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# Children's Coping Styles and Report of Depressive Symptoms Following a Natural Disaster

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ABSTRACT. The present study examined the relationship between children's coping styles (Spirito, Stark, & Williams, 1988) and self-reported levels of depressive symptoms (Kovacs, 1983) following a major stressor. 257 third- to fifth-grade children consented to participate in the study, 5 months following a hurricane. The number of coping strategies employed was positively related to depression scores, whereas coping efficacy was negatively related to depression scores. Social withdrawal, self-blaming, and emotional regulation were associated with more severe depressive symptoms. Lower levels of symptomatology were found among children who sought social support and engaged in cognitive restructuring. The overall symptom level in the sample did not exceed that of normative samples. Results are discussed in terms of competing theories of childhood depression.

THE NEGATIVE SEQUELAE of either man-made or natural trauma in children are well documented (Garmezy, 1986; Terr, 1991). For example, Kinzie, Sack, Angell, Manson, and Rath (1986) studied Cambodian children who

relocated to the United States following the traumatization of their homeland in the late 1970s. They found that over half of these children manifested symptoms of depression. Disasters are rarely singular events, but rather, a constellation of stressors. Children living in the path of a hurricane, for instance, are likely to have a damaged school, a disruption of family life, and economic hardship. Such stressors have been related to the development of depressive symptoms in children (Beck & Rosenberg, 1986).

A number of theories address the development of depressive symptoms following trauma. Psychoanalytic theory originally dismissed childhood depression as impossible, because of the immaturity of the pre-adolescent superego (Rie, 1966). Subsequent psychoanalytic models (Mendelson, 1982) typically emphasized the importance of object loss, and the anger and guilt that ensue. Object loss refers to separation or disruption of an attachment bond (Krakowski, 1970). The child feels rage, but then turns this anger inward, becoming significantly self-critical and self-rejecting. In time, the retroflexed anger is converted into depressive affect. It is believed that depressed children assume responsibility for the negative events, regardless of how little control they actually had over the events.

Behavioral theories emphasize a reduced rate of response–contingent reinforcement in the etiology of childhood depression (Petti, 1989). Lewinsohn (1974) proposed that the child's behavior does not produce sufficient positive reinforcement from the environment, thereby resulting in withdrawal and depressive affect. Some evidence suggests that social withdrawal and social-skills deficits are associated with depression in children, because they decrease the child's opportunities for rewarding interactions (Seagull & Weinshank, 1984; Kazdin, Esveldt-Dawson, Sherick, & Colbus, 1985).

The learned-helplessness model demonstrates another aspect of the behavioral theories of depression (Seligman & Peterson, 1986). This model relates depression to the child's perceived inability to escape aversive conditions. The notion of learned helplessness was originally based on animal research demonstrating that animals exposed to inescapable shock eventually cease to attempt escape, even when escape is made possible (Seligman & Maier, 1967). Likewise, when children learn to expect that their efforts will not be effective in avoiding negative experiences, they may become passive and manifest depressive affect.

Leahy (1988) applied Beck's (1976) cognitive model of depression to children, retaining the basic concept that the negative triad is responsible for the depressive affect. Depressed children believe they are failures (negative view of self), that experiences are unrewarding (negative view of the world), and that failure will continue indefinitely (negative view of the future). These

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maladaptive thoughts can become reified into cognitive schemas, through which all experience is interpreted. Leitenberg, Yost, and Carroll-Wilson (1986) found that depressed children have more maladaptive thoughts than nondepressed children, including incorrectly taking personal responsibility for negative events.

Theories of depression provide several testable hypotheses on the relationship between a child's means of coping with disaster and the development of depressive symptoms. Psychoanalytic theory predicts that children who report more anger and self-blame in dealing with disaster-related stress also will experience more depressive symptoms than children who report less anger and self-blame. Lewinsohn's behavioral theory predicts that withdrawal from the potential reinforcement of social interactions relates to higher levels of depressive symptoms. In addition, learned-helplessness theory predicts that more symptomatic children regard their coping strategies as less effective, which leads to greater passivity and the use of fewer coping strategies. Cognitive theory predicts that children who endorse greater self-blame and less positive reframing exhibit more severe symptoms. This investigation sought to examine these hypotheses in a group of children following their experience of a natural disaster.

## Method

### *Subjects*

The potential pool of subjects consisted of all 606 students attending third through fifth grades at three public schools that lay in the path of Hurricane Hugo. The hurricane struck the South Carolina coast on September 21, 1989, carrying winds of 175 miles per hour and a tidal surge of up to 23 feet. In its wake, Hugo left 5.9 billion dollars in property damage, 35 deaths, and nearly 1 million people without electricity. All subjects in the pool experienced significant disruption of their lives. The final sample, composed of 257 students from whom parental permission was obtained, was approximately evenly distributed among third ($n$ = 92), fourth ($n$ = 78), and fifth ($n$ = 87) graders and among boys ($n$ = 125) and girls ($n$ = 132). Consenting subjects did not differ from nonconsenting subjects in terms of grade, $\chi^2(2, N = 606) = 3.47, p < .18$, or gender, $\chi^2(2, N = 606) = .014, p < .93$.

### *Procedure*

Data were obtained approximately 5 months after the hurricane. Subjects were gathered into small groups (1 experimenter for 8 to 10 children) at school and were told that the purpose of the study was to understand children's reactions to the hurricane. Code numbers, rather than names, appeared

on the instruments. Confidentiality was discussed with the subjects, who were encouraged to respond openly to questions. Each item on the questionnaire was read aloud to the children as a group, and individual subjects were helped as needed.

### *Measures*

We used two instruments, which were part of several instruments administered in a large-scale project examining children's adjustment following Hurricane Hugo (Belter, Dunn, Foster, Imm, & Jeney-Gammon, 1990). Severity of depressive symptomatology was assessed by the Children's Depression Inventory (Kovacs, 1983), and the Kidcope (Spirito, Stark, & Williams, 1988) served as a measure of the subjects' coping strategies.

*Children's Depression Inventory.* The Children's Depression Inventory (CDI) is a self-report measure of severity of depressive symptomatology for children ages 7–17 years old. The CDI is not a diagnostic instrument, and no attempt was made to ascertain diagnoses for children in this study. The inventory consists of 27 items, each including 3 statements describing a symptom at three levels of severity (scored 0, 1, or 2; maximum total score = 54). Children are asked to select for each item the statement that best describes their feelings over the past 2 weeks. Higher scores suggest more severe levels of depressive symptomatology.

*Kidcope.* The Kidcope is a 15-item checklist used to assess children's coping styles. The instrument includes 15 items designed to assess 10 coping strategies: distraction, social withdrawal, cognitive restructuring, self blaming, blaming others, problem solving, emotional regulation, wishful thinking, social support, and resignation. With respect to a stressful event—in this case, Hurricane Hugo—the child indicates use of a coping strategy by answering yes or no, and efficacy of a coping strategy by responding not at all, a little, or a lot for each of the 15 items. We assessed 5 of the 10 coping strategies by 2 items each, and the other 5 coping strategies by 1 item each. The five strategies represented by two items were coded positive for use if at least one of the two items were endorsed. Usage (reported as percentage of subjects endorsing strategy) and mean efficacy scores (ranging from 0 to 2, with higher numbers being more effective) for each strategy are shown in Table 1.

## Results

The mean CDI score was 9.29 ($SD$ = 7.7), suggesting that the sample as a whole did not experience severe depressive symptoms beyond those of a normative sample of school children (Finch, Saylor, & Edwards, 1985). No gen-

**TABLE 1**
**Usage and Efficacy of Kidcope Coping Strategies Across All Subjects**

| Strategy | % of subjects using strategy | Efficacy rating | |
|---|---|---|---|
| | | Mean | *SD* |
| Distraction | 88 | 1.29 | .71 |
| Social withdrawal | 74 | .94 | .77 |
| Cognitive restructuring | 89 | 1.43 | .64 |
| Self-blame | 28 | .51 | .70 |
| Blaming others | 19 | .61 | .81 |
| Problem solving | 79 | 1.11 | .68 |
| Emotional regulation | 76 | 1.07 | .64 |
| Wishful thinking | 94 | 1.23 | .81 |
| Social support | 76 | 1.49 | .66 |
| Resignation | 43 | .88 | .83 |

der differences were found, nor was grade in school, which serves as a measure of developmental level, related to CDI score.

Two measures of coping efficacy were calculated. The first measured the mean rating of each child as to how effective the various coping strategies had been (across strategy, within subject means). This score was the self-perceived coping efficacy score. Next, the group mean efficacy rating for each strategy (across subject, within strategy means) was calculated, providing a sample-based estimate of the effectiveness of the various coping strategies (see Table 1). The second measure summed the mean efficacy rating for each strategy employed by the subject to produce a consensual efficacy score. Self-perceived coping efficacy scores did not significantly relate to depressive symptom level. Nevertheless, mean efficacy scores based on consensual ratings of efficacy were negatively related to symptom level, $r(257) = .23$, $p < .001$, indicating that those individuals who employed coping strategies that were viewed by the group as less effective tended to be more symptomatic.

The number of coping strategies employed was positively related to the CDI score, $r(257) = .24$, $p < .001$. Given the significant relationship between the number of strategies employed and the CDI score, the former was partialed out of the latter to obtain a clearer picture of each individual strategy's effect on the severity of depressive symptomatology.

Five coping strategies—distraction, social withdrawal, self-blame, emotional regulation, and wishful thinking—were positively related to the symptom level (raw CDI score). When the overarching effect of number of strategies employed was partialed out of the CDI scores, however, three strategies were positively related and two strategies were negatively related. Social withdrawal, $t(255) = 2.09$, $p < .02$; self-blame, $t(255) = 2.00$, $p < .03$; and

emotional regulation, $t(255) = 1.68$, $p < .05$, were associated with more symptomatology. Meanwhile, cognitive restructuring, $t(255) = 2.44$, $p < .01$, and seeking social support, $t(255) = 1.80$, $p < .05$, were associated with less symptomatology.

## Discussion

Given the magnitude of the disaster, it is encouraging that the overall level of depressive symptoms in the sample did not exceed that of normative samples (Finch et al., 1985). Blom (1986) found significant decreases in postdisaster symptoms over time, suggesting that assessing coping styles 5 months after Hugo struck may have lowered depression scores. Nevertheless, the economic and social impact of the hurricane continued in the community for many months after the event. Only 42% of eligible children obtained parental permission and participated in the study. It is possible that those who participated in the study were somewhat less distressed than those who did not suggesting a possible sampling bias.

Sampling difficulties are not unique to this study. Although some researchers have obtained high levels of participation, many have had difficulty obtaining and maintaining high participation levels in disaster populations. For example, Blom's (1986) sample fell from 54% of the available pool to 33% in the follow-up, while the other half consented only after a financial inducement. Terr's two groups did not differ in number or severity of symptoms.

The results of the present study suggest that children's coping styles following a natural disaster contribute to the level of depressive symptomatology, consistent with the predictions of four major theories of depression. The design of the study does not make it possible to differentially support one etiological model over another. Yet, limited support for each theoretical orientation can be found in these data.

Psychoanalytic theory predicts that children who report anger and self-blame manifest higher levels of depression. Supportive of the psychoanalytic model, subjects endorsing emotional regulation (such as those stating: "I have yelled, screamed, or gotten mad" or "I have tried to calm myself down") and self-blame were more symptomatic than those who did not.

Behavioral theory suggests that social interactions play a key role in the etiology of depression in children. As predicted, those seeking social support related to fewer depressive symptoms and those who socially withdrew related to more depressive symptoms. These results are particularly consistent with Lewinsohn's model (1974) linking depression to fewer opportunities for positive reinforcement.

The learned-helplessness model proposes that depressed children are apt to perceive their coping strategies as less effective. Contrary to prediction,

self-perceived coping efficacy was not significantly related to symptom level. Still, children reporting more severe symptomatology tended to employ coping strategies that, on average, were viewed by the group as less effective. It seems that coping efficacy is related to depression, but the function of self-perception of coping efficacy is unclear.

The learned-helplessness model also predicts more passivity among depressed children, as manifested in the use of fewer coping strategies. The results, however, suggested that more severe symptomatology was associated with the use of more coping strategies. These results are consistent with Bodiford, Eisenstadt, Johnson, and Bradlyn (1988), who likewise found no relationship between depression and helplessness behaviors in school-age children. Similar findings exist with respect to children's ability to generate alternative coping strategies (Doerfler, Mullins, Griffin, Siegel, & Richards, 1984; Mullins, Siegel, & Hodges, 1985).

Cognitive theory predicts that children who actively engage in positive reframing (cognitive restructuring) exhibit less depression, and those who take personal responsibility for the negative outcomes of disasters (self-blame) exhibit more depression. Both predictions are supported, suggesting that children's cognitions following a disaster have a significant impact on the severity of depressive symptoms experienced.

As noted above, the design of this study makes comparisons among etiological models speculative. Each model may address important elements in the development of depression among children. This investigation also is limited in that all data come from one time and one informant (self report).

To more fully explore the mechanisms of postdisaster depressive symptomatology in children, research should seek to assess symptomatology at multiple times using multiple methods. Terr, for example, studied posttraumatic reactions in a sample of children first at 5 months (Terr, 1981) and then again 4 years (Terr, 1983) after a trauma, using both child and parent as informant. The data, however, were based on unstandardized clinical interviews and observations. McFarlane (1987) set an encouraging example, using standardized measures with both teachers and parents of subjects and assessing them at various times. The course and breadth of post-traumatic depression can be examined, and causal links can be tested with a multi-informant multi-time assessment strategy.

Implications of these findings for intervention with children should be cautiously advanced. It potentially may be important to help children realistically assess their role in uncontrollable, negative events, and to help them remain socially connected. Encouraging children to focus on positive thoughts also may prove beneficial. School ultimately may be the best setting to reach children after a disaster and to intervene (Galante & Foa, 1986). Future research may profitably evaluate classroom activities designed to intervene as suggested above.

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