

## Partners in adversity

### IV. Coping and mood

P. G. Surtees<sup>1</sup>, P. McC. Miller<sup>2</sup>

<sup>1</sup> MRC Biostatistics Unit, Institute of Public Health, University Forvie Site, Robinson Way Cambridge CB2 2SR, UK

<sup>2</sup> Alcohol Research Group, Royal Edinburgh Hospital, Morningside Park, Edinburgh EH10 5HF, UK

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**Summary.** This paper presents details of an interviewer-based measure of coping, completed in the context of a study examining the mental health of three groups of married women following their exposure to recent severe adversity. For one group a marital partner had recently died and for another group a marital partner had recently experienced a myocardial infarction. The third group consisted of those women recently entering a Women's Aid refuge. Initial interviews were completed about 6 weeks following event experience. Coping and mood state were reassessed about 4 months after the events that had recruited the samples to the study. The measures of coping response were adapted from the coping domains of 'fighting spirit', 'helplessness', 'fatalism', 'avoidance' and 'anger/frustration' assessed in the Mental Adjustment to Cancer Scale. Details are provided of the construction of a summary measure of coping response based upon the above domains and of its relationship with follow-up mood state after allowance for mood levels at initial interview.

**Key words:** Female – Life event – Bereavement – Longitudinal – Coping – Depression – Anxiety

### Introduction

Investigations of the relationship between adverse experiences and mental health have sought explanations amongst study samples according to individual differences across a broad range of social and psychological factors. In many studies an emphasis has been placed upon the role of social support and of specific factors (e.g. early experiences of loss or sexual abuse) that may place some individuals at heightened risk of mental ill health in adult life or confer resilience to such adverse health outcomes (e.g. Brown et al. 1977; Harris et al. 1986; 1987; Bifulco et al. 1991; McNaughton et al. 1992).

One area that has attracted increasing interest has been concerned with how individuals deal with difficult and stressful experiences, particularly in the immediate after-

math to their occurrence. A number of approaches have been used to gain a foothold in this challenging area: attempting to specify cognitive ideations of attachment, prayer and hope (Henderson and Bostock 1977), helplessness or hopelessness (Seligman 1979; Metalsky et al. 1993), ways of appraisal of circumstances (Lazarus and Folkman 1984) or through classifying behavioural actions to face the new situation (Parker and Brown 1982; Parker et al. 1986). The practical consequence of these approaches has been to derive a variety of checklist or questionnaire methods, to represent the various conceptual positions being pursued (e.g. Seligman et al. 1979; Parker and Brown 1982; Billings and Moos 1984).

However, in many of the studies where these methods have been applied, little attempt was made to relate the coping domains assessed to either the recent (or lifetime) adversity experience of the respondents (e.g. Kendler et al. 1991). Such studies attempt to assess coping styles and behaviours in the absence of knowing whether any adversity has been experienced within common at-risk periods. A further difficulty, is that even if the samples being studied have been exposed to (recent) adversity, and that has been formally assessed, then it is unusual for the samples to be unified by any common component of that experience. The coping of such study groups is then assessed in terms of their exposure to mostly very different stressful incidents.

The assessment of coping in the context of such studies provides a good example of the difficulties inherent in evaluating influences on the pathoplasticity of the response of individuals to adversity. Typically, the problem that not all of an available sample may have been exposed to a similar adverse experience within a given time period, then needs to be overcome. Strategies for dealing with this core issue have usually called upon the use of coping questionnaires, referred to above, that are general in approach; in the sense that coping is not being assessed in relation to some recent known adverse experience but in relation to imagined (perhaps idealised) emotion-based or behaviour-based responsivity. The respondent is usually required to imagine how, and in what way, they would cope with circumstances which they may or may not have experienced. However, some studies (e.g. Folkman and Lazarus 1980; Folkman et al. 1986; Miller et al.

1985, 1987) did ask about actual circumstances. In the Miller et al. (1985) study, which was a general population study of women undertaken in Edinburgh, interviewer-based measures of mental state and of adversity experience were documented over equivalent time periods. A measure of the maladaptive reactions of the surveyed women was determined by how they responded to adverse experiences, both in general and in relation to those actual stressful incidents elicited from the interviewing procedure. Scaling techniques applied to the ratings allowed for those in the sample who had not experienced any adversity during the study period. In the context of a general population study, this attempt to link stressful incident with coping activity is probably the most realistic approach that can be pursued but does not overcome the inherent variability in the adversity exposures of the study group.

Yet other approaches have, of course, been taken to achieve advances in this area, notably in the difficult research field attempting to establish whether psychological factors have an influence upon cancer incidence (Fox 1978; 1988) or, once established, its progression (Morris et al. 1985; Pettingale et al. 1985; Kune et al. 1991). Whilst the role of psychological factors in these studies remains open to question (for many reasons including likely recall bias and the prolonged latent periods associated with the development of many neoplasms), measures have been developed in this context which were designed to represent the psychological adjustment to cancer diagnosis. Some of these measures may increasingly be found useful in research areas involving psychiatric health, particularly those involving the assessment of adaptational demands to severe stress. This study has modified such a measure (see below) for use in evaluating individual differences in mood outcome following exposure to severe life stress and was designed partly to permit an evaluation of coping with specific forms of adversity.

This paper has the following objectives:

1. to describe and introduce the interviewer-based measures of coping response that were used in the study,
2. to construct a summary scale of those measures;
3. to present details of the relationship between the (summary) coping measure and mood state of the groups at follow-up [determined by both conventional and modified scoring of the General Health Questionnaire (GHQ)] and
4. to determine the extent to which that relationship is confounded by mood state at initial interview.

## Design and methods

The design and methods of this study have been described in earlier papers (Surtees and Miller 1993, Miller and Surtees 1993). Briefly, three groups of respondents were recruited to the study based upon their common exposure to recent severe adversity.

The groups were:

1. a recently bereaved sample of married women (the bereaved group),
2. a group of women whose husbands had recently suffered a myocardial infarction which required admission to hospital (the coronary group), and
3. a group of women who had recently entered a Women's Aid refuge (the refuge group).

The 1st interview, undertaken about 6–7 weeks following the study events, assessed the life stress and psychiatric status of each respondent over the period from 6 months prior to study event occurrence up to the time of interview. The interview obtained demographic information, details of crisis social support (associated with event occurrence), of coping styles, of other life stress [according to the Life Events and Difficulties Schedule (LEDS); Brown and Harris 1989] and an assessment of mood status using the 30-item version of GHQ (Goldberg 1978; Goldberg and Williams 1988). In addition, psychiatric status was assessed according to an adaptation of the Longitudinal Interval Follow-up Evaluation (LIFE; Keller et al. 1987). A follow-up assessment was completed between 3 and 4 months after the first interview and covered the time period between interviews. The principal parts of the initial assessment were repeated at follow-up. Further details are provided in the earlier papers cited.

## Coping scale ratings

Five coping scales were rated by interviewers, each one on a five-point scale. A high score indicated a marked or extreme level of each rated attribute, namely: fighting spirit, helpless/hopeless, fatalistic, avoidance and anger/frustration. These scales were derived from earlier work investigating the psychological adjustment to breast cancer and its effect on outcome (e.g. see Greer and Morris 1978; Greer et al. 1979; Watson et al. 1988; Dean and Surtees 1989; Greer 1991; Watson et al. 1991).

In this work cognitive and behavioural responses to being told of a diagnosis of cancer were assessed using a clinical interview and in more recently published work through a questionnaire method, the Mental Adjustment to Cancer (MAC) scale (Greer and Watson 1987; Watson et al. 1988). For present purposes, given the very different experiences of the study groups, it was decided to adopt an interviewer-based assessment format. The rating decisions were made by interviewers on the completion of their assessments and were based upon the subject's behaviour and responses to the formal sections of the interview and on other incidental (ethological) aspects of the encounter. This included giving due allowance to unsolicited remarks that could suggest the response style of each respondent to their recent adverse experience. The coping response ratings were therefore not informed by asking leading questions, but through a review of material provided during the course of the whole interview. Interviewers were guided in the completion of their ratings of coping response by the notes associated with each coping scale. The scales as used in this study are reproduced in the Appendix.

## Scoring of the GHQ-30

The GHQ was scored according to both a conventional (binary) and a criterion-based approach in which individuals' scores enabled them to be assigned to three putative diagnostic classes (anxiety, depression and a 'combination' class), each with differing degrees of confidence. Details of the criterion method, and of the results obtained based upon the present study have been provided elsewhere (Surtees and Miller 1994). The scoring method has also been applied in earlier work (Surtees and Miller 1990; Surtees and Tansella 1990).

## Results

Details concerning the response, refusal rates and demographic characteristics of the three study groups have been provided in the earlier publications cited (e.g. see Surtees and Miller 1993).

A total of 143 coronary wives, 64 widows and 32 refuge seekers provided information at the initial inter-

**Table 1.** Mean raw scores of coping items at initial (A) and at follow-up interviews<sup>a</sup> (B)

A Coping response	Coronary (C) (n = 142)		Bereaved (B) (n = 63)		Refuge (R) (n = 32)		Diff. between gp means	
	Mean	SD	Mean	SD	Mean	SD	p <sup>b</sup>	p <sup>c</sup>
'Fighting spirit'	3.47	(0.81)	3.11	(0.92)	3.31	(0.90)	a	a
'Helpless/hopeless'	1.47	(0.72)	1.91	(0.88)	1.72	(0.81)	c	c
'Fatalistic'	1.61	(0.84)	1.75	(0.88)	1.69	(1.03)	ns	ns
'Avoidance'	1.32	(0.66)	1.78	(1.01)	1.22	(0.61)	c	c
'Anger/frustration'	1.51	(0.85)	1.78	(1.08)	2.25	(0.98)	c	ns
B Coping response	Coronary (C) (n = 127)		Bereaved (B) (n = 58)		Refuge (R) (n = 19)		Diff. between gp means	
	Mean	SD	Mean	SD	Mean	SD	p <sup>b</sup>	p <sup>c</sup>
'Fighting spirit'	3.55	(0.77)	3.40	(0.90)	3.68	(0.82)	ns	ns
'Helpless/hopeless'	1.38	(0.69)	1.69	(0.94)	1.79	(0.79)	b	a
'Fatalistic'	1.61	(0.84)	1.57	(0.75)	1.53	(0.70)	ns	ns
'Avoidance'	1.16	(0.41)	1.33	(0.78)	1.21	(0.54)	ns	ns
'Anger/frustration'	1.47	(0.72)	1.59	(0.92)	2.00	(1.00)	a	ns

<sup>a</sup> During interval between event occurrence and initial interview or (for follow-up) period between interviews

<sup>b</sup> Kruskal-Wallis one-way analysis of variance ('a'  $P < 0.05$ ; 'b'  $P < 0.01$ ; 'c'  $P < 0.001$ ; 'ns' = non-significant)

<sup>c</sup> Mann-Whitney U test (two-tailed) (Group 'C' v Group 'B' 'a'  $P < 0.05$ , 'c'  $P < 0.001$ ; 'ns' = non-significant)

view, completed on average 6.5 weeks following event occurrence. Follow-up interviews were completed with 126 coronary wives, 58 widows and 19 refuge seekers. These took place on average 15.8 weeks following event occurrence.

### Coping styles

The analysis of the ratings of coping style involved an initial inspection of the raw scores, an assessment of the differences in group scores and the construction of a scale taken to represent a positive, effective style of coping with adversity. Mean individual coping item scores, for the three groups at both assessments, are shown in Table 1. The greater the score, the more marked the coping attribute rated.

Kruskal-Wallis one-way analysis of variance (by ranks) tests revealed that at initial interview, significant group differences were found for four of the five modes of coping; only ratings on the 'fatalism' scale showed no significant variation amongst the groups.

At follow-up (Table 1B), overall group differences were detected only for the 'anger/frustration' and 'helpless/hopeless' scales. Further analysis confined to examining coronary/bereaved group differences in coping ratings (by Mann-Whitney U-test) revealed that the two groups differed significantly from each other on three of the five scales at initial interview ('fighting spirit'; 'helpless/hopeless'; 'avoidance') but differed only on the 'helpless/hopeless' scale at follow-up.

Table 2 shows the percentage of the coronary and bereaved samples assigned specific coping ratings at initial

and follow-up interviews. It is clear that marked or extreme ratings were rarely given for four of the five coping domains in these two samples; therefore in preparation for constructing a summary coping scale the five scales were collapsed, each to a three point range to reflect the distribution of ratings and to unify the rating direction of each coping domain. The re-coding process is also shown in Table 2.

Limited availability of the refuge seekers at follow-up, and of the difference in the nature of their adverse experiences from those of the other two groups, suggested that the construction of a summary scale should be developed on the combined coronary and bereaved samples only. However, for completeness, reliability analysis was undertaken on the five coping scales as rated at the initial interview, and based initially upon the entire sample (including the refuge seekers), and secondly upon the remaining sample of 205 women after the exclusion of the refuge seekers. Inspection of the results revealed that the measure of 'avoidance' contributed less well to a unified scale than the other items (e.g. the Pearson correlation coefficient between the avoidance score and the aggregate score based upon the remaining items was least; also the avoidance score was poorly predicted from the scores on the other items, with a squared multiple correlation of 0.11, based upon the analysis of the coping style ratings of 237 women). The results of special interest are shown in Table 3 and are based upon the (combined) three samples at initial interview and after the exclusion of the refuge seekers and when either all five coping scale items are included or when the 'avoidance' item is excluded.

The exclusion of the avoidance item ensured that the mean scores of the remaining items were non-significantly different from each other (Hotellings  $T^2$  test) and that there was no reduction in Cronbach's alpha reliability

**Table 2.** Percentage of the coronary and bereaved samples assigned specific coping ratings at initial and follow-up interviews together with the method of re-coding items

Mode of coping	Coronary sample (%)		Bereaved sample (%)		Re-coded-rating
	T1 (n = 142)	T2 (n = 127)	T1 (n = 63)	T2 (n = 58)	
<i>'Fighting spirit'</i>					
Extreme	6.3	7.0	1.6	3.1	→ 1
Marked	45.5	43.4	37.5	48.4	→ 1
Moderate	37.1	30.1	34.4	23.4	→ 2
Slight	9.1	8.4	20.3	12.5	→ 3
Not at all	1.4	0.0	4.7	3.1	→ 3
<i>'Helpless/hopeless'</i>					
Extreme	0.0	0.0	0.0	0.0	→ 3
Marked	2.1	1.4	4.7	6.3	→ 3
Moderate	7.0	6.3	18.8	10.9	→ 3
Slight	26.6	16.8	37.5	21.9	→ 2
Not at all	63.6	64.3	37.5	51.6	→ 1
<i>'Fatalistic'</i>					
Extreme	0.7	0.7	0.0	0.0	→ 3
Marked	3.5	2.8	3.1	0.0	→ 3
Moderate	8.4	7.7	18.8	14.1	→ 3
Slight	30.1	27.3	26.6	23.4	→ 2
Not at all	56.6	50.3	50.0	53.1	→ 1
<i>'Avoidance'</i>					
Extreme	0.0	0.0	0.0	0.0	→ 3
Marked	0.7	0.0	9.4	4.7	→ 3
Moderate	8.4	1.4	12.5	3.1	→ 3
Slight	12.6	11.2	23.4	9.4	→ 2
Not at all	77.6	76.2	53.1	73.4	→ 1
<i>'Anger/frustration'</i>					
Extreme	0.7	0.0	1.6	0.0	→ 3
Marked	4.2	0.7	9.4	6.3	→ 3
Moderate	6.3	9.8	10.9	7.8	→ 3
Slight	23.1	20.3	20.3	18.8	→ 2
Not at all	65.0	58.0	56.3	57.8	→ 1

coefficient. In view of these results, further analysis concerned only the four-item coping scale. Summary statistics of the coping scale are shown in Table 4, which suggest little change in the mean scores based upon the two assessments. Paired sample  $t$ -tests confirmed that there were no significant differences in the scores on the two occasions: for the coronary (mean score at initial interview, 6.07; at follow-up 5.92;  $t = 1.02$ ,  $df = 125$ , ns), recently bereaved (mean score at initial interview, 6.82; at follow-up 6.35;  $t = 1.67$ ,  $df = 56$ , ns), or indeed the refuge group (mean score at initial interview, 6.94; at follow-up 6.63;  $t = 0.62$ ,  $df = 18$ , ns).

#### *Coping styles and mood status*

Analyses were now undertaken examining the relationship between the summary coping style scores (determined at initial and follow-up interviews) and initial and follow-up mood status.

For these purposes, the summary measure of coping style was classified as 'exceptional' (a score level of 4), 'good' (a score level of 5 or 6) and 'limited or poor' (score level 7 or greater). Classification as having coped in an 'exceptional' way could only be achieved with a marked/extreme rating of 'fighting spirit' in association with ratings of 'not at all' for all three of the remaining coping styles. Table 5 (A) shows the percentage of the coronary group meeting specific initial mood status criteria by their coping index classification determined at initial interview, whilst Table 5 (B) displays the relationship between the coping measure at initial interview and follow-up mood status. The results of a comparable analysis for the bereaved group are shown in Table 6.

The results reveal that the relationship between coping style scores determined at first interview and mood state on both assessment occasions follow a clear gradient in the percentage of each sample meeting (any of) the mood status criteria; the more limited their coping with adverse experiences had been judged to have been, the greater the percentage with symptomatic distress. Table 7 shows the relationship between mood state and the (summary) coping measure for the bereaved and coronary samples where both measures were determined at follow-up.

These results, when considered in association with those shown in Tables 5 and 6, reveal that the (statistical) association between coping score and mood status was stronger for concurrent assessments than for those involv-

**Table 3.** Coping scale reliability

	All groups (n = 237)		Coronary and Bereaved only (n = 205)	
	5 items	4 items <sup>a</sup>	5 items	4 items <sup>a</sup>
Mean inter-item correlation (Range)	0.32 (0.16–0.59)	0.37 (0.23–0.59)	0.36 (0.23–0.58)	0.41 (0.32–0.58)
Hotellings $T^2$ (P value)	25.9 ( $P = 0.0001$ )	3.9 (ns)	18.0 ( $P = 0.018$ )	7.9 ( $P = 0.532$ )
Cronbach's alpha	0.70	0.70	0.73	0.73

<sup>a</sup> 'Avoidance' rating excluded

**Table 4.** Median summary coping scores (and interquartile range) for the three groups at both interviews

	Coronary	Bereaved	Refuge
Initial interview	6.0 (4.0–7.0)	6.0 (5.0–8.0)	7.0 (6.0–8.75)
Follow-up interview	5.0 (4.0–7.0)	6.0 (4.75–7.25)	6.0 (5.0–8.0)

ing a time lag. Mood status gradients varied by the criterion measure being applied and by group. In general, coping style scores based upon initial interview were more strongly associated with mood status at follow-up for the coronary wives [see Table 5 (B)] than for the recently bereaved [see Table 6 (B)].

Whilst (perhaps surprisingly) there were non-significant differences in coping style scores between the two assessment occasions (for all groups), clearly there was the concern that mood status may have had an influence upon the interviewer-based ratings of coping style. For the following analyses the role of social and demographic

factors were not considered. It should be noted however, that neither age nor social class distinguished mood status outcome at follow-up for either the coronary wives or the recently bereaved.

### Logistic analyses

The extent to which the summary coping style measure was associated with mood status at follow-up, after allowance for mood state at initial interview, was now examined. Mood status at follow-up was represented by the conventionally scored GHQ and by the three criterion-based measures introduced earlier. Analyses were completed using the Generalised Linear Interactive Modelling system (GLIM; Payne 1987). In all analyses the significance of the coping measure was determined through backward deletion and only after the predictive significance of the measure of mood had been determined. In view of the limited sample of refuge seekers at follow-up, analyses were restricted to the coronary wives and the recently bereaved.

For the coronary wives, the analysis revealed that all initial interview measures of mood were significantly as-

**Table 5. A** Coping and mood status at initial interview amongst the coronary sample ( $n = 142$ ); **B** Coping at initial interview and mood status at follow-up amongst the coronary sample ( $n = 125$ )

A 'Overall summary coping index'	Criterion scoring (%)			
	Anxiety	Depression	Combined	GHQ $\geq 5$
Exceptional ( $n = 47$ )	8.5	2.1	8.5	27.7
Good ( $n = 43$ )	9.3	4.7	11.6	32.6
Limited/poor ( $n = 52$ )	19.2	17.3	38.5	69.2
<i>P</i>	ns	0.0142	0.0003	0.0000

  

B 'Overall summary coping index'	Criterion scoring (%)			
	Anxiety	Depression	Combined	GHQ $\geq 5$
Exceptional ( $n = 40$ )	2.5	5.0	7.5	12.5
Good ( $n = 37$ )	5.4	2.7	10.8	21.6
Limited/poor ( $n = 48$ )	16.7	16.7	22.9	37.5
<i>P</i>	0.0448	0.0465	ns	0.0224

**Table 6. A** Coping and mood status at initial interview amongst the bereaved sample ( $n = 62$ ); **B** Coping at initial interview and mood status at follow-up amongst the bereaved sample ( $n = 57$ )

A 'Overall summary coping index'	Criterion scoring (%)			
	Anxiety	Depression	Combined	GHQ $\geq 5$
Exceptional ( $n = 8$ )	0.0	0.0	0.0	50.0
Good ( $n = 24$ )	20.8	20.8	37.5	75.0
Limited/poor ( $n = 30$ )	56.7	50.0	66.7	90.0
<i>P</i>	0.0019	0.0084	0.0018	0.0391

  

B 'Overall summary coping index'	Criterion scoring (%)			
	Anxiety	Depression	Combined	GHQ $\geq 5$
Exceptional ( $n = 7$ )	0.0	0.0	0.0	0.0
Good ( $n = 24$ )	16.7	25.0	25.0	33.3
Limited/poor ( $n = 26$ )	15.4	38.5	34.6	69.2
<i>P</i>	ns	ns	ns	0.0014

**Table 7. A** Coping and mood status at follow-up amongst the coronary sample ( $n = 125$ ); **B** Coping and mood status at follow-up amongst the bereaved sample ( $n = 57$ )

A 'Overall summary coping index'	Criterion scoring (%)			
	Anxiety	Depression	Combined	GHQ $\geq 5$
Exceptional ( $n = 44$ )	0.0	0.0	4.5	11.4
Good ( $n = 43$ )	9.3	2.3	11.6	23.3
Limited/poor ( $n = 39$ )	17.9	25.6	28.2	41.0
<i>P</i>	0.0151	0.0000	0.0073	0.0072

  

B 'Overall summary coping index'	Criterion scoring (%)			
	Anxiety	Depression	Combined	GHQ $\geq 5$
Exceptional ( $n = 14$ )	0.0	0.0	0.0	14.3
Good ( $n = 23$ )	8.7	17.4	17.4	30.4
Limited/poor ( $n = 21$ )	28.6	57.1	52.4	81.0
<i>P</i>	0.0369	0.0004	0.0012	0.0001

**Table 8.** Results of fitting logistic regression models of measures of mood at initial interview and of coping (ascertained either at initial interview or follow-up) to follow-up mood status

Model	Parameters	Coronary sample ( <i>n</i> = 125)		Bereaved sample ( <i>n</i> = 57)	
		Change in deviance	Standardised coefficient	Change in deviance	Standardised coefficient
<i>In relation to GHQ binary scores at follow-up:</i>					
A1	GHQ (T1)	14.85***	3.57	9.87**	2.41
A2	GHQ (T1)		2.95		2.15
	+ Coping (T1)	+2.52	1.56	+11.61***	3.02
A3	GHQ (T1)		3.13		2.19
	+ Coping (T2)	+6.07*	2.40	+14.73***	3.31
<i>In relation to binary Combined criterion at follow-up:</i>					
B1	Combined criterion score (T1)	20.80***	4.38	8.17**	2.60
B2	Combined criterion score (T1)		3.89		2.10
	+ Coping (T1)	+0.26	0.51	+0.26	0.51
B3	Combined criterion score (T1)		3.98		1.57
	+ Coping (T2)	+6.06*	2.30	+9.01**	2.60
<i>In relation to binary Anxiety criterion at follow-up:</i>					
C1	Anxiety criterion (T1)	12.72***	3.67	10.37**	2.57
C2	Anxiety criterion (T1)		3.28		2.58
	+ Coping (T1)	+3.91*	1.80	+1.51	−1.21
C3	Anxiety criterion (T1)		3.08		2.11
	+ Coping (T2)	+5.51*	2.11	+2.82	1.48
<i>In relation to binary Depression criterion at follow-up:</i>					
D1	Depression criterion (T1)	19.88***	4.44	12.22***	3.3
D2	Depression criterion (T1)		3.88		2.75
	+ Coping (T1)	+0.35	0.59	+0.52	0.71
D3	Depression criterion (T1)		3.25		2.41
	+ Coping (T2)	+16.42***	2.50	+10.86***	2.82

T1, at initial interview; T2 at follow-up interview (\*  $P < 0.05$ , \*\*  $P < 0.01$ , \*\*\*  $P < 0.001$ )

sociated with follow-up mood state (changes in scaled deviance ranging from 12.72 to 20.80, all on 1 *df*,  $P < 0.001$ ). However, the (summary) coping measure, determined at initial interview, was only shown to be significantly associated with follow-up mood status in addition to that of initial mood for one analysis; in relation to the anxiety criterion at follow-up (shown as model C2 in Table 8; additional scaled deviance of 3.91, 1 *df*,  $P < 0.05$ ). Identical analyses were then completed replacing the coping measure determined at initial interview with that obtained at follow-up. The results (shown as models A3, B3, C3 and D3 in Table 8) revealed that the follow-up measure of coping was significantly associated with all follow-up measures of mood after allowance for initial interview measure of mood. The results, including the standardised coefficients (regression coefficients divided by their standard errors) associated with each analysis, are shown in Table 8.

A repeat analysis for the recently bereaved revealed broadly similar findings to those obtained for the coronary wives. Initial mood status was significantly associated with follow-up mood (changes in scaled deviance ranging from 8.17 to 12.22, all on 1 *df*,  $P < 0.01$ ) but the summary coping measure, determined at initial interview, was only shown to be significantly associated with follow-up mood status in addition to that of initial mood for one analysis; in relation to the conventionally scored GHQ at follow-up (shown as model A2 in Table 8; additional scaled deviance of 11.61, 1 *df*,  $P < 0.001$ ).

Relationships with the criterion based measures were non-significant. Replacing the coping measure determined at initial interview with that obtained at follow-up revealed that the follow-up measure of coping was significantly associated with all follow-up measures of mood except that of anxiety, after allowance for the measure of mood determined at initial interview.

## Discussion

The population-based investigation of adversity-illness relationships has provided epidemiological estimates of the extent to which individuals are exposed to adverse events and of the risk of the subsequent development of psychiatric conditions following their occurrence. These studies have also provided the foundation for the development of interviewer-oriented life stress assessment methods that have taken account of the context of adversity exposures; a significant advance from the simpler questionnaire methods. However, population studies, by their very nature, ensure that the samples assessed have experienced a diverse range of stressful incidents. Whilst for some purposes this is a strength, for the pursuit of more narrowly defined research objectives it is a significant weakness. This study developed out of an interest in investigating (psychiatric) health outcome variability in relation to (standard) specific adverse experiences; an interest that could not be satisfactorily pursued in population research. However, whilst the design adopted in this study depended upon the recruitment of women to each of three groups through their common, but individual, adverse ex-

perience; inevitably this differed through the contextual circumstances of each study participant. This study design therefore can only attempt to limit the variability in adversity through the requirement that all were exposed to one commonly defined stressor. The degree to which these experiences actually varied over a number of stressor characteristics has been reported elsewhere (Miller and Surtees 1993). This revealed that whilst almost all of the bereaved group had events rated as severely threatening, only about half of the coronary group had their target events rated as similarly threatening. However, they encompassed a narrower range of other event characteristics than the refuge group, where target events were the most variable of the three groups. The study design ensured that within each group there was at least one common stressful experience and that it was of such severity that it would be likely to be outstanding in severity terms relative to all the other adverse events experienced by each woman during the study interval. However, individual women will still have differed in the extent to which they were exposed to other events, independent of their target event, and which may have had a consequence on their health outcome.

The first part of this paper was concerned with constructing a summary measure of the coping responses of the three study samples. Perhaps unusually, rather than apply a behaviour or checklist type approach developed in the context of life stress research, this study adapted a method that was designed originally to assess the psychological response to being informed of a cancer diagnosis. This study shares a fundamental objective with the cancer work (where the MAC or earlier structured interviews were used); namely the desire to identify measures of an individual's response to adverse events that might have prognostic value; for this study in terms of their mental health outcome.

The measure of coping response derived in this study represents only a first step towards identifying coping domains of prognostic value. One impetus behind the development of the MAC was to enable its ease of use in oncology clinics, where early recognition may be obtained of an individual's attitudes to being told of their diagnosis. However, additional work is required to establish the value of the approach outside oncology. Questions in particular remain of the reliability of the (summary) measure used in this study and of the extent to which it is confounded by mood state. Watson et al. (1988) noted that the assessment of 'avoidance' (or 'denial' as used in their earlier work) was problematical and was relatively rarely assigned as a response by patients being informed that they had cancer; a further study (Schwartz et al. 1992) based upon use of the MAC on 239 USA cancer patients suggested eliminating the 'avoidance' sub-scale due to its limited content validity. The present study showed that the 'avoidance' scale contributed less well than the other coping response areas to a unified scale and was therefore excluded from the main measure.

This study adopted the view that the coping domains being assessed represented 'snapshots' of a coping process taken in the aftermath of specific adverse experiences, rather than an assessment of an underlying trait. In recognition of this, summary measures were based upon

ratings obtained at both the initial and follow-up interviews to provide indications of this evolving coping process.

The initial results revealed a clear gradient in the percentage of both the coronary and bereaved samples meeting the (various) criterion scores according to the effectiveness of the rated coping style. There was also a suggestion that the gradient was most pronounced in relation to the depression as opposed to the anxiety criterion (for both groups). However, the tables of results illustrating the relationship between coping determined at initial interview and follow-up mood state revealed relatively weak or absent (statistical) associations. This relationship was more appropriately examined in those analyses that included provision for mood status at initial interview. The results revealed the initial interview (summary) coping measure to have only limited predictive significance of follow-up mood state, beyond mood state at initial interview, for both the coronary wives and the recent widows. A number of factors may bear upon this finding. The short study period being examined was one of considerable change in the respondents' lives (see Surtees and Miller 1994, for an indication of the magnitude of the change in mood states over this time period). The value therefore of an assessment of coping so close in time to the occurrence of the coronary or bereavement events may be limited. Many respondents at that time were still coming to terms with the immediate aftermath of the events. 'Instant' measures of 'cognitive-ideational' coping may therefore be less useful than perhaps either behavioural measures or those indicating cognitive coping styles developed after a longer period of adaptation to the initial consequences of the adverse experiences.

Certainly the measure of coping determined at follow-up was (for most analyses) strongly related to follow-up mood state beyond mood status at initial interview. The possibility remains that other factors, particularly social support and personality, may contribute to a fuller understanding of these relationships. The present analysis has neither considered their influence nor the evolution of changes in mood state following event exposure. In order to develop a fuller understanding of the role of these measures in influencing adaptation to specific forms of adversity, further analyses are needed. These should include consideration of changes in the course of (formally assessed) psychiatric disorder in relation to the coping response styles of the samples. The availability of the LIFE assessments for these samples will enable those analyses to be completed.

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### Appendix: Coping scales

(Rated on interview completion)

The following ratings are to be made on the basis of information gained from the entire interview. They are not intended to be based on responses to specific questions but rather on unsolicited (perhaps incidental) material provided by the subject (remarks, tone of voice, attitude behaviour, etc.) during the course of the interview.

Ratings are to be made at the end of the initial interview (covering the time period between event occurrence and interview) and at follow-up (covering the approximate 3-month period between interviews), and are intended to reflect the extent to which each description applies to the subject over this interview period.

Ratings:

Extreme (5)	Marked (4)	Moderate (3)	Slight (2)	Not at all (1)
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#### 1. 'Fighting spirit' scale (F.S)

The extent to which the subject has revealed a positive attitude to life. This may be characterised by her attempts, (i) to develop plans for the future, (ii) to make the most of the new situation created by the event, (iii) to put the event behind her, (iv) to regard her new (post-event) circumstances as a challenge and (v) to make a considerable effort to improve her situation. ☐

#### 2. 'Helpless/hopeless' scale (H.H)

This category is concerned with how the subject has come to see her future now that the event has occurred. In making the rating consider the extent to which the subject has reported her life now as being hopeless, that there is nothing/little she can do to help herself, whether she feels/has felt like giving up, whether she has been at a loss about what to do, and the extent to which her future is seen as bleak and without comfort. ☐

#### 3. 'Fatalistic scale' (F.)

A rating in this category is intended to reflect an 'out-of-my-hands' attitude by the subject towards influences on her life since the event has occurred. This fatalistic view of her circumstances would be suggested by such statements as "Nothing I do will make any difference to the situation. I have put myself in the hands of God. I've had a good life so far, what is left is a bonus. I only take one day at a time. I have no control over what will happen." ☐

#### 4. 'Avoidance scale' (A.)

Rate the extent to which the subject has avoided coming to terms with what has happened. Consider practical efforts made by the subject to deal with the event circumstances and statements made revealing the way the subject sees the event and its consequences (e.g. "I don't really believe all this has happened, I don't believe that (husband) has had a heart attack. I just can't believe (face up to the fact) that he has died. I keep expecting him to come home"). ☐

#### 5. 'Anger/frustration' scale (A.F)

Rate the extent to which the subject has experienced feelings of anger and frustration about what has happened. This would include such feelings that have been directed towards herself and towards others. Attempt to discount similar feelings that may be perhaps understandably engendered, by for instance, certain prevailing home circumstances preceding entry to a refuge or in relation to the medical care of the subject's husband. The rating may for some subjects reflect a diffuse (undirected) feeling, but be more focused for others (e.g. towards husband or the refuge etc.). ☐