.63	(0.67)	–2.59*
Family doesn't understand what I have been through	12.2	1.50	(0.86)	20.0	1.69	(1.04)	–0.83
Anger toward murderer	36.3	2.12	(1.05)	43.4	2.26	(1.11)	–0.53
Regretted things I have said or done toward the murdered	18.2	1.72	(0.84)	20.0	1.74	(1.02)	–0.08
Total							
Degree of upset, all in all	84.9	3.23	(0.72)	93.3	3.52	(0.70)	–1.50

NOTE: Percentage of children reporting *much* or *very much* of the complaints are listed, split by sex. Mean score and difference between boys and girls are shown (Student's *t* Test).

a. Alternatives were: 1 - *not at all*, 2 - *somewhat*, 3 - *much* and 4 - *very much* (experienced such after effects).

*$p < .05$. **$p < .01$. ***$p < .001$.

Table 1 shows significant differences between boys and girls on 23 of the 32 posttraumatic symptoms. The greatest differences found using the Student's *t* test were: the number who reported crying or a wish to cry (50% of the girls vs. 3% of the boys acknowledged this reaction to be strong, i.e., *much* or *very much*), sadness (67% female vs. 21% male), a lack of initiative (60% vs. 9%), not wanting to be alone (57% vs. 6%), finding it difficult to stop talking about the event (53% vs. 9%), pessimism about the future (20% vs. 3%), concentration difficulties (57% vs. 9%), and a change in life's meaning (30% vs. 6%).

Figure 1 shows an overview of the degree to which the two sexes acknowledged reactions within the six main areas of the questionnaire.

In the figure the symptoms are summarized into indexes (totals are divided by the number of items). The girls reported experiencing greatest intensity in depression, anxiety, intrusive images, and recurrent thoughts. The reported strength of the reactions was relatively similar. The boys' reactions varied considerably, with avoidance reactions reported as being the most prominent. With the exception of avoidance reactions, the girls reported significantly stronger posttraumatic symptoms than did the boys.[4] The difference is most noteworthy in the area of reported depression.

Multivariate Analyses

With the use of bivariate and multivariate analyses (product moment correlations, partial correlations, and multiple regression), each of the six posttraumatic indexes were related to questions regarding the manner in which the students learned about the event and how much they had talked with others about it (Table 2). The gender of the student and the class to which each student belonged were also included in the analyses.[5]

Viewing Table 2, it is evident that the number of the victims the students knew influenced the relationship between gender and posttraumatic reactions only to a minor degree (partial correlations). This was also the case with the issue of how one learned about the event. The analyses revealed, however, that the degree of personal closeness students felt to the teacher did influence the student's reactions (summed posttraumatic reactions).

Gender contributed significantly to all regression-models with the exception of avoidance. With one exception, gender rendered the strongest unique contribution to all of the models (it predicted 43% of the variance alone). More than 50% of the variance in two of the criterion variables (depressive thoughts and summed posttraumatic reactions) were accounted for by using multiple regression.

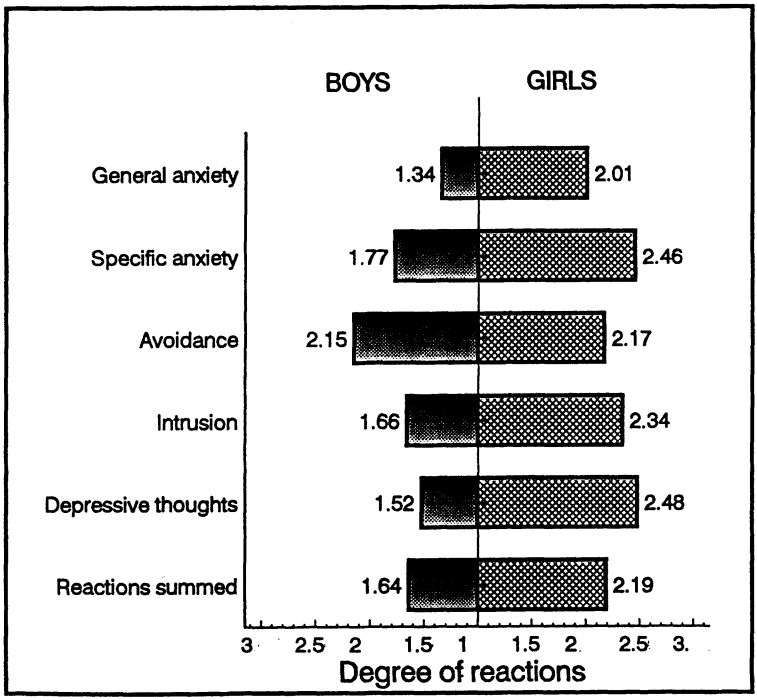

Figure 1. Stress reactions among school children (n = 63). Gender differences, mean values (range = 1-4).

Apart from gender, several other psychosocial conditions were related to the degree of posttraumatic stress reactions. These were: (a) the degree to which the student talked with friends about the event, (b) whether or not a student received support from a friend, (c) the degree to which the student talked with parents about the event, and (d) whether or not the student had someone in whom to confide.

Correlations indicate that it was the most depressed and anxious students who reported talking with their friends about the event. Talking with one's parents was associated with less depressive thinking and less avoidance. Talking about the event and receiving information within the school situation was of lesser importance. Seeking and receiving the information about the event from siblings or friends were related to a greater degree of intrusive images.

TABLE 2: School Childrens' Reactions Following the Murder of a Teacher: Posttraumatic Stress Reactions Seen in Relation to Gender, Class, Closeness, and Conversation With Others About the Event. Results form Person's *r*, partial *r* (controlled for degree of closeness to murdered persons) and Multiple Regression Are Shown (*n* = 63).

		Posttraumatic Reactions					
		General Anxiety	*Specific Anxiety*	*Depressive Thoughts*	*Intrusion*	*Avoidance*	*Summed Reactions*
Gender	*r*	0.56***	0.38**	0.68***	0.52***	0.02	0.62***
	partial *r*[a]	0.56***	0.36***	0.69***	0.53***	0.02	0.70***
	beta[b]	0.45***	0.47	0.63***	0.36***	—	0.56***
Class[c]	*r*	0.14	0.09	0.11	0.24	0.15	0.29*
	partial *r*	0.03	0.02	–0.02	0.11	0.09	0.13
	beta	—	—	—	—	—	—
Degree of personal closeness to murdered teacher	*r*	0.21	0.10	0.29*	0.31*	0.14	0.37**
	partial *r*	-)	-)	-)	-)	-)	-)
	beta	—	—	0.30	0.32	—	0.35***
Number of victims known to responder	*r*	0.27*	0.29*	0.13	0.17	0.07	0.27*
	partial *r*	-)	-)	-)	-)	-)	-)
	beta	0.24*	0.26*	—	—	—	—
Live less than 2 km from the murder scene	*r*	–0.13	–0.04	0.02	0.02	0.10	–0.01
	partial *r*	–0.20	–0.11	0.02	–0.06	0.09	–0.07
	beta	—	—	—	—	—	—
Was informed of event by parent[d]	*r*	0.04	0.15	0.18	0.10	0.05	0.13
	paratial *r*	–0.07	0.14	0.28*	0.19	0.09	0.23
	beta	—	—	—	—	—	—

continued

TABLE 2: continued

		Posttraumatic Reactions					
		General Anxiety	*Specific Anxiety*	*Depressive Thoughts*	*Intrusion*	*Avoidance*	*Summed Reactions*
Was informed of event by siblings or friends[d]	*r*	–0.15	–0.04	–0.21	–0.29*	0.02	–0.21
	partial *r*	–0.19	–0.04	–0.30*	–0.39**	–0.01	–0.32*
	beta	—	—	–0.20*	–0.28**	—	–0.20*
Was informed of event by radio/TV or in other way	*r*	0.12	–0.10	0.05	0.22	–0.07	0.10
	partial *r*	0.13	–0.10	0.05	0.23	–0.07	0.12
	beta	—	—	—	—	—	—
Talked with friends about event	*r*	–0.43***	–0.21	–0.27*	–0.36**	0.11	–0.40***
	partial *r*	–0.41***	–0.19	–0.24	–0.33*	0.14	–0.36**
	beta	–0.24*	—	—	—	—	—
Good support/comfort from friend	*r*	–0.37**	–0.34**	–0.33*	–0.25	–0.03	–0.36**
	partial *r*	–0.38**	–0.34**	–0.36*	–0.28	–0.04	–0.41**
	beta	—	—	—	—	—	—
Talked with parents about event	*r*	0.28*	–0.06	0.40***	0.48***	–0.16	0.39**
	partial *r*	0.26	–0.07	0.38**	0.45***	–0.18	0.36**
	beta	—	–0.27*	—	0.23*	—	—
Talked in class about the event	*r*	0.06	–0.03	0.10	–0.03	–0.10	0.01
	partial *r*	0.12	0.01	0.17	0.04	–0.08	0.10
	beta	—	—	—	—	—	—

Class got enough information about the event	*r*	–0.01	–0.02	0.02	–0.03	0.14	0.04
	partial *r*	0.04	0.04	0.00	–0.04	0.14	0.04
	beta	—	—	—	—	—	—
Lacked someone to talk to about event	*r*	0.22	0.03	0.18	0.20	0.13	0.30*
	partial *r*	0.24	0.05	0.14	0.17	0.11	0.28*
	beta	0.22*	—	—	—	—	0.20*
Adults have refrained from talking about event	*r*	0.16	0.02	0.01	–0.06	0.05	0.05
	partial *r*	0.15	–0.01	0.02	–0.05	0.05	0.05
	beta	—	—	—	—	—	—
Participated in funeral	*r*	–0.17	–0.10	–0.30*	–0.35**	–0.10	–0.38**
	paratial *r*	–0.03	–0.03	–0.16	–0.19	–0.01	–0.19
	beta	—	—	—	—	—	—
	k^b =	0.42***	0.23***	0.54***	0.45***	(—)	0.55***

a. Partial correlation denotes the relationship after control for how well the student knew the teacher.
b. Beta-coefficients denote the relationship after a mutual control for predictors included in the final regression model.
c. The variable is dichotomized.
d. One of three dummy-variables constructed from the same question.
— = predictor is omitted from the final regression question.
-) = partial *r* was not calculated.
(—) = multiple regression was not calculated; none of the predictors met the criteria for inclusion in the model.
*$p < .05$. **$p < .01$. ***$p < .001$.

DISCUSSION

First Information About and Reaction to the Event

The adolescents learned about the event from different sources. Those who learned about it from siblings and friends reported suffering from more intrusive images and depressive thoughts than those who learned about the event from parents. The evidence suggests that the adult world could take more initiative and responsibility for breaking bad news to children and adolescents.

Written responses indicated that the first reaction was shock, accompanied by feelings of unreality and disbelief. Shock reportedly occurred regardless of how the news was broken. These reactions are similar to those reportedly experienced by adults (Raphael, 1986). The event was reported as very upsetting to most adolescents, regardless of gender.

Information about the event that was learned at school appeared unrelated to posttraumatic reactions. This might be related to the fact that the murder took place before a long weekend. Most of the information about the event was known by the students before they returned to school.

Confiding in Others

The adolescents reported more frequently using friends to confide in rather than confiding in adults. They perceived friends as more helpful support resources. Most of the students felt they had talked enough with friends, but many indicated that they had not talked enough with their parents. Nearly one fourth of the students indicated they lacked someone with whom to talk. Interaction between parents and children can be difficult during adolescence (Bahne Bahnson, 1974), and the results simply may reflect parents' general difficulties in talking about emotionally charged matters with their adolescent offspring. Talking about the event in class did not show any relationship with lessening posttraumatic reactions. This was so regardless of efforts to help them handle the event in the classroom. However, this may reflect the teachers' lack of preparation and knowledge for facilitating such discussions. Thus it may be important that adults obtain more information about how to talk to children and adolescents following traumatic events. The results indicate that adults took too little initiative in stimulating talk and expression following the event. Some even may have been evasive.

The two sexes differed in their use of the social environment for discussions about their emotions. Girls reported confiding more in friends and

family than did boys. Interestingly, talking with friends about the event was correlated with a greater level of posttraumatic stress reactions, whereas talking with parents about the event was correlated with less posttraumatic stress reactions. Talking with friends may stimulate the experience of one's own vulnerability, or it may enhance one's acknowledgement of reactions. Some contagion effect also was possible in the group. This could have affected girls more than boys, as boys generally reported talking less with others. This is supported by the reports that discussions with friends about anxiety, reactions, and intrusive images and thoughts were associated with intensified stress reactions. Following a crisis event of this nature, stories, rumors, and fantasies may be spread quickly, and an escalation of anxiety may be the end result.

Adolescents who interacted with their parents reported less sadness and depression. They also reported fewer intrusive thoughts. An emotional climate at home that would encourage discussions about such tragic events, might help adolescents to process the event in a healthy manner (Bloch, Silber, & Perry, 1956). Adult understanding and attempts to comfort a young person may enhance the possibility of ventilating posttrauma stress reactions and might have a positive influence on reducing those reactions (Raphael, 1986). Obviously, a lack of understanding and no comfort from an adult might have the opposite effect. Another viable explanation might be that adolescents with strong coping skills (and thus less sadness and depression) might feel more comfortable talking with their parents. Unfortunately, the measures used did not include any coping scale, and conclusions cannot be drawn.

Taking part in the funeral reportedly was also related to less intrusive and depressive symptoms. It is believed that rituals help make what seems so unreal more real, and they provide an opportunity to directly express inner feelings (Rando, 1985).

Gender Differences in the Ability to Express Emotions

Results showed that girls were much more able to put their reactions into words. Some girls spontaneously commented on the value of writing down their reactions:

> "It felt so good to be able to write down my thoughts and scrutinize myself. Thank you!"
>
> "I have answered these questions because I feel it is good to 'talk it through."

Some boys, on the other hand, were negative toward getting the questionnaire:

"I think it is stupid to talk about it now. It is so long since it happened."

"I just want to say that when so much time had elapsed after the killings, it is stupid of the teachers to rip it up again. We have almost forgotten what happened and then we start talking about it again. I think that is bad."

The boys in the sample did not seem to be willing to confront the trauma and pain by either written or verbal means. This was indicated by the amount of avoidance in this group. Pennebaker, Kiecolt-Glaser, and Glaser (1988) found that writing about traumas was painful in the short term but helpful in the long term. Pennebaker (1990) discussed why writing and talking about upsetting experiences produced improved physical and psychological health. In translating experiences into language, some people can begin to organize and structure overwhelming events. Writing about a trauma is one method of externalizing the experience. Not being able to describe one's experience in writing, therefore, may be associated with more emotional inhibition.

Some of the girls commented that they thought that the event had been forgotten too soon and that life had returned to normal faster than it should have. They wanted to discuss the situation in more depth than did the boys.

Both for preschoolers and adults, studies have shown that males use more words and talk more often than females do when engaged in conversations (see Cook, Fritz, McCornack, & Visperas, 1985). The current study indicates that when it came to the expression of emotions, the opposite was true. Girls took the leading role in emotional discussions.

The results showed clear differences between boys and girls in their ability to acknowledge different stress reactions. Girls reported reacting more strongly in most respects, except when it came to keeping thoughts at bay.

There may be several viable explanations for the observed differences between the sexes. Children's play activities and play preferences seem to differ at a relatively early age (for a review see Emmott, 1985). Lever (1976), in a study of 10-year-old fifth graders, found that girls' play usually occurred in a dyad or in small, intimate groups, whereas boys' play usually involved games that stressed their participation in socially approved competitive activities. Lever suggested that such play activities may equip girls to be more comfortable in carrying out the emotionally intimate expressive functions required for the traditional roles of wife and mother. The observed results in the present study may reflect these early developed differences in handling emotional material.

Lever (1976) further suggested that her finding that boys were more apt to play in larger groups than girls, who typically played with just one or

two "best friends," also may give girls experience and training in disclosing intimate information and in discussing feelings and emotions. Girls show a steady increase in intimate disclosure in friendships, whereas boys do not demonstrate such an increase in disclosure in same-sex friendships (Buhrmester & Furman, 1987).

The only reaction that boys acknowledged more than did the girls in the present study was the attempt to keep their thoughts off of the murder. Boys may have learned through their play and upbringing to consciously and unconsciously suppress their reactions so much that they become less aware of their emotional reactions.

Studies about the range of caring of the two sexes also might explain these differences. Wetherington, McLeod, and Kessler (1987) have shown that whereas men are distressed by events that happen to their children and spouses, women are distressed also by events that happen to other members of their social network. Women's propensity for caring may predispose them to feel greater stress themselves. As in the current study, Bryant (1985) and Papini, Farmer, Clark, Micka, and Barnett (1990) have found that girls more than boys were likely to engage in intimate talks with peers. Girls also tended to have more such talks with parents and other adults. The adolescent girls' stronger reactions also may reflect the stress of caring for friends in reciprocal relationships.

Being confided in and confiding in others may make one vulnerable to the pain of others: as well, it may cause a person to acknowledge his or her own pain. Adolescent females seek out more sources of social support than do males (Funabiki et al., 1980), and the reciprocal give and take also may lead to more distress. In the long term, this may be important for coping over time.

Possible Consequences of Gender Differences

Pennebaker (1985) and Pennebaker and O'Heeron (1984) have explored the role of inhibiting one's emotions/behavior following traumatic events. Confiding in others leads to less autonomic arousal. Lack of emotional expression (not talking or writing) was linked to increased health problems. Pennebaker (1985) has speculated as to whether such failure to confide might be a critical mediating variable between traumas and long-term health problems. In the present study, the murder did not constitute a traumatic experience for all young people, but almost all reported being very upset. The girls seemed to be the most upset. Gove (1984), in a review of the literature, wrote that whereas women have higher rates of morbidity concerning minor health problems, men are more likely than women to have serious incapacitations

or chronic conditions. Talking about a traumatic event may help a person confront a distressing event and to organize and integrate thoughts and meanings. It also may stimulate emotional abreaction, and secure comfort and support from others. The results from the present study show that boys were less expressive in all respects, and that they did not confide in friends and family to the same extent as did the girls. Boys tended to repress the event and live up to social norms of what is expected boy behavior (i.e., be strong, not cry, behave like a man). Pennebaker (1985) found that adult subjects who had suffered the death of their spouse ruminated less about the death the more they talked about it with friends.

Boys were found to report fewer reactions than girls. The boys may have tried to reduce their distress by suppressing their reactions. By taking control of their own reactions, they may have been able to reverse their feelings of helplessness. Girls, on the other hand, were more likely than boys to seek support from people in their environment. Wertlieb, Weigel, and Feldstein (1987) found that boys reported coping in a relatively more individualistic or self-centered way, whereas girls gave relatively greater emphasis to the environment as a focus of their coping.

The study is based on a rather short questionnaire administered at one point in time. Direct measures of physiological arousal (ambulatory monitoring) as well as face-to-face interviews would have provided more sensitive data on physiological and emotional reactions. The pitfalls of an unidimensional methodological approach are obvious, but ethical, practical (in Norway, students leave for different schools after the ninth grade), and economic reasons made a more thorough follow-up impossible. Although almost all students answered the questionnaire and the quality of the answers were good (few missing data), no interviews or standardized measures were used. Care should be taken therefore in generalizing from the data. The study must be seen as exploratory in an area in which little in the way of systematic research has been done, and the results may help to indicate important avenues of research.

It seems well documented that emotional expressiveness is related to a better working through of traumatic events. Situational factors can facilitate or inhibit emotional expressiveness. The relatively strong gender differences that appeared in this study should be examined further in future studies of children's and adolescents' reactions to emotional trauma. If such differences are present more generally following traumatic situations, one implication might be the need to use differing clinical interventions for males and females.

NOTES

1. The question was: Have you and your friends talked much about what happened? This variable was coded in the following way: 1 = *Yes, almost too much*, 2 = *Yes, sufficiently*, 3 = *No, somewhat too little*, 4 = *No, much too little*. A higher mean thus indicates less talking.

2. The question was: Have you got a friend that you could confide in and that has been of help and support to you? This variable was coded in the following way: 1 = *Yes*, 2 = *No*. A higher mean thus indicates less help and support.

3. Internal relationships between symptoms were tested with the help of reliability analysis (interitem correlations and Cronbach's alpha). Items with acceptable reliability were summed into indexes. Cronbach alpha for the indexes were 0.81 (general anxiety), 0.70 (specific anxiety), intrusive images and thoughts (0.67), depression (0.80), and avoidance-reactions (0.52). Symptoms not grouped under indexes are grouped under other reactions.

4. The differences were (Student's *t* test): general anxiety: $\bar{X} = 2.01$, $SD = 0.67$ for girls, $\bar{X} = 1.34$, $SD = 0.28$ for boys, $t = -5.29$, $p < .001$; intrusive images and thoughts: $\bar{X} = 2.48$, SD 0.62 for girls, $\bar{X} = 1.52$, $SD = 0.44$ for boys, $t = -4.78$, $p < .001$; depression: $\bar{X} = 2.48$, $SD = 0.62$ for girls, $\bar{X} = 1.64$, $SD = 0.25$ for boys, $t = -7.08$, $p < .001$; and summed posttraumatic reactions: $\bar{X} = 2.19$, $SD = 0.45$ for girls, $\bar{X} = 1.64$, $SD = 0.25$ for boys, $t = -6.10$, $p < .001$. $df = 1/61$ for all analyses.

5. In the partial correlations, the variable of how well the student knew the victims (second-order correlations) was controlled. In the multiple regression models, a stepwise procedure was followed (forward inclusion). The inclusion criterion was set at $p < .05$. A series of multiple regression models was conducted for each of the criterion variables. The models listed in Table 2 are the optimal models; that is, most of the variance in the criterion variable is predicted with the use of the least number of predictors. Multiplied by a hundred, this indicates how much variance each R^2 regression model explains.

REFERENCES

Allen, J. G., & Haccoun, D. M. (1976). Sex differences in emotionality: A multidimensional approach. *Human Relations, 29*, 711-722.

Almqvist, F. (1986). Sex differences in adolescent psychopathology. *Acta Psychiatrica Scandinavica, 73*, 295-306.

Aukett, R., Ritchie, J., & Mill, K. (1988). Gender differences in friendship patterns. *Sex Roles, 19*, 57-66.

Ayalon, O. (1982). Children as hostages. *The Practitioner, 226*, 1773-1781.

Ayalon, O., & Soskis, D. (1986). Survivors of terrorist victimization: A follow-up study. In N. A. Milgram (Ed.), *Stress and coping in time of war* (pp. 257-274). New York: Brunner/Mazel.

Bahne Bahnson, C. (1974). Adolescent turmoil: Interactions in the family system. In D. W. Abse, E. M. Nash, & L.M.R. Louden (Eds.), *Marital and sexual counseling in medical practice* (2nd ed.). Hagerstown, MD: Harper & Row.

Baron, P., & Perron, L. M. (1986). Sex differences in the Beck Depression Inventory scores of adolescents. *Journal of Youth and Adolescence, 15*, 165-171.

Bloch, D. A., Silber, E., & Perry, S. E. (1956). Some factors in the emotional reaction of children to disaster. *American Journal of Psychiatry, 113*, 416-422.

Bryant, B. (1985). The neighborhood walk: Sources of support in middle childhood. *Monographs of the Society for Research in Child Development, 50* (3. Serial no. 210)

Buhrmester, D., & Furman, W. (1987). The development of companionship and intimacy. *Child Development, 58,* 1101-1113.

Camarena, P. M., Sarigiani, P. A., & Petersen, A. C. (1990). Gender-specific pathways to intimacy in early adolescence. *Journal of Youth and Adolescence, 19,* 19-32.

Cook, A. S., Fritz, J. J., McCornack, B. L., & Visperas, C. (1985). Early gender differences in the functional usage of language. *Sex Roles, 12,* 909-915.

Dollinger, S. J., O'Donnell, J. P., & Staley, A. A. (1984). Lightning-strike disaster: Effects on children's fears and worries. *Journal of Consulting and Clinical Psychology, 52,* 1028-1038.

Dosser, D. D., Balswick, J. O., & Halverson, C. F. (1983). Situational context of emotional responsiveness. *Journal of Counseling Psychology, 30,* 375-387.

Dyregrov, A. (1988). Responding to traumatic stress situations in Europe. *Bereavement Care, 7,* 6-9.

Emmott, S. (1985). Sex differences in children's play: Implications for cognition. *International Journal of Women's Studies, 8,* 449-456.

Fox, M., Gibbs, M., & Auerbach, D. (1985). Age and gender dimensions of friendship. *Psychology of Women Quarterly, 9,* 489-502.

Franko, D. L., Powers, T. A., Zuroff, D. C., & Moskowitz, D. S. (1985). Children and affect: Strategies for self-regulation and sex differences in sadness. *American Journal of Orthopsychiatry, 55,* 210-219.

Funabiki, D., Bologna, N. C., Pepping, M., & FitzGerald, K. C. (1980). Revisiting sex differences in the expression of depression. *Journal of Abnormal Psychology, 89,* 194-202.

Gourash, N. (1978). Help-seeking: A review of the literature. *American Journal of Community Psychology, 6,* 413-423.

Gove, W. R. (1984). Gender differences in mental and physical illness: The effects of fixed roles and nurturant roles. *Social Science and Medicine, 19,* 77-91.

Horwitz, A. V., & White, H. R. (1987). Gender role orientations and styles of pathology among adolescents. *Journal of Health and Social Behavior, 28,* 158-170.

Kashani, J. H., Carlson, G. A., Beck, N. C., Hoeper, E. W., Corcoran, C. M., McAllister, J. A., Fallahi, C., Rosenberg, T. K., & Reid, J. C. (1987). Depression, depressive symptoms, and depressed mood among a community sample of adolescents. *American Journal of Psychiatry, 144,* 931-934.

Lever, J. (1976). Sex differences in the games children play. *Social Problems, 23,* 478-487.

Notarius, C. I., & Johnson, J. S. (1982). Emotional expression in husbands and wives. *Journal of Marriage & Family, 44,* 483-489.

Papini, D. R., Farmer, F. F., Clark, S. M., Micka, J. C., & Barnett, J. K. (1990). Early adolescent age gender differences in patterns of emotional self-disclosure to parents and friends. *Adolescence, 25,* 959-976.

Pennebaker, J. W. (1985). Traumatic experience and psychosomatic disease: Exploring the roles of behavioral inhibition, obsession, and confiding. *Canadian Psychology, 26,* 82-95.

Pennebaker, J. W. (1990). *Opening up.* New York: William Morrow.

Pennebaker, J. W., & Beall, S. K. (1986). Confronting a traumatic event: Toward an understanding of inhibition and disease. *Journal of Abnormal Psychology, 95,* 274-281.

Pennebaker, J. W., Kiecolt-Glaser, J. K., & Glaser, R. (1988). Disclosure of traumas and immune function: Health implications for psychotherapy. *Journal of Counseling and Clinical Psychology, 56,* 239-245.

Pennebaker, J. W., & O'Heeron, R. C. (1984). Confiding in others and illness rate among spouses of suicide and accidental-death victims. *Journal of Abnormal Psychology, 93,* 473-476.

Pynoos, R. S., & Eth, S. (1984). The child as witness to homicide. *Journal of Social Issues, 40,* 87-108.

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

Rando, T. A. (1979). Parental bereavement and the therapeutic value of the funeral. *Director, 55,* 8-62.

Raphael, B. (1986). *When disaster strikes.* New York: Basic Books.

SPSS Inc. (1983). *SPSS-X. User's guide.* New York: McGraw-Hill.

Terr, L. C. (1979). Children of Chowchilla: A study of psychic terror. *Psychoanalytic Study of the Child, 34,* 547-623.

Terr, L. C. (1983). Chowchilla revisited: The effect of psychic trauma four years after a school-bus kidnapping. *American Journal of Psychiatry, 140,* 1543-1550.

Terr, L. (1988). What happens to early memories of trauma? A study of twenty children under age five at the time of documented traumatic events. *Journal of the American Academy of Child and Adolescent Psychiatry, 27,* 96-104.

Walker, L. S., & Greene, J. W. (1987). Negative life events, psychosocial resources and psychophysiological symptoms in adolescents. *Journal of Clinical Child Psychology, 16,* 29-36.

Wetherington, E., McLeod, J. D., & Kessler, R. C. (1987). The importance of life events for explaining sex differences in psychological distress. In R. C. Barnett, L. Biener, & G. K. Baruch (Eds.), *Gender and stress* (pp. 144-156). New York: Free Press.

Wertlieb, D., Weigel, C., & Feldstein, M. (1987). Measuring children's coping. *American Journal of Orthopsychiatry, 57,* 548-560.

Wilkinson, C. B. (1983). Aftermath of a disaster: The collapse of the Hyatt Regency Hotel skywalks. *American Journal of Psychiatry, 140,* 1134-1139.

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