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The Bereavement Response: A Cluster Analysis

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Background. Literature and clinical experience suggest that some people experience atypical, complicated or pathological bereavement reactions in response to a major loss.
Method. Three groups of community-based bereaved subjects – spouses (n=44), adult children (n=40), and parents (n=36) – were followed up four times in the 13 months after a loss. A 17-item scale of core bereavement times was developed and used to investigate the intensity of the bereavement response over time.
Results. Cluster analysis revealed a pattern of bereavement-related symptoms approximating a syndrome of chronic grief in 11 (9.2%) of the 120 subjects. None of the respondents displayed a pattern consistent with delayed or absent grief.
Conclusions. In a non-clinical community sample of bereaved people, delayed or absent grief is infrequently seen, unlike chronic grief, which is demonstrated in a minority.

While there has been a long history of conceptualising pathological or atypical bereavement responses, the literature remains divided and unclear with respect to: the validity of the varied syndromes referred to in the literature as being some variant of grief/bereavement (Middleton *et al*, 1993*a*); the delineation of the overlap between the syndrome of grief and specific psychiatric disorders like depression and anxiety (Jacobs, 1993); and the accuracy of describing variants of grief as pathological (Middleton *et al*, 1993*b*). Additionally, among those most involved with bereavement issues at a clinical/research level, there is a tendency for their perspectives to reflect their involvement with clinical populations, or high-risk groups (Burnett *et al*, 1994). The delineation of valid syndromes of atypical grief and their frequency in non-clinical populations of bereaved people has proved to be a complex and essentially unclarified issue.

Pathological bereavement reactions

While the literature includes an abundance of terms used to denote some variation from normal grief, Jacobs & Kim (1990) observed that there was an "absence of universally accepted, standardised, descriptive criteria for pathologic grief" (p. 315). The more recent terms used to denote some variation from normal grief have included "abnormal" (Pasnau *et al*, 1987), "complicated" (Sanders, 1988), "maladaptive" (Reeves & Boersma, 1990), "truncated" (Widdison & Salisbury, 1990), "unresolved" (Zisook & DeVaul, 1985), and "dysfunctional" (Rynearson, 1990). Middleton *et al* (1993*b*) attempted to bring some clarity to the area by surveying 77 prominent researchers/clinicians/writers in the bereavement area (89% of whom had five or more years of experience in the field) about their views on normal and pathological grief. The rank ordering of the degree of support for the syndromes (from most to least support) was: "delayed", "chronic", "anticipatory", "absent", "unresolved", "inhibited", "distorted". There was reasonable support for the first four syndromes, while inhibited and unresolved grief tended to be described using one of the four terms already supported. The use of the term "distorted grief" attracted little support.

Acknowledging the inherent problems of definition and comparison, Jacobs (1993) noted that around 20% of the bereaved population experienced some form of complicated grief. However, a number of the studies considered in arriving at this figure involved spousal loss. Jacobs (1993) provided diagnostic criteria for five variants of pathological grief. Using this classification and based on estimates derived from his own clinical experience, Jacobs identified chronic grief as the most common variant of pathological grief seen in clinical practice. Further, he estimated that delayed grief, which involved the manifestations of separation distress being delayed for more than two weeks after the loss, probably occurs in 10–15% of patients with pathological grief. The relationship between delayed and absent grief can be defined by the potential for delayed grief to become absent if the delay is prolonged (by 6–12 months). Jacobs

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viewed absent grief as rare, accounting for about 5% of cases of pathological grief. While Jacobs has made the most concerted and detailed attempt to define and classify atypical or pathological forms of grief, the percentage estimates that he gives are based on clinical observations in a treatment setting, with attendant selection biases.

Byrne & Raphael (1994), in their study of 57 widowed elderly Australian men, found that six weeks after bereavement 10 subjects achieved scores on the Bereavement Phenomenology Questionnaire (BPQ) which were greater than one standard deviation above the mean. Six months and 13 months after bereavement, five of these subjects were still achieving scores on the BPQ which were greater than one standard deviation above the mean. Although this group of five subjects (8.8% of the overall sample) had BPQ scores which decreased across time in a similar fashion to the whole cohort, their mean BPQ score was higher than the mean for the whole cohort at the initial six-week follow-up point. This was used as the criterion for defining this small subgroup as experiencing a syndrome of chronic grief.

Variation in the prevalence of pathological forms of grief depend on: how such forms are defined; the populations being studied; the point of initial contact and length of follow-up; and the theoretical perspectives governing the choice of instruments or outcome measures. Because of this variation it has been difficult to provide an answer to the following question. In community-based non-clinical samples who have lost a close relative, what percentage of subjects demonstrate a pattern of grief consistent with complicated or pathological grief? This question is the central one addressed in this paper.

Method

Study design

A four-phase longitudinal design was used. Bereaved subjects were interviewed approximately one month after their loss (T1) and then again 10 weeks (T2), 7 months (T3) and 13 months (T4) after the bereavement.

Subjects

Recently bereaved subjects living in Brisbane, Australia, were recruited in three groups: bereaved spouses under the age of 70; adult children who had lost a parent; and parents who had lost a child aged between 1 and 18. They were followed up over 1989–92. Subjects were recruited through hospital notifying officers or through the State Registrar-General. While not strictly randomised, the selection process continued intermittently with approximately equal numbers of subjects in the three groups entering the study. While cancer and heart disease were responsible for the great majority of losses suffered by spouses or adult children, accidents and other illnesses were responsible for most of the children's deaths. The number of bereaved spouses was 53, adult children numbered 52, and there were 53 bereaved parents, corresponding to participation rates of 57%, 57% and 48%, respectively. Eight spouses, nine adult children and seven parents dropped out during the 12 months, while 14 subjects (10 of them parents) missed one or more interviews. The numbers and percentages of potential subjects completing all four interviews was, thus: spouses, 44 (47%); adult children, 40 (44%); parents 36 (32%).

Measures

While subjects completed a range of instruments at all four time points, the central repeated measure was the 76-item bereavement phenomenology component of a bereavement questionnaire. These items were the basis for scale development using the T1 dataset for all 158 subjects (Burnett *et al*, 1996). Three subscales were derived from this process: (a) seven items dealing with images and thoughts; (b) five items dealing with acute separation phenomena; and (c) five items best described as grief, which dealt with feelings of sadness, loneliness, longing and so on, occasioned by reminders of the lost person. These items formed a scale of core bereavement items (CBI) with an internal consistency coefficient of 0.91. Initial analysis suggested that the scale is a valid measure (Burnett *et al*, 1996). The items forming the CBI were based on bereavement-related phenomena that were commonly experienced and were scored so that "never" = 0 and the most frequent option = 3.

Cluster analysis

Cluster analysis seeks to identify groups of subjects and as such is the most appropriate statistical tool for deriving a categorical classification of symptoms. While cluster analysis has been used to classify depressive syndromes (Paykel, 1971), manic syndromes (Double, 1991), borderline syndromes (Grinker *et al*, 1968), it has had limited use in bereavement research. In analysing the patterns of responses based on the CBI scores for the three

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principal groups at the four time points, Ward's hierarchical agglomerative method (Ward, 1963) was the method of cluster analysis used. Milligan (1981) supports the use of Ward's method as giving the best recovery of cluster structure. The cluster solutions for the three comparison groups were each analysed independently and were based on Z scores.

Results

To provide orientation to the cluster analyses, the mean CBI scores for the three comparison groups across time are presented in Table 1.

A four-cluster solution was derived for the bereaved spouses, a four-cluster solution for the bereaved adult children, and a three-cluster solution for the bereaved parents. Figures 1–3 illustrate these results. Despite overall significant differences in the intensities of bereavement responses (the mean score of bereaved parents being greater than that of bereaved spouses, in turn greater than that of bereaved adult children), similarities between the three groups were noted.

As shown in Figs 1–3, all three groups had a cluster comprising between 17% and 25% of subjects who started with a relatively low CBI score which then declined slightly or changed little during the 12-month follow-up. No evidence was found for the pattern of responses which might be expected for delayed grief, that is, initial low levels of grief-related phenomenology which at some point increase markedly. All three groups had a cluster of between 43% and 70% of subjects who scored in the middle range on the CBI. The scores for these clusters declined over the follow-up, with the largest fall occurring between T1 and T2. For the remaining subjects, who had the highest scores, there was some variability in patterns. Among the bereaved spouses two clusters emerged, both scoring highly, both sharing a limited decline in scores up to T3 only for a marked demarcation to occur between T3 and T4. Five bereaved spouses (11%) experienced a negative anniversary effect. With the bereaved adult children, although 25% formed a cluster with relatively higher CBI scores, the pattern over time was that of progressive decreases in scores. There was one subject, who is not included in Fig. 2, who maintained a high score across the four time points. This subject was a middle-aged married woman on regular psychotropic medication for a bipolar disorder, for which she was in regular follow-up with a psychiatrist.

Table 1
Mean CBI scores over time

	Time 1 (1 month)	Time 2 (10 weeks)	Time 3 (7 months)	Time 4 (13 months)	Mean
Spouses (n=44)	26.43	23.39	20.54	17.95	22.08
Adult children (n=40)	21.55	18.07	16.35	15.27	17.81
Parents (n=36)	30.33	27.06	26.31	23.81	26.88
Mean	25.97	22.72	20.87	18.82	–

Group x time effect not significant.
Group effect, $P<0.001$.
Time effect, $P<0.001$.

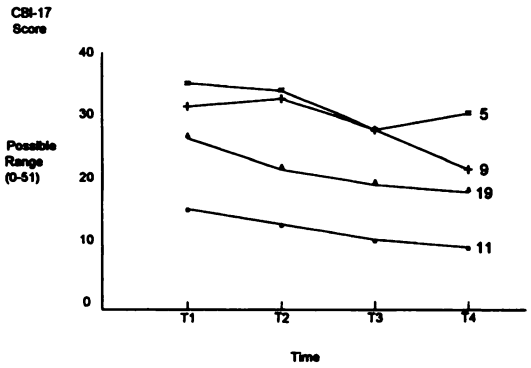


Fig. 1 Results of cluster analysis of CBI score over time for bereaved spouses (n=44) (numbers in each cluster appear on the right).

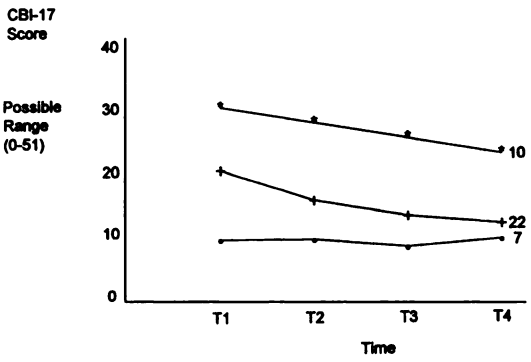


Fig. 2 Results of cluster analysis of CBI score over time for bereaved adult children (n=40) (numbers in each cluster appear on the right – one subject, who scored high at each time point, is excluded from the figure).

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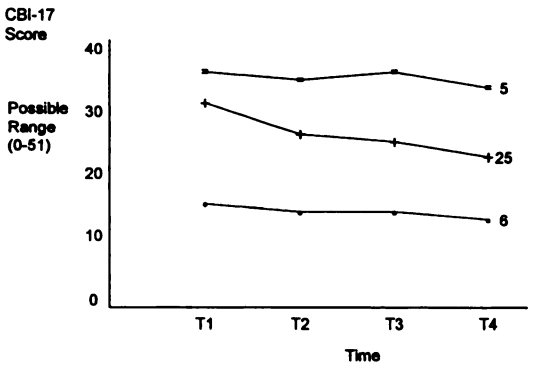


Fig. 3 Results of cluster analysis of CBI score over time for bereaved parents ($n=36$) (numbers in each cluster appear on the right).

Her scores on the CBI (T1 = 39, T2 = 33, T3 = 41, T4 = 38) closely resembled both the raw scores and the pattern of the five-subject cluster of bereaved parents who had continued to experience most core bereavement phenomena frequently.

Of the total of 120 subjects who were all seen at all four time points, 11 (9.2%) demonstrated a pattern of bereavement-related symptoms approximating the syndrome of chronic grief as defined by a high frequency of core bereavement phenomena in the initial phase compared with respective group means and a pattern where such frequencies remained relatively unchanged over the subsequent 12 months. Such a definition of chronic grief is based on patterns of core phenomena and not on depression or other enduring psychological syndromes.

Discussion

Chronic grief

In using cluster analysis with the CBI scores at the four time points for the total of 120 subjects from the three comparison groups in this study, a similar percentage (9.2%) to that reported by Byrne & Raphael (1994) (8.8%) demonstrated chronic grief. However, these two figures are considerably lower than Jacob's (1993) estimate of 20%. A reason for this may be that this study focused on the patterns of grief rather than on defining grief syndromes in terms of defined complications. The focus on these patterns of grief may have led to a more realistic figure with regard to the relative percentages of bereaved populations who experience atypical or severe forms than those achieved with studies which focus more on arbitrarily defined complications. Additionally, researchers and clinicians need to be cautious about estimates derived from personal clinical practice, because of the inherent selection or referral biases. Consequently, based on the bereavement response profiles examined here, it may well be that in these sorts of community samples the incidence of chronic grief is less frequent than Jacob's (1993) estimate.

Delayed or absent grief

There were no patterns found which were indicative of delayed or absent grief. There may be several reasons for the apparent absence of these two syndromes in the populations studied: such syndromes may be relatively rare in community or non-clinical populations; such syndromes are most likely to be noted immediately after bereavement and to have reverted to a more typical pattern by the time of first assessment four or more weeks later; or subjects with fairly low scores on grief measures over time may harbour the potential to manifest more frequent or severe grief symptoms at some later date. With respect to the last possibility, the progressive diminution in CBI scores over time for those with initial low scores was similar in its pattern to those with initially much higher scores. The fact that no individual suddenly had a markedly elevated score from what was a low and progressively diminishing baseline makes it unlikely that such patterns were a screen for delayed grief. Furthermore, on theoretical grounds, those who might be expected to have low scores and uncomplicated courses (e.g. adult children as compared with bereaved parents) were more likely to do so.

Delayed grief is generally seen as more likely to occur if there have been significant survival issues (e.g. serious injury to a survivor of an accident in which a partner died). In such instances grief appears relatively absent, as the injured individual concentrates on her or his own survival (Raphael, 1983). In the absence of normal grief, a full-blown post-traumatic stress syndrome may dominate the clinical picture (Jacobs, 1993). As absent grief and delayed grief are conceptually linked and as the great majority in society do not suffer significant losses coinciding with ongoing grave threat or personal physical injury, this may provide an explanation as to why such syndromes were not apparent among the respondents.

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Clinical implications

- Approximately 9% of a sample of community-based bereaved subjects experienced "chronic" grief.
- None experienced "delayed" or "absent" grief.
- Current estimates of "complicated" or "pathological" bereavement may be inflated.

Limitations

- The retention rate for subjects was quite low, averaging 41% across the 12-month study.
- A relatively low sample size.
- Use of a new instrument to assess the bereavement response.

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References

BURNETT, P., MIDDLETON, W., RAPHAEL, B., *et al* (1994) Concepts of normal bereavement. *Journal of Traumatic Stress*, **7**, 123–128.

———, ———, ———, *et al* (1996) Measuring core bereavement phenomena. *Psychological Medicine* (in press).

BYRNE, G. J. A. & RAPHAEL, B. (1994) A longitudinal study of bereavement phenomena in recently widowed elderly men. *Psychological Medicine*, **24**, 411–421.

DOUBLE, D. B. (1991) A cluster analysis of manic states. *Comprehensive Psychiatry*, **32**, 187–194.

GRINKER, R. R., WERBLE, B. & DRYE, R. C. (1968) *The Borderline Syndrome: A Behavioral Study of Ego Functions*. New York: Basic Books.

JACOBS, S. C. (1993) *Pathological Grief: Maladaption to loss*. Washington, DC: American Psychiatric Press.

——— & KIM, K. (1990) Psychiatric complications of bereavement. *Psychiatric Annals*, **20**, 314–317.

MIDDLETON, W., RAPHAEL, R., MARTINEK, N., *et al* (1993*a*) Pathological grief reactions. In *Handbook of Bereavement: Theory, Research and Interventions* (eds M. S. Stroebe, W. Stroebe & R. O. Hanson), pp. 44–62. Cambridge: Cambridge University Press.

———, MOYLAN, A., RAPHAEL, B., *et al* (1993*b*) An international perspective on bereavement related concepts. *Australian and New Zealand Journal of Psychiatry*, **27**, 457–463.

MILLIGAN, G. W. (1981) A review of Monte Carlo tests of cluster analysis. *Multivariate Behavioural Research*, **16**, 379–407.

PASNAU, R. O., FAWNY, F. I. & FAWNY, N. (1987) Role of the physician in bereavement. *Psychiatric Clinics of North America*, **10**, 109–120.

PAYKEL, E. S. (1971) Classification of depressed patients: a cluster analysis derived grouping. *British Journal of Psychiatry*, **118**, 275–288.

RAPHAEL, B. (1983) *The Anatomy of Bereavement*. New York: Basic Books.

REEVES, N. C. & BOERSMA, F. J. (1990) The therapeutic use of ritual in maladaptive grieving. *Omega*, **20**, 281–291.

RYNEARSON, E. K. (1990) Pathologic grief: the Queen's croquet gown. *Psychiatric Annals*, **20**, 295–303.

SANDERS, C. M. (1988) Risk factors in bereavement outcome. *Journal of Social Issues*, **44**, 97–111.

WARD, J. H. (1963) Hierarchical grouping to optimize an objective function. *Journal of the American Statistical Association*, **58**, 236–244.

WIDDISON, H. A. & SALISBURY, H. G. (1990) The delayed stress syndrome: a pathological delayed grief reaction. *Omega*, **20**, 293–306.

ZISOOK, S. & DE VAUL, R. A. (1985) Unresolved grief. *American Journal of Psychoanalysis*, **45**, 370–379.

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