COPING AND MOOD DURING AIDS-RELATED CAREGIVING AND BEREAVEMENT[1,2]

Judith Tedlie Moskowitz, Ph.D., M.P.H., Susan Folkman, Ph.D., Linda Collette, M.A., and Eric Vittinghoff, Ph.D.
University of California, San Francisco

ABSTRACT

This prospective study of a cohort of human immunodeficiency virus positive (HIV+) and HIV negative (HIV−) caregiving partners of men with AIDS examined the contextual effects of caregiving and bereavement on coping and the association between coping and positive and negative mood during the five months leading up to their partner's death and the five months following their partner's death. Participants used more problem-focused types of coping and more cognitive escape avoidance during caregiving than during bereavement. Six of the eight types of coping that were assessed were associated with negative mood, controlling for prior negative mood. These associations differed as a function of context (caregiving versus bereavement). Five types of coping were associated with positive mood, controlling for prior positive mood. HIV serostatus did not affect the relation between coping and mood.

(Ann Behav Med 1996, *18*(1):49–57)

INTRODUCTION

Acquired immune deficiency syndrome (AIDS) is currently the leading cause of death among young adults aged 25 to 44 (1). The cumulative total of AIDS cases in the United States since the start of the epidemic has exceeded 500,000 (2), and estimates of the number of people in the United States infected with human immunodeficiency virus (HIV), the virus that causes AIDS, range from 1 million to 1.5 million (3). As the AIDS epidemic has progressed, there has been a concurrent rise in the number of people caring for a loved one with AIDS. Estimates from a national survey indicate that 3.2% of the general U.S. population and 5.2% in a central cities sample have cared for a friend, relative, or lover with AIDS (4). For homosexual and bisexual men, the proportion who has been caregivers is much higher. More than 50% of homosexual or bisexual men living in large cities have cared for someone with AIDS (4).

In the current study, we focus on a sample of gay men who are serving as the primary caregivers for their partners with AIDS. These men experience two of the most profoundly stressful life circumstances humans encounter: providing care to a partner who is in the final stages of a horrific terminal disease, and then enduring the loss of that partner. Although providing care to an ill partner or spouse is always stressful, caregiving for a person with AIDS can be especially trying (5). The symptoms associated with AIDS are often especially brutal and uncontrollable. The course of the disease is unpredictable, with bouts of infection and severe illness followed by periods of seemingly good health. The tasks involved with AIDS caregiving are often emotionally as well as physically exhausting, especially if the caregiver has not had previous experience in caring for a seriously ill person. Persons with advanced AIDS may experience severe diarrhea, wasting, pain, neuropathies, and cognitive impairment that require the caregiver to perform medical tasks for which he has little formal training. This lack of training can lead a caregiver to question his ability to care for his partner and result in even higher levels of stress. Another characteristic of caring for a partner with AIDS that makes it uniquely stressful is the stigma associated with AIDS and the widespread prevalence of homophobia (6). Fear of discrimination may lead caregivers to refrain from revealing their caregiving activities to relatives or coworkers. Therefore, they may miss out on potentially valuable sources of social support and may experience additional stress in the effort to keep their caregiving a secret. Finally, many caregivers are themselves infected with HIV. Their partner's disease progression is a vivid reminder of what may be ahead for them (4,7).

The death of a spouse or partner can take a devastating toll on the surviving partner. Studies of bereaved spouses have shown that severe depression, decreased immune function, and even mortality are not unknown in the time immediately following the spouse's death (8–10). In the context of AIDS, the bereaved partner is often young, and the bereavement is therefore "off time" (11) compared to the norm in which bereaved spouses are in their 60s or 70s. People who become bereaved at a younger age tend to have more intense grief reactions and poorer adjustment than those who are bereaved when they are elderly (12,13). Further, because AIDS has had such a disproportionally high impact on the gay community, many caregivers have had many close friends and acquaintances die from AIDS (14). In addition to essentially unremitting grief, this repeated bereavement may result in the depletion of social networks and the loss of valuable emotional resources that could have buffered the effects of the death of the partner.

Coping as Mediator of the Impact of Stressful Situations

Clearly, then, caring for a loved one with AIDS and the eventual death of that loved one are two of the most profoundly stressful life events that people experience. The way in which an individual copes in a given stressful situation has been iden-

[1] Preparation of this manuscript was supported in part by grants MH44045, MH49985, and T32 MH19105 from the National Institute of Mental Health.

[2] The authors are deeply indebted to the men who participated in this study.

Reprint Address: J. T. Moskowitz, Ph.D., M.P.H., Center for AIDS Prevention Studies, 74 New Montgomery, Suite 400, San Francisco, CA 94105.

tified as one of the determinants of adjustment to a stressful experience (e.g. 15,16). Coping can be conceptualized in various ways but, in general, there are two types of coping: problem-focused and emotion-focused (15,17). Problem-focused coping responses address the problem directly, whereas emotion-focused responses address the emotional concomitants of the problem.

There are a myriad of studies concerning the effect of coping on emotional well-being in various stressful situations such as exams (18,19), surgery (20,21), and adjustment to college (22). Characteristics of the stressful situation such as perceived controllability, importance, stressfulness, and amount of situational self-efficacy have been found to influence the coping responses that are used (17–19,22,23), as well as the effect of those responses on various outcomes (24–27). In general, problem-focused responses and positive reappraisal tend to be related to positive outcomes and emotion-focused responses such as distancing, escape–avoidance, and self-blame tend to be related to negative outcomes.

Coping with Caregiving: The majority of studies of the role of coping in adjustment to caregiving look at elderly caregivers of family members suffering from Alzheimer's disease or other forms of dementia. Most of the studies have looked at the relationship between coping and negative outcomes such as anxiety or depressive mood, although a few have examined the effect of coping on positive outcomes such as life satisfaction or positive mood.

In general, the studies of coping in caregiving situations have found that emotion-focused coping responses such as emotional discharge (28), wishful thinking (29–31), and escape–avoidance (32) are positively associated with depressive mood and anxiety. Problem-focused types of coping such as logical analysis, information-seeking, problem-solving (26), and instrumental coping (30) are typically found to be negatively related to depression and anxiety and positively associated with life satisfaction and positive mood (26,30). In addition, positive reappraisal, which is usually categorized as an emotion-focused response (18,33) but is positively correlated with problem-focused responses (e.g. 24,34), has been found to be related to positive mood in caregiving situations (32).

The relationship between coping and mood in the context of caregiving may be more complex than it would appear based on the findings reviewed above, however. Williamson and Schulz (35) found that the effect of coping on depressive mood depended on which aspect of the caregiving situation was the focus of the coping efforts. For example, in coping with memory deficits, relaxation was negatively related to depressive mood, but wishfulness was positively related to depressive mood. In addition, contrary to the results of other studies of coping with caregiving which found that problem-focused responses were beneficial, Williamson and Schulz found that direct action was associated with increased depressive mood when coping with memory deficits and unrelated to depressive mood when coping with loss of communication or decline of a loved one. These apparent contradictions may be a function of the degree to which the specific stressor is controllable by the caregiver. For example, using problem-focused coping to deal with memory deficits, something that is largely out of the caregiver's control, may result in frustration and increased depressive mood.

Coping with Bereavement: Although a significant amount of bereavement research has focused on adjustment to the death of a spouse, few studies have looked specifically at the role of coping. The results of the studies that have been done, however, tend to be consistent with the findings of studies of coping with other types of stressful situations: problem-focused responses are related to positive outcomes, and emotion-focused responses are related to negative outcomes. For example, Gass and Chang (36) examined the effect of problem-focused and emotion-focused coping on psychosocial health dysfunction (a measure of adaptation to conjugal bereavement) in elderly widows and widowers. Problem-focused coping was negatively related to dysfunction, and emotion-focused coping was positively related to dysfunction. Jacobs et al. (37) looked at seven types of coping in elderly people whose spouse had recently died or had a serious illness. They found that participants who reported less problem-focused planning shortly after their spouse's death or illness were more likely to experience depression 13 months later. Mattlin, Wethington, and Kessler (27) found that respondents who reported the use of situational reappraisal and religion in response to a death in the past year were less likely to experience symptoms of depression and anxiety. Their results indicated that problem-focused responses such as active cognitive and active behavioral coping were not significantly related to depression or anxiety when dealing with the death of a loved one.

Thus, the role of various types of coping in adjustment to the death of a partner is not clear. In some studies, it appears that problem-focused responses are beneficial; in others, emotion-focused types of coping appear to be beneficial. In addition, the extent to which these results will apply to bereaved caregivers in the context of AIDS is not known. The nature of the illness may call for qualitatively different types of coping, and therefore, coping may play a different role in the adaptation of the bereaved caregiver than in other bereavement situations.

Purpose of the Present Study

Despite the amount of research that has examined the situational influences on coping and the effects of coping on outcomes, many questions remain unanswered with respect to coping under conditions in which the stress is profound and enduring, such as in the contexts of AIDS-related caregiving and bereavement. In the present study we examine two general questions. First, what is the effect of the stressful context on coping? Specifically, does coping change significantly over the course of caregiving and bereavement or is it relatively stable? Second, to what extent is coping related to mood and does the extent of the association differ as a function of context? It may be that under extremely stressful conditions, the context overwhelms any potential effect of coping. If there is an association between coping and mood, it may vary as the stressful context changes, either from caregiving to bereavement or even within caregiving and bereavement.

We addressed our hypotheses in a prospective study of a cohort of gay men who were their partner's primary caregiver. These men were followed over a ten-month period that included the five months leading up to their partner's death and the five months following their partner's death. Participants reported coping and mood bimonthly throughout this period. These frequent reports allowed us to examine situational influences on coping and its relationship to mood in two ways: first, we could examine intraindividual changes in coping during caregiving and during bereavement; second, we could determine whether the relationship between coping and mood differed during caregiving and bereavement. In addition, we were able to examine

the effect of the additional stressor of the caregiver's own health (HIV serostatus) on coping and its effects on mood.

We hypothesize that during caregiving, caregivers will use relatively more problem-focused than emotion-focused types of coping because the coping tasks include instrumental activities associated with the partner's illness. After the death of the partner, individuals will engage in relatively more emotion-focused types of coping because primary coping tasks at this stage have to do with managing the grief associated with the loss. We hypothesize that during caregiving, problem-focused responses will be related to decreased negative mood and increased positive mood because of the probability that the instrumental tasks related to caregiving can be accomplished satisfactorily. During bereavement, emotion-focused coping in the form of positive reappraisal will be associated with decreased negative mood and increased positive mood because this type of coping helps individuals cognitively reframe events in a positive light.

METHOD

The data for this study are from the UCSF Coping Project, a longitudinal study of caregiving partners of men with AIDS. Further details of the study are described elsewhere (5,38). Recruitment took place over the course of two years, from April 1990 to June 1992. Respondents were from the San Francisco Bay area and were recruited through advertisements in the gay press, public service announcements on radio and television, referrals from clinics and gay organizations, and annual mailings to residents of selected San Francisco zip codes. To be eligible as a caregiver, the participant had to identify as gay or bisexual and share living quarters with a partner with an AIDS diagnosis who needed help with at least two instrumental tasks of daily living. Participants were excluded if they had more than two symptoms of HIV disease, a diagnosis of AIDS, or used injection drugs.

We conducted face-to-face interviews with the participants every two months for two years. In addition, we interviewed participants whose partners died approximately two weeks and four weeks after the death of their partner to assess the immediate impact of bereavement. Participants received $20 for each interview.

Participants who became bereaved during the study and who had been interviewed at least two times prior to their partner's death and three times following their partner's death were included in the analyses reported here. The cohort for this analysis was selected in 1993. As of that date, 110 participants met the criteria for inclusion. Six assessment occasions are used in the present analyses: five months, three months, and one month prior to the partner's death, and one month, three months, and five months following the partner's death.

Measures

The interviews covered a variety of topics including mental and physical health, mood, stressors, psychosocial resources, and coping. The measures included in the analyses reported here are as follows.

Positive and Negative Mood: An expanded version of the Bradburn Affect Balance scale (39) was used to measure positive and negative mood. This modified version included four additional items each for positive and negative mood. The additional items substantially increased the reliability over the original version. Eight items assess positive mood (baseline $\alpha = .90$) and eight items assess negative mood (baseline $\alpha = .75$). Participants were asked to indicate how often they felt each of the moods during the past week from 0 = never to 4 = often. Responses were summed to form separate positive and negative mood scales.

TABLE 1
Sample Items for Each of the Eight Types of Coping

Type of Coping	Sample Item
Active problem-solving (9 items)	I knew what had to be done, so I doubled my efforts to make things work.
Reflective problem-solving (7 items)	I came up with a couple of different solutions to the problem.
Seeking social support (6 items)	I asked a relative or friend I respected for advice.
Positive reappraisal (11 items)	I changed or grew as a person in a good way.
Self-blame (3 items)	I realized I brought the problem on myself.
Cognitive escape–avoidance (6 items)	I had fantasies or wishes about how things might turn out.
Distancing (11 items)	I went on as if nothing had happened.
Behavioral escape–avoidance (5 items)	I felt better by drinking.

Coping: Coping was assessed using the Ways of Coping (40) modified for use with gay men (5). The modified version contained 74 items. The coping responses were on a four-point Likert scale from 0 = Not used, to 3 = Used a great deal. Subjects completed the Ways of Coping in response to the most stressful event that occurred in the past week related to caregiving ("Take a few moments to think about the situation that has been most stressful for you during the past week that was related to your caregiving situation") or following their partner's death, related to bereavement ("Take a few moments and think about the situation that has been most stressful for you during the last week that was related to the loss of your partner").

A factor analysis of the baseline data of the entire study using a principal axis solution with oblimin rotation revealed eight subscales: active problem-solving (nine items, $\alpha = .77$), reflective problem-solving (eleven items, $\alpha = .74$), seeking social support (six items, $\alpha = .82$), positive reappraisal (eleven items, $\alpha = .83$), self-blame (three items, $\alpha = .65$), cognitive escape–avoidance (six items, $\alpha = .78$), distancing (eleven items, $\alpha = .78$), and behavioral escape–avoidance (five items, $\alpha = .70$).

Responses were summed to form each of the subscales. The behavioral escape–avoidance subscale was significantly skewed, so it was converted into a dichotomous indicator with 0 indicating no behavioral escape–avoidance and 1 indicating any behavioral escape–avoidance. All other coping subscales were normally distributed. Sample items from each coping subscale appear in Table 1.

HIV Serostatus: HIV serostatus was determined at baseline by a blood draw to test for HIV antibodies. All participants were informed of the test results and were assigned to the HIV-positive caregiver group or the HIV-negative caregiver group accordingly.

TABLE 2
Means and Standard Deviations for Coping at Each Assessment Point

Variable	Caregiving						Partner's Death	Bereavement					
	−5 Months		−3 Months		−1 Month			+1 Month		+3 Months		+5 Months	
Active problem-solving	7.83		8.08	*	8.11	*		7.21	*	6.73	*	5.66	
	(4.54)		(4.90)		(4.39)			(4.48)		(4.98)		(3.70)	
Reflective problem-solving	7.31	*	6.59		6.63	*		6.35	*	5.95	*	5.42	
	(3.76)		(3.53)		(3.89)			(4.09)		(4.56)		(4.00)	
Seeking social support	6.50		7.21		8.25			7.11		6.84		6.54	
	(3.83)		(4.07)		(4.04)			(4.50)		(4.33)		(4.28)	
Positive reappraisal	8.40		9.32		9.46			9.40	*	8.28		8.37	
	(5.62)		(6.52)		(6.56)			(6.85)		(6.48)		(6.60)	
Self-blame	1.30		1.14		.96			1.16		1.40		1.14	
	(1.87)		(1.42)		(1.37)			(1.37)		(1.78)		(1.69)	
Cognitive escape–avoidance	6.66	*	6.56	*	7.45	*		5.16	*	5.47	*	4.93	
	(4.22)		(4.56)		(4.40)			(4.08)		(4.03)		(4.03)	
Distancing	9.29		8.95		9.18			8.67		8.65	*	8.15	
	(5.34)		(4.87)		(4.59)			(4.92)		(4.86)		(4.41)	

Note: Behavioral escape is avoidance not included because it was dichotomized. Standard deviations are in parentheses. Significant ($p < .05$) differences between means at successive assessment points denoted by *.

Analysis Plan

Effects of Context on Coping: We examined the effects of context on coping first by examining changes in coping during caregiving and during bereavement, and then by comparing coping during caregiving with coping during bereavement. In a preliminary step, we tested the fit of various covariance structures to the data and then examined changes in coping variables across all six time points. We used a repeated measures model based on a general or banded autoregressive covariance structure with appropriate contrasts in the adjusted means for each time point.

Relation Between Coping and Mood: Using an unbalanced repeated measures model with structured covariance matrices (41), we were able to address two questions for all types of coping simultaneously in a single model for each mood. First, is the relationship between coping and mood significantly different from zero at three months and one month prior to the partner's death and at three months and five months after the partner's death? Since mood at the previous visit was included in the model predicting current mood, we were unable to test the association between coping and mood at the initial visit, 5 months before the partner's death. Nor did we model mood one month after the partner's death, because its relationship to mood at the previous—that is the last pre-bereavement—visit might be anomalous or interpretable. Second, if there is a main effect for the association between coping and mood, does the extent of the association differ as a function of context? We compared the association of coping and mood during caregiving to the association during bereavement, as well as comparing the associations at points within caregiving and within bereavement.

We fit eight exploratory regression models, one for each outcome at each of four time points—three months and one month prior to the death of the partner and three months and five months after the death of the partner—controlling for mood at the previous visit, as well as HIV status. These preliminary results were used to guide the selection of a final pair of repeated measures models (one for positive mood and one for negative mood). Again controlling for the value of the outcome at the previous visit, as well as HIV status, the focus of interest in these two final models was on interactions between coping variables and time period. This provided statistical tests of the hypothesis that the effect of coping on positive and negative mood varies between caregiving and bereavement, and even within those periods. Because of limited sample size, we selected parsimonious models excluding non-significant main effects and interactions (with the exception of HIV status). The likelihood ratio test was used to determine best-fitting mean and covariance structures. All models were fit using BMDP 5V which allows for missing values, adjusts for autocorrelation, and allows for the specification and testing of alternate covariance structures. In addition, this approach simultaneously tests the significant main and interaction effects of coping variables with selected time points and allows for the calculation of estimates (beta) of linear combinations of total effects for each coping variable along with the corresponding p-values.

RESULTS

Sample

One hundred and ten participants had complete data for five of the six measurement occasions. Eighty-seven had complete data for all six occasions. There were 37 HIV-positive caregivers and 73 HIV-negative caregivers in the sample. Participants' ages ranged from 24 to 57 with a mean age of 38. Approximately half of the participants had a college degree. The majority of participants earned between $20,000 and $40,000 a year. Over 90% of the participants were White.

Effects of the Context on Coping

Means and standard deviations for each type of coping at each assessment point appear in Table 2.

Three types of coping changed significantly over the caregiving and bereavement periods. During caregiving, active problem-solving increased significantly from three months to one month prior to the partner's death ($\chi^2 = 12.54$, $p < .01$), reflective problem-solving decreased significantly from five months to three months prior to the partner's death ($\chi^2 = 14.36$, $p < .01$), and cognitive escape–avoidance decreased from five months to three months prior to the partner's death ($\chi^2 = 5.42$, $p < .05$)

TABLE 3
Results of Unbalanced Repeated Measures Model for Association Between Coping and Negative Mood

	Caregiving		Bereavement				
	3 Months Prior to the Partner's Death (A)	1 Month Prior to the Partner's Death (B)	3 Months After the Partner's Death (C)	5 Months After the Partner's Death (D)	Main Effect	Context Interaction	Significant Contrasts
Active problem-solving	−.03	−.29***	−.03	−.03	−.09*	−.07**	B vs. A, C, D
Reflective problem-solving	—	—	—	—	—	—	
Seeking social support	.06	.25***	.12**	.12**	.12**	−.15**	A vs. B
Positive reappraisal	−.01	−.01	−.13***	−.13***	−.07*	.06*	A, B vs. C, D
Self-blame	.39**	1.01***	.39**	.39**	.54***	.15*	B vs. A, C, D
Cognitive escape–avoidance	.01	.01	.20**	.20**	.11*	−.09*	A, B vs. C, D
Distancing	—	—	—	—	—	—	
Behavioral escape–avoidance	1.96***	.08	1.96***	1.96***	1.49***	−.47**	B vs. A, C, D

Note: HIV serostatus and mood at previous assessment were entered as covariates. Parameters are beta coefficients.
* $p < .05$, ** $p < .01$, *** $p < .001$.

then increased from three months to one month prior ($\chi^2 = 8.33$, $p < .01$). During the two-month period that spanned the partner's death—from one month prior to the death of the partner to one month after the death of the partner—active problem-solving, reflective problem-solving, and cognitive escape–avoidance all decreased significantly ($\chi^2 = 23.55$, $p < .01$; $\chi^2 = 15.17$, $p < .01$; and $\chi^2 = 37.85$, $p < .01$, respectively).

During the bereavement period following the partner's death, active problem-solving and reflective problem-solving decreased significantly from one to three months after the death of the partner ($\chi^2 = 6.67$, $p < .01$; $\chi^2 = 5.05$, $p = .02$, respectively) and again from three months to five months after the death of the partner ($\chi^2 = 23.51$, $p < .01$ and $\chi^2 = 11.34$, $p < .01$, respectively). Cognitive escape–avoidance increased significantly from one month to three months after the partner's death ($\chi^2 = 37.85$, $p < .01$), then decreased significantly from three months to five months after the partner's death ($\chi^2 = 13.79$, $p < .01$).

Planned comparisons of coping during caregiving to coping during bereavement revealed that active problem-solving, reflective problem-solving, and cognitive escape–avoidance decreased significantly from caregiving to bereavement ($\chi^2 = 23.55$, $p < .01$; $\chi^2 = 15.17$, $p < .01$; and $\chi^2 = 37.85$, $p < .01$, respectively).

Coping and Mood

Positive and negative mood were moderately correlated at all time points. During the caregiving period, the correlation between positive and negative mood ranged from −.40 to −.49. During the bereavement period, the correlation ranged from −.54 to −.59. Given the lack of a strong correlation between positive and negative mood, we chose to examine them separately.

Coping and Negative Mood: The results of the model examining the association of coping and negative mood appear in Table 3. Controlling for HIV serostatus and negative mood at the previous assessment, active problem-solving, seeking social support, positive reappraisal, self-blame, cognitive escape–avoidance, and behavioral escape–avoidance were significantly associated with negative mood. The relation between coping and negative mood differed as a function of assessment point. Positive reappraisal and cognitive escape–avoidance were significantly related to negative mood during bereavement but not during caregiving. Specifically, positive reappraisal was inversely related to negative mood and cognitive escape–avoidance was positively related to negative mood at three and five months after the partner's death. Active problem-solving and self-blame were more strongly related to negative mood at one month prior to the partner's death than at the other three time points, and behavioral escape–avoidance was less strongly related to negative mood at one month prior to the partner's death than at the other three time points. Finally, seeking social support was unrelated to negative mood at three months prior to the partner's death, significantly more strongly related to negative mood at one month prior to the partner's death, and less strongly related at three and five months after the partner's death.

Coping and Positive Mood: The results of the model comparing the association of coping with positive mood across caregiving and bereavement appear in Table 4. Again controlling for HIV serostatus and positive mood at the previous assessment, active problem-solving, positive reappraisal, self-blame, cognitive escape–avoidance, and behavioral escape–avoidance were significantly associated with positive mood across assessments. The magnitude of the relation did not differ as a function of context for most types of coping. Only reflective problem-solving and seeking social support showed significant change in the association with positive mood as a function of time point. Reflective problem-solving was inversely related to positive mood at three months prior to the partner's death and unrelated at the other three time points. Seeking social support was inversely related to positive mood at one month prior to the partner's death and unrelated at the other assessment points.

DISCUSSION

This prospective study of a cohort of caregiving partners of men with AIDS examined the effects of caregiving and bereavement on coping and compared the association of coping with positive and negative mood during caregiving and bereavement. With respect to the effect of the context on coping, as expected, participants used more problem-focused coping during caregiving, when there are many tasks that require attention,

TABLE 4
Results of Unbalanced Repeated Measures Model for Association Between Coping and Positive Mood

	Caregiving		Bereavement				
	3 Months Prior to the Death of the Partner (A)	1 Month Prior to the Death of the Partner (B)	3 Months After the Death of the Partner (C)	5 Months After the Death of the Partner (D)	Main Effect	Context Interaction	Significant Contrasts
Active problem-solving	.16**	.16**	.16**	.16**	.16**	—	
Reflective problem-solving	−.25**	.04	−.10	−.10	−.10	−.14*	A vs. B
Seeking social support	.05	−.22**	−.09	−.09	−.08	.14*	A vs. B
Positive reappraisal	.18***	.18***	.18***	.18***	.18***	—	
Self-blame	−.32**	−.32**	−.32**	−.32**	−.32*	—	
Cognitive escape–avoidance	−.13*	−.13*	−.13*	−.13*	−.13*	—	
Distancing	—	—	—	—	—	—	
Behavioral escape–avoidance	−1.07**	−1.07**	−1.07**	−1.07**	−1.07**	—	

Note: HIV serostatus and mood at previous assessment were entered as covariates. Parameters are beta coefficients.
* $p < .05$, ** $p < .01$, *** $p < .001$.

than during bereavement, when participants are dealing primarily with an irrevocable loss. However, contrary to what we expected, participants did not use more emotion-focused coping during bereavement than they did during caregiving. With respect to the relation between coping and mood, in general, active problem-solving and positive reappraisal were associated with improved mood, whereas cognitive and behavioral escape–avoidance and self-blame were associated with worsened mood. The relation between coping and negative mood was more sensitive to the context (caregiving versus bereavement) than was the relation between coping and positive mood.

Effect of Context on Coping

Active problem-solving and reflective problem-solving were used significantly more during caregiving than they were during bereavement. The greater use of both types of problem-focused coping during caregiving is consistent with our hypothesis that even though the overall deterioration of the partner's health is uncontrollable, there are still situations during caregiving in which there is the possibility of control and which therefore call for problem-focused types of coping. For example, one participant explained:

> I have this illusion that if I can maintain control of things, if I've the feeling that I'm maintaining control of things, I'd feel better—and essentially I do. I don't feel that it's hopeless. . . . If there's food in the fridge and dinner's taken care of, the laundry's taken care of, and there's someone there to take care of (Partner) and I report to work on time everyday, I feel that I'm controlling those things. And the feeling I guess is more secure.

In contrast, the stressful events reported during bereavement tended to reflect a lack of perceived control. Many participants reported frustration with insurance companies, lack of understanding from bosses and coworkers, and the inability to recover from their grief and depression. For example,

> [Boss] commented on how he thought that I had not been putting my full energy into work. He said I was late a couple of days. I told him I was a little bit depressed, that I was coming up on the six-month anniversary of (Partner's) death and I was feeling that. I told him I had never experienced the grieving process like this before. His response was to me, "You are a strong person, you'll overcome it." I read that as meaning, 'get over it.' I suggested that I take some time off, he said he couldn't [allow that] but that he wanted to be helpful . . . It makes me feel depressed, angry, and used. It's stressful because there's nothing I can do . . . I really loved him and I do miss him.

Cognitive escape–avoidance was also used more during caregiving than during bereavement. As measured in this study, cognitive escape–avoidance involves wishful thinking about the way things might turn out and hoping for a miracle. Prior to the death of his partner, the caregiver might engage in these types of coping to support hope for the survival of his partner. However, after the death of his partner, such fantasizing no longer has much point.

Coping and Mood

Overall, the relation between coping and mood was consistent with previous studies: problem-focused active problem-solving and emotion-focused positive reappraisal were associated with improved mood, and emotion-focused types of coping including cognitive and behavioral escape–avoidance and self-blame were associated with worsening mood. However, when the context is taken into account, the findings about coping and mood become more complex, especially with respect to negative mood.

Active problem-solving was associated with lessened negative mood at only one occasion—one month prior to the partner's death. Yet it was consistently associated with increased positive mood across all measurement points. Active problem-solving is generally task focused. Such tasks often include caregiving responsibilities, such as changing linens, cleaning up the partner after a bout with diarrhea, or preparing a nice meal. Although such tasks may appear mundane, their successful completion can provide a sense of satisfaction that can contribute to well-being. Similarly, following the partner's death, there are often many matters regarding memorials, insurance, and business transactions, the successful completion of which can help provide closure and signify moving on. The completion of these tasks during bereavement may be especially important in understanding the maintenance of positive mood in a period that is characterized by sadness and feelings of loss. The beneficial effects of active problem-solving are especially interesting in

light of the virtual absence of any effects associated with reflective problem-solving. Reflective problem-solving includes responses such as "I went over in my mind what to say" and "I tried to analyze the problem in order to understand it better;" is inversely associated with positive mood only at three months prior to the partner's death; and is unrelated to negative mood across all time points. It may be that reflective problem-solving by itself is not sufficient to improve mood. To be beneficial, it may be necessary to move beyond reflecting to taking action.

Seeking social support is associated with worsening mood through caregiving and bereavement, with its strongest effect occuring one month prior to the partner's death. At this stage, when the ill partner's condition is rapidly deteriorating, it is not clear whether seeking social support leads to deteriorating mood, or whether the deteriorating mood leads to the seeking of social support. For example, as the situation deteriorates, it is equally plausible that the caregiver is prompted to seek additional social support as it is that social support is having a deleterious effect on mood (42).

Positive reappraisal is consistently related to positive mood. This supports our hypothesis that after the partner's death, cognitive reframing of the situation in a positive light is one of the few coping strategies that will be associated with improved mood. The relationship between positive reappraisal and improved mood may be a function of the caregiver finding a higher meaning or purpose in his caregiving experience and the death of his partner (43–45). Finding some positive aspect or potential for personal growth in an otherwise negative experience has been shown to be related to increased positive affectivity (43). Positive reappraisal may reflect stress-related growth even in these extremely stressful circumstances.

Behavioral escape–avoidance, cognitive escape–avoidance, and self-blame were associated with worsening mood during both caregiving and bereavement. Behavioral escape–avoidance is made up of behaviors such as drinking and using recreational drugs, and although these substances may provide a temporary blunting of the emotional distress, their effects on mood are typically deleterious. Cognitive escape–avoidance, which includes such responses as "Hoped a miracle would happen" and "I wished the situation would go away or somehow be over with," is also associated with decreased positive mood during caregiving and bereavement. The detrimental effect of cognitive escape–avoidance is especially evident, however, during bereavement. There is some indication that when the partner's death is imminent, self-blame is more strongly related to worsening mood and behavioral escape–avoidance is less strongly related to worsening mood. Self-blame is made up of responses such as "realized I brought the problem on myself" and "criticized or lectured myself." The kinds of cognitions and behaviors that are described by behavioral and cognitive escape–avoidance and self-blame can in and of themselves produce distress, and they do not facilitate coming to terms with the losses that are suffered throughout caregiving and bereavement as a result of the ill partner's disease and eventual death. These kinds of coping responses are therefore maladaptive in these contexts.

HIV Sersotatus and Mood

HIV serostatus was not a significant determinant of mood in either of the models. The absence of a relation between HIV serostatus and mood may be due to the relative good health of the HIV-positive participants in this study. Perhaps when the participant becomes symptomatic, HIV serostatus may affect mood.

Positive and Negative Mood

Positive and negative mood were moderately correlated. The findings with respect to the relations between coping and mood in general reflect this correlation: types of coping that were positively associated with negative mood were negatively associated with positive mood. However, the contextual analysis supported the decision to examine these moods separately. The relation between coping and negative mood appears to be more sensitive to the context than the relation between coping and positive mood. As an example, positive reappraisal and active problem-solving always contribute to positive mood, but their effect on negative mood is limited. Such findings suggest that what makes a person feel good are not necessarily the same things that make that person feel less bad.

Other findings from the UCSF Coping Project suggest that positive mood in the context of chronic stress may be influenced by factors in addition to coping. For example, early in the study, the bimonthly interview concluded with the stressful event and coping report. Several participants commented that by asking only about stressful events, we were not getting a complete picture of how they were coping. Further, they did not like ending interviews by discussing a stressful incident; they wanted to end the interview on a more upbeat note. We added a question that asked the participant to describe a meaningful, positive event that helped him get through the day during the previous week (46). Perhaps noting and describing meaningful positive events helps people feel more positive mood, but not necessarily less negative mood. Further research is needed in this area.

CONCLUSION

This study focused on a population that heretofore has been little studied: men who at a relatively young age go through the extraordinarily stressful process of providing care to and then losing a mate due to AIDS. The extent to which the findings from this study can be generalized to other populations would ordinarily be limited by the special characteristics of the sample. However, the findings are generally consistent with stress and coping theory (15), which posits that problem-focused coping can help reduce distress when the situation is controllable or amenable to change, and certain types of emotion-focused coping, such as positive reappraisal, can help reduce distress in situations where little can be done (15,46). For this reason, we believe that the findings are important not just for gay men but for other caregivers and bereaved partners as well.

The findings of this study highlight the importance of focusing on positive mood as well as negative mood. The types of coping that help support positive mood may differ from those that reduce negative mood. Stress research has focused primarily on coping processes that affect negative mood. More attention needs to be given to coping processes that support positive mood (46).

The findings also have implications for helping individuals cope with caregiving and bereavement. Friends, family, and even professional care providers who want to be helpful might encourage caregivers or the newly bereaved to identify instrumental tasks that are manageable, even if they are ordinary. These tasks can provide opportunities for experiencing mastery and control in situations that are generally uncontrollable. Further, caregivers or bereaved partners should be encouraged to

note these successes and capitalize on the positive feelings that they generate (47). These processes can help support well-being during circumstances that are normally highly distressing.

REFERENCES

(1) CDC update: Acquired immunodeficiency syndrome—United States, 1994. *Morbidity and Mortality Weekly Report.* 1995, *44:* 64–67.

(2) Centers for Disease Control and Prevention: HIV/AIDS Surveillance Report. Washington, DC: Centers for Disease Control and Prevention, 1995, *7*(2):7.

(3) Mann J, Tarantola DJM, Netter TW: *AIDS in the World.* Cambridge, MA: Harvard University Press, 1992.

(4) Turner HA, Catania JA, Gagnon J: The prevalence of informal caregiving to persons with AIDS in the United States: Caregiver characteristics and their implications. *Social Science and Medicine.* 1994, *11:*543–552.

(5) Folkman S, Chesney MA, Christopher-Richards A: Stress and coping in caregiving partners of men with AIDS. *Psychiatric Clinics of North America.* 1994, *17:*35–53.

(6) Powell-Cope GM, Brown MA: Going public as an AIDS family caregiver. *Social Science and Medicine.* 1994, *34:*571–580.

(7) Pearlin LI, Semple S, Turner H: Stress of AIDS caregiving: A preliminary overview of the issues. *Death Studies.* 1988, *12:*501–517.

(8) Stroebe MS, Stroebe W: The mortality of bereavement: A review. In Stroebe MS, Stroebe W, Hansson RO (eds), *Handbook of Bereavement.* Cambridge, MA: Press Syndicate, 1994, 175–195.

(9) Irwin M, Pike J: Bereavement, depressive symptoms, and immune function. In Stroebe MS, Stroebe W, Hansson RO (eds), *Handbook of Bereavement.* Cambridge, MA: Press Syndicate, 1994, 160–174.

(10) Martin JL, Dean L: Bereavement following death from AIDS: Unique problems, reactions, and special needs. In Stroebe MS, Stroebe W, Hansson RO (eds), *Handbook of Bereavement.* Cambridge, MA: Press Syndicate, 1994, 317–330.

(11) Neugarten BL: Time, age, and the life cycle. *American Journal of Psychiatry.* 1979, *136:*887–894.

(12) Parkes CM, Weiss RS: *Recovery from Bereavement.* New York: Basic Books, 1983.

(13) Sanders CM: Risk factors in bereavement outcome. In Stroebe MS, Stroebe W, Hansson RO (eds), *Handbook of Bereavement.* Cambridge, MA: Press Syndicate, 1994, 255–270.

(14) Neugebauer R, Rabkin JG, Williams JBW, et al: Bereavement reactions among homosexual men experiencing multiple losses in the AIDS epidemic. *American Journal of Psychiatry.* 1992, *149:* 1374–1379.

(15) Lazarus RS, Folkman S: *Stress, Appraisal, and Coping.* New York: Springer, 1984.

(16) Silver RL, Wortman CB: Coping with undesirable life events. In Garber J, Seligman MEP (eds), *Human Helplessness: Theory and Applications.* New York: Academic Press, 1980, 279–340.

(17) Folkman S, Lazarus RS: An analysis of coping in a middle-aged community sample. *Journal of Health and Social Behavior.* 1980, *21:*219–239.

(18) Folkman S, Lazarus RS: If it changes it must be a process: Study of emotion and coping during three stages of a college examination. *Journal of Personality and Social Psychology.* 1985, *48:*150–170.

(19) Bolger N: Coping as a personality process: A prospective study. *Journal of Personality and Social Psychology.* 1990, *59:*525–537.

(20) Carver CS, Pozo C, Harris SD, et al: How coping mediates the effect of optimism on distress: A study of women with early stage breast cancer. *Journal of Personality and Social Psychology.* 1993, *65:*375–390.

(21) Stanton AL, Snider PR: Coping with a breast cancer diagnosis: A prospective study. *Health Psychology.* 1993, *12:*16–23.

(22) Aspinwall LG, Taylor SE: Modeling cognitive adaptation: A longitudinal investigation of the impact of individual differences and coping on college adjustment and performance. *Journal of Personality and Social Psychology.* 1992, *63:*989–1103.

(23) Terry DJ: Determinants of coping: The role of stable and situational factors. *Journal of Personality and Social Psychology.* 1994, *66:*895–910.

(24) Folkman S, Lazarus RS, Dunkel-Schetter C, et al: The dynamics of a stressful encounter: Cognitive appraisal, coping, and encounter outcomes. *Journal of Personality and Social Psychology.* 1986, *50:* 992–1003.

(25) Felton BJ, Revenson TA: Coping with chronic illness: A study of illness controllability and the influence of coping strategies on psychological adjustment. *Journal of Consulting and Clinical Psychology.* 1984, *52:*343–353.

(26) Vitaliano PP, DeWolfe DJ, Maiuro RD, et al: Appraised changeability of a stressor as a modifier of the relationship between coping and depression: A test of the hypothesis of fit. *Journal of Personality and Social Psychology.* 1990, *59:*582–592.

(27) Mattlin JA, Wethington E, Kessler RC: Situational determinants of coping and coping effectiveness. *Journal of Health and Social Behavior.* 1990, *31:*103–122.

(28) Haley WE, Levine EG, Brown SL, et al: Stress, appraisal, coping, and social support as predictors of adaptational outcome among dementia caregivers. *Psychology and Aging.* 1987, *2:*323–330.

(29) Neundorfer MM: Coping and health outcomes in spouse caregivers of persons with dementia. *Nursing Research.* 1991, *40:*260–265.

(30) Pruchno RA, Resch NL: Mental health of caregiving spouses: Coping as mediator, moderator, or main effect? *Psychology and Aging.* 1989, *4:*454–463.

(31) Wallhagen MI: Perceived control and adaptation in elder caregivers: Development of an explanatory model. *International Journal of Aging and Human Development.* 1993, *36:*219–237.

(32) Stephens MAP, Norris VK, Kinney JM, et al: Stressful situations in caregiving: Relations between caregiver coping and well-being. *Psychology and Aging.* 1988, *3:*208–209.

(33) Carver CS, Scheier MF, Weintraub JK: Assessing coping strategies: A theoretically-based approach. *Journal of Personality and Social Psychology.* 1989, *56:*267–283.

(34) Scheier MF, Weintraub JK, Carver CS: Coping with stress: Divergent strategies of optimists and pessimists. *Journal of Personality and Social Psychology.* 1986, *51:*1257–1264.

(35) Williamson GM, Schulz R: Coping with specific stressors in Alzheimer's disease caregiving. *The Gerontologist.* 1993, *33:*747–755.

(36) Gass KA, Chang AS: Appraisals of bereavement, coping, resources, and psychosocial health dysfunction in widows and widowers. *Nursing Research.* 1989, *38:*31–36.

(37) Jacobs S, Stanislav K, Schaefer C, et al: Conscious and unconscious coping with loss. *Psychosomatic Medicine.* 1994, *56:*557–563.

(38) Folkman S, Chesney MA, Cooke M, et al: Caregiver burden in HIV+ and HIV− partners of men with AIDS. *Journal of Consulting and Clinical Psychology.* 1994, *62:*746–756.

(39) Bradburn NM: *The Structure of Psychological Well-Being.* Chicago: Aldine, 1969.

(40) Folkman S, Lazarus RS: *Ways of Coping Questionnaire.* Palo Alto, CA: Consulting Psychologists Press, 1988.

(41) Jennrich RI, Schluchter MD: Unbalanced repeated-measures models with structured covariance matrices. *Biometrics.* 1986, *42:*805–820.

(42) Burg MM, Seeman TE: Families and health: The negative side of social ties. *Annals of Behavioral Medicine.* 1994, *16:*109–115.

(43) Park CL, Cohen LH, Murch RL: Assessment and prediction of stress-related growth. *Journal of Personality* (in press, 1995).

(44) Park CL, Folkman S: The role of meaning in coping with negative life events. Unpublished manuscript.

(45) Schaefer J, Moos R: Life crises and personal growth. In Carpenter B (ed), *Personal Coping: Theory, Research, and Application.* Westport, CT: Praeger, 1992, 149–170.

(46) Folkman S, Moskowitz JT, Ozer EM, Park CL: Getting through the day: Meaningful events as coping in the context of HIV/AIDS. In Gottlieb B (ed), *Coping with Chronic Stress*. New York: Plenum (in press, 1995).

(47) Langston CA: Capitalizing on and coping with daily life events: Expressive responses to positive events. *Journal of Personality and Social Psychology*. 1994, *67:*1112–1125.