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Partners in adversity V: support, personality and coping behaviour at the time of crisis

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Abstract This paper presents further results from a study of married women in Edinburgh who had just suffered an adverse experience: either their husband's non-fatal myocardial infarction, their husband's death or their own arrival in a Women's Aid refuge for battered women. Interviews were carried out 4–6 weeks following the adverse experience and, where possible, again approximately 3 months later. Symptoms were assessed using the 30-item General Health Questionnaire and criterion-based measures of depression and anxiety derived from it. The extent and nature of crisis support from household members and from groups of people outside the household, and also of failures in expected support, was measured at first interview. A modified version of Tyrer and Alexander's (1979) personality schedule was administered at the follow-up interview, and the resulting personality data were then reduced to six factors using principal components analysis. An interviewer assessment of how well the subject was coping was made at both interviews. The vast majority of the sample received extensive practical and emotional support from family and friends, and perhaps because such positive support was so prevalent, variations in it seemed to have little effect on symptoms. However, subjects who were unexpectedly 'let down' or criticised by friends or family tended to show higher symptom levels, although, surprisingly, this was less true for the bereaved wives than for the others. The six personality factors that emerged were labelled *nervousness* (similar to neuroticism) *impulsivity, social withdrawal, helplessness, inferiority* and *aggressiveness*. There was evidence that subjects high on nervousness remained symptomatic longer following the adverse experience. The aggressiveness factor showed a curvilinear trend with high and low aggressives showing higher symptom levels than middle aggressives. However, for the coronary wives the trend was linear with low aggressives having high symptoms. Subjects low on impulsivity were more affected by being 'let down' by friends and family. The interviewer-assessed coping measure was linearly related to nervousness and showed a curvilinear relationship with aggressiveness.

Key words Life event · Support · Personality · Coping · Symptoms

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Introduction

This paper is one of a series reporting on a study, undertaken in Edinburgh, of groups of married women who had recently been exposed to a similar adverse life experience. There were three samples: a recently bereaved group, a sample whose husbands had just suffered non-fatal myocardial infarction and a group who had sought refuge in a womens' aid refuge. The women were all interviewed for the first time 6–7 weeks following the event, and followed up 3–4 months later.

Previous papers (Surtees and Miller 1993; Miller and Surtees 1993; Surtees and Miller 1994a; Surtees and Miller 1994b) have reported on the design and background of the study, on within-sample variations in the type of event experienced, on the mood status following the event and on the effectiveness of the subjects' efforts to cope with their tragedy.

The current paper has four aims: firstly to examine the effects of social support on mood status; secondly, to explore the influence of personality on mood status; thirdly, to identify any possible interactions between social support and personality; and fourthly, to look briefly at the relationships between personality, coping and mood.

The concept of personality has a history of controversy over the definition of personality traits, their stability and their possible overlap with psychiatric symptoms, on the one hand, and coping processes on the other (see e.g. Lon-

don and Exner 1978; Hall and Lindzey 1970; Ingham 1966; Folkman et al. 1986). In this paper, following DSM-III-R, personality traits are conceived as 'enduring patterns of perceiving, thinking and relating to the environment and oneself exhibited in a wide range of important social and personal contexts'. Coping will be regarded as 'a response to the psychological and environmental demands of specific stressful encounters' (Folkman et al. 1986). Given these definitions it is clear that there is likely to be a relationship between coping, as reported in a previous paper (Surtees and Miller 1994b) and personality factors, as described here. The extent of this overlap is investigated.

Social support in time of crisis has received very considerable attention (e.g. Brown et al. 1986a; Brown 1991; Kitamura et al. 1993). This paper concentrates on two issues: firstly, to elucidate the effects of crisis support on symptoms, and secondly, to investigate what happens when women are either 'let down' or criticised. The expectations are that positive support will be beneficial, whereas being let down will increase symptoms (Brown et al. 1986a). Furthermore, it was considered that being let down at the time of crisis might well hinder recovery from symptoms.

In a different context Miller and Lloyd (1991) studied the relationships between social support and personality. They found that social support was not equally beneficial to all university first-year medical students. Sometimes the costs of social support while studying hard for examinations seemed to outweigh the benefits. There was also some suggestion that students who were high scoring on the personality trait of suspiciousness were more symptomatic than low scorers when they had higher levels of support from classmates. These findings are somewhat difficult to interpret and, in a later attempt to review this issue, Miller (1995) concluded that there was little evidence of the existence of a truly hardy personality – a person who remains asymptomatic under stress, does not need the help and support of other people and genuinely does as well or better without it. This issue seemed worthy of further examination in the present study.

Subjects and methods

The design of the study has been described in detail previously (Surtees and Miller 1993). Briefly, the bereaved sample of married women was obtained from a group of co-operating general practices in the Lothian Region of Scotland over an approximately 1-year period. Married men under age 65 years who had died during the previous fortnight were identified, and the GP then approached the widow requesting her agreement to a research interview. The coronary group was obtained by first approaching all married male patients (of working age) admitted to the Royal Infirmary or the Western General Hospital in Edinburgh with a diagnosis of myocardial infarction. Research interviews could then be undertaken once the consent of both partners had been obtained. To obtain the refuge sample, local women's aid groups approached suitable women on our behalf. For all the groups the first interview took place 4–6 weeks following the adverse event, and a follow-up interview was sought 12 weeks later.

Measures

The measures relevant to this paper concern symptoms, coping style, personality and social support. The symptoms measures are more fully described in Surtees and Miller (1994a). They are all derived from the 30-item General Health Questionnaire (GHQ; Goldberg 1978; Goldberg and Williams 1988), which was administered at both interviews. In this paper the analysis is confined to four measures. In the first of these the overall GHQ score, ranging from 0–30, is obtained using the usual scoring procedures and then dichotomised into those scoring five and above against all others. The other three consist of dichotomous measures of anxiety, depression and combined anxiety/depression described by Surtees and Miller (1994a). These are based on a subset of 12 of the GHQ items, six relating to anxiety and six to depression. To score as 'anxious' the subjects had to endorse 'been feeling nervous and strung-up all the time' together with at least two other items from the anxiety set. For 'depression' the subject had to agree to 'been feeling unhappy and depressed' together with at least one other item from the depression set. For combined anxiety/depression endorsement of either key symptom with at least two other items from either set was necessary.

The measure of coping style involved ratings made by the interviewers on five-point scales at the end of each interview. The attributes rated were: fighting spirit, helpless/hopelessness, fatalism, avoidance and anger/frustration. Surtees and Miller (1994b) describe the steps in transforming these original ratings into a three-point summary measure of coping behaviour at each interview. This measure excludes avoidance, because analysis suggested that it was contributing less well to the unified scale than the other items.

At the first interview each respondent was asked about crisis support within the first week after the adverse experience. There were three measures of relevance here. Firstly, each person in the household (excluding the husband for the coronary group) was rated on the degree of support and comfort they had given to the subject during the week immediately following the adverse event. There was a three-point scale ranging from giving excellent support to being a total liability. Secondly, the number of "groups" of people who gave substantial help during the first week was noted. Each "group" must either have come to stay with the subject for at least one day or have called round more than once in the first week. A "group" did not necessarily have to contain more than one person (examples would be a next-door neighbour, the daughter and her family or a cluster of people from work). Thirdly, the subject was asked about people who had let her down. This could be either by failing to offer the help and support that she expected or by being deliberately unhelpful or critical.

Personality assessment was carried out during the follow-up interview using a modified version of Tyrer and Alexander's (1985) Personality Assessment Schedule (PAS). This enables 24 personality traits (see Table 3) to be rated, after interview, on nine-point scales. In the original version there are obligatory key questions for each trait and also a number of amplifying questions that may be asked following the subject's reply. Due to interview time constraints it was felt necessary to modify this into a questionnaire to be termed PAS-Q. This was achieved through asking the key questions for each trait and using the other questions to fashion a set of four anchor points. For example, the item assessing shyness was: "Are you normally a shy person?" The choice of answers was as follows:

1. I feel so anxious and shy when others are around that I have made very few friends and have been unable to do things like go to work or go to parties or social occasions.

2. I find it difficult to make friends because I am so shy. I often go out of my way to avoid other people and feel anxious and embarrassed when in a group of people. Other people see me as shy.

3. I sometimes feel shy, but I can overcome it and most people would not notice.

4. I almost never feel shy.

Subjects were first asked to pick the statement that best described them, even if it was not entirely accurate. After doing this for all 24 traits, they were then given the option of modifying their responses. If one of the two extreme anchor points was chosen, no adjustment was made. If an intermediate one was picked, the subject was asked whether this exactly represented their view of themselves or whether they might more accurately be described as being between the scaled point chosen and the points above or below. This yields a seven-point scale for each trait. The full PAS-Q schedule, instructions and scoring procedures are available from the authors.

Personality assessments were made at the second interview (for most subjects approximately four months following the adverse event). Subjects were told that the questions were aimed at finding out about their personality throughout their life. They were also reminded that "Sometimes a person's personality changes over the years. If this has happened to you think mainly about the past ten years or so. *Try hard to forget and ignore the time since...*[the adverse event]*...Think back to how you were before it occurred*".

Results

Response rates

Fuller details of the numbers of subjects approached and refusal rates at first interview and at follow-up have been given previously (Surtees and Miller 1993; Miller and Surtees 1993). Briefly, at first interview, 174 coronary wives were approached, of whom 143 (82.2%) were successfully interviewed. A total of 85 widows were sampled and 64 (76.2%) took part, and 46 refuge seekers were sought, of whom 32 (69.6%) participated. At the follow-up stage these numbers dropped to 126, 58 and 19, respectively. The refuge group was particularly difficult both to recruit and to follow-up. In particular, at follow-up, many of these women had returned to a violent or uncooperative husband, or had moved away from Edinburgh leaving no contact address.

Support

For each of the three groups, Table 1 shows the average number of people both inside and outside her household whom the subject perceived to have either supported or let her down during the week following the adverse event. The coronary group was more likely than the bereaved to have one or more people in the household who were supportive and who coped well with the adverse experience. The refuge subjects tended to have bigger households than the other two groups, and to have greater numbers of both supportive and unsupportive people within them. The possible confounding effects of family size were investigated in two different ways. Firstly, a multiple regression was undertaken predicting the number of household members who gave excellent support entering family size first and then group membership. Secondly, a one-way analysis of variance was performed on the scores formed by dividing household members who gave excellent support by the number in the household plus one. All the differences between the three groups noted in lines two and three of Table 1 remained significant after family size was thus controlled. Refuge subjects were younger than coronary or bereaved subjects, and their households consisted largely of children. Compared with the coronary group, the bereaved had a higher number of groups external to the household who supported them, and a higher number who had let them down. The same applied to the refuge group compared with the other two. It was noteworthy that only nine subjects, all from the coronary group, said that nobody from outside the household came to their support during the first week.

In order to investigate the effects of support on symptoms at first and second interview three of the four support variables were re-categorised as binary measures retaining the distinction between one or more versus none. These three variables were household members giving excellent support, household members giving less-than-ex-

Table 1 Mean support levels during the week following adverse experience

Type of support	Coronary group (a; $n = 143$)	Bereaved group (b; $n = 64$)	Refuge group (c; $n = 32$)	Significance[a] (a vs b)	Significance[a] (c vs [a + b])
Total household members (excluding husband)	0.86	0.66	2.28	NS	$P < 0.001$
Household members who gave excellent support	0.76	0.44	1.34	$P < 0.01$	$P < 0.01$
Household members who gave less than excellent support	0.10	0.22	0.94	NS	$P < 0.01$
Supportive groups outside household	3.13	5.17	3.28	$P < 0.001$	NS
Groups outside household who 'let down' the subject[b]	0.29	0.50	0.625	$P < 0.05$	NS

[a] Analysis of variance followed by planned comparisons
[b] These people either failed to give support that the subject expected or were in some way hurtful or critical

cellent support and people who had let the subject down. The fourth support variable, external groups giving support, was subdivided into two or less, three or four and more than four. The main reasons for these re-classifications were to simplify the analyses and to provide larger numbers in the cells (and probably greater reliability for the findings).

Logistical regressions were then completed for data from both interviews on the total GHQ score and on the anxiety, depression and combined criteria scores described previously. In these regressions the group variable (coronary, bereaved or refuge) was fitted first followed by each support variable in turn. Finally, the interaction between group and support was tested.

Only two of the support variables yielded any significant results. Being let down produced significant results on seven of the eight dependent variables, which are shown in Table 2.

The percentages shown in Table 2 are the cell percentages; thus, 42 coronary wives who had not been let down were GHQ cases at first interview, and this figure is 38.5% of coronary wives who had not been let down. Cell numbers are lower at second interview, because 36 subjects did not take part in the follow-up. From Table 2 it seems that being let down is exerting somewhat stronger effects at first interview, and that the coronary and refuge groups are more affected than the bereaved. At second interview, the bereaved group rather puzzlingly seems to show, if anything, a reversed trend, thus contributing strongly to the three interactions found.

The effects of being let down were probed a little further by confining the second interview analysis to those subjects who were ill at first interview. The results were similar to the main analysis. On the GHQ there was a main effect for being let down which demonstrated that those who were ill at first interview and had been let down were more likely to be ill at second interview than those ill at first interview who had not been let down. As in the main analysis (Table 2) significant interaction effects showed up for the other three dependent variables with the bereaved group showing paradoxical behaviour. Numbers of subjects who were well at first interview and became ill at the second were too small to permit further analysis.

Apart from being let down, the only other support variable to exhibit any significant result was positive support

Table 2 Numbers and percentages of subjects meeting symptom criteria on measures derived from the GHQ general health questionnaire by whether or not they were 'let down' in the week following adverse experience

Criterion		First interview				Second interview			
		Not let down		Let down		Not let down		Let down	
Total GHQ	Coronary	42	38.5%	22	64.7%	17	18.1%	14	43.8%
	Bereaved	31	77.5%	19	79.2%	17	44.7%	9	45.0%
	Refuge	6	35.3%	12	80.0%	3	30.0%	6	66.7%
Scale deviance reductions:	Group	22.42*** (*df* 2)				9.38**			
	Let down	10.00** (*df* 1)				6.86**			
	Group × let down	4.0 NS (*df* 2)				3.63 NS			
Anxiety criterion	Coronary	11	10.1%	8	23.5%	4	4.3%	7	21.9%
	Bereaved	14	35.9%	8	33.3%	7	18.4%	1	5.0%
	Refuge	1	5.9%	6	40.0%	1	10.0%	1	11.1%
Scaled deviance reductions:	Group	12.11**				1.05 NS			
	Let down	4.23*				1.52 NS			
	Group × let down	5.28 NS				8.72*			
Depression criterion	Coronary	8	7.3%	4	11.8%	4	4.3%	7	21.9%
	Bereaved	13	33.3%	7	29.2%	14	36.8%	2	10.0%
	Refuge	1	5.9%	6	40.0%	2	20.0%	2	22.2%
Scaled deviance reductions:	Group	17.51***				10.98**			
	Let down	1.56 NS				0.12 NS			
	Group × let down	5.00 NS				13.15**			
Combined depression/ anxiety criterion	Coronary	18	16.5%	12	35.3%	7	7.4%	11	34.4%
	Bereaved	16	41.0%	13	54.2%	13	34.2%	2	10.0%
	Refuge	2	11.8%	10	66.7%	2	20.0%	3	33.3%
Scaled deviance reductions:	Group	13.90***				4.19 NS			
	Let down	12.29***				2.29 NS			
	Group × let down	4.75 NS				14.96***			

* $P = 0.05$
** $P = 0.01$
*** $P = 0.001$

from within the household. There was only one significant finding, that for depression at second interview where there was an interaction ($P < 0.001$). Four coronary wives (16.9%) without any excellent support from within the household met the criteria for depression compared with none at all for those who has such support. For bereaved subjects the figures were, respectively, 23.1% and 36.8%, and for refuge 16.7% and 23.1%. Once again the bereaved subjects seemed to yield a paradoxical finding.

Personality

Mean values for the three groups on the 24 traits assessed are shown in Table 3. The refuge group scored significantly higher than the other two on suspiciousness, introspection and childishness, whereas the coronary group scored lower than the other two on shyness.

In order to reduce complexity, the 24 traits were subjected to a principal components analysis with orthogonal rotation. During this process six of the original traits were dropped from the analysis. Optimism, conscientiousness, eccentricity, rigidity and callousness were excluded because they showed too low initial relationships with other traits and sensitivity because, after rotation, it had loadings on several factors. Table 4 shows the names given to the six factors that emerged and the factor loadings of the remaining traits on them.

To simplify the analyses that follow, each factor was divided at the 33rd and 66th percentile scores so that subjects could be categorised as 'low', 'central' or 'high' on each factor, and this categorisation is used throughout what follows. The rationale for using this re-categorisation, rather than the original continuous variables, is that analyses on continuous variables can be harder to comprehend, and that there would be an implied claim to a level of precision that is probably not justified. Splitting the distributions at the 33rd and 66th percentiles, rather than at the median, allows testing of hypotheses regarding curvilinearity of relationships, i.e. that people who are central scorers on a personality factor differ from those who are high and low.

Only on the factor named impulsivity was there a difference between the three groups with refuge group subjects tending to be more impulsive than those in the other two groups ($\chi^2 = 14.2$; df 4; $P < 0.01$). In the refuge group 52.6% scored 'high' on impulsivity and 26.3% 'low' compared with 30.9% and 33.6% in the other two groups combined.

To examine the relationships between personality factors and symptom criteria, logistical regressions were completed. The group variable (coronary, bereaved or refuge) was entered first followed by each factor in turn. Table 5 displays the scaled deviance reductions. Higher levels of the nervousness factor are associated with higher symptom levels at both first and second interview for the GHQ, and these two associations are straight-forwardly linear. All the other main effects for personality are significantly curvilinear, with subjects who are low and high in the trait showing greater symptoms. For example, on

Table 3 Mean scores for personality traits

Trait	Coronary group ($n = 126$)	Bereaved group ($n = 58$)	Refuge group ($n = 19$)	Significance[a]
Pessimism	1.71	1.91	2.47	NS
Worthlessness	0.79	0.79	1.53	NS
Optimism	1.10	0.88	1.63	NS
Lability	1.01	0.69	1.58	NS
Anxiousness	1.56	1.47	1.63	NS
Suspiciousness	1.54	1.79	2.32	$P < 0.05$
Introspection	1.89	2.00	2.84	$P < 0.05$
Shyness	1.44	2.05	1.95	$P < 0.01$
Aloofness	1.56	1.29	1.84	NS
Sensitivity	1.64	1.84	3.21	NS
Vulnerability	1.39	1.47	1.89	NS
Irritability	1.66	1.62	1.89	NS
Impulsiveness	1.38	1.83	2.21	NS
Aggressiveness	0.46	0.52	0.74	NS
Callousness	0.45	0.47	0.68	NS
Irresponsibility	0.83	0.97	1.68	NS
Childishness	0.50	0.69	1.11	$P < 0.01$
Resourcelessness	0.94	0.91	1.26	NS
Dependence	0.86	0.79	0.74	NS
Submissiveness	1.60	2.02	1.94	NS
Conscientiousness	1.25	1.31	1.21	NS
Rigidity	1.04	1.33	1.26	NS
Eccentricity	0.48	0.45	0.58	NS
Hypochondriasis	0.88	0.84	0.89	NS

[a] Kruskal-Wallis one-way analysis of variance

Table 4 Factor loadings of personality traits

Trait	Nervousness	Impulsivity	Social withdrawal	Helplessness	Inferiority	Aggressiveness
Anxiousness	0.79					
Lability	0.68					
Vulnerability	0.68					
Hypochondriasis	0.67					
Pessimism	0.67					
Irritability	0.63	0.40				
Introspection	0.62					
Irresponsibility		0.74				
Impulsivity		0.72				
Childishness		0.64				
Suspiciousness			0.77			
Aloofness			0.71			
Shyness			0.68		0.32	
Resourcelessness				0.85		
Dependency	0.35			0.70		
Submissiveness					0.87	
Worthlessness					0.51	0.44
Aggressiveness						0.86

NOTE: Only loadings of 0.3 and above are shown

Table 5 Scaled deviance reductions on predicitng symptom criteria after allowing for group membership

		Nervousness	Impulsivity	Social Withdrawal	Helplessness	Inferiority	Aggressiveness
GHQ							
First interview	Group	17.7***	17.7***	17.7***	17.7***	17.7***	17.7***
	Personality	13.0**	1.4	0.1	8.3*	4.5	4.6
	Interaction	7.7	3.9	2.1	6.3	3.0	13.1*
Second interview	Group	9.4**	9.4**	9.4**	9.4**	9.4**	9.4**
	Personality	17.3***	1.3	2.2	4.0	5.1	8.0*
	Interaction	10.0*	5.5	2.3	5.5	1.1	1.7
Anxiety							
First interview	Group	14.1***	14.1***	14.1***	14.1***	14.1***	14.1***
	Personality	1.2	1.2	1.0	0.7	0.5	0.7
	Interaction	6.4	3.1	4.7	2.7	3.9	2.1
Second interview	Group	1.1	1.1	1.1	1.1	1.1	1.1
	Personality	12.0**	8.7*	2.2	2.3	1.9	4.6
	Interaction	3.3	0.7	5.1	3.5	2.7	9.4
Depression							
First interview	Group	19.7***	19.7***	19.7***	19.7***	19.7***	19.7***
	Personality	2.7	2.7	1.1	2.1	3.5	1.9
	Interaction	8.9	4.5	3.5	6.0	0.1	6.6
Second interview	Group	11.0**	11.0**	11.0**	11.0**	11.0**	11.0**
	Personality	10.8**	4.4	0.9	7.3*	5.3	5.6
	Interaction	3.1	3.4	3.2	3.0	1.5	16.7**
Combined							
First interview	Group	17.0***	17.0***	17.0***	17.0***	17.0***	17.0***
	Personality	4.8	1.4	4.0	2.4	2.7	2.3
	Interaction	3.2	10.6*	0.5	8.2	2.2	2.3
Second interview	Group	4.2	4.2	4.2	4.2	4.2	4.2
	Personality	12.8**	3.2	0.6	3.0	6.9*	9.8**
	Interaction	3.4	4.6	6.1	5.7	0.9	9.7*

* $P = 0.05$
** $P = 0.01$
*** $P = 0.001$

aggressiveness at second interview 34.8% of low aggressives have GHQ scores of five or greater, compared with 20.6% of those aggressives with central scores and 43.9% of high aggressives. Four significant interaction effects between group and personality were observed. Three of these concern aggressiveness and, in all three, coronary subjects differ from subjects in the other two groups. Coronary subjects who are low in aggressiveness show high symptom levels, whereas for bereaved and refuge subjects the reverse holds true. For nervousness on the GHQ at second interview, coronary subjects show a linear trend with subjects low in nervousness also being low in symptoms. For the other two groups the association is stongly curvilinear, with subjects both high and low in nervousness being more likely to score five or more on the GHQ.

Personality and support

Cross-tabulations were made of the four support variables against the six personality factors. Only two significant relationships were discovered. Central-scoring nervous subjects were least likely to say they had been let down (low nervous 31.3% let down, central nervous 18.2% and high nervous 40.6%; $P < 0.05$), and low-impulsivity subjects were most likely to report no excellent support from within the household (low impulsives 68.7% no household support, central 41.8% and high 51.5%; $P < 0.01$).

Personality support and symptoms

Interactions between the four types of support and the six personality factors in predicting symptom criteria were tested after allowing for the effects of group membership. Because this involves 96 significance tests, the 0.01 level of significance was adopted for these. The following eight interactions are significant at this level, with scaled deviance reductions and probabilities given in parentheses:

Helplessness × let down in household predicts interview 1 GHQ (9.3; $P < 0.01$)

Nervousness × support outside household predicts interview 1 anxiety (13.0; $P < 0.01$)

Impulsivity × let down in household predicts interview 1 depression (11.9; $P < 0.001$)

Impulsivity × support in household predicts interview 2 GHQ (10.1; $P < 0.01$)

Impulsivity × let down in household predicts interview 2 anxiety (9.9; $P < 0.01$)

Impulsivity × let down in household predicts interview 2 depression (9.8; P P < 0.01)

Impulsivity × let down in household predicts interview 2 combined (10.2; $P < 0.01$)

Impulsivity × support outside household predicts interview 2 combined (13.7; $P < 0.01$)

The clearest results here concern impulsivity at the second interview. Those who are low in impulsivity and who are let down within the household are more likely to be symptomatic. For instance, on anxiety, five of eight (62.5%) low-impulsivity subjects let down within the household meet the criteria, whereas for the central- and high-impulsivity categories the figures are none of thirteen and none of eight. For the other significant interactions, the results seem to be that the central-scoring personality category differs from the high and low categories. For example, on helplessness at the first interview, 4 of 12 subjects (33.3%) intermediate on helplessness who had been let down inside the household met the GHQ criteria. For those low and high on helplessness the corresponding figures were six of seven (85.7%) and ten of ten (100%).

Personality and coping

The associations between the six personality traits and three levels of coping, as described herein, were tested on the pooled group data. Two of the six relationships were significant, and these are presented in Table 6.

There is a fairly linear association between nervousness and coping: High nervous subjects tend to be seen by the interviewers as poor copers. Low nervous subjects tend to be seen as good or medium copers. For aggressiveness, a curvilinear relationship is again in evidence: Both high and low aggressive subjects tend to be poor copers with central aggressives tending to be good or medium copers.

At both interviews and for all four symptom criteria, coping is a significant predictor of symptoms. Because coping is related to nervousness and aggressiveness, it follows that these latter might not predict symptoms once coping is factored out. This is in fact the case in only one

Table 6 Relationships between coping and the nervousness and agressiveness personality factors

Coping	Nervousness[a]			Agressiveness[b]		
	Low	Central	High	Low	Central	High
Good	20	20	7	9	24	14
	30.3%	29.4%	10.6%	13.6%	35.3%	21.2%
Medium	27	26	17	22	25	23
	40.9%	38.2%	25.8%	33.3%	36.8%	34.8%
Poor	19	22	42	35	19	29
	28.8%	32.4%	63.6%	53.0%	27.9%	43.9%

[a] $\chi^2 = 21.19$ ($P < 0.001$)
[b] $\chi^2 = 12.24$ ($P < 0.05$)

instance. Aggressiveness is no longer a significant predictor of the GHQ at interview 2 if coping is entered into the equation first. In all other cases where the results were significant (Table 5) they remain so.

Discussion

This study had four main aims, all of which are concerned with predicting *symptoms* following adversity. In a parallel set of analyses it is hoped to study *psychiatric morbidity* following adversity, and a start has been made (Surtees 1995). However, the first aim of the present study was to look once more at the relationships between social support and symptomatology. There were some differences between the three groups of women in the extent to which they were supported and 'let down' in the week following their adverse experience. The refuge group had larger households (excluding the spouse) than the other two groups (Table 1). They were younger and the excess was largely made up of children. They also had significantly more household members who gave them excellent support and who were in some way troublesome or difficult. Compared with the coronary wives, bereaved subjects had fewer household members who gave them excellent support. They were better supported by people outside the household and also more likely to be 'let down' by people outside the household. The extent of outside support in the crisis is worthy of comment. Only nine subjects, all in the coronary group, said that nobody at all from outside the household came to try to help on more than one occasion during the first week. In all three groups the average number of such helpers (or groups of helpers) was greater than three. Perhaps because there was so much positive crisis support, with so few subjects reporting none, this study finds little evidence that positive support either from within or without the household is directly related to symptoms. There was just one significant interaction in which, somewhat paradoxically, coronary subjects with good support within the household were less likely to be depressed at the follow-up interview, with the reverse holding true for bereaved subjects. It is to be noted here that, for the coronary and refuge groups, support from the subjects' spouse was not included in the analysis. This support may well contribute to the significant group effects observed, with the bereaved and refuge groups (where such support is not possible) tending to show more psychopathology than the coronary group. It would also be likely to contribute to swifter recovery from symptoms in the coronary group.

However, there can be little doubt about the unpleasant effects of being 'let down' or criticised during the first week (Table 2). The results are generally in line with those of Brown et al. (1986a). Subjects who perceived that they had been 'let down' were significantly more likely to be symptomatic at both interviews on the full GHQ, and there was evidence that those who were ill at first interview were less likely to be well at second interview if they saw themselves as having been let down. Five of six tests produced significant results for the criterion-based symptom measures, although three of these, all at second interview, were interactions. However, the bereaved group are once again out of line tending to show either very little difference on being 'let down', or even a reverse trend. This is all the more puzzling because there are several studies specifically on bereavement which suggest that perceived deficit in social support immediately following the death may be associated with symptoms both in the short term (Clayton 1995) and the longer term (e.g. Nuss et al. 1992; Vachon et al. 1982; Bornstein et al. 1973; Zisook et al. 1994), although there is some doubt about whether the associations are causal (Stroebe and Stroebe 1987; Hays et al. 1994). It may also be important to distinguish perceived support from variables such as the number of available contacts. This shows little association with depression outcome (Stroebe and Stroebe 1987).

Three speculative explanations may be offered for the curious findings of the present study. Perhaps there was greater support within the household and fewer let-downs for those bereaved wives whose loss was most traumatic, and who therefore had higher symptom levels. This matter will be taken up elsewhere. Alternatively, the balance between positive and negative support might be all-important. The bereaved group occupy a central position on being 'let down' (Table 2). However, the bereaved wives receive substantially more positive support from groups outside the household than either of the other two groups, and perhaps this might cancel out the adverse effects of being let down. Finally, it is noteworthy that the interaction effects are seen most markedly at second interview. Perhaps by that time those who had let down the bereaved wives might have been more likely than in the other groups to have apologised or tried to make amends. There is evidence from within the study that discounts this last explanation. Each participant was asked at the follow-up interview whether anyone who had let them down had made amends. Of those who took part at second interview, 32 coronary wives had been let down (several by more than one person or group); in four of these some attempt had been made by the others involved to make amends. The figures for the bereaved wives were two amends out of 20 'offences', and for the refuge group, five amends out of nine 'offences' ($\chi^2 = 10.14$; df 2; $P < 0.01$). Thus, there is a highly significant difference between the groups, but it is in the refuge group, not the bereaved, that those who criticise or fail to help are likely to try to make up for it.

A total of 24 personality traits were originally measured, and it is noteworthy that on 19 of these the refuge group were numerically the highest scorers. Only three of these differences, those for suspiciousness, introspection and childishness, reach statistical significance. (In the fourth case where there is a significant finding, the refuge group does not score highest.) When the original 24 traits are reduced to six by principal components analysis, the refuge group scores significantly higher than the other two groups on the factor impulsivity. It is not possible to

determine the extent to which these differences arise because of the refuge group's greater youthfulness, because of their very different life circumstances or because of genuine long-lasting or life-long personality differences.

Some of the six factors that emerged have parallels in the literature. The factors that have been termed nervousness and social withdrawal seem similar to well-known definitions of neuroticism and extroversion by Eysenck and Eysenck (1964). The two factors labelled helplessness and inferiority are reminiscent of studies on dependency and lack of self-confidence by Bedford and Foulds (1978).

It comes as no surprise that the nervousness factor is predictive of symptoms. This is true for all four symptom measures only at second interview, although, at first interview, it is stongly predictive of overall GHQ caseness. Unfortunately, this could be because the personality measurements, which were performed at second interview, were unduly influenced by the subject's mood at that time. This would not, however, preclude the more interesting interpretation that those of a 'nervous' disposition would remain symptomatic for a longer time after a crisis. When the analyses on second-interview symptoms are repeated with first-interview symptoms controlled, this second explanation receives support. In all four analyses nervousness remains a significant predictor of symptoms, and the significance level are actually enhanced in relation to both the GHQ score and the anxiety criterion.

Of the other five factors aggressiveness shows the most consistent relationship with symptoms, particularly depression, but this is not straightforward. Within the coronary group, low-aggressivity subjects tend to have marked depression levels, and high aggressives, little depression. For the other two groups the result is curvilinear: both high- and low-aggressivity subjects have marked levels of depression, whereas the central-scoring aggressives show the least depression. The aggressiveness factor is largely made up of just one of the original 24 traits, and it may be helpful to see in detail the four statements used to measure this one trait. They are:

1. "It takes a great deal to make me feel angry and I am never physically violent".

2. "I frequently feel angry but I am seldom physically violent".

3. "I lose my temper frequently and sometimes lose control. When angry, I have sometimes hit people, and I have had problems with friends or relatives because of my bad temper".

4. "I am easily angered and often physically violent. I have been in a lot of trouble because of this; for instance losing friends or getting on the wrong side of the law".

Thus, this study would seem to suggest that those who are never angry or violent tend to be depressed following adversity, whatever the nature of the trouble. For people with more aggressive tendencies it would depend on the nature of the adversity. Perhaps the anger of the more aggressive coronary wives night have had some appropriate outlets, e.g. it could be directed towards changing the spouse's diet, drinking and smoking habits or lack of exercise. For the other two groups such useful outlets are perhaps less easy to envisage and, for both groups, some of this anger might be directed inwards, i.e. the subject might get angry with herself. In this connection it is interesting that the only other original trait to have a reasonably large loading on the aggressiveness factor is worthlessness.

One further somewhat surprising finding concerning the personality factors is the dearth of significant relationships between symptoms and the factors helplessness and inferiority. These two personality factors are clearly akin to measures of self-esteem, which have sometimes been found to be related to depression (e.g. Ingham et al. 1987; Miller et al. 1989; Brown et al. 1986a, b, 1990a, b). However, helplessness is related to depression at second interview, and the similar finding for inferiority reaches the 0.1 level. Perhaps all subjects tend to suffer symptoms immediately following severe adversity, but those of lower self-esteem are slower to recover, in which case stronger relationships might only be seen at a later date than was measured in this study. This explanation would accord well with the findings of Brown et al. (1990c) on the role of self-esteem in recovery from depression.

Turning to the third main aim of the study, to examine possible relationships between support, personality and symptoms, most of the significant findings involve the factor impulsivity. On the whole it appears that the people who are most susceptible to symptoms following being 'let down' are those who think carefully before doing things and/or are very careful in what they do, and/or behave in a completely mature way virtually all the time. Those who act on impulse or take risks, or sometimes behave childishly, are less likely to have symptoms on being 'let down'. This finding occurs consistently at the second interview for anxiety, depression and the combined criterion at the 0.01 level, and for the total GHQ at the 0.05 level. There was little clear-cut support within the study for the hypothesis that high levels of positive support might be detrimental for certain personalities. There were only three significant interactions involving personality and positive support and, in all these, subjects who had *central* levels of the personality trait and were well supported had lower symptom levels.

Finally, there are the results concerning coping and personality. After both interviews the interviewers made ratings of how well they felt the subject was coping with the adverse experience, and an overall measure derived from these ratings was a highly significant predictor of symptoms. (See Surtees and Miller 1994b for further details.) In contrast, the personality measures were self-reported by the subject at the second interview only. Coping (at the first interview) is highly related to nervousness and is actually a more significant predictor of symptoms. However, nervousness remains a significant predictor when coping is controlled. There is also, as described previously, a curvilinear relationship between coping and aggressiveness. It might be argued that to some extent all the relationships between coping, personality and self-reported symptoms are spurious. Interviewer ratings of coping might have been influenced, at least to some extent,

by the subject's symptoms and manner during the interview. Equally, as suggested previously, the personality measurements might have been affected by the adverse experience and the symptoms following it. However, while personality, symptoms and coping may indeed be intercorrelated, they are conceptually distinct. It seems reasonable to postulate a sequence in which the symptomatic response to adversity is differentially influenced by pre-existing personality traits. Appraisal (Folkman et al. 1986) of the adverse experience is then followed by coping behaviour aimed at reducing symptoms and normalising the situation, with subsequent re-appraisal and a change in symptom levels. The appraisal and coping parts of the sequence may cycle several times. To the extent that this sequence is reasonable the results of this study suggest that the personality traits of nervousness and aggressiveness are involved both in initial symptom levels and in subsequent coping behaviour. Subjects high on nervousness report high symptom levels and are seen as poor copers. The same is true of subjects who are both high and low (as opposed to central) on aggressiveness.

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