

Thirty-four percent of the sample met criteria for CG. Although violent deaths did not pose a heightened CG risk, gender and kinship to the deceased did significantly increase the likelihood of meeting criteria for CG.

While conditions in Karachi, Pakistan have improved in recent years, rampant and sporadic violence has left behind, and continues to leave behind, many bereft survivors. In the mid-1990s, ethnic and political aggression had escalated, with lootings, car fires, and random killings becoming a part of daily life (Masood, 1998). Fifty people murdered in a week was not uncommon (Bakhtiar, 1998). The chaos was so extreme that U.S. State Department officials had dubbed Karachi the “terrorist capital of the world” (Marquand, 1996). Given the amount of bloodshed and life lost, we hypothesized that bereavement-related psychic distress would be a common problem among Karachi psychiatric clinic patients. On the basis of this assumption, a study of bereaved Karachi psychiatric clinic patients was believed to provide an opportunity to explore grief reactions in a non-Western culture. In addition, the high rates of violence would allow for grief reactions to be compared between bereaved survivors of violent and non-violent deaths.

More specifically, we hypothesized that psychological symptoms of trauma and grief—symptoms that define a syndrome we call complicated grief (CG)—would characterize much of the mental distress experienced by Karachi psychiatric clinic patients. CG constitutes a syndrome comprised of symptoms of separation distress (e.g., yearning, searching, loneliness) and traumatic distress (e.g., numbness, disbelief, anger, mistrust, insecurity; Prigerson et al., 1997; Prigerson, Bridge et al., 1999; Prigerson & Jacobs, 2001a, 2001b; Prigerson, Shear et al., 1999). Symptoms of CG have proven distinctive (i.e., to have relatively low rates of diagnostic concordance, risk factors, clinical course, treatment response, and outcomes) from symptoms of bereavement-related depression and anxiety, including PTSD (Prigerson et al., 1996, 1997; Prigerson, Bridge et al., 1999; Prigerson, Shear et al., 1999; Silverman et al., 2000; Silverman, Johnson, & Prigerson, 2001). In U.S. samples, CG symptoms have predicted enduring dysfunction (e.g., suicidality, cardiac events) over and above the effects of depressive and anxiety-related symptomatology, and prior morbidity (Prigerson et al., 1997; Prigerson, Bridge et al., 1999; Prigerson, Shear et al., 1999; Silverman et al., 2000). Taken together, these results indicate a need for clinicians to attend to

symptoms of CG (Prigerson, Shear et al., 1999; Prigerson et al., 2001). A study of the frequency with which Karachi psychiatric patients meet criteria for CG and the identification of CG risk factors would not only permit cross-cultural comparisons, but would also assist in the detection of those most vulnerable to this disabling form of mental distress.

The present study sought to determine the prevalence with which our proposed consensus criteria for CG (Prigerson, Shear et al., 1999) would be met among recently bereaved Karachi psychiatric clinic patients. The extent to which mode of death, age, gender, time from loss, and relationship to the deceased influence the likelihood of meeting diagnostic criteria for CG were examined, as were variations in CG symptom severity associated with the manner of death and relationship to the deceased.

Method

From June 1998 through June 2000, Dr. Munir Hamirani, a Karachi psychiatrist, approached all of his private clinic patients who, when asked, indicated that they had survived the death of a relative or close friend within the past year. After fully explaining the study procedures, and assuring patients that their treatment would not be negatively influenced by a decision not to be interviewed for the study, all patients approached agreed to be interviewed privately by Dr. Hamirani. Dr. Hamirani asked for and obtained written informed consent from all study participants. Permission to participate for minors aged 18 years and younger was sought from and granted by their parents. The patient's age, gender, relationship to the deceased, the date and cause of death were documented. The sample consisted of 151 bereaved relatives or close friends of 25 deceased people ($M = 6$ bereaved patients per each deceased person).

An early version of the Inventory of Complicated Grief—Revised (ICG—R), the Inventory of Traumatic Grief (ITG; Prigerson et al., 2001a), was used to assess symptoms of separation distress and traumatic distress. The ITG was translated into Urdu and back-translated into English. Dr. Hamirani administered the ITG in Urdu. Seventeen items were applied to a previously tested algorithm to determine “caseness” of CG (Prigerson, Shear et al., 1999). A CG diagnosis required that 3 of the proposed 5 “separation distress” symptoms (e.g., yearning and searching for deceased) and 6 of the 12 proposed “traumatic distress” symptoms (e.g., numbness, disbelief, anger, mistrust) receive a score of at least “4” (i.e., *often, very, or marked*).

Cronbach's α was used to evaluate the ITG's internal consistency. Logistic regression analyses modeled the likelihood of meeting criteria for CG as a function of each background characteristic, yielding unadjusted odds ratios. The SAS Generalized Linear Mixed Model (GLIMMIX; SAS Institute, 1996) macroprocedure estimated the fixed effects of age, gender, relationship to the deceased, and mode of death in the prediction of the CG diagnosis, adjusting for the random effect of social network membership (i.e., the clustering of bereaved family members and friends of the deceased). Analysis of variance (ANOVA) models compared CG symptom score means by the mode of death and relationship to the deceased, with *t* tests used to determine whether significant mean differences emerged between particular subgroups.

Results

The sample was 53% female, had a mean age of 34.9 ($SD = 16.6$) years, with an average time from loss of 5.3 ($SD = 2.5$) months. The sample was composed of parents (23%), spouses (11%), offspring (23%), and siblings (34%); the remaining 9% were either close friends or non-first-degree relatives of the deceased. Causes of death were health problem/surgery (17%); accidents (26%); drowning (9%); or acts of violence ("dacoity"—robbery by a bandit; police encounter, shooting, beating; 48%), reflecting the high rates of exposure to violent death in this sample. Drownings were separated from accidents because of their unusual frequency in this sample, and because two drowned in a heroic attempt to save another drowning person (i.e., they were not technically accidental deaths). The mode of death varied significantly by the relationship to the deceased ($\chi^2 = 37.3$; $df = 12$; $p = 0.0002$). Among spouses, 41% survived a health-related death, 12% an accidental death, 12% a drowning, and 35% a violent death. For parents, violent death was the most common cause of death (57%), followed by accidents (23%), health-related deaths (11%), and drownings (9%).

Cronbach's $\alpha = 0.97$ indicated the high degree of internal consistency among the ICG-R items. The overall prevalence of patients meeting criteria for CG was 34%.

Because results in Table 1 reveal unadjusted and adjusted odds ratios to be entirely consistent with each other, only adjusted estimates will be discussed. Time from loss was not significantly associated with CG

TABLE 1 Sample Characteristics and Their Association with Meeting Consensus Criteria for Complicated Grief ($N = 151$)

Characteristic	n (%)	CG Dx	Unadjusted		Adjusted ^a	
			OR	95% CI	OR	95% CI
Age						
55+	16 (11%)	44%	2.33	0.71–7.62	0.24	0.03–1.74
22–54	87 (58%)	38%	1.83	0.84–4.02	0.37	0.09–1.45
0–21	48 (32%)	25%	1.00	—	1.00	—
Gender						
Female	80 (53%)	44%	2.47*	1.23–4.98	3.33*	1.36–8.18
Male	71 (47%)	24%	1.00	—	1.00*	—
Relation						
Spouse	17 (11%)	71%	13.2*	2.11–82.50	21.50*	2.36–195.00.
Parent	35 (23%)	63%	9.31*	1.78–48.70	11.30*	1.72–73.90
Offspring	35 (23%)	23%	1.63*	0.30–8.93	0.93*	0.09–9.07
Sibling	51 (34%)	16%	1.02*	0.19–5.52	0.50	0.06–3.97
Other	13 (9%)	15%	1.00	—	1.00	—
Cause of Death						
Violence	72 (48%)	38%	1.35	0.52–3.53	2.65	0.71–9.86
Drowning	14 (9%)	29%	0.90	0.22–3.75	0.94	0.14–6.12
Accident	39 (26%)	33%	1.13	0.39–3.27	2.47	0.58–10.60
Health	26 (17%)	31%	1.00	—	1.00	—

Note. CG = complicated grief; Dx = diagnosis; OR = Odds Ratio; CI = Confidence Interval.

* $p < 0.05$; ** $p < 0.01$; two-tailed.

^aEach model simultaneously entered the fixed effects of age, sex, relation to the deceased, and cause of death, and the random effect of social network membership.

diagnosis. Although age was not associated with meeting criteria for CG, women were 3.3 (1.4–8.2) times more likely to meet criteria for CG than men. Spouses were the most likely to meet criteria for CG (71%) and were 21.5 (2.4–195.0) times more likely to meet criteria for CG than non-first-degree relatives. Parents (63%) had the next highest rate of meeting criteria for CG, and were 11.3 (1.72–73.9) times more likely than non-first-degree relatives to be diagnosed with CG. Offspring (23%) and siblings (16%) were the first-degree relations having the lowest likelihood of meeting criteria for CG and were not significantly more likely to be diagnosed with CG than were non-first-degree relatives.

Cause of death did not significantly increase the risk of meeting criteria for CG (Table 1). Although the prevalence of CG among survivors of violent deaths was the highest (38%) relative to the other causes of

death, violent deaths did not pose a significantly greater risk of CG compared with deaths from health problems (31%; nor compared with any other cause of death, as determined by subsequent analyses). Drownings were associated with the lowest rate of meeting CG criteria (29%), with health failures (31%) and accidents (33%) having slightly higher frequencies than drownings, but not significantly so.

When CG symptom scores were examined (Table 2), the summary CG symptom measure (the ITG total score) means did not differ significantly by mode of death. Somewhat counterintuitively, no significant differences emerged by cause of death for the Traumatic Distress (Criteria B) symptom means, yet a marginally significant difference in Separation Distress (Criteria A) symptom means was found. In particular, deaths that were the result of violence had higher mean separation distress scores compared with deaths from accidents ($t = 2.62$; $p = 0.01$).

Among the individual CG symptom means that differed significantly ($p < 0.01$) by mode of death, violence was associated with the highest mean scores for the following symptoms: yearning, anger, bitterness, and lost sense of security. Health-related deaths, which were most common among the spouses, were associated with the highest mean scores for pain in the same part of the body as the deceased had prior to death, envy of non-bereaved persons, and not imagining a fulfilling life without the deceased. Drowning was associated with the highest mean scores for trouble accepting the death, auditory and visual hallucinations of the deceased, and the longest duration of grief symptoms.

When similar analyses were conducted by relationship to the deceased (results not displayed), the means for all CG symptoms examined together and individually, including separation distress and traumatic distress symptoms, were uniformly highest for the spouses. Spouses were significantly ($p < 0.01$) higher than all relationships other than parents on every single CG symptom. Although parents had the highest means for symptoms of disbelief, mistrust, and anger (recall that nearly 60% of parents survived the murder of their child), these parent mean symptom scores were not significantly higher than those for the spouses.

Discussion

As expected, the studied Karachi psychiatric clinic patients reported high rates of violent deaths of a family member or close friend, with

TABLE 2 Complicated Grief Symptom Severity by Mode of Death ($N = 151$)

ITG ^a Item [Criterion]	Symptom	<i>F</i>	<i>p</i>	Mode of death	
				Highest mean score	Lowest mean score
ITG Q1	Death overwhelming	2.14	0.098	Violence	Accident
ITG Q2	Intrusive thoughts	2.17	0.095	Violence	Accident
[Sep Distress]	of dcsd				
ITG Q3	Upset by memories	2.34	0.076	Violence	Accident
[Sep Distress]	of dcsd				
ITG Q4	Trouble accepting the death	3.90	0.010	Drowning	Accident
ITG Q5	Longing, yearning	3.86	0.011	Violence	Accident
[Sep Distress]					
ITG Q6	Drawn to reminders	0.87	0.460	Violence	Accident/Health
[Sep Distress]	of dcsd				
ITG Q7	Angry about death	3.52	0.017	Violence	Health
ITG Q8	Disbelief	1.69	0.170	Violence	Drowning
[Trauma Distress]					
ITG Q9	Stunned, dazed,	1.32	0.269	Violence	Drowning
[Trauma Distress]	shocked				
ITG Q10	Hard to trust people	2.20	0.091	Violence	Drowning
ITG Q11	Detached from	1.78	0.150	Health	Drowning
[Trauma Distress]	significant others				
ITG Q12	Pain in same part of body	5.85	0.001	Health	Violence
[Trauma Distress]					
ITG Q13	Avoid reminders	0.76	0.516	Health	Accident
[Trauma Distress]	of dcsd				
ITG Q14	Life empty w/o dcsd	1.18	0.320	Health	Drowning
[Trauma Distress]					
ITG Q15	Hear dcsd speak to me	2.74	0.046	Drowning	Accident
ITG Q16	See dcsd before me	4.26	0.006	Drowning	Accident
ITG Q17	Numb since the death	2.27	0.083	Health	Drowning
ITG Q18	Survivor guilt	0.50	0.686	Drowning	Accident
ITG Q19	Bitter over the death	5.52	0.001	Violence	Drowning
[Trauma Distress]					
ITG Q20	Envious of those not bereaved	7.27	0.001	Health	Accident
ITG Q21	Future meaningless	1.65	0.189	Violence	Drowning
[Trauma Distress]	w/o dcsd				
ITG Q22	Lonely since death	2.35	0.075	Violence	Accident
[Sep Distress]					

TABLE 2 *Continued*

ITG ^a Item [Criterion]	Symptom	<i>F</i>	<i>p</i>	Mode of death	
				Highest mean score	Lowest mean score
ITG Q23 [Trauma Distress]	Can't imagine fulfillment w/o dcscd	3.52	0.017	Health	Accident
ITG Q24 [Trauma Distress]	Part of self died w/ dcscd	1.36	0.257	Violence	Drowning
ITG Q25	Death change world view	2.27	0.083	Drowning	Accident
ITG Q26 [Trauma Distress]	Lost sense of security, trust, control	1.25	0.030	Violence	Drowning
ITG Q27	Impaired soc, occ, other function	2.19	0.092	Violence	Health
ITG Q28	On edge, jumpy, easily startled	1.16	0.328	Accident	Health
ITG Q29	Disturbed sleep	1.35	0.261	Accident	Drowning/ Health
ITG Q30	Grief symptom onset after loss	1.64	0.185	Health	Drowning
ITG Q31	Duration of grief symptoms	10.20	0.001	Drowning	Violence
ITG Q32	Onset immediate	0.05	0.988	Health	Drowning
ITG Q33	Intermittent course	6.51	0.001	Accident	Violence
ITG Q34	Grief symptoms changed over time	N/A ^b	N/A ^b	N/A ^b	N/A ^b
ITG total	Symptom summary score	1.12	0.34	Murder	Accident
Separation Distress ^c	Criterion A complicated grief symptoms	2.29	0.08	Murder	Accident
Traumatic Distress ^c	Criterion B complicated grief symptoms	1.32	0.27	Murder	Drowning

Note. Bolded items have mean scores that differ significantly by mode of death of the decedent. Sep = Separation; dcscd = deceased; soc = social; occ = occupational.

^a The Inventory of Traumatic Grief (ITG) (Prigerson et al. 2001a) was an early version of the Inventory of Complicated Grief-Revised. ^bResponse open-ended, not numerical. ^cSome CG criteria could be represented by more than one ITG question. We compared alternate measures for the creation of the Separation and Traumatic Distress symptom summary scores and the results were nearly identical with the substituted items.

nearly half of the bereaved patients surviving a death that was the result of an assault. Over a third (34%) of the assessed Karachi psychiatric clinic patients interviewed met criteria for CG. Although this rate was nearly double the 18% prevalence reported in a U.S. community-based widowed sample (Silverman et al., 2000), it was strikingly similar to the third of all patients at two psychiatric outpatient clinics in Vancouver, Canada who met criteria for CG (Piper, Ogrodniczuk, Azim, and Weideman, 2001). Results also indicate that the violent nature of the death did not significantly influence the likelihood of CG. These findings are consistent with those of Cleiren, Diekstra, Kerkhof, and van der Wal (1994) and Turvey, Carney, Arndt, Wallace, and Herzog (1999) who found that mode of death played only a marginal role in adaptation to bereavement. The results suggest that the high rates of CG among psychiatric clinic patients are quite uniform between Karachi and Westernized samples. Further, they indicate that the manner in which the loved one died (e.g., whether or not they died as a result of violence) is not an important determinant of whether or not a survivor will meet criteria for CG.

Although the rates of CG did not differ significantly by mode of death, some interesting differences in CG symptom presentation emerged based on the manner of death. For example, one might expect the CG symptoms of Traumatic Distress to be more elevated following violent deaths compared with non-violent deaths, given exposure to an objectively traumatic life event. The results of this report, however, revealed that separation distress symptoms, and not the traumatic distress symptoms, were more sensitive to the cause of death. Between-group comparisons demonstrated separation distress symptoms (e.g., yearning) to be significantly higher for those bereaved by deaths from violent acts relative to those bereaved by accidental deaths. Still, two symptoms in the traumatic distress symptom cluster—anger/bitterness and lost sense of security, trust, and control—were more elevated among the survivors of violent deaths compared with other forms of death. It is understandable that a loved one's murder, compared with deaths from health-related or accidental causes, would evoke feelings of rage, injustice, vulnerability, and helplessness among the victim's survivors.

Although the significant influence of kinship on bereavement adjustment found in this study is consistent with results reported elsewhere (Zisook & Lyons, 1988; Cleiren et al., 1994; Sanders, 1980; Levav, Friedlander, Kark, Peritz, 1988), the order of relationships most

adversely affected appears to differ somewhat from these prior reports. Bereavement studies in the United States (Sanders, 1979–1980; Zisook & Lyons, 1988), Israel (Levav et al., 1988), and the Netherlands (Cleiren et al., 1994) find parents to be the most devastated, followed by spouses, siblings, and children. In the Karachi sample studied here, spouses had the highest frequency of meeting criteria for CG, and significantly higher mean levels of each CG symptom compared with all relationships other than parents. Siblings had the lowest risk of CG among all of the first-degree relatives. Although the available data appear insufficient to explain the observed differences in kinship rates of CG, the meaning of marriage and of the implications of widowhood for surviving spouses, particularly widows, within the context of Pakistani culture would be expected to factor prominently in accounting for these differences.

Several study limitations warrant caution in the interpretation of these results. First, all assessments were conducted by a single treating psychiatrist. Second, a thorough psychiatric history and evaluation of present symptoms through use of standardized psychiatric assessment tools was not conducted for each subject (e.g., no information on the presence of major depressive disorder or posttraumatic stress disorder was obtained), nor was detailed information about the circumstances of the death recorded. Further, although it is common practice in Pakistan for family members and close friends to seek treatment from the same psychiatrist (M. Hamirani, personal communication, December, 10, 1999; I. Ahmed, personal communication, December, 10, 1999; N. Aqeel, personal communication, December, 10, 1999), and nesting within these groups was taken into account by using random regression modeling techniques, the extent to which the assessed clinic sample was representative of Pakistani outpatients or the Pakistani population at large remains unknown. Thus, although the results are consistent with other recent reports that suggest considerable cross-cultural uniformity in psychic responses to death between Pakistani and Westernized cultures (Suhail & Akram, 2002), study limitations call for caution to be exercised in generalizing from these results. Future research in which assessments are conducted by several trained and independent clinical research interviewers and that obtains more complete information about the patient's psychiatric history and other presenting symptoms, as well as information on factors surrounding the death, is needed to confirm the results of this preliminary report.

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