

Collaborative Coping and Daily Mood in Couples Dealing With Prostate Cancer

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Collaborative coping (i.e., spouses pooling resources and problem solving jointly) may be associated with better daily mood because of heightened perceptions of efficacy in coping with stressful events. The study examined the daily processes of collaborative coping (individuals' perceptions that the spouse collaborated), perceived coping effectiveness (ratings of how well they dealt with the event), and mood (i.e., Positive and Negative Affect Scale) across 14 days in 57 older couples coping with stressors involving the husband's prostate cancer and daily life in general. In hierarchical multivariate linear models, collaborative coping was associated with more positive same-day mood for both husbands and wives and less negative mood for wives only. These associations were partially mediated by heightened perceptions of coping effectiveness. Exploratory analyses revealed that collaborative coping was more frequent among wives who performed more poorly on cognitive tests and couples who reported greater marital satisfaction and more frequently using collaboration to make decisions. The results suggest that older couples may benefit from collaborative coping in dealing with problems surrounding illness.

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Older adulthood is marked by the experience of illnesses (Hoffmann, Rice, & Sung, 1996), which may bring challenges to the

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ways in which adults cope with stressful events (Wrosch, Schulz, & Heckhausen, 2004). These challenges affect not only the patient with the illness but the spouse as well (Coyne & Smith, 1991; Druley, Stephens, & Coyne, 1997; Stephens, Martire, Creameans-Smith, Druley, & Wojno, 2006), a finding that is consistent with a growing emphasis on coping as an interpersonal phenomenon (Berg & Upchurch, 2007; Bodenmann, 2005; Lyons, Mickelson, Sullivan, & Coyne, 1998; O'Brien & DeLongis, 1997; Revenson, Kayser, & Bodenmann, 2005). Terms such as *dyadic*, *interpersonal*, *communal*, *relationship-focused*, and *collaborative coping* have all been used to characterize interpersonal aspects of coping beyond traditional notions of social support (Ben-Zur, Gilbar & Lev, 2001; Pakenham, 1998). The research on dyadic coping suggests that collaborative coping (e.g., pooling resources, discussing and solving problems jointly) may be especially beneficial for couples' adjustment (Coyne & Smith, 1994; Kuijer et al., 2000). In late adulthood, collaborative coping may be particularly useful as older adults experience increased physiological (Uchino, Berg, Smith, Pearce, & Skinner, 2006) and affective (Mroczek & Almeida, 2004) reactions to daily stressors, especially in the context of many illnesses (Piazza, Charles, & Almeida, 2007), as it may serve a compensation function (Dixon & Gould, 1996). In the present study, we explored whether daily collaborative coping was associated with more positive mood and lower negative mood for husbands and wives and whether such associations were mediated by perceived coping effectiveness. Collaborative coping was examined in the context of couples who were dealing with the husband's prostate cancer, an illness that poses numerous ongoing

challenges for both men and their wives due to difficult treatment decisions and associated side effects (e.g., incontinence and impotence) that are relevant to the marital relationship.

We use the term *collaborative coping* to refer to the active engagement of spouses in pooling resources and in joint problem solving and coping. Collaborative coping involves many features of collaborative problem solving (Dixon & Gould, 1996; Meegan & Berg, 2002), which has proven to be a useful way for older couples to approach many cognitive tasks (Gould, Trevithick, & Dixon, 1991) and everyday problem solving (Berg, Smith, et al., 2007). This active problem-solving component may assist individuals in dealing with the stressful event, such that coping is improved.

Most research on dyadic coping (Coyno & Smith, 1991, 1994; Hagedoorn et al., 2000) operationalizes collaborative coping, mood, and self-efficacy at a global level (e.g., over the past 6 months), potentially obscuring the daily self-regulatory processes that may be operating as couples collaborate together. In addition, operationalizations have often blended strategies that involve the beneficial components of collaborative coping with the potentially negative effects of social control. This is problematic because the same strategy, such as "sitting down to discuss the pros and cons of radiology," could be viewed by a spouse as either collaborative (e.g., "My wife and I are really working as a team") or controlling (e.g., "My wife is telling me what to do"). It is thus not surprising that collaborative coping has sometimes been associated with positive (Kuijer et al., 2000) and sometimes with negative (Coyno & Smith, 1991) psychosocial adjustment. In the present study, we built on previous research by determining whether spouses viewed their partner's involvement as collaborative, supportive, or controlling and by examining the daily processes linking collaborative coping and mood. We specifically examined whether the positive associations of collaborative coping and affect derived from the individual's perception that coping effectiveness is improved.

We used a developmental-contextual model of coping (Berg & Upchurch, 2007) to operationalize how spouses may cope with prostate cancer and the many problems that arise in making treatment decisions and beginning treatment. We examined collaborative strategies as one of four different ways in which spouses may interact as they cope with stressors (Berg, Meegan, & Deviney, 1998). *Collaborative* strategies were those in which spouses were perceived to be actively involved as collaborators (Meegan & Berg, 2002), by taking equal responsibility for action, brainstorming, and negotiating. Collaborative strategies were examined in contrast to *uninvolved* strategies (an individual acting on his or her own; Heckhausen & Schulz, 1995; Lazarus & Folkman, 1984), *supportive* strategies (involvement of spouse through provision of instrumental or emotional support, consistent with the social support literature; Cutrona & Russell, 1990), and *control* strategies (one spouse dominating the other by telling him or her what to do; Rook, 1995).

The active engagement of collaborative coping has been associated with less depressive symptoms and more positive mood in couples across illness conditions (Berg & Upchurch, 2007), both concurrently and prospectively. We examined the daily relations among collaborative coping, mood, and perceived coping effectiveness to understand whether the better mood associated with collaborative coping occurs through heightening individuals' perceived coping effectiveness. On a daily basis, collaborative coping may be associated with more positive mood and less negative

mood as couples jointly problem solve difficult stressors surrounding the diagnosis and treatment of illness. Collaborative coping may be associated with greater perceptions that one is effective in coping with the stressful event, consistent with couples' beliefs that "two heads are better than one" (Strough, Hicks Patrick, Swenson, Cheng, & Barnes, 2003). Collaborative coping in long-term married couples may reflect a collaborative expertise (Dixon & Gould, 1996) that allows couples to draw from their store of shared experiences to know what types of information spouses desire and the ways in which spouses think.

The present study also sought to explore individual differences in collaborative coping as couples dealt with stressors involving the husband's prostate cancer. To the extent that collaborative coping reflects the broader literature on collaborative problem solving, it may relate to cognitive function and be one way in which couples compensate for reduced cognitive resources, especially during late adulthood (Dixon & Gould, 1996). If collaboration serves a compensation function, those with lower cognitive ability may be more likely to report using collaboration. Individuals who regularly engage in collaboration and believe that working together is associated with better outcomes may also be more likely to engage in collaboration. Collaborative coping may also serve a relational function (Meegan & Berg, 2002) and be more frequent when couples are satisfied with their marriages (Hagedoorn et al., 2000), as well as relate to greater relationship improvement over the course of dealing with illness in both patients and their spouses (Kuijer et al., 2000). Personality characteristics have been associated with an individual's tendency to engage his or her spouse in coping. More specifically, Helgeson and Lepore (1997) found that men who scored high in *unmitigated agency* (focus on the self characterized by arrogance, egoism, and cynicism) were less willing to engage with their wives by expressing their emotions. In contrast, individuals who scored high in *unmitigated communion* (a focus on other people characterized by placing needs of others before one's own; Helgeson, 1993) may report greater use of collaboration because such individuals feel more responsible for their partner. Finally, we examined the relation between collaborative coping and depression, given previous findings that self-report checklist measures of dyadic coping are often associated with lower depressive symptoms (Kuijer et al., 2000).

There were two primary goals addressed in the present study. We explored the ways in which husbands and wives separately appraised each others' involvement in daily stressors surrounding the husband's prostate cancer through a 14-day daily diary, which included data on stressors, coping strategies, perceived coping effectiveness, and mood. First, we examined whether wives' and husbands' perceptions of collaborative coping were related to more positive and less negative mood and whether these effects were mediated by individuals' perceptions of the effectiveness of their coping. Second, we explored individual and relational factors that predicted the frequency of collaborative coping across the 14 days.

Method

Participants

Fifty-nine men diagnosed with localized prostate cancer (Stage I) and their spouses participated in the study. The men were 40–84 years of age ($M = 67.56$, $SD = 9.16$) and were largely in long-term marriages ($M = 38.4$ years, $SD = 13.7$; range, 1–59

years). Participants were mostly White (94.7%), retired (67.8% men, 78% women), and had some education beyond high school (82.8% men, 64.4% women). The wives were 38–80 years of age ($M = 64.8$, $SD = 9.2$). The majority (76.3%) of participants was from the dominant religion in the greater Salt Lake City area (Latter-Day Saints).¹

Men and their wives were recruited from oncology, radiation therapy, and surgical clinics (93%) and through advertisements in prostate cancer support group publications (7%). Couples were eligible if the husband had been diagnosed with localized prostate cancer (i.e., the cancer had not spread beyond the connective tissue surrounding the prostate gland) and was in the process of making a decision about one or more phases of treatment; 89% of participants were recruited during treatment consultations. Individuals were excluded if they had a prior history of cancer other than skin cancer, did not speak English, and did not have a significant other. Of 102 eligible men approached, 29 declined to participate for various reasons (i.e., living too far away, wife did not agree to participate, other serious illness, busy with other commitments). Of the 73 (72% of eligible pool) who initially agreed to participate, 59 completed all components of the study. Nine couples withdrew before any data collection, and another 5 withdrew after completing baseline questionnaires.² Participants most frequently mentioned an illness in the family as a reason for not completing the study.

For the 59 men completing the study, the average number of days since diagnosis of prostate cancer was 83.4 (range, 1–498, $SD = 106$); 90% of the sample were recruited within 6 months of diagnosis. Twenty men had undergone some treatment for prostate cancer by the time they completed the daily diaries (4 had undergone external beam radiation, 5 internal radiation, 7 surgery, and 4 hormonal treatment prior to seeking additional treatment). Analyses were conducted to ascertain whether those receiving treatment reported different amounts of collaborative coping than those who were not receiving treatment. No differences were found between those who received treatment and those who did not, nor were any differences found between treatment conditions among those receiving treatment (all $ps > .10$).

Procedure

The study consisted of three components. First, a take-home packet of questionnaires was given to participants at the time of clinical consultation or mailed to their homes. Husbands and wives were asked to complete their packets separately. Second, approximately 1–2 weeks after initial recruitment, a 90-min in-home session was scheduled with each couple. During this session, the take-home packets were collected and reviewed, and husband and wife individually completed cognitive tasks and other measures not relevant to the present article (e.g., general social support, hoped-for and feared possible selves, psychological well-being). Third, a 2-week daily diary protocol was completed. Couples completed diaries individually for 14 consecutive days and were called on Days 1, 3, 5, 7, 9, 11, and 13 during the daily diary component of the study to remind them to complete their diaries and ask if they had any questions or concerns. Actual contact with couples was made an average of five times (additional voice messages were left when personal contact was not possible). Participants returned each individual diary separately in a self-addressed stamped envelope. Research assistants reviewed the

envelopes for postmarked dates and the diaries for completeness (i.e., the absence of missing data). When diaries contained missing data, research assistants contacted participants to ensure that participants were aware of the missing data and to answer any questions. Couples who did not complete the daily diary component of the study were not included in any analyses reported in the following sections. Individuals each received \$19 for completing the questionnaires and home interview and \$4 each day for completing the diary.

Measures

Background information. Husband and wife separately responded to questions regarding their date of birth, highest level of education, household income, employment, religious affiliation, racial/ethnic background, and number of children. Husbands rated their health a mean of 3.5 ($SD = 0.90$) on a 5-point scale (1 = *poor*, 5 = *excellent*) and wives rated their health a mean of 3.3 ($SD = 0.90$). Participants also indicated the presence of major medical conditions (e.g., allergies, gastrointestinal problems, high blood pressure, and so forth) and what medications they were taking. In this sample, 73% of the men and 78% of the women reported two or more medical conditions: arthritis or other joint/bone conditions (40.7% of men, 44.1% of women); diabetes or high cholesterol (39.0% men, 37.3% women); ear, nose, or throat problems (35.6% men, 8.5% women); head and eye problems (32.2% men, 33.9% women); high blood pressure (30.5% men, 27.1% women); and allergies (23.7% men, 30.5% women).

Marital satisfaction. The Dyadic Adjustment Scale (DAS; Spanier, 1976) consists of 32 items, with varying response formats (e.g., some 6-point scales of frequency of agreement/disagreement and other questions with yes/no responses). The total score was used in the present analyses (potential range from 0–151). Spanier (1976) reported excellent internal consistency (Cronbach's $\alpha = .96$ for the total scale) and construct validity. Reliability for the current sample was .93 for the total scale across husbands and wives. Means are presented in Table 1.

Personality. The Unmitigated Communion and Unmitigated Agency Scales from the extended version of the Personal Attributes Questionnaire (Spence, Helmreich, & Holahan, 1979) were used. These scales theoretically represent negative aspects of femininity (e.g., items such as "I always place the needs of others above own") and masculinity (e.g., items such as "very arrogant," "very dictatorial"), respectively, and have been associated with

¹ Analyses comparing participants who were Latter Day Saints (LDS) with those who were not LDS on the primary study variables revealed no effects of religious affiliation for wife's or husband's positive or negative emotion (ts ranged from -1.34 to $.033$), or for husband's or wife's proportion of collaborative strategies (ts ranged from $-.72$ to $.09$).

² To address whether those who began the study but did not complete the diaries were different from those who completed the diaries, we conducted analyses comparing the full sample of 59 couples with the 5 husbands and wives who did not complete the diaries. We utilized variables that were closest to the primary study variables obtained from the take-home packet (self-reported depression from the Hospital Anxiety and Depression Scale, perceptions of collaboration from the Perceptions of Collaboration Questionnaire). The only difference occurred for wife's depression, $t(61) = 2.7$, $p < .01$. Wives who did not complete the diaries were significantly more depressed than those who completed the diaries.

Table 1
Correlations of Collaborative Coping and Related Variables and Means

	1	2	3	4	5	6	7	8	9	10	11	H M
1. COLL	.36**	-.13	.23	-.01	.25	.27*	-.08	-.07	.25	.19	.02	0.2
2. UNAG	-.22	.24	-.01	-.09	-.30*	-.08	.37**	.41**	-.28*	-.13	.28*	2.2
3. UNCOM	.25	-.26	.48**	.07	-.06	.14	-.15	-.19	.02	.04	.06	3.4
4. CCOMP	.37**	-.18	.12	.08	.48**	.40**	.04	.11	.21	-.35**	-.14	4.1
5. CENJOY	.35**	-.39	.05	.55**	.38**	.45**	-.14	.02	.51**	-.16	-.35**	4.6
6. CFREQ	.40**	-.23	-.01	.55**	.61**	.32*	-.07	.10	.36**	-.21	-.27*	3.3
7. LETTER	-.36**	.15	-.16	-.04	.02	-.08	.58**	.45**	-.12	-.42**	-.04	5.8
8. VERBAL	-.29*	.32*	-.03	.09	.23	.11	.58**	.48**	-.08	-.19	-.08	26.4
9. DAS	.38**	-.41**	.19	.40**	.70**	.39**	-.08	.10	.71**	-.05	-.35**	120.4
10. AGE	.08	-.06	-.04	-.17	-.19	.04	-.30*	-.47**	-.08	.91**	.19	67.6
11. DEPRESS	-.13	.34**	.13	-.11	-.52**	-.11	.11	-.02	-.56**	.14	.16	3.3
W M	0.3	2.0	3.5	3.9	4.3	3.4	6.3	27.2	118.9	64.8	3.4	—

Note. Correlations for husbands are reported above the diagonal and correlations for wives below the diagonal. Correlations for the same measure between husbands and wives are reported on the diagonal (in bold). COLL = Collaborative Coping; UNAG = Unmitigated Agency Scale; UNCOM = Unmitigated Communion Scale; CCOMP = Perceptions of Collaboration—Compensation; CENJOY = Perceptions of Collaboration—Enjoyment; CFREQ = Perceptions of Collaboration—Frequency; LETTER = Letter Series Subtest; VERBAL = Verbal Meaning Subtest; DAS = Dyadic Adjustment Scale (marital satisfaction); AGE = Age of Participant; DEPRESS = Hospital Anxiety and Depression Scale; H M = Husband's Mean; W M = Wife's Mean. * $p < .05$. ** $p < .01$.

differential engagement with one's spouse (Helgeson & Lepore, 1997). The nine-item Unmitigated Communion Scale is a 5-point scale with responses ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The responses to the nine-item Unmitigated Agency Scale is composed of 5-point bipolar adjective rating scales, with responses ranging from, for example, 0 (*not at all arrogant*) to 4 (*very arrogant*). Cronbach's alphas for both scales were excellent (Unmitigated Communion .71 for husbands and .82 for wives; Unmitigated Agency .83 for husbands and .85 for wives).

Perceptions of Collaboration Questionnaire. This 12-item measure was developed by Cynthia A. Berg to assess perceptions of collaboration and independence between spouses in daily decision making. Items assess the frequency of daily collaboration, whether collaboration was perceived as beneficial, and the reasons behind collaboration (i.e., cognitive need, interpersonal closeness, and the like). The items are answered on a 5-point scale, with responses ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Structural equation modeling of this measure on a large sample of middle-aged and older adults (Berg et al., 2006) confirmed three factors: compensation (e.g., "I view working together with my spouse as necessary as it is harder for me to do things by myself"), enjoyment (e.g., "I enjoy the support and encouragement I receive when I work together with my spouse"), and frequent use (e.g., "My spouse and I always work together to deal with really important household decisions"). Separate summary scores were calculated for these three dimensions.

Cognitive abilities. The Primary Mental Abilities (Thurstone, 1962) Verbal Meaning and Letter Series subtests were administered during the in-home session. Following standard instructions, participants completed as many items in each subtest as they could within separate 4-min time periods. The total number of items answered correctly for each subtest was summed.

Depression. The Hospital Anxiety and Depression Scale is a 14-item measure used to assess clinically relevant symptoms of anxiety and depression in outpatient medical populations (Zigmond & Snaith, 1983). Responses to the items are made on a

4-point scale, with anchors ranging from *not at all* to *most of the time* and from *hardly at all* to *definitely as much*). It is widely employed in psychosocial research and has demonstrated acceptable reliability. For the present sample, we focused on depressive symptoms as this is the outcome most frequently examined in the dyadic coping literature (Berg & Upchurch, 2007). Cronbach's alphas for the husband's and wife's Depression subscales were .76 and .75, respectively. Scores consist of the sum of seven items (see Table 1 for means).

Diary. The daily diary was used to assess aspects of dyadic coping that were based on our prior work using structured interviews (Berg, Wiebe, et al., 2007; Wiebe et al., 2005) and questionnaire methods (Meegan & Berg, 2001). Couples received instructions and practice in completing the daily diaries at the end of the in-home session that was given to familiarize participants with the diary and to define the major constructs of interest (e.g., stressors were defined as including minor hassles or concerns in addition to more major life stressors; descriptions of the strategy categories were provided). We took special care to avoid directing participants to report particular types of stressors or strategies by using examples of stressors experienced by a hypothetical patient with Type 2 diabetes—rather than a patient with cancer—to prompt them when necessary. At the end of each day, husbands and wives first wrote one brief sentence describing the most bothersome event dealing with prostate cancer that they had encountered that day. If participants did not have a bothersome event dealing with prostate cancer, they wrote down the most bothersome event of the day. Participants then rated on a scale of 1 (*not at all*) to 7 (*completely*) the extent to which the stressful event was due to prostate cancer.

To assess daily collaborative coping strategies, we asked participants to list three things that they thought, did, or felt to deal with the event. Respondents then indicated whether their spouse was "not involved" or was "supportive" (gave advice, listened, change his/her plans on account of the participant) as well as whether they "worked together" with their spouse (worked as a team, negotiated) or whether their spouse "took charge" (told the

participant what to do, was too involved, controlled the participant's actions). Collaborative coping was indexed by the proportion of strategies categorized as showing a couple "worked together." As is typical for proportion scores, the distributions were positively skewed. Square root transformations were applied (Tabachnick & Fidell, 1996), which reduced skew. We analyzed all models described in the article using square root transformations. Because the transformed and nontransformed scores produced identical results, we report data based on the original proportion scores for ease of interpretation.

Perceived coping effectiveness was assessed with the question, "How well do you think you dealt with this stressful event or concern today?" Individuals rated their coping on a scale of 1 (*not well at all*) to 7 (*very well*). Finally, participants completed the Positive and Negative Affect Scale (PANAS) to assess mood each day. This 20-item scale assesses both positive and negative affective states, which have been shown to be independent dimensions (Watson, Clark, & Tellegen, 1988).

A symptom checklist was developed by Nail and colleagues (King, Nail, Kreamer, Strohl, & Johnson, 1985; Nail, Jones, Greene, Schipper, & Jensen, 1991) and was included in husbands' daily diary. The symptoms listed were generated by physicians and nurse practitioners in urology and oncology. A total of 14 symptoms were included, with husbands responding on a 5-point scale to rate the extent to which they experienced the symptom during the day (1 = *not at all*, 5 = *extremely*). The symptoms were related to prostate cancer and to treatment side effects, such as problems with urination, fatigue, decreased appetite, hot flashes, inability to have an erection, and pain.

A paper diary was utilized rather than an electronic diary because at the time of data collection, the use of diaries in older adult populations was quite limited; some studies examining prospective memory failures (e.g., Burke, MacKay, Worthley, & Wade, 1991), sleep (Libman, Fichten, Bailes, & Amsel, 2000), and health (Rosner, Namazi, & Wykle, 1992) reported using paper diaries only. Although concerns about participant compliance with keeping paper diaries have been raised (Stone & Shiffman, 2002), compliance with keeping paper diaries may be much more similar to that of keeping electronic diaries if a moderate number of days (7–14) are recorded and single-day assessments are conducted (Green, Rafaeli, and Bolger, 2006). We also implemented procedures to limit potential shortcomings of paper diaries (see Bolger, Davis, & Rafaeli, 2003; Preece, DeLongis, Lee-Aggle, Holtzman, & Coyne, 2005; Stone, Kessler, & Haythornthwaite, 1991) by writing the date of each diary on a diary record, training couples in the importance of completing the diary daily in their homes, regularly calling participants to address questions and encourage compliance, and having participants mail back the diaries each day.

Fifty-six percent of husbands' stressors dealt with prostate cancer at least to some degree (rated ≥ 2 on the question, "To what extent was this stressful event due to prostate cancer?"). Men's and women's stressful events dealing with prostate cancer included physical symptoms of the prostate cancer and its treatment (such as having to wear diapers or being unable to achieve an erection; 27.5% of stressors for men, 10.7% for women) and concerns over treatment and doctor's appointments (such as spending half of the day trying to get laboratory reports or finding out a seed implant procedure must be delayed; 13% for men, 11.3% for women). Stressors that did not involve prostate cancer included medical

conditions not related to prostate cancer (such as knee pain or a headache; 7.3% for men, 11.6% for women), daily chores (such as repairing a leaky water supply valve, painting woodwork, spending 3 hr shopping for groceries; 12.5% for men, 12.9% for women), and problems involving family and friends (such as worries over friends' health—"My friend broke her ankle"—and interpersonal conflicts—"I had an argument with my daughter concerning family problems"; 7% for men, 12.9% for women). Both prostate cancer and non-prostate cancer stressors were used in the present analyses because restricting the analyses across both husbands and wives to a particularly type of stressor would have jeopardized the number of days available for the analyses. Analyses conducted to examine whether collaborative coping differed across stressors types (whether stressor dealing with prostate cancer was rated ≥ 2 on the "due to cancer" scale vs. being rated 1, reflecting stressor was not due to cancer) revealed some differences. However, the associations between collaborative coping and positive and negative emotion were unaffected by our controlling stressor type in the model.

Two couples had an unacceptably low number of consecutive days (2 and 0) on which both husbands and wives reported diary data and had to be removed from analyses. Twenty-nine couples completed all 14 diary entries on the same consecutive days. Fifty-seven couples had data for 4 or more days (only 6 couples had fewer than 7 days' worth of data) and were included in the analyses (Bryk & Raudenbush, 1992). The analyses that are reported were based on an average of 10.5 days for both husbands and wives. To address whether completing the daily diary affected the frequency of collaborative coping (i.e., whether thinking about the spouse's involvement led one to engage in more collaborative coping), we utilized a hierarchical linear modeling (HLM) approach in which the effect of Day (1–14) on the proportion of daily collaborative coping was tested separately for husbands and wives. There was no effect of Day on the proportion of daily collaborative coping for either husbands, $t(55) = -1.2, p > .2$, or wives, $t(55) = -0.5, p > .3$. Thus, there was no systematic tendency for couples to become increasingly collaborative across the daily diary, suggesting our procedures did not clearly alter the process being studied. We therefore utilized HLM, in which the missing data are interpolated under the assumption that they are missing at random (Bryk & Raudenbush, 1992). The majority of men completed the diaries prior to treatment: 38% prior to all treatments, 22% prior to all treatments except hormonal therapy (used to shrink the tumor before the patient receives another treatment), 21% during treatment, and 18% shortly after treatment). No significant differences were found between men who were at different phases of treatment for any of the variables used in the analyses described in following sections (i.e., husband's and wife's positive and negative emotion, collaborative coping, all $ps > .2$).

Statistical Model and Analyses

The diary design provided 14 daily reports separately from the husband and wife involving daily measures of collaborative coping, perceived coping effectiveness, and positive and negative mood. To assess the relation between collaborative coping and same day mood, and whether perceived coping effectiveness mediated these relationships, hierarchical multivariate linear models with application to matched pairs was used (Almeida & Kessler,

1998; Raudenbush, Brennan, & Barnett, 1995; HMLM2, Raudenbush, Bryk, Cheong, & Congdon, 2000). These models were based on a multilevel data array of individuals (i) within couples (p) assessed at time points (t) in which within-couple effects were assessed. Two models like that depicted in Figure 1 were calculated one for positive and one for negative emotion (depicted with the traditional mediational logic of Baron and Kenny, 1986, depicting the total effect of collaboration on emotion as $c = c' + ab$). To account for the dependencies between husbands and wives, we simultaneously estimated models for emotion for wives and husbands and compared the models. We began by establishing that collaborative coping was associated with same-day positive and negative affect via the following model ($w =$ wife; $h =$ husband; e_{itp} = error term at Level 1; WPCC = wife's perceptions of daily collaborative coping; HPCC = husband's perceptions of daily collaborative coping; r_{wtp} and r_{htp} = error terms at Level 2):

$$\text{Level 1, Emotion}_{itp} = \pi_{wtp}(\text{Wife})_{itp} + \pi_{htp}(\text{Husband})_{itp} + e_{itp};$$

$$\text{Level 2, } \pi_{wtp} = \beta_{w0p} + \beta_{w1p}(\text{Day})_{wtp} + \beta_{w2p}$$

$$(\text{WPCC})_{wtp} + r_{wtp}$$

$$\pi_{htp} = \beta_{h0p} + \beta_{h1p}(\text{Day})_{htp} + \beta_{h2p}$$

$$(\text{HPCC})_{htp} + r_{htp}$$

The Level 1 equation without the Level 1 intercept turns π_{wtp} , and π_{htp} , into true scores for emotions at a single point in time for wife and husband, respectively. This accounts for the dependency that arises because of the nesting of persons within couples (see Raudenbush et al., 1995). The Level 2 equation then predicts each participant's true emotion score from Day (which day the diary was completed) and collaborative coping akin to the first level of a normal two-level HLM. The third level (equivalent to the second level of a normal two-level HLM) contains only fixed intercepts and random effects for each coefficient generating average coefficients across individuals and variance components of these coefficients. Although some of our Level 2 effects did contain significant variance on these effects, Level 3 modeling was beyond the scope of the analyses performed here.

To test for mediation using random effects models, the average fixed effects are biased to the extent that there is covariance between the components of the indirect paths (e.g., if there is covariance between the weights for the collaborative coping–perceived effectiveness path and the perceived effectiveness–emotion path; depicted as the curved arrow in Figure 1, σ_{ab} , Bauer, Preacher, & Gil, 2006; Kenny, Korchmaros, & Bolger, 2003). To address this bias, we followed the procedures outlined in Bauer et al. (2006). This involved simultaneously modeling the regression predicting the mediator (how collaborative coping predicts perceived effectiveness) and the outcome (how collaborative coping and perceived effectiveness predict emotion). We extended this model to the multivariate case in which values for husbands and wives were also simultaneously estimated. The full model with all covariates for the HMLM2 analyses establishing the relationship between collaborative coping and emotion can be expressed in the following Level 1 and Level 2 equations (WPE = wife's perceived effectiveness; HPE = husband's perceived effectiveness):

$$\text{Level 1, } Z_{itp} = \pi_{1tp} (\text{Wife Perceived Effectiveness Mediator Indicator})_{itp} + \pi_{2tp} (\text{Husband Perceived Effectiveness Mediator Indicator})_{itp} + \pi_{3tp} (\text{Wife Emotion Outcome Indicator})_{itp} + \pi_{4tp} (\text{Husband Emotion Outcome Indicator})_{itp} + e_{itp};$$

Level 2,

$$\pi_{1tp} = \beta_{10p} + \beta_{11p}(\text{Day})_{itp} + \beta_{12p}(\text{WPCC})_{itp} + r_{1tp}$$

$$\pi_{2tp} = \beta_{20p} + \beta_{21p}(\text{Day})_{itp} + \beta_{22p}(\text{HPCC})_{itp} + r_{2tp}$$

$$\pi_{3tp} = \beta_{30p} + \beta_{31p}(\text{Day})_{itp} + \beta_{32p}(\text{WPCC})_{itp} + \beta_{33p}(\text{WPE})_{itp} + r_{3tp}$$

$$\pi_{4tp} = \beta_{40p} + \beta_{41p}(\text{Day})_{itp} + \beta_{42p}(\text{HPCC})_{itp} + \beta_{43p}(\text{HPE})_{itp} + r_{4tp}.$$

At Level 1, the mediator and outcome indicators represent dummy codes and Z represents a stacked variable that reflects the true score for perceived coping effectiveness in husband or wife (depending on the dummy value representing the wife's or husband's perceived effectiveness mediator indicator) or for emotion in husband or wife (depending on the dummy variable representing

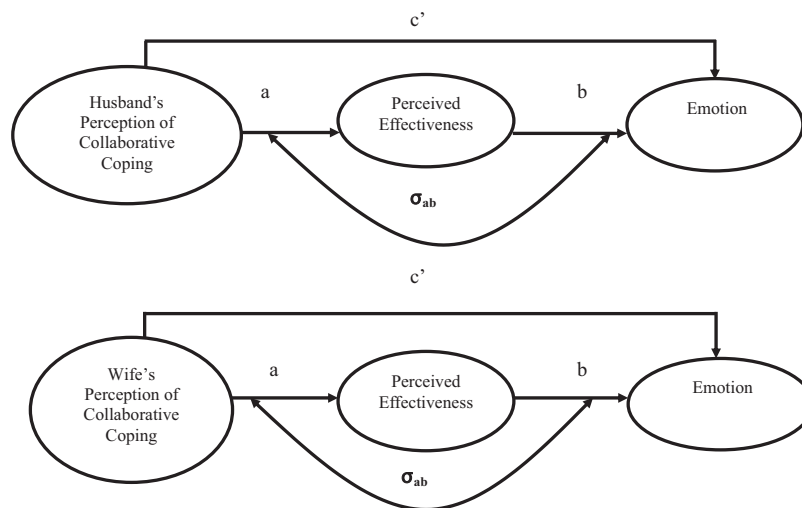


Figure 1. Mediation model. σ_{ab} = the covariance of the indirect paths (MacKinnon et al., 2004). Corrected mediation is $c = c' + ab + \sigma_{ab}$ (Bauer et al., 2006).

the wife's or husband's emotion outcome indicator). These true scores are then modeled at Level 2.

At Level 2, the true scores for emotion and perceived effectiveness were each regressed simultaneously, generating the equation predicting the mediator from the independent variable and the equation predicting the outcome from both the independent variable and the mediator (Baron & Kenny, 1986). Specifically, the equation for π_{1tp} at Level 2 is the regression of the wife's mediator (wife's perceived effectiveness) from wife's perceived coping; the equation for π_{2tp} at Level 2 is the regression of the husband's mediator (husband's perceived effectiveness) from the husband's perceived coping; the equation for π_{3tp} is the regression of the wife's outcome (wife's emotion) from perceived coping effectiveness and collaborative coping; and the equation for π_{4tp} at Level 2 is the husband's outcome (husband's emotion) from his perceptions of perceived coping effectiveness and collaborative coping. For the wives for example, the average $\beta_{12p} \times \beta_{33p}$ is the traditional mediation effect for wife ($a \times b$ in Figure 1) and the corresponding β_{32p} is the remaining reduced effect (c' in Figure 1). In the case of random effects mediation, the corrected mediation includes this traditional mediation effect plus the covariance between the mediation components (σ_{ab} as estimated from β_{12p} and β_{33p}). All predictors were grand centered (i.e., within sex but not within person) to facilitate interpretation in the mediation context (Kreft, deLeeuw, & Aiken, 1995). We present the Sobel test for the unadjusted mediated effects to establish the significance of mediation, followed by the adjusted effect without a test.

Results

Perceived Daily Collaborative Coping, Perceived Efficacy, and Mood

Descriptive statistics on dyadic coping strategies. We calculated the daily proportions of uninvolved, supportive, collaborative, and controlling strategies across the strategies that individuals

mentioned for each of the 14 daily stressors. Across the 14 days, husbands most frequently reported that their wife was not involved ($M = .40, SD = .23$; range: 0–.95), followed by supportive ($M = .37, SD = .20$; range: 0–.88), collaborative ($M = .22, SD = .19$; range, 0–.86), and controlling ($M = .02, SD = .03$; range: 0–.12). Wives also most frequently reported that their husband was not involved ($M = .40, SD = .23$; range, 0–1), followed by collaborative ($M = .30, SD = .21$; range, 0–.9), supportive ($M = .24, SD = .18$; range: 0–.86), and controlling ($M = .04, SD = .05$; range: 0–.24). Across the 14 days, for both husbands and wives, collaborative coping was associated with less uninvolved ($r = -.52, p < .01$, for husbands, and $r = -.65, p < .01$, for wives) and fewer supportive strategies ($r = -.35, p < .01$, for husbands, and $r = -.29, p < .05$, for wives), but was unrelated to controlling strategies ($r = -.03, p .50$, for husbands, and $r = -.08, p > .50$ for wives). These correlations should be interpreted with caution as they reflect relations among the averages of daily proportions, which are necessarily ipsative (i.e., they sum to 1). Examination of the distributions of collaborative coping across the 14 days revealed that few individuals had means that were consistently high (e.g., only 3 men and 3 women had means $\geq .75$) or low (18 men and 4 women had means $\leq .10$), suggesting that few individuals had a consistent style of extensive or little collaboration across days. However, test-retest reliability across the 14 days revealed that individuals were fairly consistent in their mean level of collaboration across days ($\rho = .78$ for husbands, and $\rho = .73$ for wives). We focus in the remainder of the results on the proportion of collaborative strategies.

Collaborative coping and positive emotion. The first section of Table 2 presents the results of the HMLM2 analyses establishing that collaborative coping was associated with same-day positive emotion. The coefficients in the tables can be interpreted in the same manner as multiple regression coefficients. For both husbands and wives, greater perceptions of collaborative coping on a

Table 2
Level 2: Hierarchical Multivariate Linear Model (HMLM2) Analyses Predicting Perceived Effectiveness as a Mediator of the Effect of Collaborative Coping on Positive Mood

Model variable	Husband		Wife		Variance component ^a	
	Coefficient	SE	Coefficient	SE	Husband	Wife
Part 1: Collaborative coping predicting positive emotion						
Intercept	28.90**	0.92	27.70**	0.85	5.00**	10.30**
Day of study (1–14)	–0.02	0.09	–0.13*	0.06	0.72	1.02
Collaborative coping	2.10**	0.78	2.40**	0.66	11.50**	48.50**
Part 2: Collaborative coping predicting perceived effectiveness (mediator) ^b						
Intercept	5.00*	0.11	4.60**	0.11	7.50**	14.80**
Day of study (1–14)	–0.04**	0.02	–0.01	0.01	0.20	1.32
Collaborative coping	0.44*	0.18	0.61**	0.14	0.57	0.52
Part 3: Collaborative coping and perceived effectiveness predicting positive emotion (outcome) ^b						
Intercept	29.20*	0.86	27.70*	0.84	4.90**	57.60**
Day of study (1–14)	–0.03	0.09	–0.12	0.07	0.23	1.25
Collaborative coping	1.40	0.73	2.50**	0.72	3.90**	1.12
Perceived effectiveness	1.30**	0.25	–0.35	0.25	0.37	14.70**

^a These variance components are distributed on a z distribution. ^b Stacked model.
* $p < .05$. ** $p < .01$.

given day were associated with greater positive emotion on that day. For wives only, positive emotion decreased across days.

We then conducted analyses to examine whether perceived coping effectiveness was a mediator of the effects of collaborative coping on mood. The results of the stacked models, simultaneously predicting the effects of collaborative coping on perceived coping effectiveness, and the combined effect of collaborative coping and perceived effectiveness on positive emotion are presented in Parts 2 and 3 of Table 2. For both husbands and wives, perceptions of their spouse as collaborative significantly predicted perceptions of coping effectiveness (see Part 2 of Table 2). That is, both husbands and wives reported higher coping effectiveness on days they perceived their spouse as more collaborative in their coping efforts. Day was a significant predictor of perceived effectiveness for husbands such that perceived effectiveness decreased across the 14 days.

For the regressions predicting positive emotion from both perceived effectiveness and collaborative coping (see Part 3 of Table 2), a husband's reports of collaborative coping did not significantly predict his daily positive mood once his perceptions of coping effectiveness were included in the model. For wives, however, greater collaborative coping did predict higher positive mood beyond perceived effectiveness. The results of a test of whether husbands and wives differed on the slope coefficients relating collaborative coping to positive mood (β_{32p} and β_{42p} using a 1-*df* equality contrast) were not significant, $\chi^2(1) = 1.03, p > .3$. The results of a test of whether husbands and wives differed on the slope coefficients relating perceived coping effectiveness to positive mood were significantly different, $\chi^2(1) = 28.5, p < .001$, indicating that the association was only present for husbands. Day was not a significant predictor of positive emotion for husbands or wives in this model.

We applied the Sobel test (Baron & Kenny, 1986) on the uncorrected mediated effects to assess whether perceptions of coping effectiveness mediated the association between perceived collaboration and positive mood. The Sobel test (which tests for a significant reduction in the indirect versus direct path) indicated that significant mediation occurred for husbands (test statistic = 2.2, $p < .05$), but not for wives (test statistic = -1.29, $p = .19$).³

Collaborative coping and negative emotion. The effects of parallel analyses conducted on negative emotions are presented in Table 3. As indicated in the first section of Table 3, on days in which wives reported greater collaborative coping, they also reported lower negative mood, but these associations were not found for husbands. A test of whether husbands and wives differed on the slope coefficients relating collaborative coping to negative mood was significant, $\chi^2(1) = .83, p < .001$, indicating that this effect was only found for wives. Day was not a significant predictor of negative emotion for husbands or wives.

A separate mediational model was then performed for negative emotion. The results of the stacked model reported in Part 2 of Table 3 again indicated that both husbands and wives perceived higher levels of coping effectiveness on days when they experienced more collaboration from their spouse. For husbands, collaborative coping was not a significant predictor of their same-day negative mood when same-day perceptions of coping effectiveness were controlled (see Part 3 of Table 3). For wives, however, the same-day associations between collaborative coping and negative mood remained after their perceptions of coping effectiveness were controlled. The result of a test to determine whether the

slope coefficients relating collaborative coping to negative mood were different for husbands versus wives was significant, $\chi^2(1) = 9.3, p < .01$, indicating that this effect was only present for wives. Greater perceived effectiveness was significantly associated with lower negative emotion for both husbands and wives. Day was not a significant predictor of negative emotion for husbands or wives.

The Sobel test supported mediation for both husbands and wives. That is, the association between collaborative coping and negative mood was significantly reduced when the effects of perceived coping effectiveness were statistically controlled (test statistics = -2.3, $p < .05$, and -3.0, $p < .01$, for husbands and wives, respectively).⁴ Thus, for both husbands and wives, perceived effectiveness was a significant mediator of the association of perceived collaborative coping with negative emotion.

An additional analysis was conducted to explore whether the nonsignificant effect of husbands' perceptions of collaborative coping on negative mood could be due to the fact that husbands' symptoms were driving husbands' negative mood. An HLM model was constructed with Day (1-14), collaborative coping, and the husband's symptoms predicting negative mood. A strong positive association was found between the husband's report of number of symptoms and negative mood ($b = 5.11, SE = 1.04, p < .01$).⁵

In sum, for both husbands and wives, collaborative coping was related to more same-day positive mood, and for wives only, it was related to less same-day negative mood. These effects were partially mediated by the perceived effectiveness of dealing with the stressful event for negative emotion for both husbands and wives and for positive emotion for husbands only. Thus, collaborative coping largely was associated with emotion because individuals were assisted in perceiving that they effectively handled the stressful event.

Predictors of Collaborative Coping

Correlations were conducted to examine the relations among individual characteristics of husbands and wives, relationship characteristics, and the proportion of coping strategies appraised as collaborative across the 14 days (see Table 1). Age was not significantly associated with collaborative coping for either husbands or wives. Associations between collaborative coping and cognitive function were only found for wives' performance on the Letter Series and Verbal Meaning subtests. Wives who reported more collaborative involvement from their husband performed

³ Although there is a method for a modified test of mediation given in Bauer et al. (2006), one of the coefficients is not available in HMLM2. However, the differences between uncorrected and corrected mediation for both husbands and wives were small (husbands: uncorrected = .59, corrected = .54; wives: uncorrected = -.21, corrected = -.14).

⁴ Corrections were calculated for the mediated effect, and again the differences between the uncorrected and corrected mediational effects were small (husband: uncorrected = .18, corrected = .14; wife: uncorrected = -.56, corrected = -.73).

⁵ Additional analyses were conducted to examine whether the significant effect of collaborative coping and positive mood for husbands was maintained when husband's symptoms were included in the model. This analysis indicated that even when husband's daily symptoms were controlled, the effect of collaborative coping on positive mood was maintained.

Table 3
 Level 2: Hierarchical Multivariate Linear Model (HMLM2) Analyses Predicting the Effect of Perceived Effectiveness as a Mediator of the Association of Collaborative Coping with Negative Mood

Model variable	Husband		Wife		Variance component ^a	
	Coefficient	SE	Coefficient	SE	Husband	Wife
Part 1: Collaborative coping predicting negative emotion						
Intercept	16.30**	0.70	19.50**	0.78	4.90**	8.80*
Day of study (1–14)	–0.07	0.06	–0.04	0.08	0.22	2.50*
Collaborative coping	0.37	0.67	–2.40**	0.75	22.00**	169.80**
Part 2: Collaborative coping predicting perceived effectiveness (mediator) ^b						
Intercept	4.98**	0.11	4.70**	0.11	11.10**	9.60**
Day of study (1–14)	–0.04**	0.02	–0.01	0.02	0.19	0.29
Collaborative coping	0.43*	0.18	0.67**	0.14	0.62	15.00**
Part 3: Collaborative coping and perceived effectiveness predicting negative emotion (outcome) ^b						
Intercept	16.20**	0.63	19.10**	0.71	4.90**	87.00**
Day of study (1–14)	–0.08	0.06	–0.02	0.08	0.12	2.30**
Collaborative coping	0.95	0.63	–1.73*	0.67	5.70*	1.40
Perceived effectiveness	–1.37**	0.17	–0.84**	0.22	0.20	10.50*

^a These variance components are distributed on a z distribution. ^b Stacked model.
 * $p < .05$. ** $p < .01$.

more poorly on the Letter Series and Verbal Meaning subtests, perceived greater enjoyment of collaboration, and greater need to use collaboration for cognitive compensation. For both husbands and wives, the more that each person reported using collaboration to make daily household decisions (i.e., frequency of collaboration), the more they reported that their spouse was involved in a collaborative way as they coped with stress across the 14 days. Collaborative coping was positively associated with marital satisfaction for both husbands and wives. Unmitigated Agency, Unmitigated Communion, and depressive symptoms were all unrelated to perceptions of collaborative coping among both husbands and wives.

Discussion

Collaborative Coping and Emotion

Consistent with the conceptualization of collaborative or communal coping as providing emotional benefits (Lyons et al., 1998), perceptions of collaborative coping were associated with more same-day positive emotion for both husbands and wives and less same-day negative emotion for wives. Collaborative coping was associated with more positive and less negative emotion, in part, because of heightened perceptions of effectiveness in dealing with the stressor. Collaborative problem solving, in general, is thought to be beneficial for performance outcomes (Berg, Johnson, Meegan, & Strough, 2003; Meegan & Berg, 2002; Rogoff, 1998) because collaborators are contributing nearly equally to the exchange, which creates the context for the types of negotiations and transactive dialogues that can produce the outcome that “two heads are better than one.” Such performance benefits may be important for the types of stressors our couples reported, because they were dealing with complex everyday problems that had many potential solutions (e.g., which treatment decision to make, how to interface with medical personnel, how to mitigate the symptoms of the disease or treatment). Collaborative coping may be especially

beneficial when older couples make treatment decisions, given that older adults are prone to making decisions more quickly and using less information than are young adults (Meyer, Talbot, & Ranalli, 2007).

Perceptions of collaborative coping were not directly related to husband’s negative mood, but a mediational pathway did occur through perceived coping effectiveness. This suggests that in order for collaborative coping to be associated with less negative mood, men must have perceived it as resulting in effective coping. Further, results from the study reveal that husband’s daily negative mood was also related to the physical symptoms of prostate cancer and its treatment that he experienced daily. The physical symptoms of prostate cancer and its treatment are a significant source of distress and disruption of quality of life for men (Harlan et al., 2001). Husbands may be more aware of their physical symptoms than are their wives and report physical symptoms as more problematic than do their spouses (Jacobs et al., 2002). Thus, for men, their negative mood may be more directly a function of their daily symptoms, rather than their perceptions of collaborative coping in response to these daily stressful events.

Collaborative coping was associated with better mood not only for men experiencing prostate cancer but also for their wives. This is especially interesting because in the case of prostate cancer, men are the “patients,” and wives have typically been perceived as providing support to their spouse (Helgeson & Lepore, 1997). The results clearly indicate that cancer is a stressful experience for both patient and spouse and that the “ill” spouse’s collaborative involvement can benefit the “healthy” spouse (Berg & Upchurch, 2007). For wives, the association between collaborative coping and positive emotion was not mediated through perceived coping effectiveness, suggesting that it occurs through some other pathway. The wife’s role as caregiver for her husband as he undergoes treatment for prostate cancer could mean that associations between collaborative coping and positive mood reflect processes such as caregiver satisfaction (Brown, Nesse, Vinokur, & Smith, 2003). In

late adulthood, however, it may be difficult to consider one spouse as only the patient because the increased frequency of chronic illness conditions in late adulthood means that both spouses are likely to be in the role of patient and to serve as caregiver to each other (e.g., in the current study, the majority of both spouses were experiencing two or more chronic medical conditions).

Individual Differences in Collaborative Coping

The results indicate that in couples coping with stress surrounding the husband's prostate cancer, the spouse frequently is involved in collaborative or supportive coping strategies; these findings are consistent with a growing emphasis on the dyadic or communal nature of coping (Berg & Upchurch, 2007; Bodenmann, 2005; Lyons et al., 1998; Revenson, 1994). In addition, individual and contextual factors are important in understanding the frequency with which collaborative coping occurs. Although there was no significant relationship between age and collaborative coping, this finding may reflect the restriction of range in age in our sample. Prostate cancer is a chronic condition whose onset most frequently occurs during late adulthood (National Cancer Institute, 2002). Consistent with research on aging and collaborative problem solving (Dixon & Gould, 1996), there was evidence of the importance of collaborative coping as a potential compensation mechanism, especially for wives. That is, wives' reports of collaborative coping were associated with their perceived need to collaborate for compensation, as well as with their cognitive ability. The results seem to suggest that wives think of collaborative coping more for compensation than do husbands and that the husband may engage collaboratively when the wife has less cognitive ability. A fruitful direction for future research would be to examine collaborative coping and problem solving in the context of husbands and wives making treatment decisions (Meyer et al., 2007).

Collaborative coping was perceived to be used more frequently when relationship quality was high and individuals perceived that they used collaboration frequently in making daily decisions. Individuals in marriages characterized by greater satisfaction frequently engage in positive problem solving, agreement, and validation (Gottmann, 1998), characteristics of optimal collaborative problem solving (Berg et al., 2003; Rogoff, 1998). Support for this idea was found in the current study in the high associations between marital satisfaction and the enjoyment of collaboration and reported frequency of collaboration regarding daily decisions. Such relations suggest that collaboration is more frequently perceived in marriages characterized by greater levels of satisfaction (see also Hagedoorn et al., 2000). Couples in marriages characterized by marital dissatisfaction may avoid collaborative coping as a way to avoid the disagreement and conflict that collaboration may bring. Consistent with our prior research (Meegan & Berg, 2001), collaborative coping was not significantly related to the specific measures of personality used in the present work (Unmitigated Communion and Unmitigated Agency Scales). Our results are in contrast to previous work by Helgeson and Lepore (1997) that suggested that unmitigated communion and agency related to communication and engagement between husbands and wives. The field would benefit from a more comprehensive assessment of personality and collaborative coping (see O'Brien & DeLongis, 1996, for relations with extraversion). The lack of association

between collaborative coping and depressive symptoms was somewhat surprising, given the associations found in the literature (Berg & Upchurch, 2007). Such discrepancies could be due to our more specific measure of collaborative coping in relation to specific stressful events (as opposed to checklists, in which collaborative coping is measured more globally) or to our measure of depressive symptoms.

The results of the study should be interpreted in light of potential limitations. The present study was an initial step in understanding daily relations between mood and collaborative coping. Although the results suggest that coping effectiveness is a plausible mediator of the effect of collaborative coping on mood, our data were collected at a single time point each day, preventing us from making temporal distinctions between presumed cause and effect. Future research will need to examine these relations with measures of coping, coping effectiveness, and mood offset in time so that these relations are not retrospectively or contemporaneously recalled. The measures will also need to assess whether the forced choice nature of our measure obscured the blended ways that spouses may be involved (e.g., a strategy may be seen as largely collaborative but also somewhat controlling). Additionally, comparisons between our measure of collaborative coping and more traditional distinctions in the stress and coping field (e.g., problem-focused and emotion-focused coping) would be useful in understanding whether collaborative coping is more problem focused than emotion focused, likely contributing to its emotional benefit. Bodenmann's work (Bodenmann, Pihet, & Kayser, 2006) with communal stressors (similar to collaborative coping) has suggested that communal coping can be both problem focused (e.g., "We engage in a serious discussion about what needs to be done") as well as emotion focused (e.g., "We sit down to talk about each other's feelings"). Researchers also need to examine whether the benefits of collaborative coping extend beyond stressors experienced in the context of chronic illness to more routine everyday stressors of daily life. The fact that the stressors that husbands and wives described included numerous non-prostate-cancer-related stressors lends support to the extension of this approach beyond serious illness, in addition to other work that is currently being conducted with non-illness stressful events (see Revenson et al., 2005). Although our measure of collaborative coping more directly assessed individuals' perceptions of the collaborative nature of their coping efforts than many previous measures, our measure is still an individual assessment. Additional dyadic assessment (e.g., joint interviews around stressful events, comparisons of behavioral coding of collaboration with individual assessments of spousal involvement, agreement between husband's and wife's reports of collaborative coping for the same stressor and strategy) may illuminate whether it is one's perception of collaboration or "actual" collaboration that is important in understanding daily mood and adjustment (Berg & Upchurch, 2007; Manne & Zautra, 1989; Pistrang, Barker, & Rutter, 1997).

In sum, collaborative coping may be a beneficial way for older couples to deal with the stressors that surround chronic illness. Collaborative coping may occur in the context of warm and satisfied relationships and may also be associated with daily positive and negative mood. Although collaborative coping is associated with more positive and less negative emotion, the dyadic coping process is likely transactional, whereby collaborative coping not only affects perceived coping effectiveness and mood but

also occurs differentially in the context of better mood (Bodenmann, Widmer, Charvoz, & Bradbury, 2004). Our work with adolescents suggests that the emotional benefit of collaborative coping is not restricted to older couples but extends as well to parent-adolescent dyads when the adolescent has an illness (Berg, Wiebe, et al., 2007; Wiebe et al., 2005). A greater understanding of how husbands and wives come to appraise coping as collaborative efforts may allow psychologists to assist couples in making collaborative efforts beneficial. This is particularly important as coping with chronic illness becomes more common in adulthood (Schaie, Leventhal, & Willis, 2002) and is stressful for couples as well as for larger family units.

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