The Melbourne Family Grief Study, I: Perceptions of Family Functioning in Bereavement

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Objective: *The aim of this study was to identify patterns of family functioning in adult families after the death of a parent.* *Method:* *One hundred fifteen families completed measures of family functioning, grief, psychological state, and social adjustment 6 weeks (time 1), 6 months (time 2), and 13 months (time 3) after the death of a parent (a total of 670 individual responses). Cluster analytic methods were applied to develop a typology of perceptions of family functioning during bereavement.* *Results:* *Five types of families emerged from dimensions of cohesiveness, conflict, and expressiveness on the Family Environment Scale. Thirty-six percent of the families were considered supportive because of their high cohesiveness, and another 23% resolved conflict effectively. Two types were dysfunctional: hostile families, distinguished by high conflict, low cohesiveness, and poor expressiveness, and sullen families, who had more moderate limitations in these three areas; they declined in frequency from 30% at time 1 to 15% at time 3. The remaining type (26%), termed intermediate, exhibited mid-range cohesiveness, low control, and low achievement orientation. The typology at time 1 predicted typologies at time 2 and time 3. There were no age or gender differences among the family types, but offspring, as compared with spouses, were overrepresented in the hostile families.* *Conclusions:* *Family types can be identified, allowing at-risk families to be helped to prevent complications of grief. Screening with the family relationship index of the Family Environment Scale would facilitate such a family-centered approach.*
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Coming to terms with the death of a family member is a personal matter in which the bereaved person undergoes a highly individualized experience. At the same time, however, in the context of a family's loss of one of its members—be it a nuclear family, family of origin, or extended family—all of the bereaved continue to relate with one another, and in so doing, their individual experiences of grief inevitably are influenced by, and in turn influence, the experiences of their relatives. As Lieberman and Black (1) pointed out, "Losses and an individual's reaction to them are not solely rooted in the person visibly suffering the loss. Losses have repercussions in the family and its relationships, which are equally profound. The nuclear and extended family's reaction to and acceptance of loss, mourning and grief can hinder or help each individual family member" (p. 373).

Hitherto, important research has been focused on individual grief, its complications, and risk factors that should alert one to the need for prompt intervention, but only minimal attention has been paid to bereaved families (2). It is not surprising that family grief has been relatively little studied; given the research paradigm associated with the natural sciences, the individual has long been the focus of both mental health clinicians and researchers. In addition, methodological hurdles facing the investigator when the family is the focus are considerable—indeed, intimidating (3).

The literature on family grief has recently been reviewed (4). On the basis of clinical observations, it appears that a substantial proportion of families grieve in a maladaptive way. However, we have a poor idea of the pattern of these responses, which militates against rational interventions. Fortunately, in recent decades we have seen the advent of useful theoretical models of

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family functioning, with corresponding greater understanding (5). Our group applied this knowledge to the study of grieving families in order to identify a typology of family grief patterns, which in turn would permit identification of families at risk of maladaptive grief. In this article we describe this typology, based on specific dimensions of family functioning. In a companion article in this issue of the *Journal* we examine associated psychological and social morbidity in these different types of bereaved families.

METHOD

Patients who had died of cancer were identified by our colleagues in the oncology department of a metropolitan general hospital, St. Vincent's in Melbourne, Australia, and its associated hospice, Caritas Christi. Inclusion criteria for the study were death of a patient between the ages of 40 and 65 years whose family had an adequate command of English, was geographically accessible, and included a living partner and one or more children aged 12 years or older. This last requirement was necessary so that the children would be able to complete a set of questionnaires.

Measures and Procedure

The Family Environment Scale (6) and the Family Adaptability and Cohesion Evaluation Scales (FACES III) (7) were used to measure family functioning. The Family Environment Scale, a well-validated instrument, measures a person's perceptions of his or her family's features such as interpersonal relationships and organizational structure. It has 10 subscales; the cohesiveness, conflict, and expressiveness (of both thoughts and feelings) subscales generate the family relationship index, a global measure of family interaction; the organization and control subscales reflect structure; and the achievement orientation, independence, intellectual-cultural orientation, moral-religious emphasis, and active-recreational orientation subscales are personal growth dimensions. The short form of the Family Environment Scale, for which population norms have been determined, has satisfactory consistency, stability, and discriminant validity (6). Extensive research supports its predictive validity (8).

FACES III contains two scales, cohesion and adaptability. Cohesion reflects the bonding that family members share with one another; adaptability covers their ability to modify structure, roles, and rules in response to situational or developmental demands. Satisfactory internal consistency, test-retest reliability, and discriminant validity of FACES III have been demonstrated (9).

Psychological morbidity was measured with the cognitive items of the Beck Depression Inventory (10, 11) and the Brief Symptom Inventory (12); grief was measured with the Bereavement Phenomenology Questionnaire (13). These measures are covered in detail in the companion article, together with measures of social adjustment (14) and family coping (15).

Relatives of the deceased person were approached, and written informed consent was obtained from each participant in the study. The spouse was interviewed initially either in the hospital or at home after 6 weeks of bereavement (time 1), and then the children were approached through arrangements with the spouse. Follow-up interviews were conducted 6 months (time 2) and 13 months (time 3) after the death. Respondents completed questionnaires independently.

Statistical Analysis

A taxonomic approach was used to cluster analyze the data (16–18). This Snob computer program has previously been applied to psychiatric data (19–22). The decision statistic for allocating objects to classes (the conventional term for clusters), dividing classes, and merging classes—called the Wallace information measure, or the minimum message length (23, 24)—is grounded in information theory (16, 25). This technique of cluster analysis was selected because its algorithm automatically determines the number of classes within the multivariate population (26). If the message length is diminished when classes are split or combined to make an assignment, then the asignment is retained; otherwise, it is rejected. The program uses minimum message length both for selection of the model (number of classes and assignment to classes) and parameter values (means and standard deviations for normal distributions and probabilities for multistate distributions), assuming that attributes with continuous values come from a normal distribution and discrete attributes from a multistate distribution. The precision or measure of repeatability was set at 1.0. The program assumes that the standard deviation of a normal distribution is at least 0.3 times its measurement precision. The unit of message length used is termed a "nit," where 1 nit=$\log_2 e$ bits, and 1 bit is the amount of information required to state an event with a probability of 0.5.

Clusters were created at each time point. The emergent classes at each point were applied to later data sets to assess predictability, where a difference of more than 30 nits is considered significant (18).

We used the time 1 class structure in a repeated measures multivariate analysis of variance (MANOVA), as suggested by Ekstrom et al. (27) and Tabachick and Fidell (28). This type of analysis is able to assess the main effects of cluster (a between-subjects factor) and time (a within-subjects or repeated measures factor) and the interaction between them. Analyses were carried out for each dependent variable separately.

In these multivariate analyses we first used individuals as the unit of analysis. This approach is conceptually advantageous, since it does not assume that all members within a family must exhibit the same attitudes (e.g., belong to the same cluster), as would be assumed if families, rather than individual family members, were the unit of analysis. However, the individual approach assumes that there is no correlation or statistical relation between individuals with regard to the variables being studied. Even if the correlation is not itself statistically significant, any correlation violates one of the cardinal requirements of significance tests including analysis of variance (ANOVA)—that the observations be independent of one another (29).

The design is of necessity complex, since individual family members are not forced to belong to the same cluster, any more than they should be forced to exhibit the same pattern of bereavement as other family members. On the other hand, some correlation among family members may be expected. As a compromise between changing reality in order that it may be statistically treatable and ignoring statistical assumptions altogether, and in order to assess the additional impact of family membership within clusters, we carried out further MANOVAs using a hierarchical model (29). Such analyses allowed us to study the effects of family membership within clusters and the interaction between such membership and time; thus we were in a position to confirm or not confirm the initial set of MANOVAs carried out on individuals. Intraclass correlation coefficients (ICCs) (30), representing the statistical relationship between family members within clusters, were also calculated.

The MANOVAs for both individuals and families were carried out with the general linear models procedure of the Statistical Analysis System (31). For all analyses involving time, only the individuals with complete data across all three time points were included. For hierarchical analyses involving family membership, families whose members were all located (i.e., "nested") within a specific cluster were dealt with through the hierarchical model. In cases where members of families were located in more than one cluster, the cluster to which most family members belonged was selected, and data on the remaining individuals were excluded.

In the event of a significant main effect of cluster membership, obtained using both the individual and hierarchical approaches, we used the KnowledgeSEEKER program (32, 33) to perform post hoc comparisons of the cluster means. The program uses t tests to compare mean scores of clusters (in this case) on a particular dependent variable. Clusters that were not significantly different from one another were merged into groups. These groups were then compared by ANOVA, and the resulting significance of the F statistic was adjusted for the number of comparisons performed. Similar in operation to pairwise comparison methods such as the modified least significant difference test (30), and in contrast to alternative approaches (34), the

TABLE 1. Membership of Individuals in Five Types (Clusters) of Bereaved Families Over the 13 Months After a Parent's Death

	Cluster									
	Supportive		Conflict-Resolving		Intermediate		Sullen		Hostile	
Time Since Death of Parent	N	%	N	%	N	%	N	%	N	%
6 weeks (time 1) (N=269)	74	28	67	25	47	17	49	18	32	12
6 months (time 2) (N=200)	63	32	45	22	43	21	29	15	20	10
13 months (time 3) (N=201)	72	36	46	23	53	26	0	0	30	15

TABLE 2. Membership of Individuals in Five Types (Clusters) of Bereaved Families by Age, Gender, and Type of Relative (N=269)

	Cluster										
Variable	Supportive (N=74)		Conflict-Resolving (N=67)		Intermediate (N=47)		Sullen (N=49)		Hostile (N=32)		Analysis
	Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*	
Age (years)	42	15	38	16	45	16	41	17	33	15	F=3.00, df=4, 239, p<0.02[a]
	N	%	*N*	%	*N*	%	*N*	%	*N*	%	
Gender											χ^2=7.82, df=4, p<0.10
Female	47	64	36	54	19	41	24	49	13	41	
Male	27	36	31	46	28	59	25	51	19	59	
Type of relative											χ^2=15.49, df=4, p=0.004[b]
Spouse	34	46	27	40	25	53	25	51	4	13	
Offspring	40	54	40	60	22	47	24	49	28	87	

[a]Nonsignificant after correction for number of comparisons.
[b]p<0.01 after correction for number of comparisons. KnowledgeSEEKER post hoc analyses (32) showed that the hostile cluster was significantly different from the rest.

KnowledgeSEEKER method has the advantage of generating readily understood groups (of clusters) whose means are maximally different from one another, and it uses simple t tests and ANOVA to do so. Although KnowledgeSEEKER was only used when both the individual and the hierarchical analyses were significant, the KnowledgeSEEKER analyses were performed on all individuals (i.e., no one had to be excluded, as was the case when the hierarchical model was used). KnowledgeSEEKER has been validated on both simulated data (35) and empirical psychiatric data (36–38).

RESULTS

Of the 169 families approached, 115 (68%) were recruited for the study. Reasons for 54 families' lack of response were clarified; they included a desire to avoid talking (39%), circumstances too distressing (26%), questions too personal (13%), inadequate time (9%), anger toward the hospital (4%), and no discernible reason (9%). Of the 115 spouses recruited, 100 completed the study; 11 dropped out at time 2 and four at time 3. Reasons for dropout included avoidance in 10 cases, anger in two, ill health in one, and our inability to contact the spouse in two. Of the 153 offspring recruited at 6 weeks, 97 (63%) completed responses at time 2 and 101 (66%) at time 3. Reasons for offspring dropout were difficult to ascertain, as contact was often indirect (i.e., through the spouse). Overall, 670 individual responses constituted the data set.

The study group comprised 115 spouses (mean age=55.9 years, SD=9.2), 53% of whom were female (widows' mean age=54 years, SD=9; widowers' mean age=58 years, SD=9) and 153 offspring (mean age=28.2 years, SD=7.7), 52% of whom were female (both sons' and daughters' mean age=28 years, SD=7.7). The families had a mean of 3.1 children (SD=1.6).

Spouses identified their family's ethnic background as follows: Australian, 66%; English, 11%; Eastern European, 7%; Italian, 5%; Irish, 4%; Asian, 2%; Greek, 1%; and other, 4%. Religious affiliation was cited as Christian by 85% (Catholic, 32%; Protestant, 53%), Jewish by 3.5%, and none by 8%.

The frequency of each cause of death was as follows: lung cancer, 20%; breast cancer, 20%; bowel cancer, 17%; brain cancer, 7%; lymphoma, 4%; prostate cancer, 4%; melanoma, 3%; leukemia 3%; kidney cancer, 3%; and other, 19%.

In each data set (combined spouses and offspring at time 1, time 2, and time 3) entered into the analysis, cohesiveness (Family Environment Scale) and conflict (Family Environment Scale) were significant for virtually every class, while expressiveness (Family Environment Scale) was occasionally relevant; adaptability (FACES III) played no role in forming any classification. Since responses were consistent between the cohesiveness subscale of the Family Environment Scale and FACES III cohesion, we concentrated on the former to avoid correlated items in the cluster analysis. For each

TABLE 3. Scores on the Family Environment Scale and FACES III of Individuals in Five Types (Clusters) of Bereaved Families 6 Weeks After a Parent's Death (N=253)[a]

Subscale	Score: Supportive Cluster Mean	Supportive Cluster SD	Conflict-Resolving Cluster Mean	Conflict-Resolving Cluster SD	Intermediate Cluster Mean	Intermediate Cluster SD	Sullen Cluster Mean	Sullen Cluster SD	Hostile Cluster Mean	Hostile Cluster SD	Analysis of Variance: F (df=4, 239)
Family Environment Scale											
Cohesiveness	4.00	0.30	4.00	0.30	2.98	0.15	3.00	0.30	1.38	0.66	900.77***
Conflict	0.00	0.30	1.62	0.70	0.00	0.30	1.88	0.99	1.77	1.43	87.21***
Expressiveness	2.39	1.20	2.56	1.17	2.45	1.04	2.15	1.09	1.03	0.93	10.74***
Achievement orientation	2.21	0.92	2.24	0.85	1.72	1.03	2.36	0.88	2.42	1.09	3.52**[b]
Organization	2.94	1.01	2.74	0.98	2.61	1.18	2.50	1.15	2.10	1.18	3.46*[c]
Control	1.23	0.94	1.46	1.04	0.81	0.82	1.88	0.89	1.47	1.14	7.11***[d]
Family relationship index	10.49	1.17	8.89	1.42	9.43	1.04	7.19	1.41	4.70	2.13	93.30***
FACES III: cohesion	38.32	5.38	37.87	5.15	36.00	7.94	36.05	7.29	27.32	7.29	17.62***[e]

[a]FACES III=Family Adaptability and Cohesion Evaluation Scales III. Post hoc analyses were not repeated on variables used to form the clusters.
[b]$p<0.01$ after correction for number of comparisons. KnowledgeSEEKER post hoc comparisons (32) showed that intermediate families differed significantly from the rest.
[c]$p<0.01$ after correction for number of comparisons. KnowledgeSEEKER post hoc comparisons (32) showed that hostile families differed significantly from supportive families.
[d]KnowledgeSEEKER post hoc comparisons (32) showed that intermediate families differed significantly from the rest.
[e]KnowledgeSEEKER post hoc comparisons (32) showed that hostile families differed significantly from the rest.
*p=0.009. **p=0.008. ***p<0.0001.

TABLE 4. Analysis of Variance (Families by Cluster) of Scores on the Family Environment Scale and FACES III of Bereaved Families 6 Weeks After a Parent's Death[a]

Subscale	Effect of Cluster F	Effect of Cluster df	Effect of Families Within Cluster F	Effect of Families Within Cluster df	Intraclass Correlation Coefficient
Family Environment Scale					
Cohesiveness (N=115)	547.15***	4, 67	0.63	67, 47	0.00
Conflict (N=113)	52.92***	4, 64	1.18	64, 44	0.10
Expressiveness (N=110)	4.19**	4, 60	1.23	60, 45	0.12
Achievement orientation (N=109)	2.69*	4, 60	1.45	60, 44	0.21
Organization (N=115)	1.45	4, 65	2.12**	65, 48	0.40
Control (N=107)	2.89***	4, 58	1.27	58, 44	0.14
Family relationship index (N=113)	57.01***	4, 66	0.92	66, 42	0.00
FACES III: cohesion (N=115)	9.63***	4, 66	1.44	66, 48	0.21

[a] A hierarchical model, with the family as the unit of analysis, was used. FACES III=Family Adaptability and Cohesion Evaluation Scales III. The bereaved family clusters were supportive, conflict-resolving, intermediate, sullen, and hostile.
*p<0.05. **p<0.01. ***p<0.001.

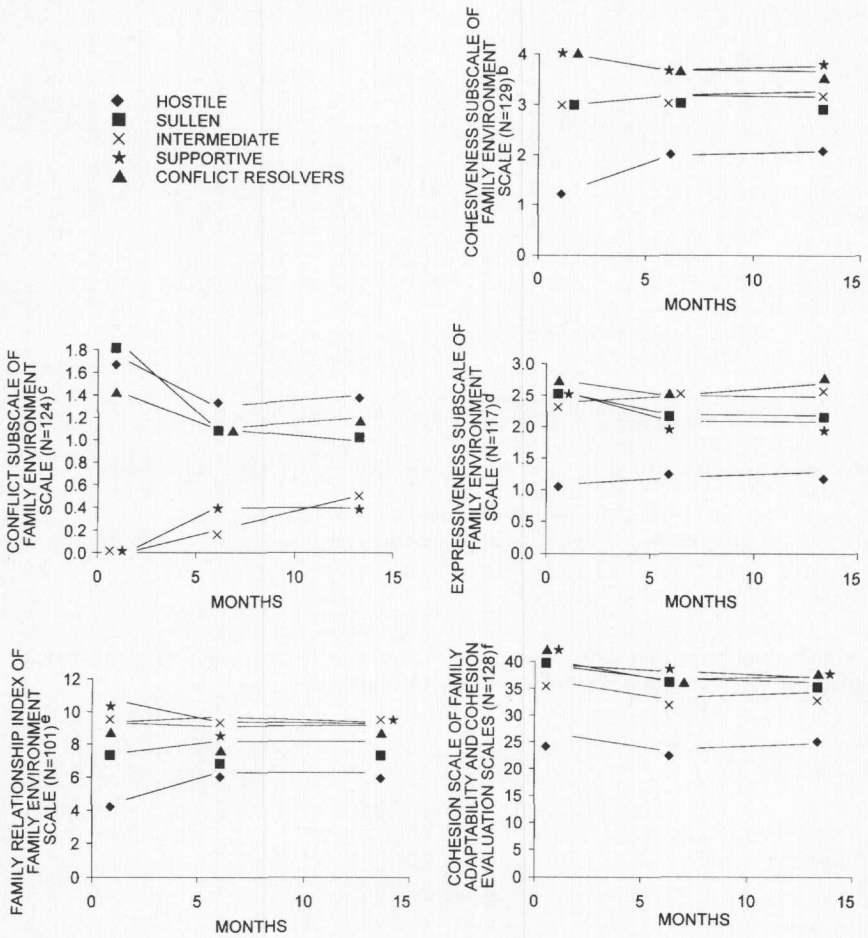
of the Family Environment Scale variables of cohesiveness, conflict, and expressiveness, the range for the raw scores was 0–4.

A five-class family structure was found at 6 weeks and 6 months, which was reduced to four classes at 13 months. The first class, termed supportive, was typified by high cohesiveness (mean score=4.00, SD=0.30) and absent conflict. Membership frequencies across time are shown in table 1. The conflict-resolving class showed high cohesiveness (mean score=4.00, SD=0.30) and mean conflict scores of 1.62 (SD=0.70), 1.52 (SD=0.69), and 1.69 (SD=0.94) at time 1, time 2, and time 3, respectively. Intermediate families had a mid range of cohesiveness (mean score=2.98, SD=0.15) and low conflict, while the sullen class had similar cohesiveness (mean score=3.00, SD=0.30) but moderate conflict (mean score=1.88, SD=0.99) at time 1. At time 2, the sullen class had characteristics merging with those of the intermediate class (mean cohesiveness score=2.60, SD=0.74; mean conflict score=0.01, SD=0.30), and it disappeared altogether at time 3. Finally, the hostile class was determined by three significant characteristics at the three time points: low cohesiveness (mean score=1.38, SD=0.66; mean=1.62, SD=0.88; and mean=1.54, SD=0.73, respectively), high conflict (mean score=1.77, SD=1.43; mean=2.20, SD=1.12; and mean=1.50, SD=1.28, respectively), and low expressiveness (mean score=1.03, SD=0.93; mean=1.13, SD=1.17; and mean=1.22, SD=0.99, respectively).

Table 2 shows the family clusters by age, gender, and type of relative. The hostile cluster was made up mostly of offspring, although only 18% of them were located in this group. No significant differences in age and gender were found between the clusters. Table 3 reports the mean scores on relevant family functioning subscales for the family classes derived by cluster analysis at time 1, where the individual was the unit of analysis.

ANOVAs were repeated with a hierarchical approach, where the family was the unit of analysis, and ICCs between family members were calculated. Results of these analyses are shown in table 4. The patterns found in the analyses of individuals were replicated in

FIGURE 1. Scores on Measures of Family Functioning in Five Types (Clusters) of Bereaved Families 6 Weeks, 6 Months, and 13 Months After a Parent's Death[a]



[a]Clusters are based on types of family functioning at 6 weeks (time 1). Repeated measures multivariate analysis of variance, with the individual as the unit of analysis, was used.
[b]Significant main effect of cluster: F=49.48, df=4, 124, p<0.001. Significant main effect of time: F=3.26, df=2, 123, p=0.04. Significant interaction between time and cluster: F=4.76, df=8, 244, p<0.001.
[c]Significant main effect of cluster: F=20.50, df=4, 119, p<0.001. Significant interaction between time and cluster: F=7.16, df=8, 234, p<0.001.
[d]Significant main effect of cluster: F=5.07, df=4, 112, p<0.01.
[e]Significant main effect of cluster: F=16.59, df=4, 96, p<0.001. Significant interaction between time and cluster: F=5.91, df=8, 188, p<0.001.
[f]Significant main effect of cluster: F=17.38, df=4, 123, p<0.001. Significant main effect of time: F=14.05, df=2, 122, p<0.001.

the hierarchical analyses, with the exception of Family Environment Scale organization, which lost significance and displayed a higher ICC.

The consistency of the clusters across time was assessed by comparing the respective minimum message lengths (in nits) derived for each of the class structures. The optimal model for each time point had the shortest message length, as expected, compared to that obtained by imposing the structure of another time period upon it. The time 1 classification predicted well for time 2 (1393.00 nits versus 1368.92, a 24.08-nit difference) and for time 3 (1338.90 nits versus 1316.92, a 21.98-nit difference). Similarly, the time 2 classification predicted well for time 3 (1334.57 nits versus 1316.92, a 17.65-nit difference). In every case, the difference in minimum message length was <25 nits; the patterns are remarkably consistent.

The class structure derived from time 1 was applied to all the data, and repeated measures ANOVAs (cluster by time, the latter being a within-subjects or repeated measures factor) for family functioning variables, with individuals as the unit of analysis, were graphed (figure 1). A significant interaction between clusters and time was found for cohesiveness, but it accounted for only 5% of the variance in this dimension, as assessed by eta-squared (28). The main effect of cluster membership accounted for 61.5% of this variance, indicating that the clusters were substantially more relevant than the interaction. There was also a significant interaction for conflict, accounting for 19.7% of the variance in this attribute. Conflict levels fell in sullen families, the class that eventually disappeared by 13 months (table 1); the members transferred to either the intermediate or the hostile cluster. This reduction in conflict levels in sullen families, with the corresponding rise in membership in the intermediate and hostile clusters, explains this interaction between cluster and time. However, the main effect of cluster membership accounted for 40.8% of the variance in the dependent variable of conflict. Furthermore, this interaction between clusters and time persisted in the family relationship index, but since this is derived from cohesiveness and conflict, the explanation for the interaction is found in the patterns discussed above. When this ANOVA was repeated using the hierarchical model (table 5), the patterns were the same with the exception of Family Environment Scale cohesiveness, where an effect was also found for families within clusters, and the ICC was high.

It is important to emphasize that cohesion according to FACES III was not used as a variable to form the clusters, so that the significant main effect of cluster membership on FACES III cohesion (MANOVA, figure 1) provides concurrent validity for the findings with Family Environment Scale cohesiveness.

There was a lack of significant effect of time on per-

TABLE 5. Repeated Measures Multivariate Analysis of Variance of Scores on the Family Environment Scale 6 Weeks, 6 Months, and 13 Months After a Parent's Death in Five Clusters of Bereaved Families Classified According to Their Type of Functioning at 6 Weeks[a]

Subscale of the Family Environment Scale	Effect of Cluster		Effect of Families Within Cluster		Intraclass Correlation Coefficient	Effect of Time	Interaction of Time and Cluster		Interaction of Time and Families Within Cluster	
	F	df	F	df			F	df	F	df
Cohesiveness (N=90)	21.87†	4, 69	3.37**	69, 16	0.66	n.s.	2.45*	8, 136	n.s.	
Conflict (N=88)	10.00***	4, 67	n.s.		0.19	n.s.	5.43***	8, 132	n.s.	
Expressiveness (N=78)	2.96*	4, 59	n.s.		0.37	n.s.	n.s.		2.05*	118, 26
Family relationship index (N=73)	9.71†	45, 55	n.s.		0.27	n.s.	3.94***	8, 108	n.s.	

[a]A hierarchical model, with the family as the unit of analysis, was used. Family types were supportive, conflict-resolving, intermediate, sullen, and hostile.

*p<0.05. **p<0.01. ***p<0.001. † p<0.0001.

TABLE 6. Subscale Scores of Individuals in Five Types (Clusters) of Bereaved Families 6 Weeks After a Parent's Death[a]

Measure	Score for Total 6-Week Data Set		Analysis of Variance		Post Hoc Analysis of Clusters				
								Score	
	Mean	SD	F	df	Grouping of Family Types	N	%	Mean	SD
Family Environment Scale, family relationship index (N=221)	8.63	2.29	93.3***	4, 216	Supportive	59	27	10.49	1.17
					Intermediate	44	20	9.43	1.04
					Conflict-resolving	54	24	8.89	1.42
					Sullen	37	17	7.19	1.41
					Hostile	27	12	4.70	2.13
FACES III: cohesion[b] (N=242)	36.02	7.27	35.44***	2, 239	Supportive and conflict-resolving	128	53	38.12	5.27
					Intermediate and sullen	83	34	36.02	7.57
					Hostile	31	13	27.32	7.24
Family Environment Scale Organization (N=240)	2.66	1.11	6.34*	2, 237	Supportive	71	30	2.94	1.01
					Conflict-resolving, intermediate, and sullen	140	58	2.63	1.10
					Hostile	29	12	2.10	1.18
Control (N=241)	1.35	1.01	13.05**	2, 238	Sullen	42	17	1.88	0.89
					Supportive, conflict-resolving, and hostile	156	65	1.36	1.02
					Intermediate	43	18	0.81	0.82
Achievement orientation (N=240)	2.18	0.96	12.77*	1, 238	Supportive, conflict-resolving, sullen, and hostile	197	82	2.28	0.91
					Intermediate	43	18	1.72	1.03

[a]The individual was the unit of analysis. The KnowledgeSEEKER program (32) was used for post hoc analyses.
[b]FACES III= Family Adaptability and Cohesion Evaluation Scales III.

*p<0.02. **p<0.001. ***p<0.0001.

ceptions of family functioning (figure 1) on the subscales of the Family Environment Scale compared to FACES III. In contrast, there were significant main effects of clusters accounting for 40.9% of the variance in the family relationship index, 15.3% of the variance in expressiveness, 9.9% in organization, and 7.4% in control.

For post hoc analyses, KnowledgeSEEKER was applied to the five time 1 clusters; taking the family relationship index as a global measure, the class structure was confirmed (table 6). Supportive families displayed the highest level of organization, and hostile families the lowest; sullen families exercised the most control in family life; and intermediate families had the lowest achievement orientation and control.

DISCUSSION

Our response rate of 68% is consistent with or better than rates in much bereavement research, but it does serve as a limitation in generalizing from this study. Nearly 40% of the nonresponders appeared to be avoidant (this characteristic was also prominent among the dropouts), and a further 26% were too distressed. While some nonresponders may simply not wish to talk because they do not feel the need, others will evidence psychosocial morbidity. Generally, the level of this morbidity will be higher than that revealed in studies such as this one.

Cohesiveness, conflict, and expressiveness emerged as useful dimensions in discriminating between adap-

tive and maladaptive families, thus generating an empirically derived typology of family grief. This was identified in adult families who had lost a parent who was middle-aged or in early old age and who had teenage and young adult children moving in and out of the home of the widowed spouse.

Cohesiveness is striking for its ability to identify families that are dealing effectively with their grief. It appears to be the hallmark of the adaptive family, whose members are intimate with each other, share their distress, and provide mutual support. Conflict is absent as members tolerate negative emotions, disclose their feelings honestly, and draw confidence from a belief in the family's closeness. About one-third of the families demonstrated these qualities, hence they are called supportive.

Conflict is another pivotal reflection of family functioning that assists in the identification of dysfunction. In our study group, nearly one-third of families displayed it 6 weeks after a parent's death, declining to one-quarter at 6 months and 15% at 13 months. The most dysfunctional cluster showed such conflict in a major way (hence the term "hostile"), but low cohesiveness, low expressiveness, and poor organization were also featured in this class. These families do not plan activities carefully and are not punctual; structure and order are absent; argument destroys teamwork and inhibits any capacity for support. Offspring were overrepresented in this cluster and appeared to carry the family's anger. Clinically, these children become problematic as their families find fault, blame, promote guilt, and refuse to speak to members; their distress reverberates throughout the treatment system.

The sullen cluster was similar to the hostile one, but the characteristics were less pronounced. Its members had a moderate level of conflict and reduced cohesiveness, and they exercised greater control over family life than any other class. In such families, there is typically a dominant member who rigidly issues directions and sets rules. Family discussion and expression of feelings are blocked; disagreements remain unresolved, hovering just beneath the surface. Membership in this cluster diminished as mourning proceeded, and the cluster was not discernible at 13 months. Members with persisting conflict merged with the hostile cluster, while those whose anger had dissipated moved into more functional groups.

A noteworthy cluster was the conflict-resolving one, which showed moderate conflict but also high cohesiveness. We conceptualize the closeness as protective, providing a means to resolve differences. The membership of this cluster was sustained over the 13 months.

The fifth cluster, intermediate families (termed "ordinary" in our previous research with families of patients receiving palliative care [22]), had an intermediate level of cohesiveness, but without other features of dysfunction. Their members had the lowest levels of both achievement orientation, a dimension reflecting personal ambition, and control, the extent to which rules are inflexibly used to conduct family life.

This family classification was remarkably consistent across the three time points. Furthermore, there was a striking absence of a significant effect of time on family functioning in the MANOVA, as shown in figure 1. An interesting question, and one remaining to be answered, is whether these measures of family functioning reflect trait or state characteristics. On the one hand, the absence of significant change in scores on the Family Environment Scale during this period of bereavement, an acknowledged stressor on all life event scales, supports the notion that these are substantially stable family features. On the other hand, one cluster had disappeared by 13 months. This issue of stability is of considerable clinical interest because of the need to be able to predict families at risk of developing complicated grief, permitting prompt intervention.

Given the work of Green et al. (39) on FACES III, published after we commenced our study, it is not surprising that adaptability was not pertinent in any cluster. While a family's ability to manage change and function flexibly appeals as a dimension of an adaptive pattern (40), the FACES III adaptability subscale proved unhelpful. However, the FACES III cohesion subscale showed a pattern of results similar to that for Family Environment Scale cohesiveness and adds convergent validity to the family typology.

Although criticism has recently been leveled at the Family Environment Scale (41), Moos (8) has argued trenchantly that conceptually broad subscales composed of diverse items have a greater capacity to discriminate, and hence greater validity, even if at the expense of internal consistency. This salient argument is endorsed by the large body of research that supports the predictive validity of the Family Environment Scale.

We appreciate that our clusters did not consist of discrete families; this is a common methodological problem in analyzing family data (5), and we regard this as the best compromise and far more appropriate than calculating a mean score for each family. The latter precludes recognition of a particular member's perception of functioning, which parallels the common clinical finding that an individual member becomes the symptom bearer or scapegoat for the family. Statistically, these members' "outlying" scores may be normalized through the use of means. The clinician must take note of any single member's perception of concern about problems in the family; this is the model adopted in our analysis. When further hierarchical analyses were conducted to assess the additional impact of family membership within clusters, it was found that the pattern of results did not change, with the exception that the organization subscale of the Family Environment Scale lost significance in discriminating between family clusters. ICCs, assessing the statistical dependency among family members, were low for all Family Environment Scale subscales except organization. These analyses support the validity of our approach in what is statistically a methodologically problematic area.

We surmise that our classification has clinical utility for health professionals caring for the bereaved. This ap-

proach, noted by several researchers to be missing from the literature (2, 42, 43), is obviously relevant to early intervention, since identification of families at risk could well prevent development and, worse, entrenchment of psychological and social complications. We have tried to see how this weaves in with our review of the literature. Our empirically derived clusters of family responses to grief resemble those we have previously distilled from clinical observations (4, 44). In fact, we discerned five such patterns, one adaptive and four maladaptive (avoidant, distorted, inflexible, and amplifying).

In adaptive grief, family members rally together, share distress openly, and support one another through mutual consolation and care. Avoidant responses involve poor communication, little exchange of feelings, and a lack of intimacy. A distorted pattern includes excessive guilt, anger, blame, or idealization. Inflexible families have difficulty coping with change, insisting that life continue as before. Amplification arises from complex combinations of avoidance, distortion, and inflexibility and is associated with chronic grief (44).

Supportive families are clearly adaptive, but conflict-resolving families are a hitherto unrecognized subset that are also adaptive. Hostile families resemble an amplifying response pattern, in which distress and chaos reverberate through the family; grief is prolonged and bonds are disrupted. Sullen families resemble a distorted response, with prominent anger, high control, and ineffective handling of negative and ambivalent feelings. Finally, intermediate families are most similar to the inflexible response, in that reduced initiative limits the capacity to manage change. A key group, identified by clinical observations but apparently missing from this empirical research, is the avoidant type of family. In this study, they may have been represented by the nonresponders and dropouts. Our response rate, typical of research on bereavement, indicated that one-third of eligible families declined assessment; over 70% of these cited a typically avoidant reason. A similar pattern of explanation was given by dropouts. Alternatively, we may have missed avoidant families through the lack of a specific measure of avoidance. If a percentage of nonresponders and dropouts are from avoidant families, then the family morbidity identified by this study is probably an underestimate of the real prevalence.

Our companion article describes in detail the levels of grief, psychological and social morbidity, and forms of coping seen in our five clusters. It is appropriate to report on such individual morbidity before turning to discuss treatment implications. However, just as Keitner and Miller (45), in reviewing family functioning in major depression, proposed that family competence interacts significantly with individual vulnerability in the generation of and relapse into a depressive episode, we also recommend that clinicians assess the functioning of the bereaved family. We recommend that assessments of the dimensions of family cohesiveness, conflict, and expressiveness be the means to achieve this. Moreover, we suggest that the 12 items that constitute the brief version of the family relationship index could serve well as an assessment measure. This would allow categorization of families according to our typology and facilitate appropriate intervention with those that are dysfunctional or at risk.

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