

Children's Coping Assistance: How Parents, Teachers, and Friends Help Children Cope After a Natural Disaster

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Investigated the construct of coping assistance, defined as actions taken by significant others to help children cope with stressful events, in the aftermath of Hurricane Andrew. The Children's Coping Assistance Checklist (CCAC) was developed to assess three types of coping assistance (Emotional Processing, Roles and Routines, and Distraction) from three sources (Parents, Teachers, and Friends). The CCAC and measures of children's social support, coping, and posttraumatic stress disorder (PTSD) symptomatology were administered to 506 third through fifth graders 7 months after Hurricane Andrew. Roles and Routines coping assistance was reported most frequently, followed by Distraction and Emotional Processing. Coping assistance from parents and friends was reported more frequently than from teachers. Third graders reported significantly more Emotional Processing from parents and friends than fourth and fifth graders; no sex effects were found. As expected, children with more severe levels of PTSD symptomatology reported more Emotional Processing and Distraction coping assistance. Findings suggest that coping assistance is an important construct for understanding children's reactions to natural disasters.

Hurricane Andrew disrupted the lives of thousands of children on August 24, 1992. Following such a trauma, children can develop symptoms of posttraumatic stress disorder (PTSD), which may persist long after the disaster (Vogel & Vernberg, 1993). Symptoms of PTSD in children include reexperiencing phenomena (e.g., persistent nightmares and flashbacks), avoidance of trauma-related reminders and psychic numbing (e.g., a loss of interest in pleasurable activities), and hyper-

arousal (e.g., trouble sleeping or concentrating; American Psychiatric Association, 1994). A recent investigation of children's reactions 3 months after Hurricane Andrew revealed that nearly one third of the children reported severe to very severe levels of PTSD symptomatology (Vernberg, La Greca, Silverman, & Prinstein, 1996).

Despite the prevalence of PTSD symptoms in children following trauma, there is little research on the ways that adults and peers assist children in the recovery process (Vernberg & Vogel, 1993; Yule & Williams, 1990). In addition, no previous investigations have studied specific ways of providing support for child disaster victims, even though recent research has suggested that social support is related to less PTSD symptomatology 3 months after Hurricane Andrew (Vernberg et al., 1996) as well as almost 1 year later (La Greca, Silverman, Vernberg, & Prinstein, 1996).

Thus, the primary goal of this study was to investigate the types of coping assistance offered by parents, friends, and teachers to children after a natural disaster. The term *coping assistance* refers to actions taken by significant others that help children cope with stressful events—in this instance, a major natural disaster. Specifically, Thoits (1986) described coping assistance as

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an integration of the coping and social support constructs in which the stress-buffering effects of social support are effective *because* these supportive interactions involve active suggestions and aid for coping.

Coping assistance is similar to the concept of coping in that it represents an active attempt to deal with a major stressor or life event; however, it also differs in that the coping is facilitated or initiated by others, not just by the child. For example, a child might use distraction to cope with a stressor (e.g., "I just watched TV to forget it"). In contrast, with coping assistance, a parent, teacher, or friend might be actively involved in this coping process (e.g., "My friend helped me get my mind off of it"). Examining coping assistance should yield useful information regarding naturally occurring strategies that parents, teachers, or peers use to help children with the process of coping with a disaster and possibly identify strategies that are particularly helpful in facilitating their recovery.

In some ways, coping assistance also appears similar to the construct of social support, in that for both, significant others in the child's life are involved in a helpful or supportive manner. However, coping assistance is focused more directly on social interactions that facilitate or promote a specific coping activity (e.g., "I drew or colored pictures about the hurricane with my parents") rather than on general supportive behaviors (e.g., "My parents listen to me when I have a problem").

In developing a measure of coping assistance for children, we drew on existing literature in the areas of children's coping and children's social support, as well as our clinical experience in dealing with child disaster victims following Hurricane Andrew. Coping assistance was examined for three types of activities that reflect themes commonly reported in the research and clinical literature on interventions with children following disasters (American Red Cross [ARC], 1991; Corder & Haizlip, n.d.; Deaton, 1989; Farberow & Frederick, 1978; Farberow & Gordon, 1981; Federal Emergency Management Agency [FEMA], 1989; National Organization for Victim Assistance [NOVA], 1991; Ponton & Bryant, 1991; Yule & Williams, 1990). The three types of activities were emotional processing, reinstatement of familiar roles and routines, and distraction.

The first type of coping assistance examined in this study was emotional processing. Emotional processing has been described as a diverse set of physical, cognitive, and affective actions that lead to the absorption of emotional disturbances (Lang, 1977; Rachman, 1980) and may thus be conceived of as an emotion-focused coping approach. Without sufficient absorption, a traumatic stressor or life event is believed to interfere with normal functioning either directly, in the form of trauma-related nightmares, obsessions, or phobias, or indirectly, as in an inability to concentrate, excessive restlessness, irritability, and marked distress when reminded of the stressor (Rachman, 1980). Due to the

life-threatening nature of many natural disasters, such as Hurricane Andrew, it may be that strategies that foster the emotional processing of traumatic stimuli would be effective in helping children cope with distress after a natural disaster (Foy, 1992; Joseph, Yule, & Williams, 1995; Vernberg & Vogel, 1993; Yule & Williams, 1990).

Emotional processing of traumatic events involves controlled and repeated exposure to various reminders of these distressing events (Rachman, 1980; Vernberg & Vogel, 1993). Such controlled exposure could take the form of habituation training; calm rehearsals; vivid presentations of stimuli; or, more commonly in an informal setting, relaxation, relevant conversation, or trauma-related play (Rachman, 1980). Indeed, activities such as drawing, coloring, play therapy, in vivo exposure, or imagery have frequently been used to help children cope with disaster-related events (Frederick, 1985). In one of the few studies on the effectiveness of these types of interventions with disaster survivors, Galante and Foa (1986) reported significant symptom reduction in child survivors of an earthquake following an intervention that included trauma-related drawings and a controlled reexperiencing of the disaster. Because actions that promote emotional processing may play an important role in coping with traumatic events, we examined how often significant others engaged in specific actions believed to provide this type of coping assistance following Hurricane Andrew.

The second type of activity suggested by the general coping literature as important for reducing trauma-related symptomatology is the reinstatement of familiar roles and routines (Foy, 1992). The limited research available suggests that the reinstatement of familiar roles and routines helps children's adaptation to several stressful life events, including divorce, major loss, or bereavement (Boyce, 1981; Sandler, Gersten, Reynolds, Kallgren, & Ramirez, in press). Perhaps because it promotes a sense of stability and security (Boyce, 1981), the reinstatement of familiar roles and routines may be especially important after major natural disasters, which can precipitate feelings of insecurity and instability due to their life-threatening and disruptive nature. Reinstating familiar roles and routines may be conceptualized as a problem-focused coping approach in that it represents an effort to gain control over a stressful environment, and this appears to be an important concern after a destructive natural disaster. Indeed, many disaster-related materials stress the importance of resuming familiar routines as soon as possible following a disaster (e.g., ARC, 1992; Foy, 1992; Klingman, 1987). For example, a rapid return to school appeared helpful to children who witnessed a fatal school bus accident (Klingman, 1987). Thus, we examined several ways that people in the children's lives helped them to resume familiar roles and routines following Hurricane Andrew.

The third type of coping assistance examined in this study was distraction. Investigations have found that children are likely to report distraction as an effective emotion-focused coping approach to life stressors (Altshuler & Ruble, 1989; Dise-Lewis, 1987). Distraction is also a useful intervention for children during painful medical procedures or anticipatory medical stress (Bush, Melamed, Sheras, & Greenbaum, 1986; Smith, Ackerson, & Blotcky, 1989). Distraction may assist children coping with aroused emotions or trauma-related distress, such as the reexperiencing of trauma-related reminders. In fact, Yule and Williams (1990) discussed distraction (listening to music at bedtime) as an effective way of reestablishing normal sleep patterns and reducing intrusive thoughts. We examined ways that significant others helped children to use distraction techniques following Hurricane Andrew.

In addition to variation in the types of coping assistance provided to children after a natural disaster, children may receive support or assistance from several different sources. Investigations of children's support networks indicate that parents, teachers, and friends are particularly important sources of emotional support (Cauce, Reid, Landesman, & Gonzales, 1990; Furman & Buhrmester, 1985). Findings indicate that children with strong social support networks are more likely to cope well with life stressors than children without such support (Compas & Epping, 1993; Vernberg et al., 1996). Following a disaster, parents, friends, and teachers may help children process a traumatic event through relevant discussions, reenactment activities (e.g., drawing and role playing), or playing games related to the disaster (Frederick, 1985). Parents, teachers, and friends would be most helpful in engaging children in their normal family, student, or friendship roles. These sources of support may also provide distraction coping assistance by encouraging children to engage in activities that draw attention away from trauma-related worries or concerns.

From the foregoing discussion, it appears worthwhile to investigate coping assistance that parents, teachers, and friends provide to children following a natural disaster, in the form of facilitating emotional processing, reinstating familiar roles and routines, and providing distraction from troubling thoughts and feelings. Such research would begin to identify how adults and peers try to help children cope with disasters, and perhaps it would establish appropriate and effective methods to assist children following disasters. Therefore, a primary goal of this study was to examine the frequency of specific types of coping assistance provided to children by parents, teachers, and friends following Hurricane Andrew. The Children's Coping Assistance Checklist was developed for this purpose; it assesses children's reports of three types of coping assistance (emotional processing, reinstatement of roles and routines, and distraction) provided by three sources

(parents, teacher, and friends). In addition, the associations among the constructs of coping assistance, social support, and children's coping were examined.

A second major goal of this investigation was to examine how the frequency of coping assistance varied as a function of children's sex and grade. Girls have been reported to experience more severe reactions after a trauma than boys (Lonigan, Shannon, Taylor, Finch, & Sallee, 1994) and may, therefore, be in greater need of coping assistance from significant others. Because significant people in children's lives may have beliefs about the age-appropriateness of specific coping approaches, the provision or use of specific types of coping assistance may be affected by children's age or grade.

A final goal was to examine coping assistance in relation to children's symptoms of PTSD, a common reaction of child disaster victims (Lonigan et al., 1994; Vernberg et al., 1996). Because coping assistance has not yet been studied, there is no direct evidence that bears on this question. However, we reasoned that children who experienced more symptoms of PTSD might also report receiving more coping assistance from others because these children may need more assistance coping in the aftermath of a catastrophic disaster. Other researchers have observed an increase in social support following a major natural disaster (e.g., Kaniasty & Norris, 1993). Furthermore, our study of children during the initial phase of recovery after Hurricane Andrew (Vernberg et al., 1996) found that children with higher levels of PTSD symptomatology also reported greater use of coping strategies (of all kinds) than children with less postdisaster distress. Because of the ongoing nature of the life disruption that followed Hurricane Andrew (e.g., relocation, major changes in daily routines, and loss of property and possessions) and the intense, life-threatening nature of the hurricane itself, it is likely that children who were traumatized by this disaster would need considerable help with coping and processing this event. Thus, in this study, we expected that children with more severe trauma-related reactions following Hurricane Andrew would concurrently report being the recipients of greater coping assistance than would children with less severe postdisaster reactions. In this study, children's coping assistance and symptoms of PTSD were examined following the initial, acute phase of disaster recovery, at a time when more persistent symptoms of posttraumatic distress would be observed (e.g., 4 to 7 months postdisaster).

Method

Participants

The participants were 506 children (44% boys and 56% girls) in the third (32%), fourth (31%), and fifth (37%) grades of three elementary schools in southern Dade County, where moderate to severe damage to

housing and other structures occurred during Hurricane Andrew. The ethnic/racial composition of the sample was 47% White, 27% Hispanic, 23% African American, and 3% Asian American.

Procedure

In November 1992, parents of all children in the third to fifth grades of three elementary schools received a letter requesting permission for their child to participate in the study ($n=1086$). Of the 62% ($n = 677$) of parents who returned letters, 87% ($n = 589$) gave consent for their children to participate. Twenty-one (3.5%) of these students were absent during testing and were therefore excluded. This yielded a sample of 568 students who were assessed 3 months posthurricane as part of a related study (Vernberg et al., 1996). By 7 months posthurricane, when data for our study were collected, 22 (3.9%) of these children had moved away, 26 (4.6%) were absent on the days of testing or did not have complete protocols, and 14 (2.5%) declined to participate further, yielding a total of 506 children who completed all measures during this assessment period.

Children were asked to sign an assent form prior to participation. Measures were administered in group format, in two testing sessions. Items were read aloud by a member of the research team while the children marked their responses. Research assistants were present to ensure that the measures were completed correctly, with a ratio of 1 adult for each 10 children. The primary measures used in this study were the Children's Coping Assistance Checklist and the Post-Traumatic Stress Disorder Reaction Index for Children. In addition, measures of children's coping (Kidcope) and social support (Social Support Scale for Children and Adolescents) were included to examine these constructs' relations to coping assistance and the validity of the Children's Coping Assistance Checklist.

Measures

Children's Coping Assistance Checklist (CCAC). This measure was developed to assess how frequently parents, teachers, and friends helped children engage in three different types of coping: emotional processing, reinstatement of familiar roles and routines, and distraction. To develop a potential item pool for the CCAC, 64 intervention strategies were transcribed from a survey of pamphlets and brochures distributed by disaster relief organizations that recommend methods to help children cope with disaster-related distress (ARC, 1991; Corder & Haizlip, n.d.; Deaton, 1989; Farberow & Frederick, 1978; Farberow & Gordon, 1981; FEMA, 1989; NOVA, 1991; Ponton & Bryant, 1991). Because most of these strategies focused on the immediate post-disaster period, and we were interested in children's coping assistance over a more extended time period, 9

additional items were added. These 9 items reflected types of coping that would be more appropriate for a longer recovery period, and we developed them rationally (e.g., "My parents and I did some of the things that we used to do before the hurricane").

The resulting pool of 73 items were edited to eliminate redundancies ($n = 16$) and those that would be difficult for elementary school-age children to report ($n = 27$; e.g., "provide normalizing experiences for the child").¹ The remaining 30 items were reworded in clear, simple language appropriate for children. Eight expert raters (four clinical child psychologists and four advanced psychology graduate students) independently Q-sorted the 30 items for each of the three types of coping assistance, in random order. Definitions of each coping assistance type were provided. Raters placed each item in one of five piles, according to how well the item represented the strategy, thus giving each item eight scores ranging from 1 to 5, for each strategy. A mean score was calculated for each item, for each of the three types. The 3 items with the lowest means (i.e., rated as most representative of the coping strategy across raters) in each type, without loading on another type, were selected for the questionnaire.

Interrater agreement on the Q-sort was assessed by calculating Pearson's product-moment correlations for each possible pair of raters. The mean correlation was used to determine effective reliability using the Spearman-Brown procedure (Rosenthal, 1973). Effective reliability scores were .95 for Emotional Processing, .93 for Distraction, and .82 for Roles and Routines, indicating satisfactory interrater reliability.

Next, the three items for each type of coping assistance were written separately for each of the three potential sources social support—parent, teacher, and friend. This yielded a total of 27 items for the CCAC.² (These items are listed in abbreviated form in Table 1.) For each item, children were asked to rate how often "you have done the following things with people in your life to help you feel better about the hurricane, within the last three months." Responses to each item were rated on a 4-point scale that was anchored as follows: 0 = *not at all*, 1 = *sometimes*, 2 = *a lot*, and 3 = *almost all the time*.

To examine the frequency of the three types of coping assistance, total scores for each of three coping assistance types were calculated by summing the responses for the nine questions that comprised each scale. These scores had a possible range from 0 to 27, with higher scores reflecting a higher frequency of coping assistance. Internal consistencies (Cronbach's alphas) for the three coping assistance types were .74

¹A copy of the original item pool may be obtained from Mitchell Prinstein.

²A copy of the CCAC may be obtained from Mitchell Prinstein.

(Emotional Processing), .78 (Roles and Routines), and .84 (Distraction).

In addition, within each coping assistance type, separate subscale scores were calculated for parents, teachers, and friends (i.e., Emotional Processing from parents, . . . from teachers, . . . from friends) by summing the scores for the relevant items; this allowed us to examine the types of coping assistance provided by the different sources. Thus, nine subscales of coping assistance source (three within each type) were obtained; their scores could range from 0 to 9. Internal consistencies (Cronbach's α s) were as follows: for Emotional Processing— .57 for Parents, .35 for Teachers, and .60 for Friends; for Roles and Routines— .59 for Parents, .46 for Teachers, and .52 for Friends; and for Distraction— .73 for Parents, .69 for Teachers, and .72 for Friends. Thus, among the sources, items reflecting coping assistance from Parents and Friends elicited the highest internal consistencies.

To evaluate the factor structure of the CCAC, confirmatory factor analyses (CFAs) were conducted separately for each of the three sources of coping assistance (Parents, Teachers, and Friends). Using Bentler's (1985) EQS structural equation program, each maximum likelihood CFA was set up to confirm a three-factor model, with items assigned to each factor according to the type of coping assistance it was intended to represent (i.e., Emotional Processing, Roles and Routines, and Distraction). Item loadings and error variances were free to vary, latent factor variances were set to 1.0, and factors were allowed to covary. Generally, each CFA supported a three-factor structure; adequate Bentler-Bonett fit index coefficients were obtained: .92 for Parents, .82 for Teachers, and .86 for Friends, $\chi^2(24, N = 506) = 73.58$, for Parents, 111.73 for Teachers, and 136.78 for Friends (all $ps < .001$). The results for the three-factor solutions were significantly better than those obtained for one-factor solutions, $\Delta\chi^2(3, N = 506) = 193.24$, for Parents, 29.39 for Teachers, 44.31 for Friends (all $ps < .001$). In addition, the single-factor solutions yielded lower fit index coefficients (.71 for Parents, .78 for Teachers, and .81 for Friends). Thus, the CCAC subscale scores were generally supported by the CFAs.³

Post-Traumatic Stress Disorder Reaction Index for Children (PTSD-RI). The 20-item PTSD-RI (Frederick, 1985) is the most widely used instrument for assessing PTSD symptoms in children (McNally,

1991). The self-report format was used, which assessed PTSD symptomatology during the past few weeks. For this sample, a 3-point response scale was used that include the two endpoints and midpoint of the original 5-point scale (i.e., *none of the time*, *some of the time*, and *most of the time*). Scores for these three ratings was maintained at 0, 2, and 4, respectively, to ensure compatibility with the PTSD cutoffs and range of total scores (0–80) established by Frederick, Pynoos, and Nader (1992). Total PTSD-RI scores were obtained by summing the 20 items, with 3 items reverse coded; higher scores reflected greater PTSD symptomatology. Furthermore, based on these scores, children were assigned a clinical rating of PTSD symptom severity (Frederick et al., 1992), as follows: *doubtful* (scores from 0 to 10), *mild* (scores from 11 to 24), *moderate* (scores from 25 to 39), *severe* (scores from 40 to 59) and *very severe* (scores from 60 to 80). In this study, the severe and very severe levels were combined due to the small number of children in the very severe level. Frederick (1985) reported that the correlation between the PTSD-RI and established cases of PTSD was .91.

Kidcope. The Kidcope (Spirito, Stark & Williams, 1988) is a brief coping checklist developed to assess the frequency of use of 10 different types of coping strategies. These 10 types include 5 assessed by two items (Distraction, Social Withdrawal, Problem Solving, Emotional Regulation, and Wishful Thinking) and 5 assessed by a single item (Cognitive Restructuring, Self-Criticism, Blaming Others, Social Support, and Resignation), for a total of 15 items. Initial studies using the Kidcope indicate adequate test-retest reliability and moderate to high correlations with other measures of coping (Spirito et al., 1988). For this questionnaire, a specific stressor is named (in this study, "the worst things that still upset me now because of the hurricane"). Children rated how frequently they used each coping strategy as follows: 0 = *not at all*, 1 = *sometimes*, 2 = *a lot*, 3 = *almost all the time*.

To assess the construct validity of the coping assistance types, three Kidcope subscales were included: Distraction, Resignation, and Positive Coping. Distraction (two items) and Resignation (one item) were scored in a manner consistent with the original subscales (Spirito et al., 1988). The Positive Coping subscale (six items) was derived from the results of factor analyses

³Because the CFA fit indexes fell below .90 for Teacher and Friends, exploratory (i.e., principal components) factor analyses were also conducted for these two sources, to specifically examine how the nine items would load on the Emotional Processing, Roles and Routines, and Distraction factors. For these two analyses, three factors were forced and a varimax rotation was used. Eight of the nine CCAC items loaded on the expected factors, with loadings ranging between .49 and .84 for the analysis of Teacher items and between .68 and .85 for Friends items. One item that

was intended to be a part of the Roles and Routines factor, "helped clean up . . . after the hurricane," loaded on Distraction for Teachers and for Friends. However, when this item was eliminated from the Roles and Routines scale for Teachers and for Friends, the main study results did not change significantly. In fact, the scores children gave to this item for Teachers and for Friends were quite low (see Table 1). Therefore, for conceptual reasons, this item was retained in the Roles and Routines subscale for Teachers and Friends.

of the Kidcope following Hurricane Andrew (Vernberg et al., 1996; internal consistency = .77). Positive Coping included items that reflected Problem Solving, Distraction, Cognitive Restructuring, Social Support, and adaptive Emotional Regulation. We anticipated that the three types of coping assistance (Emotional Processing, Roles and Routines, Distraction) would correlate with adaptive coping strategies (i.e., Positive Coping) but not with maladaptive, unrelated strategies (i.e., Resignation). We also expected Distraction on the Kidcope to be more strongly related to Distraction coping assistance than to the other types of coping assistance.

To examine the construct validity of the CCAC's coping assistance sources, two additional Kidcope subscales were calculated: Social Withdrawal and People-Oriented. The Social Withdrawal subscale (two items) was scored in a manner consistent with that of Spirito et al. (1988). Two other Kidcope items were combined to form a People-Oriented subscale (e.g., "I try to feel better by spending time with others like family, grownups, or friends"; "I try to fix the bad things by doing something or talking to someone"); internal consistency was .57 in this sample for these two latter items. We expected the frequency of coping assistance children reported on the CCAC to be more strongly related to People-Oriented coping, than to Social Withdrawal.

Social Support Scale for Children and Adolescents (SSSCA). The SSSCA (Harter, 1985, 1989) assesses children's perceptions of social support from parents, classmates, teachers, and close friends. This 24-item measure has six questions for each of the four sources of support. Each question is scored on a 4-point scale, with higher scores reflecting greater perceived support. A mean score is calculated for each of the four sources. Harter (1985, 1989) provided extensive data to support the reliability and validity of this instrument for children. Internal consistency ranges from .72 to .83 for the SSSCA subscales in several samples of children and adolescents. Several additional studies support the validity of the SSSCA (e.g., Dubow & Ullman, 1989; East, Hess, & Lerner, 1987). To examine the construct validity of the CCAC's coping assistance sources, three subscales of the SSSCA were used here: Parent, Teacher, and Close Friend. We expected that coping assistance from each source (Parents, Teachers, Close Friends) would be related to social support received from the same source.

Results

Children's Coping Assistance

The first goal of this study was to examine the specific types of coping assistance that parents, teach-

ers, and friends provided to children following Hurricane Andrew. In doing so, we evaluated the internal reliability and construct validity of the CCAC. In the following sections, the results are presented on the frequency of the different types of coping assistance, the relations among different types coping assistance, and the relation between coping assistance and children's coping and social support.

Differences in types and sources of coping assistance. In terms of the types of coping assistance children reported, Roles and Routines was the highest ($M = 11.05$, $SD = 5.8$), followed by Distraction ($M = 5.68$, $SD = 5.3$), and Emotional Processing ($M = 2.16$, $SD = 3.0$). Paired t tests were conducted to investigate differences in these three types of coping assistance. Children reported receiving more Roles and Routines coping assistance than Distraction, $t(505) = 20.51$, $p < .001$ or Emotional Processing, $t(505) = -33.28$, $p < .001$. In addition, children reported more Distraction coping assistance than Emotional Processing coping assistance, $t(505) = -17.38$, $p < .001$.

Following these significant effects for coping assistance types, additional analyses were conducted to examine differences between the sources of coping assistance within each type using paired t tests. For these analyses, a Bonferroni correction (corrected $\alpha = .005$, which equals .05/9 comparisons) was used to control for the possibility of Type I error. (See Table 1 for the means.)

The results yielded an identical pattern for Roles and Routines and Distraction coping assistance. Specifically, for Roles and Routines, children reported receiving more from Parents than from Friends, $t(505) = 10.46$, $p < .001$, or Teachers, $t(505) = 24.54$, $p < .001$. In addition, children reported receiving more Roles and Routines coping assistance from Friends than from Teachers, $t(505) = -16.05$, $p < .001$. Also, children reported more Distraction coping assistance from Parents than from Friends, $t(505) = 7.35$, $p < .001$, or Teachers, $t(505) = 18.09$, $p < .001$, and more Distraction coping assistance from Friends than from Teachers, $t(505) = -11.07$, $p < .001$. In contrast, however, children reported receiving more Emotional Processing from Friends than from Teachers, $t(505) = -3.96$, $p < .001$, or Parents, $t(505) = -5.44$, $p < .001$.

Relations among types and sources of coping assistance. Relationships among the three types of coping assistance were calculated using Pearson correlations. Children who reported more Emotional Processing were also likely to report more Distraction ($r = .51$, $p < .001$). In addition, children who reported more Distraction also reported more Roles and Routines ($r = .44$, $p < .001$). Emotional Processing and Roles and

Routines coping assistance, however, appeared to be relatively more independent ($r = .19, p < .001$).

In addition, correlations were computed to examine the relationship of the three sources of coping assistance within each type. In general, for all three types of coping assistance, the various sources of coping assistance were moderately and significantly interrelated (median $r = .52$, all $ps < .0001$). For instance, children who reported more Distraction coping assistance from their Parents also reported more Distraction coping assistance from their Teachers ($r = .55$) and Friends ($r = .60$).

Relationship of coping assistance to social support and children's coping. To examine the construct validity of the CCAC types and sources, correlations were computed to compare children's coping assistance with their reported use of coping strategies and perceived social support. As expected, the three types of coping assistance on the CCAC were significantly correlated with Kidcope measures of adaptive coping (i.e., Positive Coping) but not maladaptive coping (e.g., Resignation; see Table 2). Also as expected, Distraction on the Kidcope was more strongly related to Distraction coping assistance than to

Table 1. Summary of Means and Standard Deviations for Coping Assistance Items

Item	Parents		Teacher		Friend	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Emotional Processing						
I played a game with ____ . . . pretended we were in the hurricane again.	.11	.43	.06	.33	.35	.73
I drew or colored pictures about the hurricane with ____.	.28	.66	.51	.74	.32	.71
I played with toys that make me think of the hurricane with my ____.	.20	.56	.08	.38	.25	.62
Total Emotional Processing	.58	1.23 _a	.65	1.02 _a	.92	1.54 _b
Roles and Routines						
I did things with ____ like we used to do . . .	1.53	1.08	.92	1.12	1.67	1.16
I helped ____ clean-up or fix stuff . . .	1.81	1.05	.44	.81	.76	.90
I did things with ____ just as if the hurricane never happened.	1.51	1.12	1.02	1.14	1.40	1.16
Total Roles and Routines	4.84	2.42 _a	2.37	2.15 _b	3.83	2.33 _c
Distraction						
. . . ____ helped me get my mind off of it.	1.00	1.07	.41	.74	.60	.89
When I started to feel bad . . . , I did something fun with ____.	.87	.96	.27	.60	.81	.99
I talked with ____ . . . to help me forget . . . the hurricane.	.80	.98	.35	.69	.57	.87
Total Distraction	2.67	2.43 _a	1.03	1.59 _b	1.98	2.20 _c

Note: Items were rated on a 4-point scale, which was anchored as follows: 0 = not at all, 1 = sometimes, 2 = a lot, and 3 = almost all the time. Row means with different subscripts differ significantly ($p < .001$).

Table 2. Correlations Between CCAC Subscales of Coping Assistance Types and Sources and Related Measures

	CCAC Types		
	Emotional Processing	Roles and Routines	Distraction
Kidcope			
Positive Coping	.31**	.22**	.52**
Resignation	.09	-.03	.09
Distraction	.18**	.05	.35**
	CCAC Sources		
	Parents	Friend	Teacher
Kidcope			
People-Oriented	.51**	.39**	.24**
Social Withdrawal	.08	.13**	.00
Social Support Scale (SSSCA)			
Parent	.12*	.00	.03
Friend	.13*	.15**	.12
Teacher	.08	.02	.17**

Note: $n = 506$.

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

Emotional Processing (Fisher's $Z = 2.90, p < .01$) or to Roles and Routines (Fisher's $Z = 5.23, p < .01$).

To examine the construct validity of the CCAC sources, it was expected that the three sources of coping assistance would be significantly correlated with Kidcope measures of People-Oriented coping, but not with the use of Social Withdrawal as a coping strategy. Prior to examining these relations, the three subscales assessing each coping assistance source (e.g., Emotional Processing-Parent, Roles and Routines-Parent, and Distraction-Parent) were summed to provide an overall index of coping assistance from each source (Parents, Teachers, and Friends). These combined scores were then correlated with the Kidcope subscales. As can be seen in Table 2, children who reported using People-Oriented coping strategies more frequently also reported higher frequencies of coping assistance from all three sources. In contrast, children's reports of using Social Withdrawal coping strategies were unrelated to reports of coping assistance from parents and teachers. Although coping assistance from friends was related to Social Withdrawal coping strategies ($r = .13$), this relation was significantly weaker than its relation with People-Oriented strategies on the Kidcope ($r = .39$, Fisher's $Z = 4.44, p < .001$).

In addition, to examine the construct validity of the CCAC sources, we expected that CCAC scales of coping assistance source would be related to the corresponding source of social support on the SSSCA. As shown in Table 2, this was generally true. For the Friend and Teacher subscales of the CCAC, correlations with the appropriate SSSCA subscales were the only ones reaching statistically significant levels, providing some support for the construct validity of these sources as providers of both coping assistance and social support. The Parent subscale of the CCAC was significantly correlated with both the Parent and Friend subscales on the SSSCA.

Grade and Sex Differences in Coping Assistance

A second major goal of this study was to examine differences in coping assistance as a function of grade and sex. A two-way (Grade \times Sex) multivariate analysis of variance (MANOVA) was conducted using the three types of coping assistance as a set of dependent variables, followed by univariate analyses for each of the three types. In the presence of a univariate effect, additional follow-up analyses were conducted to investigate grade and sex differences in coping assistance from each source (within the coping assistance type). To reduce the probability of Type I error, a Bonferroni correction (corrected $\alpha = .003$, which equals $.05/18$ comparisons) was used for these follow-up analyses.

The MANOVA revealed a main effect for Grade, Wilks's $F(6, 994) = 6.59, p < .001$. Univariate analyses indicated that this grade effect was significant only for Emotional Processing, $F(2, 499) = 13.96, p < .0001$. Post-hoc analyses revealed that third graders ($M = 3.2, SD = 3.7$) reported significantly more Emotional Processing coping assistance than fourth or fifth graders ($M = 2.0, SD = 2.7; M = 1.4, SD = 2.2$, respectively; Tukey's HSD = 3.34, $df = 503, p < .05$).

Follow-up analyses of coping assistance sources within type revealed a significant effect for Emotional Processing from Parents, $F(2, 503) = 11.48, p < .0001$, and from Friends, $F(2, 503) = 10.96, p < .0001$. Again, third graders reported more Emotional Processing coping assistance from Parents and Friends than fourth or fifth graders (Tukey's HSD = 3.34, $df = 503, p < .05$); no grade differences were observed for Emotional Processing from Teachers.⁴

Relation Between Coping Assistance and PTSD Symptoms

The final goal of this study was to examine the relation between children's reports of coping assistance and their level of PTSD symptomatology, with the expectation that children reporting more severe levels of PTSD symptoms would also report receiving more coping assistance. Note that, in general, children reported moderate levels of PTSD symptomatology ($M = 24.3, SD = 16.1$). More specifically, 7 months after Hurricane Andrew, 18% ($n = 91$) reported severe to very severe levels of PTSD symptoms, 23% ($n = 116$) reported moderate symptoms, 34% ($n = 170$) reported mild symptoms, and 24% ($n = 121$) reported no/doubtful symptoms.

⁴Although ethnicity was not a focus of this study, ethnic differences in the types of coping assistance were examined in a preliminary way. Some children were not included in these analyses either because they did not belong to one of three major ethnic groups represented in the sample (i.e., White, African American, and Hispanic) or ethnicity data was unavailable, resulting in a somewhat smaller sample for these analyses ($n = 462$). To examine ethnic differences in the frequency of coping assistance, a MANOVA was conducted with the three types of coping assistance as a set of dependent variables. A significant effect for ethnicity was revealed, Wilks's $F(6, 914) = 8.08, p < .001$. Univariate analyses indicated that this ethnicity effect was significant for Roles and Routines, $F(2, 459) = 7.78, p < .001$, and Distraction, $F(2, 459) = 5.02, p < .01$. Post-hoc analyses revealed that, for Roles and Routines, White children ($M = 12.0, SD = 5.9$) reported more of this type of coping assistance than African American ($M = 10.3, SD = 5.3$) and Hispanic children ($M = 9.8, SD = 5.4$; Tukey's HSD = 3.34, $df = 462, p < .05$). For Distraction, African American children ($M = 6.8, SD = 5.1$) reported significantly more of this type of coping assistance than White ($M = 5.0, SD = 5.2$) children (Tukey's HSD = 3.34, $df = 462, p < .05$), but not significantly more than Hispanic children ($M = 5.9, SD = 5.2$).

The relation between types of coping assistance and PTSD symptoms was assessed using a one-way MANOVA, with the PTSD symptom severity levels (doubtful to very severe) as the group variable and the three types of coping assistance as the set of dependent variables. The MANOVA revealed a significant effect for group, Wilks's $F(9, 1,197.6) = 18.84, p < .001$. Univariate tests revealed significant group differences for all three types of coping assistance: Emotional Processing, $F(3, 494) = 17.42, p < .001$; Roles and Routines, $F(3, 494) = 5.57, p < .001$; and Distraction, $F(3, 494) = 25.58, p < .001$. (See Table 3.) Post-hoc analyses, based on Tukey's HSD (all $ps < .05$), indicated a greater frequency of Emotional Processing coping assistance for students with moderate to very severe levels of PTSD symptoms as compared to children with doubtful or mild symptoms. Similarly, higher levels of Distraction coping assistance were reported by students with moderate to very severe levels of PTSD symptoms, as compared to those with doubtful or mild symptoms. In contrast, children with doubtful PTSD symptom levels reported more Roles and Routines coping assistance than children at the mild and severe/very severe levels of PTSD symptoms. (See Table 3.)

Because significant effects were obtained for all three types of coping assistance, additional analyses were conducted to examine differences among the PTSD symptom levels for the three sources of coping assistance (within each type). One-way analyses of variance (ANOVAs) were conducted, and a Bonferroni correction (corrected $\alpha = .005$ which equals $.05/9$ comparisons) was used to reduce the possibility of Type I error.

For Emotional Processing, significant group effects were obtained for coping assistance from Parents, $F(3, 494) = 12.78, p < .0001$, and Friends, $F(3, 494) = 16.17, p < .0001$. (See Table 3.) Specifically, children with moderate to very severe levels of PTSD symptoms reported more Emotional Processing from Parents and Friends, as compared to children with doubtful or mild symptoms. Emotional Processing from Teachers did not vary as a function of children's PTSD severity level.

For Distraction, all three sources of coping assistance varied as a function of children's PTSD levels: for Parents, $F(3, 494) = 20.85, p < .0001$; for Friends, $F(3, 494) = 19.54, p < .0001$; and for Teachers, $F(3, 494) = 10.90, p < .0001$. As shown in Table 3, children with moderate to very severe levels of PTSD symptoms reported more Distraction from all sources than children with low levels of symptoms.

Finally, for Roles and Routines, only coping assistance from Teachers was significant, $F(3, 494) = 7.14, p < .0001$. Children with a doubtful level of PTSD symptoms reported more Roles and Routines coping assistance from Teachers than children in any other group.

Discussion

Although it is widely recognized that children are vulnerable to traumatic reactions after a major stressor, such as a natural disaster, little information is available on ways to help children cope with their reactions. This investigation is the first to provide systematic information on the frequency of three types of coping assistance

Table 3. Coping Assistance as a Function of PTSD Symptom Levels: Means and Standard Deviations

Types of Coping Assistance	PTSD Symptom Level							
	Doubtful ^a		Mild ^b		Moderate ^c		Severe/Very Severe ^d	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Emotional Processing (Total)	1.04	1.8 _a	1.66	2.6 _a	2.91	3.5 _b	3.51	3.6 _b
Parents	.23	.8 _a	.38	1.0 _a	.82	1.4 _b	1.11	1.6 _b
Teachers	.48	.8	.57	.9	.78	1.2	.84	1.1
Friends	.33	.8 _a	.71	1.3 _a	1.30	1.7 _b	1.56	2.0 _b
Roles and Routines (Total)	12.71	6.5 _a	10.08	5.76 _b	11.02	5.2 _{ab}	10.30	5.3 _b
Parents	5.41	2.5	4.47	2.4	4.81	2.4	4.67	2.4
Teachers	3.09	2.4 _a	1.96	2.1 _b	2.33	2.0 _b	2.19	1.8 _b
Friends	4.21	2.4	3.65	2.3	3.88	2.2	3.44	2.4
Distraction (Total)	2.66	4.1 _a	5.35	5.0 _b	7.53	5.1 _c	7.54	5.3 _c
Parents	1.39	1.9 _a	2.54	2.4 _b	3.38	2.4 _c	3.54	2.4 _c
Teachers	.41	1.2 _a	.96	1.5 _b	1.47	1.8 _c	1.34	1.8 _{bc}
Friends	.86	1.6 _a	1.85	2.1 _b	2.67	2.0 _c	2.66	2.5 _c

Note: Row means with different subscripts are significantly different, Tukey's HSD = 3.65, $df = 493, p < .05$.

^a $n = 121$. ^b $n = 170$. ^c $n = 116$. ^d $n = 91$.

offered to children by parents, teachers, and friends several months after Hurricane Andrew.

Hurricane Andrew had a tremendous impact on children's everyday lives (Vernberg et al., 1996). The findings indicate that children most frequently reported receiving coping assistance in the form of reinstating familiar roles and routines. Perhaps, because children's parents, teachers, and friends were also affected by this widespread disaster, the desire to have things return to normal (i.e., using Roles and Routines coping assistance) was common. Indeed, almost 60% of the children reported extensive damage to their homes (Vernberg et al., 1996). In this context, it would seem appropriate to try to reinstitute normal roles and routines to the extent possible, to "normalize" children's everyday lives.

In contrast, children reported relatively little emotional processing coping assistance in the form of playing disaster-related games, drawing pictures about the storm, or using toys to reenact aspects of the hurricane. This is somewhat surprising because these types of activities are frequently recommended in disaster-relief materials (FEMA, 1989; Frederick, 1985; NOVA, 1991; Yule & Williams, 1990). Emotional processing involves a controlled reexperiencing of emotion-provoking aspects of a traumatic event (Rachman, 1980). It is possible that the relatively low frequency of emotional processing reported in this study indicates that the important people in children's lives hesitated to provide such assistance, perhaps in an effort to avoid arousing disturbing emotions. This idea is consistent with the relatively higher levels of distraction coping assistance that parents, friends, and teachers provided. Adults, in particular, may feel the need to shield a child from emotionally provoking stimuli after a disaster (Gillis, 1993). It is also possible that emotional processing was more common immediately following the disaster, but it was used less frequently 4 to 7 months later—the time frame in which coping assistance was assessed in this study. Despite the generally low levels of emotional processing, however, note that most children did report some emotional processing coping assistance, and it is plausible that even the relatively infrequent provision of this type of coping assistance may still be useful for helping children after a disaster. Future research may benefit from investigating subtler forms of emotional processing, such as discussions and stories about disaster-related experiences, sharing emotions and reactions related to these experiences, and talking about stressors that persist after the disaster has passed.

A second important finding from this investigation was that parents, friends, and teachers differed in the frequency of coping assistance they provided. In general, children reported receiving the most coping assistance from their parents, mainly in the form of distraction and reinstating normal roles and routines; however, children's friends were reported to be the

most salient providers of emotional processing coping assistance. These findings are consistent with developmental research that points to children's parents and friends as primary sources of social support (Cauce et al., 1990) and to parents as models for adaptive coping behavior after disasters (Compas & Epping, 1993; Vernberg & Vogel, 1993). Our findings extend this line of research by indicating that parents and friends are also the primary providers of coping assistance. Although teachers were reported to provide relatively lower levels of coping assistance, their potential influence on children's recovery after disasters should not be discounted. For example, teachers were reported to encourage hurricane-related drawings, a form of emotional processing coping assistance, more often than parents or friends (see Table 1). The varied types of coping assistance provided by parents, friends, and teachers is consistent with the formulation of social provisions (Furman & Robbins, 1985; Weiss, 1974), whereby some members of children's social networks are better suited than others to fulfill certain types of social needs.

Another major goal of this investigation was to examine differences in the frequency of coping assistance as a function of grade and sex. The findings revealed no sex and little age variation in coping assistance within the middle elementary school years. The only grade effect was that emotional processing coping assistance was more frequent for third graders than for older children. This may reflect a belief by parents and friends that this type of coping assistance is more appropriate for younger children. Clinical writings suggest that metaphoric or symbolic representations of traumatic events (e.g., drawings) are more appropriately employed as techniques for assisting younger rather than older children (Gillis, 1993); perhaps grade differences in the frequency of emotional processing coping assistance reflects this belief. Alternatively, this result may reflect the content of the CCAC's Emotional Processing subscale, which contained items that could be more developmentally appropriate for younger children (e.g., drawings), rather than more verbal forms of emotional processing suitable for older children (e.g., storytelling). Within the middle elementary school years, it is not clear whether children within different grades and sexes have different coping assistance needs. Future research may serve to investigate the varying efficacy of different types of coping assistance from different sources based on children's sex and developmental level.

A third goal in this investigation was to provide preliminary evidence for a relation between children's coping assistance and PTSD symptomatology after a severe natural disaster. As expected, children who reported more severe levels of PTSD symptomatology and who were arguably in greater need of coping assistance also reported more frequent emotional processing

and distraction coping assistance, especially from parents and friends. These results are consonant with the frequently reported finding of increased levels of social support in response to severe stress (Kaniasty & Norris, 1993). Over time, however, one might anticipate that increased coping assistance would lead to a reduction in PTSD symptoms. Because coping assistance and PTSD symptoms were assessed concurrently, the direction of this relation cannot be confirmed at this time. Future research may benefit from investigating the prospective role of coping assistance in the reduction of PTSD.

In contrast to the findings for emotional processing and distraction, more severe levels of PTSD symptomatology were associated with less frequent Roles and Routines coping assistance, although most of this effect was due to teachers. Parents and friends were reported to help children reinstitute normal roles and routines at comparable levels, regardless of the children's PTSD symptoms. Perhaps children reporting more PTSD symptoms responded to questions such as, "I did things with my teacher like we used to do before the hurricane," at a lower frequency because their school life was disrupted to a greater extent than those with fewer PTSD symptoms. Indeed, one of the schools was in such a devastated area of Dade County that, at least for part of the school year, the children had to share classrooms and textbooks with students from another school, which had been completely destroyed. For some children, it may have been extremely difficult to return to their normal roles and routines at school. Further research of a prospective nature will be necessary to more clearly understand the relation between PTSD symptomatology and the effectiveness of roles and routines coping assistance for aiding children's postdisaster recovery.

Although our primary interest in this investigation was to understand the role of coping assistance following a major natural disaster, we also obtained preliminary support for the validity and reliability of the CCAC. The factor structure of the CCAC was generally supported by confirmatory factor analyses, and the reliability and internal consistency of the three primary CCAC subscales were satisfactory. In addition, preliminary information on the validity of the CCAC subscales was promising. For all CCAC subscales, statistically significant correlations were obtained with other measures assessing similar constructs. Equally important, the CCAC subscales seldom correlated with conceptually unrelated measures. These results provide initial support for the concurrent validity of the CCAC.

Although the findings indicate that distinctions between the constructs of coping assistance, coping, and social support are appropriate, coping assistance did appear to be more closely associated with coping than with social support. This raises an interesting conceptual issue regarding the distinctiveness of the coping assistance and social support constructs. Various social

support functions have been identified (e.g., tangible, companionship, and emotional; Cauce et al., 1990), yet the measure used to assess social support in this study primarily reflects emotional support. It is possible that coping assistance is more similar to tangible or enacted social support; like enacted support, coping assistance involves the social provisions of others. It is also possible that the various types of coping assistance captured by the CCAC collectively reflect a variety of support functions, not just emotional support. These notions might explain why the correlations between coping assistance and social support were significant but low. Additional research is necessary to further explore in detail the linkages between the constructs of social support and coping assistance.

Based on the results of this study, several avenues for future research are suggested. First, it would be useful to investigate parents', teachers', and friends' reports of the coping assistance they provide to child disaster survivors as a complement to children's reports. In this study, all the data were collected via self-report. Although children are the most reliable informants of persistent levels of distress (Green, 1991) and perceived coping assistance, future research may incorporate the reports of significant others, to provide additional information and to further confirm the validity of the CCAC.

Second, additional investigation of children's coping assistance following other types of disasters would be desirable. Although this study was the first to examine children's coping assistance after a natural disaster (i.e., hurricane), it would be useful to determine whether the same types of coping assistance are offered to children after other kinds of natural disasters (e.g., earthquakes, floods, and fires) or manmade disasters (e.g., bombings and sniper attacks).

A third avenue for future inquiry is the frequency and utility of various types of coping assistance at different points in the recovery process. Because the construct of coping assistance has not been investigated previously in children, it is difficult to determine exactly how coping assistance varies over time. In this investigation, we examined the types of coping assistance provided to children after the initial, acute recovery period (i.e., 4 to 7 months postdisaster) when more persistent levels of PTSD symptoms would be observed. However, at this point in the recovery process, the frequency of coping assistance was reported to be quite low. It is possible that in the months immediately following a disaster, the frequency of coping assistance would be much greater. It may also be the case that some *types* of coping assistance (e.g., emotional processing) would be more frequently provided early on in the recovery process, but others (e.g., reinstatement of normal roles and routines) might predominate at later time points. In the future, efforts to study children's coping assistance as a function of the stage of the recovery

period would be important and desirable. It may also be worthwhile to investigate children's own ratings of the helpfulness of coping assistance strategies at various points throughout the recovery process.

A final consideration for future studies is the content of the CCAC. Although the factor structure of the CCAC was supported by CFAs, exploratory analyses revealed that one Roles and Routines item, "helped clean up ... after the hurricane," did not load on the Roles and Routines factor for Teachers or for Friends. Conceptually, it is understandable that children might engage in clean up activities less often with their friends and teachers than with their parents, as cleaning up after the hurricane may not be a part of the role of the student or friend. Because children's roles may vary in different contexts, it might be useful in the future to revise the content of the Roles and Routines subscale, to include additional items that specifically tap the role of the student and friend.

In conclusion, this initial investigation of coping assistance after a natural disaster suggests that this construct, although related to children's social support and coping, is an important area of study in its own right. Further investigation of coping assistance may yield information that has important implications for postdisaster intervention materials distributed by disaster agencies, for clinicians who treat children following a traumatic event, and for individuals interested in helping children after a major stressful life event, such as a natural disaster.

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