

Psychological Distress in Spouses of Men Treated for Early-Stage Prostate Carcinoma

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The current study is dedicated to the memory of Renee Elizabeth Rhodes, our friend and colleague, who left us too soon on July 18, 2004.

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BACKGROUND. The authors examined levels and predictors of psychological distress in the wives of men treated for early-stage prostate carcinoma (PCa).

METHODS. Patients with PCa ($N = 165$) and spouses were interviewed to assess general and cancer-specific distress. Social and intrapersonal factors of spouses as well as clinical characteristics and quality of life of patients were assessed as potential predictors of spouses' distress.

RESULTS. Spouses reported more cancer-specific distress than did patients ($P < 0.001$), but did not differ from patients in general distress. Several spouse-reported factors predicted higher spouses' distress, including less education ($P < 0.005$), worse marriage quality and less social support (P s < 0.005), more negative social interaction with the patient (P s < 0.001), lower self-esteem (P s < 0.001), less positive coping (P s < 0.005), searching for meaning ($P < 0.001$), not finding meaning ($P < 0.005$), and greater illness uncertainty (P s < 0.001). Patients' bowel function and mental health also predicted greater spouses' distress (P s < 0.005).

CONCLUSIONS. The findings indicated that overall distress in spouses of early-stage patients with PCa was modest, and it was more likely to be predicted by psychosocial than medical factors. *Cancer* 2005;103:2412–8.

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In addition to lowering the quality of life in patients, prostate carcinoma (PCa) may lower the quality of life in patients' close family members. In particular, the wives of men with PCa may confront uncertainties and demands that can be distressing, including the threat of losing a loved one, social isolation, and taking on additional roles and responsibilities. The current study examines both the levels and correlates of psychological distress in the wives of men with early-stage PCa.

A handful of studies have evaluated psychological distress levels in wives of men treated for PCa. In one study,¹ wives reported significantly greater distress (e.g., worry, depression) and more cancer-related intrusive thoughts than the patients. In another,² wives reported more general anxiety and higher cancer-specific distress (e.g., fear about the diagnosis) than patients.

One complaint among wives of men with PCa is that they lack information about their husband's condition due to inadequate communications from their husband and health care providers.^{3–7} Research also points to several factors related to distress in spouses of men with PCa, including poor marital quality,⁸ spouses' use of avoidant coping,⁸ uncertainty about the cancer,⁹ and perceived lack of social support.¹⁰ In contrast, wives' use of problem solving, information seeking, open communication, and positive reappraisal to

cope is associated with less distress.^{3,11,12} Investigators also have found that higher levels of patient-reported fatigue and urinary problems are associated with greater psychological distress and poorer quality of life in spouses.¹

Clarifying the predictors of distress could help to identify spouses in need of attention. However, previous studies in this area have a number of limitations including small sample sizes (< 40 spouses),^{3-5,7,11,12} overreliance on qualitative methodologies that lack valid measures,^{3-5,7,12} or an overly narrow focus on 1 or 2 predictive factors.⁸⁻¹⁰ With one exception,¹ the degree to which patients' functioning is related to spouses' distress is rarely reported. In the current study, we explore a diversity of spouse and patient-reported predictors of spouses' distress in a large sample of couples in the first few months after treatment for early-stage PCa.

The first objective was to compare the psychological distress level of men treated for early-stage PCa to that of their spouses. From previous studies, we expected that spouses of men with PCa would report higher levels of distress than the patients. The second objective was to identify spousal and patient factors that predict spouses' distress. Among demographic factors, we expected that younger and less-educated spouses would report higher distress than older and more-educated spouses, respectively. Several spouse psychosocial factors were studied in relation to distress. We expected that higher-quality marriages and supportive social environments would be related to lower distress, as would personal resources like self-esteem and adaptive coping. Greater perceived uncertainty about the patient's illness was expected to be predictive of higher distress in spouses. Consistent with cognitive adaptation theory and cognitive-processing theory,^{13,14} we hypothesized that spousal attempts to "search for meaning" in the PCa experience would be associated with higher distress. Spousal reports of psychological resolution of the cancer experience ("finding meaning") were expected to be associated with lower distress. Finally, we expected that more visible signs of the patient's functional impairment (i.e., disease-related and general quality of life) would be associated with higher spouse distress.¹ Less observable, objective indicators of the patient's status (i.e., stage and grade of disease, prostate-specific antigen [PSA] level) were expected to be more modestly related to spouse distress.¹⁵

MATERIALS AND METHODS

Participants and Procedure

The men and women participating in the current study were also participating in a clinical trial of sup-

portive group interventions for PCa. The findings reported here are from the first wave of data collected prior to intervention. Consecutive patients were recruited from clinics in the greater Pittsburgh area. Eligibility criteria included treatment within the past 3 months for early-stage PCa, no evidence of metastasis at diagnosis, and no history of other malignancies. Of 576 referred patients, 87 refused to be contacted and 127 did not meet inclusion criteria. Of the remaining 362 patients, 279 (77%) agreed to be interviewed. Of these 279 patients, 243 (87%) were married. After hearing a description of the study, 165 spouses (68% of married cohort) agreed to be interviewed. We report findings from these 165 couples. (Note: Patients whose spouse elected to participate [$n = 165$] also were compared with those whose spouse opted not to participate [$n = 78$]. Patients whose spouse did participate were less likely to be employed than patients whose spouse did not participate, $\chi^2(1) = 3.9$, $P < 0.05$. There were no other differences in demographic or clinical characteristics.)

Male research assistants interviewed patients in their homes within 3 months of primary treatment initiation (mean = 47.7 days, standard deviation [SD] = 21.4). Female research assistants conducted phone interviews with the patients' spouses ≤ 2 weeks after the patient interview (mean = 8.8 days, SD = 7.3). Informed consent was obtained from the participants as approved by the appropriate institutional review boards.

Data came from three sources: spouses' self-reports (distress, psychosocial factors, demographics), patients' self-reports (distress, functional status, demographics), and medical chart review (stage of disease, grade, treatment). Outcomes of interest were general distress (depression) and cancer-specific distress (illness-related intrusive and avoidant thoughts). They were assessed in both patients and spouses.

Patients' and Spouses' Distress Measures

General distress

We measured depressive symptoms over the past week in patients and spouses using a 15-item modified version of Radloff's¹⁶ original 20-item Center for Epidemiological Studies-Depression Scale (CES-D). The 15-item measure has been validated with cancer patients, and captures almost all of the same information as the original 20-item CES-D, but is free of gender bias.¹⁷ To obtain a score that maps onto the scale of each item (0: none or rarely to 3: most of the time), we divided the total aggregated score by 15 (the Cronbach α values were 0.87 for patients and 0.86 for spouses). To reduce possible ambivalence about expressing negative emotions to the interviewer, pa-

tients were allowed to self-administer the CES-D, place it in an envelope, and return it to the interviewer.

Cancer-specific distress

We measured illness-related intrusive and avoidant ideation over the past month in patients and spouses with the Impact of Events Scale (IES).¹⁸ The IES measures intrusive, undesirable, uncontrollable thoughts about a stressful experience, as well as tendencies to avoid thinking about a stressful experience. We used a 15-item version of the IES specifically adapted to PCa.^{19,20} To obtain a score mapping onto the scale of each item (1: never to 5: very often), we divided the total aggregated score by 15 (the Cronbach α values were 0.90 for patients and 0.91 for spouses).

Spouse-Only Measures

We used the Social Provisions Scale (SPS)²¹ to measure total perceived social support from the patient. Possible scores range from 16 (low support) to 80 (high support) ($\alpha = 0.92$). We used the Social Constraints Scale (SCS)²² to assess how often in the past month the spouse perceived that the patient acted in a negative and unsupportive manner when the spouse attempted to discuss the cancer. Possible scores range from 12 (low constraints) to 60 (high constraints) ($\alpha = 0.92$). We used the Marital Quality Index²³ to measure spouses' perception of marriage quality. Scores on the 4-item index can range from 4 (low marital quality) to 20 (high marital quality) ($\alpha = 0.95$).

Several intrapersonal factors were assessed. We used the Rosenberg Self-Esteem Scale²⁴ to assess spouse self-esteem ($\alpha = 0.78$). Possible scores range from 9 (low self-esteem) to 45 (high self-esteem). We used the 9-item illness ambiguity subscale of Mishel's Uncertainty in Illness Scale²⁵ to assess spousal uncertainty about the patient's illness ($\alpha = 0.85$), with possible scores ranging from 9 (low uncertainty) to 45 (high uncertainty). Two spouse-coping behaviors were assessed using subscales from the COPE inventory,²⁶ positive reappraisal ($\alpha = 0.68$) and acceptance ($\alpha = 0.75$). On both subscales, possible scores range from 4 (less positive coping) to 20 (more positive coping).

A two-question index tapped the process of searching for meaning in the PCa experience: "How often have you found yourself searching to make sense of your husband's illness?" and "How often have you found yourself wondering why he got cancer?" Possible scores range from 2 (low search for meaning) to 10 (high search for meaning) ($\alpha = 0.79$). A third question asked the extent to which the spouse believed that she had been able to find meaning in the PCa experience, from 1 (not at all) to 5 (completely).

Patient-Only Measures

The University of California-Los Angeles Prostate Cancer Index (PCI) was used to assess patients' prostate-specific health-related quality of life (HRQL) over the past month.²⁷ The PCI measures function and bother in three PCa-specific domains: urinary, sexual, and bowel. Scores range from 0 to 100, with higher scores indicating better functioning or less bother ($\alpha = 0.70-0.91$).

The Medical Outcomes Study Short Form-36 (SF-36)²⁸ was used to assess the patient's general HRQL over the past month. The SF-36 consists of 8 multiitem scales: general health, physical functioning, role limitations due to physical problems, bodily pain, energy level, social functioning, role limitations due to emotional problems, and mental health. Scale scores range from 0 (poor functioning) to 100 (good functioning) ($\alpha = 0.76-0.91$).

Demographic and Clinical Variables

Patients' demographics and comorbid conditions²⁹ were collected at a screening intake. Clinical stage, Gleason grade, pretreatment PSA level, and primary treatment were obtained from medical records. Spouse's demographics were collected at the beginning of the phone interview.

Data Analysis

Paired *t* tests were used to compare patients' with spouses' distress (general and cancer-specific) because data from married couples are not necessarily independent. We used Pearson correlations and independent samples *t* tests to identify associations of spouses' demographic and psychosocial factors with spouses' distress. Pearson correlations were also used to identify associations between patients' clinical characteristics and functional status with spouses' distress. Alpha was set at 0.01 (one-tailed) for all analyses.

RESULTS

Participant Characteristics

Spouses were mostly white (92%), college educated (62%), not currently working (56%), and had an average age of 62 years. Most patients were white (91%), college educated (65%), and not currently working (52%). Their average age was 65 years. All patients were diagnosed with early-stage (Stage I-III) disease. Clinical TNM classifications ranged from T1N0M0 (clinically inapparent tumor, no regional lymph node spread, no distant metastases) to T3N0M0 (tumor extending through the prostatic capsule, no regional lymph node spread, no distant metastases).³⁰ On average, tumors were moderately differentiated (mean

Gleason sum = 6.1, SD = 1.1) and the pretreatment PSA level was moderate (mean = 9.1 ng/mL, SD = 7.0). Most men had undergone a radical prostatectomy (57%), although some were treated with brachytherapy (18%), external-beam radiotherapy (18%), or both (5%). A few received cryosurgery (3%). On average, patients were interviewed approximately 7 weeks after beginning treatment and approximately 6 months after being diagnosed. Most had no other comorbid health conditions (80%).

Patients' versus Spouses' Distress

No difference was observed in general distress (depression) between patients (mean CES-D score = 0.48, SD = 0.48) and spouses (mean CES-D score = 0.56, SD = 0.46), $t_{(164)} = 1.55$, not significant (NS): effect size (ES) = 0.17. The CES-D score ranges from 0 (none of the time or rarely) to 3 (most of the time). Ninety-nine percent of patients and 98% of spouses had CES-D scores < 2.0 (less than occasional depressive symptoms). The majority of patients (87%) and spouses (81%) had CES-D scores < 1.0 (depressive symptoms less than some of the time). Spouses did report more cancer-specific distress (mean IES score = 2.29, SD = 0.72) than patients (mean IES score = 1.57, SD = 0.59), $t_{(164)} = 10.6$, $P < 0.001$: ES = 1.10. The IES score ranges from 0 (never) to 5 (very often). Twenty percent of spouses had IES scores ≥ 3.0 (intrusive and avoidant thoughts at least sometimes), whereas only 4% of patients had IES scores ≥ 3.0 .

Relation of Spouses' Demographics to Spouses' Distress

Spouses' education status was associated with spouses' distress. Women with a high school education reported higher cancer-specific distress (mean = 2.51, SD = 0.78) than college-educated women (mean = 2.16, SD = 0.65), $t_{(163)} = 3.12$, $P < 0.005$: ES = 0.50. There was no education status difference in general distress, $t_{(163)} = 1.77$, NS: ES = 0.28. There were also no significant relations between spouses' age and general ($r = -0.18$, ns) or cancer-specific distress ($r = -0.04$, NS).

Relation between Spouses' Psychosocial Factors to Spouses' Distress

As shown in Table 1, positive and negative interpersonal factors were associated with spouses' distress. Higher perceived marital quality was associated with lower general distress in spouses, although it was unrelated to cancer-specific distress. Higher perceived social support from patients was associated with lower general distress in spouses, although it too was unrelated to cancer-specific distress. Higher social constraints from patients were associated with higher

TABLE 1
Pearson Correlations of Spouses' Psychosocial Factors with Spouses' Distress^a

Spouse predictor	Spouses' distress	
	General	Cancer-specific
Marital quality	-0.23 ^c	-0.01
Social support-patient	-0.30 ^b	-0.08
Social constraints-patient	0.48 ^b	0.47 ^b
Self-esteem	-0.51 ^b	-0.37 ^b
Illness uncertainty	0.43 ^b	0.50 ^b
Acceptance	-0.29 ^b	-0.38 ^b
Positive reappraisal	-0.23 ^c	-0.10
Searching for meaning	0.32 ^b	0.68 ^b
Finding meaning	-0.24 ^c	-0.28 ^b

^a N's fluctuate due to missing data, (range, 162–165). General distress indicates the total score of the Center for Epidemiological Studies—Depression Scale (CES-D). Cancer-specific distress indicates the total score of the Impact of Events Scale (IES). Higher scores on the CES-D and IES indicate more distress. Higher marital quality scores indicate higher perceived quality of marriage. Higher support scores indicate more perceived support from the patient. Higher constraint scores indicate more unsupportive behavior from the patient. Higher esteem scores indicate higher self-esteem. Higher uncertainty scores indicate more uncertainty about the patient's illness. Higher acceptance and reappraisal scores indicate more positive coping. Higher search for meaning scores indicate a greater search for meaning in the illness experience. Higher finding meaning scores indicate greater personal understanding and resolution of the illness experience.

^b $P < 0.001$.

^c $P < 0.005$.

general and cancer-specific distress in spouses. Two intrapersonal factors (i.e., self-esteem and illness uncertainty) were associated with spouses' distress (Table 1). Higher self-esteem was associated with lower general and cancer-specific distress in spouses. Higher uncertainty about the patient's illness was associated with higher general and cancer-specific distress in spouses.

Two forms of positive coping (i.e., acceptance of the illness and positive reappraisal) were associated with spouses' distress. As Table 1 shows, greater acceptance of the patient's illness was associated with lower general and cancer-specific distress in spouses. Greater positive reappraisal was associated with lower general distress, but was unrelated to cancer-specific distress.

Finally, we determined the extent to which spouses process and cognitively adapt to the PCa experience. We first correlated our two-item search for meaning index with spouses' distress. As Table 1 shows, greater search for meaning was associated with higher general and cancer-specific distress in spouses. Next, we correlated the single-item assessment designed to tap the extent to which the spouse was able to find meaning or make sense of the illness experience. The more that spouses were able to make sense

TABLE 2
Pearson Correlations of Patients' Characteristics and Functional Status with Spouses' Distress^a

Patient variable	Spouses' distress	
	General	Cancer-specific
Gleason sum score	0.10	0.07
Pre-treatment PSA	0.09	0.07
Days post-treatment ^a	0.01	0.06
Days post-diagnosis	0.00	0.12
No. of comorbid conditions	0.00	-0.02
Urinary function	0.03	0.08
Sexual function	-0.03	-0.01
Bowel function	-0.12	-0.26 ^b
Urinary bother	-0.03	-0.01
Sexual bother	-0.11	-0.13
Bowel bother	-0.08	-0.14
Physical function	-0.11	-0.06
Role-physical function	0.02	-0.02
General health	-0.04	-0.11
Body pain	-0.13	-0.12
Vitality	-0.08	-0.12
Social function	0.02	-0.13
Role-emotional function	-0.14	-0.18
Mental health	-0.07	-0.28 ^b
General distress	0.03	0.21 ^c
Cancer-specific distress	0.00	0.13

PSA: prostate-specific antigen.

^a Days since treatment initiation. N's fluctuate due to missing data, (range, 162-165). Higher prostate-specific and general health-related quality of life scores indicate better functioning. General distress indicates the total score of the Center for Epidemiological Studies—Depression Scale (CES-D). Cancer-specific distress indicates the total score of the Impact of Events Scale (IES). Higher scores on the CES-D and IES indicate more distress.

^b $P < 0.001$.

^c $P < 0.005$.

of their husbands' illness, the lower were their levels of general and cancer-specific distress (Table 1).

Relation of Patients' Clinical Characteristics and Functional Status to Spouses' Distress

As Table 2 shows, none of the patients' clinical characteristics (Gleason grade, pretreatment PSA level, days posttreatment, days postdiagnosis, comorbidities) were associated with spouses' general or cancer-specific distress. Although there were no significant relations between patients' prostate-specific or general HRQL and spouses' general distress, worse bowel function and worse mental health among patients were significantly associated with higher cancer-specific distress in spouses (Table 2). Finally, neither general distress nor cancer-specific distress among patients was associated with general distress in spouses. However, higher general distress in patients was associated with higher cancer-specific distress in spouses (Table 2).

DISCUSSION

Ours is the first large-scale study to specifically evaluate the levels and correlates of distress in spouses of men recovering from treatment for early-stage PCa. Similar to other studies of mixed-stage patients with PCa,^{1,2} spouses in the current study reported more distress than did patients. However, unlike previous research, it was only cancer-specific distress (intrusive and avoidant thoughts) that differed between patients and spouses. This is consistent with well known gender differences in ruminative tendencies.³¹ Some investigators have argued that intrusive thoughts and avoidance are indicators of normative cognitive processing of the cancer experience.^{14,32} There were no differences between patients and spouses with respect to general distress (depression). Indeed, we found that both men and women were remarkably low in depressive symptoms.

Despite the low levels of distress in the spouses, we did identify some correlates of spouses' general and cancer-specific distress. We also found that a number of variables we intuited to influence distress, did not. For example, among demographic factors, education status, but not age, was associated with spouse distress. Less educated spouses reported more intrusive and avoidant thoughts. In a previous study, we found that patients with lower educational achievement had poorer mental functioning after treatment for early-stage PCa and reasoned that these patients may have had fewer personal resources compared with patients with more formal education.³³ Perhaps, the same is true for the spouses.

Spouses reporting poorer marital quality and less social support from their husbands reported more depressive symptoms. However, marital quality and perceived support from husbands were not related to intrusive and avoidant thoughts in their spouses. A strong marriage and more nurturance from a husband may help to sustain a spouse's mood through this challenging period. However, perhaps more influential are the negative responses of her husband. Unsupportive and socially constraining interactions with the patient were associated with more spouse depression and intrusive and avoidant thoughts. What may be particularly distressing are patient efforts to avoid open disclosure. Ironically, whereas patients may believe that avoidance reduces emotional burden on themselves and their family, such behavior may actually be creating greater distress in their spouses.^{4,5}

Intrapersonal characteristics were strongly associated with spouse distress. Lower self-esteem predicted more depression and cancer-specific intrusive and avoidant thoughts. Spouses with a low sense of self-

worth may lack the personal resources to cope with their husband's illness. They may be less inclined to seek support and more inclined to feel helpless. Greater uncertainty about the patient's illness was also associated with more spouse depression and intrusive and avoidant ideation. Many of the spouses in our study may have had questions about their husband's posttreatment recovery that went unanswered. Although there is often a flurry of informational exchange among patients, partners, and health care providers during the treatment decision-making phase, there are fewer exchanges after treatment.⁶ We studied several cognitive means of coping and adjustment. Two adaptive coping strategies (i.e., acceptance and positive reappraisal) were associated with spouse distress. Greater acceptance of their husband's illness was associated with less depression and intrusive and avoidant ideation. Focusing on the positive aspects of the illness experience was associated with less depression. Positive coping has been associated with less emotional distress in spouses of patients with PCa.^{11,34} We also tapped two indicators of cognitive adaptation, searching for and finding meaning. Cognitive processing¹⁴ and cognitive adaptation theories hold that personally threatening events like the experience of a potentially life-threatening illness trigger a psychological need to make sense of the experience.¹³ Although a search for understanding can be associated with greater distress, successful resolution of that search is often associated with less distress.^{13,35} Our results were consistent with this conceptualization.

Conversely, patients' prognostic factors (e.g., grade of disease, pretreatment PSA level) and other objective clinical markers (e.g., days posttreatment, comorbidity) were not major predictors of spouses' distress. It is possible that the overall good prognosis for this patient population made prognostic and clinical factors less relevant. One disease-related variable, patient-reported bowel function, was associated with spouse distress. Worse bowel function was associated with more cancer-specific intrusive and avoidant thoughts. Patients and spouses may have had less of an expectation that bowel complications would occur so soon after treatment. Bowel dysfunction typically occurs in early-stage patients after radiotherapy, yet it often becomes apparent later in the posttreatment recovery phase.³⁶

Other indicators of patients' physical well-being and functioning were poor predictors of spouses' distress. For example, the patient's physical and role function, general health, pain, vitality, and social function were unrelated to spouses' distress. Similar to the prostate-specific problems, spouses may have fully expected that their husbands would experience phys-

ical limitations soon after treatment. However, observing emotional distress after treatment may be slightly upsetting to the spouse. Indeed, spouses who observed greater emotional problems in their husbands reported experiencing more intrusive and avoidant thoughts. Couples' psychosocial distress reactions appear closely linked in the first few months after a cancer diagnosis and may in some cases indicate an at-risk pattern.³⁷

There are some limitations to the current study. First, there are the usual problems associated with cross-sectional, correlational data, including potential spurious correlations between variables and unclear causal direction. Second, interviews were conducted at one time point fairly soon after treatment. Distress levels may fluctuate over the course of the recovery trajectory and some predictors may play different roles at different time points. Third, we did not assess social support from other sources besides the husband. Fourth, the fact that spouses were interviewed by phone and patients were interviewed face-to-face is a potential confound. It is possible that the phone medium led to greater amounts of disclosure. Fifth, patients all had early-stage disease and good prognoses. Associations seen here may be different for couples coping with more advanced stages of disease. Finally, the population was a fairly homogenous one, with little representation of minorities or medically underserved populations.

Despite these limitations our study does have clinical implications. Although overall distress in patients and spouses was low, spouses in particular were not without distress. Our analysis of predictors of spouse distress identifies those who might be at higher risk, including less-educated spouses, spouses in less supportive marital relationships, spouses with fewer personal and coping resources, spouses who feel more uncertain about their husband's illness, and spouses of patients experiencing greater bowel dysfunction and poorer mental health after treatment. Many of these risk factors are modifiable. We believe that many spouses of early-stage patients might respond well to education and informational interventions, particularly those not showing clinical levels of distress. A recent pilot trial has shown that a psychoeducational group intervention for spouses of men with PCa can improve adaptive coping skills.³⁴ Of course, more intensive psychotherapeutic or psychiatric intervention is likely more appropriate for spouses evidencing clinical distress. Improving access to information can also be directed at the providers of care (e.g., urologists addressing psychosocial concerns of both the patient and spouse).³⁸ Encouraging spouses to accompany their husbands to routine follow-up visits and attend-

ing to spouse concerns during these visits might have a salubrious effect on the couple's overall well-being.

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