

# Parental Response and Adolescent Adjustment to the September 11, 2001 Terrorist Attacks

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*This study examined adolescents' adjustment following the attacks of September 11, 2001 (9/11). A Web-based survey was administered 2 weeks and 7 months postattacks to a national sample of adolescents (N = 104). A randomly selected parent also completed a survey at the 7-month assessment. Although exposure to the attacks was indirect, over half the participants felt threatened. Adolescents' posttraumatic stress symptoms were associated with their acute stress symptoms, parental distress, parental coping advice, parental availability to discuss the attacks, and reports that 9/11-related discussions were unhelpful. Adolescents' distress symptoms were associated with a history of mental health problems, acute stress symptoms, and parental unavailability to discuss the attacks.*

Exposure to highly stressful events often elicits anxiety and distress among adolescents (Bolton, O'Ryan, Boyle, & Yule, 2000). Adolescents cope with such events within the context of their families, and in particular, parents provide adolescents with support, information, and coping advice (Prinstein, LaGreca, Vernberg, & Silverman, 1996). However, parents' distress may negatively impact their ability to talk and listen to their children and generate effective advice (Pynoos, Steinberg, & Warth, 1995), and parental

emotional reactions may lead adolescents to avoid seeking their support or talking about the event with them. Few studies have examined the impact of parental behaviors on adolescents' adjustment following traumatic events.

On September 11, 2001 (9/11), the terrorist attacks were viewed throughout the United States via the media. Mass media coverage of such events may expand their impact to youths not directly exposed (Pfefferbaum et al., 2000). National studies found that many adults

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This study was funded by National Science Foundation grants BCS-9910223, BCS-0211039, and BCS-0215937 to Roxane Cohen Silver.

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© 2007 International Society for Traumatic Stress Studies. Published online in Wiley InterScience (www.interscience.wiley.com) DOI: 10.1002/jts.20277

(Silver, Holman, McIntosh, Poulin, & Gil-Rivas, 2002) and adolescents (Ford, Udry, Gleiter, & Chatala, 2003) reported event-related symptoms even 6-months later. We conducted a study of the impact of the attacks on a national sample of adolescents. We focused on the impact of parental symptomatology, parental coping advice, and parent–adolescent discussions on adolescents’ trauma-related and distress symptoms seven months post 9/11. We expected these parental factors to have a greater impact on symptomatology for those adolescents who reported high levels of acute stress symptoms at baseline and those who in general, perceived their parents as less supportive.

## METHOD

### Participants and Procedures

Participants were drawn from a Web-enabled national panel developed by Knowledge Networks, Inc. (KN; Menlo Park, CA). To ensure representation of population segments that would not otherwise have Internet access, KN provides panel households with an Internet connection and Web TV appliance. Panel members participate in brief Internet surveys 3–4 times per month in exchange for free Internet access or other compensation if the household is already Web-enabled (see Silver et al., 2002).

Between September 20, 2001 and October 4, 2001 (Wave 1), KN fielded a Web-based survey to 987 adolescents from randomly selected panel households where parents had provided blanket consent for their participation. Four-hundred five adolescents completed the survey (41%); most (81.3%) did so within 9–14 days after 9/11.

Approximately 7 months after 9/11 (Wave 2), 224 adolescents were available for follow-up. The remainder had withdrawn from the panel ( $n = 23$ ) or were committed to another project ( $n = 158$ ). Parental consent for minors ( $n = 199$ ) was requested; 143 parents granted it (71.9%). Parental consent was not required for respondents over 18 ( $n = 25$ ). The survey was fielded to 168 adolescents and a randomly selected parent from their household; 110 adolescents (65%) and 144 parents (86%) completed it, comprising 104 parent–adolescent dyads.

## Measures

**Wave 1: Adolescents.** The 9/11 acute stress symptoms were assessed with the Stanford Acute Stress Reaction Questionnaire (SASRQ; Cardeña, Koopman, Classen, Waelde, & Spiegel, 2000), modified to a 6.5-grade Kincaid reading level ( $\alpha = .86$ ).

**Wave 2: Adolescents.** We assessed adolescents’ direct, vicarious, and 9/11-related TV exposure (number of hours/day), and perceived 9/11-threat (1 = *not at all* to 5 = *a great deal*). The 22-item Impact of Event Scale-Revised (IES-R; Weiss & Marmar, 1997) assessed 9/11-related symptoms during the prior 7 days (0 = *not at all* to 4 = *extremely*  $\alpha = .95$ ). The Brief Symptom Inventory-18 (BSI-18; Derogatis, 2001) assessed prior week distress (0 = *not at all* to 4 = *extremely*;  $\alpha = .93$ ).

Adolescents reported the frequency of 9/11-related discussions with their parent (1 = *never* to 5 = *all the time*) and completed a 14-item checklist assessing parental unavailability, ability to provide help, and constraints on discussions. Also, adolescents reported global levels of parental support by indicating how frequently their parent had “helped them understand or figure things out” and “had provided them with encouragement” during the previous week (1 = *never* to 5 = *all the time*;  $\alpha = .78$ ) (Abbey, Abramis, & Caplan, 1985).

Parental 9/11 coping advice was assessed with a 24-item measure paralleling in content the Brief COPE Inventory (Carver, 1997) and the emotional expression subscale of the Emotional Approach Coping Scale (Stanton, Kirk, Cameron, & Dannoff-Burg, 2000) that measured 12 dimensions of coping (1 = *My parent has not been doing that at all* to 4 = *My parent has been doing this a lot*) ( $\alpha = .61$  to  $.87$ ).

**Wave 2: Parents.** Parents reported lifetime diagnosis of their child’s learning disability and psychiatric disorders. Parental posttraumatic stress symptoms were assessed with the IES-R ( $\alpha = .94$ ); global distress symptoms were assessed with the BSI-18 ( $\alpha = .90$ ) (Derogatis, 2001).

## Data Analysis

Hierarchical regression analyses were conducted for each outcome. Demographics, mental health history, 9/11 exposure, and acute stress were entered in Step 1. Parents' reports of distress and PTS, and adolescents' reports of parental support, coping advice, and talking at W2 were entered in Step 2. Nonsignificant variables were excluded.

Four interaction terms created from centered variables were tested: adolescents' acute stress at W1 by W2 parental distress, adolescents' PTS at W2 by parental distress, perceived parental support by parental coping advice, and perceived parental support by reasons for not talking about 9/11.

## RESULTS

Analyses were conducted with the W2 parent-adolescent data. Adolescents' mean age was 15.2 years ( $SD = 1.3$ ); 52.9% were male; 75% were White, 6.7% Black, 7.7% Hispanic, 4.8% Asian American, and 5.8% other backgrounds. Most (75%) lived with both biological parents. Pre-9/11, 6.9% of adolescents had been diagnosed with a learning disability, 1.9% with anxiety, and 4.9% with depression.

Mean parental age was 45.0 years ( $SD = 7.9$ ) and 52.9% were male. Most (78.7%) were employed, 72% reported annual household incomes of \$40,000 or greater; 62.9% had at least some college education. Pre-9/11, 10.8% had been diagnosed with anxiety and 6.9% with depression.

The ANOVAs and cross-tabulation analyses were conducted comparing adolescents completing W1 ( $n = 405$ ) with nonparticipants on demographics; no significant differences emerged. Adolescents completing W2 ( $N = 110$ ) did not differ from those who only completed W1 on demographics or acute stress symptoms. Participating parents ( $N = 104$ ) did not differ from nonparticipants ( $n = 40$ ) on demographics.

Participants were not directly exposed to the attacks. Most adolescents (71.6%) watched television coverage during the week following 9/11. Although exposure was in-

direct, 62.5% of adolescents and 61.5% of parents felt threatened.

At W1, adolescents reported 4.42 ( $SD = 4.34$ ) 9/11-related PTS symptoms and 7.7% reported 10 or more. As expected at W2, adolescents reported mild levels of PTS ( $M = 2.51$ ,  $SD = 4.19$ ) and distress ( $M = 0.42$ ,  $SD = 0.49$ ). No significant age and gender differences in acute stress, PTS, and distress emerged. Parents reported mild levels of PTS ( $M = 2.46$ ,  $SD = 0.04$ ) and distress ( $M = 0.37$ ,  $SD = 0.22$ ) at W2.

Adolescents rated their parents as moderately supportive ( $M = 3.26$ ,  $SD = 1.19$ ) and talked with them about the attacks a moderate amount ( $M = 2.46$ ,  $SD = 0.93$ ).

The 9/11-related threat and acute stress were positively associated with adolescents' W2 PTS. Parents' reports of distress and adolescents' reports that (a) parents recommended they seek help and advice from others, (b) discussion with parents was not helpful, and (c) they did not discuss the events with their parents for fear of upsetting them were associated with greater PTS symptomatology (Table 1).

The potential moderating effect of parental distress on the relation between adolescents' W1 acute stress and W2 PTS was examined. For adolescents with high levels of acute stress, higher levels of parental distress were associated with greater symptomatology ( $\Delta R^2_{adj} = .03$ ,  $\beta = .22$ ,  $p < .05$ ). We examined whether parental support moderated the relation between parental behaviors and adolescents' symptoms. Out of four interactions tested, only one was significant ( $\Delta R^2_{adj} = .08$ ,  $\beta = .31$ ,  $p < .001$ ); higher levels of symptoms were reported by adolescents who viewed their parents as very supportive, but did not discuss the attacks for fear of upsetting them.

Adolescents' 9/11-related acute stress was positively associated with their W2 global distress (Table 2). Parental recommendations to seek help from others and to cope by planning were associated with greater distress. In contrast, advice to positively reframe, accept, and express emotions related to the attacks was associated with lower distress. Adolescents who, in general, viewed their parents as supportive, but did not discuss the attacks for fear of upsetting

**Table 1.** Summary of Regression Analysis for Factors Predicting Adolescents' Wave 2 Posttraumatic Stress ( $n = 103$ )

Variable	Model 1			Model 2		
	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	$\beta$
9/11-related exposure						
Perceived 9/11 threat	.11	.05	.19*	.07	.05	.14
Acute stress symptoms	.05	.01	.34***	.02	.01	.16*
Parental distress	—	—	—	.32	.10	.25***
Perceived parental support	—	—	—	-.01	.04	-.01
Parental coping advice						
Seek advice and help from others	—	—	—	.27	.07	.32****
Reasons for not talking about 9/11						
"It does not help when we talk"	—	—	—	.33	.13	.20**
"I did not want to upset my parent"	—	—	—	.62	.20	.25***

Note. Adjusted  $R^2 = .46$ ; Model 1  $R^2 = .17$ ,  $p < .001$ ; Model 2  $\Delta R^2 = .29$ ,  $p < .001$ .

\* $p < .10$ . \*\* $p < .05$ . \*\*\* $p < .01$ . \*\*\*\* $p < .001$ .

them, reported higher levels of distress at W2 ( $\Delta R^2_{adj} = .08$ ,  $\beta = .29$ ,  $p < .001$ ).

## DISCUSSION

Parents played an important role in predicting adolescents' symptoms in response to the 9/11 attacks. Parental

distress was associated with adolescents' PTS symptoms, particularly among those reporting high levels of acute 9/11-related stress. In contrast, parental distress did not moderate the association between adolescents' acute stress symptoms and global distress over time.

Parental recommendations that adolescents seek help and advice from others to cope with the attacks and their

**Table 2.** Summary of Regression Analysis Factors Predicting Adolescents' Wave 2 Distress ( $n = 104$ )

Variable	Model 1			Model 2		
	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	$\beta$
Pre 9/11 mental health (parent report)	.68	.20	.31**	.79	.19	.37****
9/11-related exposure						
Acute stress symptoms (adolescent)	.03	.01	.26***	.03	.01	.26***
Parental distress (self-report)	—	—	—	.07	.10	.06
Perceived parental support	—	—	—	-.02	.04	-.04
Parental coping advice (per adolescent)						
Positive reframing	—	—	—	-.18	.09	-.25*
Emotional expression	—	—	—	-.16	.07	-.25**
Acceptance	—	—	—	-.24	.07	-.37***
Planning	—	—	—	.35	.11	.43***
Seek advice and help from others	—	—	—	.19	.09	.24**
Reasons for not talking about 9/11						
"I did not want to upset my parent"	—	—	—	.41	.19	.18**

Note. Adjusted  $R^2 = .41$ ; Model 1  $R^2 = .16$ ,  $p < .001$ ; Model 2  $\Delta R^2 = .25$ ,  $p < .001$ .

\* $p < .10$ . \*\* $p < .05$ . \*\*\* $p < .01$ . \*\*\*\* $p < .001$ .

aftermath were associated with higher PTS symptoms. Perhaps adolescents interpreted this response as parental unavailability or inability to cope with the events, which may have led to increased symptomatology. In contrast, parental coping advice had both beneficial and detrimental effects on adolescents' reports of distress. Specifically, positive reframing, emotional expression, and acceptance were associated with lower distress levels. These types of advice may have enhanced adolescents' feelings of security and safety. In contrast, adolescents whose parents encouraged planning and recommended their seeking help and advice from others reported more distress. Recommendations involving planning (i.e., "come up with a strategy about what to do" and "think hard about what steps to take") in the context of an unprecedented, uncontrollable, and ongoing stressor, may have been interpreted by adolescents as a sign of greater threat than they originally assessed. In addition, recommendations to seek help and advice from others may have been viewed by adolescents as a sign of parental inability to keep them safe in the future.

Adolescents who did not talk to their parents about the attacks due to concerns about upsetting them also reported higher levels of PTS and distress over time, but this finding was specific to those who reported having highly supportive parents. Adolescents who perceive (and receive) higher levels of parental support in general might have been particularly vulnerable to their perception that they could not count on parental support for this event.

We acknowledge several limitations of this study. The cross-sectional nature of the data assessing parental factors, and reliance on adolescents' self-reports of parental coping advice and 9/11-related discussions, limit our ability to make causal inferences. Also, sample size, sample characteristics, and participation rates limit our ability to generalize results to the adolescent population as a whole. Fortunately, our analyses demonstrated that the sample followed over time was not biased in terms of demographics nor participants' acute response to the attacks. Despite these limitations, this is one of the very few studies to include both parents and adolescents following a highly stressful event. Parents' ability to manage their own dis-

tress and voice their concerns may be key for promoting adolescents' adjustment following major stressors. Understanding parental responses to stress and their influences on their children is critical to understanding adolescent adjustment to these events over time.

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