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# Dyadic concordance among prostate cancer patients and their partners and health-related quality of life: Does it matter?

**Erin Merz**[3], **Vanessa Malcarne**[1,2,3,*], **Celine M. Ko**[3,4], **Melody Sadler**[1], **Lisa Kwack**[1], **James W. Varni**[5,6], and **Georgia Robins Sadler**[2]

[1]Psychology Department, San Diego State University, 5500 Campanile Drive, San Diego, CA 92182-4611

[2]Rebecca & John Moores UCSD Cancer Center, 3855 Health Sciences Drive, La Jolla, CA 92093

[3]SDSU/UCSD Joint Doctoral Program in Clinical Psychology, 6363 Alvarado Court, Suite 103, San Diego, CA 92120-4913

[4]Department of Psychology, University of Redlands, 1200 East Colton Ave, P.O. Box 3080, Redlands, CA 92373

[5]Department of Pediatrics, College of Medicine, Texas A&M University, College Station, TX

[6]Department of Landscape Architecture and Urban Planning, College of Architecture, TAMU 3137, Texas A&M University, College Station, TX 77843-3137

## Abstract

Serious and chronic illnesses occur within a family context, affecting not only the patient but the spouse/partner, children, and extended family network. Spouses/partners are likely to experience the greatest personal impact, and may influence patient adjustment. Also, the intimate relationship may be affected by the illness experience. This study examined whether dyadic concordance on characteristics of prostate cancer (PC) was related to health-related quality of life (HRQOL), psychological distress, and marital adjustment in PC patients and their female partners. Couples (*N* = 164) completed questionnaires on appraisals of PC, and individual and dyadic adjustment. Patient and partner PC appraisal ratings were positively correlated. There was a general pattern of patients and partners in concordant dyads, versus those in dyads in which spouses maximized or minimized PC characteristics, reporting significantly better individual HRQOL outcomes, although there were several exceptions. Patient-partner appraisal (dis)agreement generally did not significantly predict dyadic adjustment. Overall, results suggest that dyadic disagreement is associated with worse HRQOL in couples facing PC.

### Keywords

chronic illness; prostate cancer; appraisals; coping; spouses; survivorship

## Introduction

In 2008 there were an estimated 186,320 new cases of prostate cancer (PC), making it the most common type of cancer and second leading cause of cancer death among men (American Cancer Society, 2008). Advances in early detection and treatment have increased 5-year survival rates up to 99%, and there are approximately 2 million survivors in America

*Corresponding author: malcarne@sciences.sdsu.edu.

today (American Cancer Society, 2008; Jemal, Murray, & Ward, 2005). Thus, increased attention is being given to the physical and psychological consequences of PC and its treatment. The physical consequences can be damaging and enduring, with urinary, bowel, and sexual dysfunction commonly reported as problematic (Bremner, Chong, Tomlinson, Alibhai, & Krahn, 2007; Eton & Lepore, 2002). It is well-documented that these difficulties negatively impact the patient's physical and mental health-related quality of life (HRQOL) and intimate relationships (Eton & Lepore, 2002; Gray et al., 1997; Hassouna & Heaton, 1999; Kornblith, Herr, Ofman, Scher, & Holland, 1994; Lavery & Clarke, 1999; Penson, Feng et al., 2003; Penson, Litwin, & Aaronson, 2003; Resendes & McCorkle, 2006).

A committed romantic relationship, usually a marriage, may be a male patient's most important social relationship, and the influence of PC on both members of a couple is central to understanding patient adjustment. Considering the documented role of social support, especially spousal/partner support, in promoting adjustment to chronic disease, disruption to this intimate relationship could result in poorer patient outcomes (Ben-Zur, Gilbar, & Lev, 2001; Galbraith, Arechiga, Ramierz & Pedro, 2005; Krongrad, Lai, Burke, Goodkin, & Lai 1996; Northouse, Mood, Templin, Mellon, & George 2000; Revenson, 1994; Revenson, 2003; Revenson, & Majerovitz, 1991; Revenson, Wollman, & Felton, 1983). While the majority of studies focus on patients and their spouses, committed romantic partners are often included, thus the term 'partner' will be used here to describe that role in the intimate dyad.

Prostate cancer in particular has been described as a "relationship disease" (Gray, Fitch, Phillips, Labrecque, & Klotz, 1999) in that both patient and partner experience significant stress and their responses reciprocally influence each other and the relationship. This may be true across other types of cancer; a recent meta-analysis of 46 studies of cancer patients and partners (three of which were prostate cancer studies) found a medium-sized association of patient-partner distress, supporting the notion that patients and partners react as an "emotional system" (Hagedoorn, Sanderman, Bolks, Tuinstra, & Coyne, 2008). In prostate cancer, high quality marriages have been associated with increased longevity (Krongrad et al., 1996), better HRQOL (Galbraith et al., 2005), and less distress (Banthia et al., 2002). Determining the processes that underlie, promote, and maintain healthy marriages in the context of chronic illness can assist efforts to identify and intervene in at-risk relationships.

## Patient and Partner Appraisals

Lazarus and Folkman's (1984) stress-appraisal model delineates the essential role of cognitive appraisals in mediating the relationship between a stressor (such as a serious illness) and coping behaviours that ultimately result in positive or negative outcomes. Thus, dyadic appraisals may be an important starting point in studying adjustment to disease (Bodenmann, 1995). Although there are very few studies of appraisals in dyads facing PC, one recently published study found that patient and spouse appraisals of self-efficacy, concerns and communication strongly influence their own adjustment to PC, while hopelessness and number of baseline symptoms appraisals influenced the other's adjustment (Kershaw et al., 2008). This underscores the notion that patients and partners experience, appraise, and cope with PC both individually and as an interpersonal unit (Kershaw et al., 2008),

## (Dis)agreement of Appraisals

There is evidence that, across diseases, dyads agree on many disease-related appraisals. Patient-partner dyads report agreeing on social roles and pain domains (Beaupre et al., 1997; Wilson, Dowling, Abdolell, & Tannock, 2000), symptoms and HRQOL (Sneeuw et al., 2001), and social support (Kuijer et al., 2000; Ptacek, Pierce, Ptacek, & Nogel 1999). Other

studies have found evidence of disagreement. Dyads disagree on reports of depressive symptoms (Klinedinst, Clark, Blanton, & Wolf, 2007), treatment outcomes (Volk et al., 2004), and pain (Clipp & George, 1992; Martire et al., 2006; Redinbaugh, Baum, DeMoss, Fello, & Arnold, 2002).

## Does (dis)agreement influence adjustment?

A related question concerns the implications of (dis)agreement for the adjustment of the patient, the partner, and their relationship. Revenson (1994) has proposed a congruence model that emphasizes the importance of similarities and differences between patients and partners, but to date this model has been primarily applied in examinations of how couples cope with illness rather than how they appraise the illness experience (Berg & Upchurch, 2007). Relatively little is known regarding the extent of divergence between patient and partner disease appraisals, and whether differences influence important outcomes such as individual HRQOL and marital quality. A growing literature has examined whether agreement of stressor appraisals among patients and close relations (usually partners) predicts adjustment to chronic disease. In general, greater patient-partner agreement on disease-related appraisals has been associated with better adjustment. Concordance of pain appraisals has been associated with less caregiver stress and better emotional support among osteoarthritis patients and their partners (Cremeans-Smith et al., 2003; Martire et al., 2006). However, agreement of optimistic appraisals may be conceptually different from agreement of pessimistic appraisals. In myocardial infarction (Figueiras & Weinman, 2003) and rheumatoid arthritis (Sterba et al., 2008), patient-partner dyads with concordant optimistic appraisals report better physical function and psychological adjustment over time, whereas dyads with concordant pessimistic appraisals do not.

Dissimilar appraisals have been associated with worse caregiver and patient coping and adjustment in individuals with chronic pain (Cano, Johansen, & Geisser, 2004) and myocardial infarction (Figueiras & Weinman, 2003). Patients with Chronic Fatigue Syndrome and Addisons Disease, and their partners, who have greater levels of dissimilarity also report more maladaptive outcomes (Heijmans, de Ridder, & Bensing, 1999). The direction of dissimilarity may also be important. Appraisal patterns of ‘maximization’ (in which the partner appraises disease-related problems as more severe than does the patient) versus ‘minimization’ (in which the partner appraises disease-related problems as less severe than does the patient) may be related to adjustment. There is some evidence that minimization is maladaptive; minimization has also been associated with decreased disease-management confidence, health status and positive affect in patients with osteoarthritis (Cremeans-Smith et al., 2003) and cancer (Miaskowski, Zimmer, Barrett, Diblle, & Wallhagen, 1997). In contrast, the literature regarding maximization is mixed; some studies find maximization to be maladaptive, while others find it to be adaptive. In a study of patients with rheumatoid arthritis and their partners, Riemsma, Taal, and Rasker (2000) found that both maximization and minimization were associated with poorer mental health for both individuals. Maximization has also been associated with increased caregiver distress and decreased patient HRQOL in end-stage cancer patients (Redinbaugh et al., 2002), less satisfying emotional support (Martire et al., 2006) and increased depressive symptoms (Cremeans-Smith et al., 2003) in osteoarthritis patients, and decreased well-being for patients with heart disease (Franks, Hong, Pierce, & Ketterer, 2002). Conversely, some studies have shown maximization is associated with increased support for patients with heart disease (Benyamini, Medalion, & Garfinkel, 2007) and better adjustment for women with rheumatoid arthritis (Sterba et al., 2008).

### The Present Study

The present study addressed three questions: (1) How do patients and partners appraise PC-related urinary, bowel and sexual problems? (2) What is the level of (dis)agreement between patient and partner appraisals? (3) Is the level and direction of (dis)agreement (i.e., minimization, congruence, maximization) of patient and partner appraisals associated with a) patients' and partners' individual physical and mental HRQOL, and b) relationship quality?

## Method

### Participants

This study used baseline data collected as part of a randomized controlled trial designed to test a psychosocial intervention aimed at improving problem-solving skills in partners of men with PC. Participants were 164 men diagnosed with PC and their female partners. To be included in the study, participants had to live in San Diego County, speak English, and be married or cohabitating with their partner. Most couples (90.2%) were married. Sample characteristics are described in Table 1.

### Measures

**UCLA Prostate Cancer Index (PCI)—**The 20-item UCLA PCI measures urinary, bowel and sexual function and bother for PC patients (Litwin et al., 1998). Patients reported on their own function (e.g., *Over the past 4 weeks, how often have you leaked urine*?) and bother (e.g., *How big of a problem has dripping urine or wetting your pants been for you*?). Partners were asked to report their perceptions of patients' function (e.g., *Over the past 4 weeks, how often has your spouse leaked urine*?) and bother (e.g., *How big of a problem has dripping urine or wetting his pants been for your spouse*?). The PCI includes three subscales measuring function: urinary function (UF; 5 items), bowel function (BF; 4 items), and sexual function (SF; 8 items), and three single-item bother scales: urinary bother (UB), bowel bother (BB), and sexual bother (SB). Raw scores are linearly transformed to a 0 to 100 scale, with higher scores indicating better function and less bother. Overall internal consistency for the present sample was: patient $\alpha$ = .74, partner $\alpha$ = .82.

**Medical Outcomes Study Short-Form Health Survey (SF-36)—**The SF-36 is a widely-used 36-item HRQOL survey that yields 8 subscales: Physical Functioning, Role-Physical, Bodily Pain, General Health, Vitality, Social Functioning, Role-Emotional, and Mental Health (Ware & Sherbourne, 1992). These subscales are combined into two composite scores of physical and mental health. Total scores on the composites range from 0–100; higher scores indicate better HRQOL. The overall alpha for the present sample was: patient $\alpha$ = .92, partner $\alpha$ = .93.

**Dyadic Adjustment Scale (DAS)—**The 32-item DAS measures perceived dyadic quality in married or cohabitating unmarried couples (Spanier, 1976). Respondents rate the extent of their agreement between themselves and their partner on a 6-point scale (0 = Always disagree, 5 = Always agree). A sample item is: "*Demonstrations of affection*." Total scores can range from 0–150 with higher scores indicating better adjustment. Alphas were: patient $\alpha$ = .93, partner $\alpha$ = .93.

### Procedure

This research protocol was approved by Institutional Review Boards at the University of California, San Diego (UCSD) and San Diego State University. Over a three-year period, patients and partners were recruited to participate in a randomized controlled trial

investigating the efficacy of a problem-solving therapy program for partners of men diagnosed with prostate cancer within the past 18 months. Broad recruitment was conducted via print and electronic media, flyer distribution, and poster displays in the waiting rooms of collaborating physicians, medical centres, churches, beauty salons and barber shops. Collaborating physicians from the UCSD Medical Center, the Rebecca and John Moores UCSD Cancer Center, the San Diego Veterans Healthcare System, the Naval Medical Center, other local medical care centres and oncology practices throughout San Diego County mailed personal recruitment letters and fliers, and made phone calls to eligible patients. In-person appeals were made by physicians, support group leaders, and community business and organization leaders. Both patients and partners were required to consent to participate in order to be enrolled. When eligible couples were identified, research assistants administered baseline questionnaires at the couples' homes, before random assignment to study condition was made. Of the 169 couples who consented, 5 refused randomization and were excluded from analyses. Patients and partners completed questionnaire packets independently. Couples were compensated $30 for completing the baseline portion of the study. Only baseline data were used for the present analysis.

## Analytic plan

We conducted the following analyses to address the aims of this study: To assess how patients and partners appraise PC-related problems, we calculated the range, mean, and standard deviation for each PC appraisal. Pearson correlations were calculated to reflect patient-partner agreement on the PCI scores. The level of (dis)agreement between patient and partner appraisals for each of the six PCI subscales was calculated by subtracting the patient's PCI score from their partner's score to yield a (dis)agreement score, a continuous variable that represented the direction of divergence from the patient's appraisal for that subscale. To assess whether (dis)agreement was associated with patient or partner HRQOL or relationship quality, we conducted hierarchical multiple regression analysis. Separate regressions were conducted for each PCI subscale, testing (dis)agreement on that subscale as a predictor of patient or partner outcomes. In the first block, latency (time since diagnosis) and cancer stage were entered as covariates. (Dis)agreement scores were centred to reduce multicollinearity among predictors (Aiken & West, 1991; Cohen & Cohen, 1983), and were entered in the second block. Because we predicted that dyadic appraisal patterns (i.e., minimizing, concordant, and maximizing) would differentially relate to adjustment, a curvilinear model was tested[1] (Miles & Shevlin, 2001). Specifically, we predicted that increases in the predictor variables (dyadic appraisal patterns) would be not associated with a constant increase in the HRQOL and relationship quality outcomes. Rather, we hypothesized that minimizing and maximizing couples would report lower HRQOL and relationship quality, and concordant couples would report higher HRQOL and relationship quality. The (dis)agreement scores were raised to the second power to create the quadratic term, which was entered in the third block. To explore the nature of any significant quadratic terms, follow-up tests of the simple slopes were conducted. Because (dis)agreement scores are derived from two subjects, some variability is expected, thus dyads scoring within .5 standard deviation (SD) of the centred mean in either direction were conceptualized as concordant. Dyads scoring more than .5 SD below the mean were conceptualized as maximizing (i.e., the partners rated function or bother worse [lower] than did the patients), and dyads scoring more than .5 above the mean were conceptualized as minimizing (i.e., partners rated function or bother better [higher] than did the patients). Accordingly, when there were significant quadratic effects, tangent lines were tested at the mean (concordant),

[1]The primary research question of interest presumes categorization of couples (those who minimize, agree, maximize), however, dividing dyads into categories for mean comparison creates arbitrary boundaries and diminishes statistical power. We would like to thank two anonymous reviewers for suggesting alternate data analysis strategies.

−1 SD (maximizing), and +1 SD (minimizing) to determine whether (dis)agreement patterns predicted HRQOL in patients and partners.

## Results

### Patient and partner appraisals of PC-related urinary, bowel and sexual problems

Descriptive data for all study measures are presented in Table 2. Patient and partner PC appraisals were similar to those previously reported for PC patients (Litwin et al., 1998). The three PC-related appraisals of function and bother were highly intercorrelated for both patients (Urinary: $r$ =.641, $p < .001$; Bowel: $r = .711$, $p < .001$; Sexual: $r = .476$, $p < .001$) and partners (Urinary: $r = .617$, $p < .001$; Bowel: $r = .802$, $p < .001$; Sexual: $r = .234$, $p = .005$). The sample reported physical and mental HRQOL comparable to data from other PC samples (e.g., Litwin et al., 1998; Love et al., 2008), and good marital adjustment (Spanier, 1976).

### (Dis)agreement of patient-partner appraisals

Patient and partner scores on each measure were significantly and positively correlated (see Table 2). (Dis)agreement scores are shown in Table 3. A positive (dis)agreement score indicates partner minimization (i.e., partner appraises disease-related problems as less serious); a negative (dis)agreement score indicates partner maximization (i.e., partner appraises disease-related problems as more serious).

### Associations of (dis)agreement patterns to patient and partner HRQOL, and relationship quality

**Patients—**The regression models relating (dis)agreement to patient HRQOL are summarized in Table 4. After controlling for latency and stage, the quadratic terms for UB and BB were significant predictors of physical HRQOL. There were no other significant quadratic predictors for physical HRQOL. For UB, greater minimization was significantly related to poorer patient physical HRQOL ($b = -.15$, $p < .05$). Maximization ($b = .07$) and concordance ($b = -.04$) were not significantly related to physical HRQOL, $ps > .05$. For BB, both greater maximization ($b = .19$, $p < .05$), and greater minimization ($b = -.14$, $p < .05$) were significantly related to poorer physical HRQOL. Concordance was not significantly related to physical HRQOL, $b = .03$, $p > .05$. None of the quadratic terms significantly predicted mental HRQOL or marital strength.

**Partners—**The regression models relating (dis)agreement to partner HRQOL are summarized in Table 5. After controlling for latency and stage, the quadratic terms for UF and BF were significant predictors of physical HRQOL. For UF, greater maximization ($b = .35$, $p < .05$) was significantly related to poorer physical HRQOL, while concordance ($b = .15$, $p < .05$) was significantly related to better physical HRQOL. Minimization ($b = -.06$, $p > .05$) was not significantly related to physical HRQOL. For BF, greater maximization was significantly related to poorer physical HRQOL, $b = .12$, $p = .05$. Concordance ($b = .01$) and minimization ($b = -.11$) were not significantly related to physical HRQOL, $ps > .05$.

The quadratic term for UB was a significant predictor of mental HRQOL. For UB, greater maximization was significantly related to poorer mental HRQOL, $b = .15$, $p < .05$. Concordance ($b = .04$) and minimization ($b = -.07$) were not significant predictors of mental HRQOL, $ps > .05$.

The quadratic term for BB was a significant predictor of marital strength. For BB, greater minimization was significantly related to marital strength, $b = .21$, p <.05. However, maximization ($b = -.12$), and concordance ($b = .05$) were not significant, $ps > .05$.

## Discussion

In this sample of prostate cancer patients within 18 months of diagnosis, and their partners, both patients and partners generally reported that patients had significant PC-related urinary, bowel, and sexual problems, at levels consistent with prior reports (Bremner, et al., 2007; Eton & Lepore, 2002). Patient-partner appraisals were strongly and positively correlated, similar to previous findings (Hagedoorn et al., 2008). While there is a great range of levels of (dis)agreement among couples facing PC, most couples, in most appraisal domains, were concordant. The exception to this was sexual bother. (Dis)agreement scores for SB had the largest range and standard deviation of any appraisal domain. The mean patient-partner (dis)agreement was 13 points, with partners perceiving that patients experienced lower levels of sexual bother than the patients experienced in actuality. Such discrepancies are common; patients regularly report greater worry regarding their sexual dysfunction than partners report regarding patient sexual dysfunction (Couper et al., 1999).

The nature of (dis)agreement was assessed for patterns of minimization, concordance and maximization. Overall, patient-partner (dis)agreement was not significantly associated with many outcomes. Several significant curvilinear relationships emerged, suggesting that physical and mental HRQOL outcomes are related to (dis)agreement patterns in the domains of urinary and bowel function. Minimization and maximization were generally associated with negative outcomes; however, the effects were modest and dependent on the appraisal domain.

(Dis)agreements on urinary and bowel, versus sexual, problems were most strongly related to negative outcomes, as has been previously reported (Baider et al., 2003; Kornblith et al. 1994). While both function and bother (dis)agreement scores were predictive of outcomes, (dis)agreement about bother appraisals appeared to be most predictive, at least for patients. Thus, outcomes were most negative when patients and partners differently perceived the degree of bother patients experienced, rather than when they differently perceived the actual levels of function.

When partners minimize urinary bother or disagree in either direction on bowel bother (i.e., minimization or maximization) patients experienced poorer physical HRQOL, findings similar to those of Riemsa, Taal, and Rasker (2000). This suggests that disagreement, regardless of the direction, may be maladaptive for the patient. Minimization may distress patients if they feel their partner does not accurately perceive their PC-related bother and thus is underappreciative of the negative aspects of their experience, while maximization may unnecessarily increase patient dependence on the partner due to the partners' inflated perception of patient bother. Thus, either disagreement pattern may negatively influence HRQOL (Weinman, Heijmans & Figueiras, 2003).

Partners who maximized patient problems in urinary function/bother and bowel function reported poorer physical or mental HRQOL. Maximization, or partner exaggeration of the disease appraisal, was the most maladaptive (dis)agreement pattern for partners. When a partner overstates the patient's level of dysfunction and/or bother, the partner may become excessively worried, overprotective, and stressed, which could compromise their own HRQOL. Because it has been well established that partners experience psychological consequences from PC (Couper et al., 2006), it is surprising that the majority of studies examining (dis)agreement have focused exclusively on patient outcomes. Because PC is a "relationship disease" (Gray et al., 1999), it is equally important to assess factors that may negatively influence partner HRQOL.

Interestingly, the relatively large level of disagreement between patients and partners on sexual function and bother, which represent the most interactive of the three domains

examined here, did not predict maladaptive adjustment in either member of the dyad. While this seems surprising, given that sexual problems are greatly distressing to patients, partner minimization in this case may reflect an acceptance that sexual problems are an unavoidable result of life-saving PC treatments (Korfage, deKoning, Habbema, Schröder & Essink-Bot, 2007). In general, partners tend to placate patients who experience sexual dysfunction (Couper et al., 2006). Thus the pattern of (dis)agreement on sexual problems found here, in which the partner views the problems as less serious than the patient, may not be maladaptive.

Overall, these findings suggest that (dis)agreement on urinary and bowel disease appraisals may predict maladaptive adjustment outcomes for both patients and partners and thus may be a clinically important point of intervention. Interestingly, in most cases (dis)agreement was associated with negative individual patient or partner outcomes, and not with dyadic adjustment. In this sample, most couples reported high-functioning relationships, perhaps reflecting a self-selection bias in which more well-adjusted couples were receptive to enrolling in the problem-solving clinical trial. Thus, limited variance may have restricted our ability to detect relationships between (dis)agreement and marital strength. The only significant finding was that minimization of bowel bother was associated with better marital strength. Bowel problems are of particular concern to patients with prostate cancer, and thus it is interesting that it is for this side effect that partner minimization of patient experience was associated with happier marriages. That patients may have experienced their partners' minimization as reassuring is one possibility; however, this was an isolated finding, and overall there was little evidence of (dis)agreement being associated with marital strength in these relatively happy couples.

The present findings suggest that one way to identify patients and partners who are at risk for maladaptive HRQOL outcomes may be to determine the dyad's level of agreement on PC-related function and bother. Psychoeducation and the use of well-established strategies for improving couples' communication patterns may be helpful in resolving points of disagreement, or helping to promote better understanding of different perspectives on aspects of prostate cancer.

### Limitations and Future Directions

Although this study contributes to the growing literature on couples' adjustment to prostate cancer, it has several limitations. Recruitment of a larger and more diverse sample is needed. Despite our best efforts at recruitment, the sample was predominantly Caucasian and all couples were heterosexual, limiting generalizability. Also, although HRQOL levels reported by patients and partners were consistent with those reported in the existing literature on adjustment in PC, patients with poor HRQOL are likely underrepresented in the sample, thus limiting our ability to identify risk factors for maladaptive outcomes. As already noted, the preponderance of couples with strong marriages limits variance as well. Although a contribution of the study was to examine (dis)agreement on two types of appraisals (function and bother) across several important prostate cancer problem areas, this necessarily inflated family-wise error rate, and thus patterns of findings should be given greater emphasis than any individual result. Finally, all data were cross-sectional, precluding any conclusions about cause-effect relationships. Couples' adjustment to prostate cancer must be followed over time in order to understand the relationship between concordance of appraisals and individual/couples outcomes.

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## Table 1

Sample characteristics

| | | Patient (*n* = 164) | Spouse (*n* = 164) |
|---|---|---|---|
| Age[a] | | 65.78 (09.93) | 61.54 (10.73) |
| Latency since diagnosis (months)[a] | | 05.26 (04.53) | |
| Stage of Cancer[b, c] | 1 | 80 (48.8) | |
| | 2 | 45 (27.4) | |
| | 3 | 17 (10.4) | |
| | 4 | 07 (04.3) | |
| Ethnicity[b] | Caucasian | 142 (86.6) | 134 (81.7) |
| | African American | 11 (07.6) | 09 (05.5) |
| | Hispanic | 03 (01.8) | 09 (05.5) |
| | Asian American | 05 (03.0) | 08 (04.9) |
| | Other | 03 (01.8) | 04 (02.4) |
| Education[b] | High school or less | 25 (15.2) | 42 (26.2) |
| | Some college | 48 (29.3) | 55 (33.5) |
| | College graduate | 34 (20.7) | 29 (17.7) |
| | Graduate school | 57 (34.8) | 37 (22.6) |
| Family income per year[b] | Under $20,000 | 11 (06.9) | 10 (06.6) |
| | $20,000–$30,000 | 15 (09.1) | 19 (11.6) |
| | $30,000–$50,000 | 37 (22.6) | 41 (25.0) |
| | $50,000–$75,000 | 46 (28.0) | 36 (22.0) |
| | Over $75,000 | 50 (30.5) | 46 (28.0) |
| Treatment Type[b] | Radical Prostatectomy | 50 (30.5) | |
| | Radiation | 29 (17.7) | |
| | Orchiectomy | 4 (2.4) | |
| | Lupron/Zoladex shots | 51 (31.1) | |
| | Flutamide pills | 15 (9.1) | |

Note.

[a] *M* (*SD*).

[b] *n* (%).

[c] Stage 1: confined to prostate, Stage 2: confined to prostate, biopsy borders not clean, Stage 3: spread outside prostate, within abdomen region, Stage 4: spread beyond abdomen region

**Table 2**

Means and standard deviations of study measures and correlations for patients and partners

| Measure | Patients | | Partners | | | | |
|---|---|---|---|---|---|---|---|
| **Predictors** | **Range** | ***M (SD)*** | **Range** | ***M (SD)*** | ***r*** | ***t*** | ***df*** |
| *PCI - UF*[a] | 00.00–100.00 | 81.55 (23.70) | 06.60–100.00 | 82.04 (23.01) | .75** | .284 | 159 |
| *PCI - BF*[a] | 16.75–100.00 | 81.46 (18.06) | 08.25–100.00 | 80.32 (20.23) | .51** | −.706 | 159 |
| *PCI - SF*[a] | 00.00–87.50 | 24.17 (24.93) | 00.00–90.63 | 26.96 (30.15) | .83** | 1.066 | 142 |
| *PCI - UB*[a] | 00.00–100.00 | 75.16 (29.91) | 00.00–100.00 | 76.39 (30.56) | .56** | .417 | 159 |
| *PCI - BB*[a] | 00.00–100.00 | 81.40 (27.64) | 00.00–100.00 | 77.78 (27.72) | .52** | −1.587 | 161 |
| *PCI - SB*[a] | 00.00–100.00 | 48.91 (41.40) | 00.00–100.00 | 62.58 (39.00) | .41** | 3.963*** | 153 |
| Outcomes | | | | | | | |
| *SF-36 (Physical)* | 14.64–66.12 | 46.75 (11.32) | 13.08–69.67 | 50.49 (12.22) | | −3.58*** | 161 |
| *SF-36 (Mental)* | 13.40–67.45 | 48.91 (11.99) | 07.24–68.58 | 44.06 (14.34) | | 3.80*** | 161 |
| *DAS* | 67.00–148.00 | 118.57 (16.38) | 56.00–150.00 | 118.62 (16.82) | | −.10 | 160 |

Note.

[a]Abbreviations for the PCI are as follows: UF = Urinary Function, BF = Bowel Function, SF = Sexual Function, UB = Urinary Bother, BB = Bowel Bother, SB = Sexual Bother.

*p < .05;

**p < .01;

***p < .001

## Table 3

Means and standard deviations of (dis)agreement scores on PC appraisals

| PCI[a] | Range | Mean | SD |
|---|---|---|---|
| UF (*n* = 160) | −41.60 — 55.00 | .3750 | 16.70223 |
| BF (*n* = 160) | −70.75 - 45.00 | −1.0688 | 19.14507 |
| SF (*n* = 143) | −59.38 — 71.88 | 1.6766 | 18.80164 |
| UB (*n* = 160) | −75.00 — 100.00 | .9375 | 28.44053 |
| BB (*n* = 162) | −75.00 - 75.00 | −3.3951 | 27.23064 |
| SB (*n* = 154) | −100.00 - 100.00 | 13.9610 | 43.72252 |

Note.

[a]Abbreviations for the PCI are as follows: UF = Urinary Function, BF = Bowel Function, SF = Sexual Function, UB = Urinary Bother, BB = Bowel Bother, SB = Sexual Bother.

**Table 4**

Hierarchical regression analysis for (dis)agreement scores on PCI predicting patient HRQOL outcomes (SF-36 physical and mental health composites, DAS marital strength).

| Outcome | Predictor[a] | F | p | df | $R^2$ | $\Delta R^2$ | β | p |
|---|---|---|---|---|---|---|---|---|
| Physical Health | | | | | | | | |
| *Urinary Function* | Centered UF | | | | | | −.096 | .248 |
| | Quadratic UF | 2.938 | .023 | 4, 138 | .078 | .000 | −.008 | .922 |
| *Bowel Function* | Centered BF | | | | | | .127 | .146 |
| | Quadratic BF | 3.880 | .005 | 4, 138 | .101 | .007 | −.088 | .312 |
| *Sexual Function* | Centered SF | | | | | | −.103 | .235 |
| | Quadratic SF | 3.280 | .014 | 4, 123 | .096 | .009 | −.097 | .272 |
| *Urinary Bother* | Centered UB | | | | | | −.101 | .214 |
| | Quadratic UB | 4.509 | .002 | 4, 137 | .116 | .049 | −.225 | .006 |
| *Bowel Bother* | Centered BB | | | | | | .065 | .402 |
| | Quadratic BB | 8.136 | .000 | 4, 140 | .189 | .114 | −.344 | .000 |
| *Sexual Bother* | Centered SB | | | | | | −.065 | .455 |
| | Quadratic SB | 2.723 | .032 | 4, 131 | .077 | .002 | −.043 | .621 |
| Mental Health | | | | | | | | |
| *Urinary Function* | Centered UF | | | | | | −.087 | .309 |
| | Quadratic UF | 0.816 | .517 | 4, 138 | .023 | .002 | .050 | .556 |
| *Bowel Function* | Centered BF | | | | | | −.029 | .752 |
| | Quadratic BF | 0.670 | .614 | 4, 138 | .019 | .007 | −.093 | .308 |
| *Sexual Function* | Centered SF | | | | | | .061 | .812 |
| | Quadratic SF | 0.422 | .793 | 4, 123 | .014 | .000 | .015 | .495 |
| *Urinary Bother* | Centered UB | | | | | | −.027 | .754 |
| | Quadratic UB | 0.631 | .641 | 4, 137 | .018 | .008 | −.089 | .303 |
| *Bowel Bother* | Centered BB | | | | | | .097 | .253 |
| | Quadratic BB | 1.101 | .359 | 4, 140 | .030 | .007 | −.087 | .304 |
| *Sexual Bother* | Centered SB | | | | | | .027 | .765 |
| | Quadratic SB | 0.547 | .701 | 4, 131 | .016 | .004 | −.061 | .492 |
| Marital Strength | | | | | | | | |

| Outcome | Predictor[a] | F | p | df | $R^2$ | $\Delta R^2$ | β | p |
|---|---|---|---|---|---|---|---|---|
| *Urinary Function* | Centered UF | | | | | | −.034 | .693 |
| | Quadratic UF | 0.163 | .957 | 4, 139 | .005 | .003 | .052 | .540 |
| *Bowel Function* | Centered BF | | | | | | .062 | .499 |
| | Quadratic BF | 0.121 | .975 | 4, 139 | .003 | .001 | .032 | .728 |
| *Sexual Function* | Centered SF | | | | | | .086 | .338 |
| | Quadratic SF | 0.482 | .749 | 4, 124 | .015 | .006 | .082 | .370 |
| *Urinary Bother* | Centered UB | | | | | | .055 | .515 |
| | Quadratic UB | 1.124 | .348 | 4, 138 | .032 | .025 | −.161 | .061 |
| *Bowel Bother* | Centered BB | | | | | | −.056 | .511 |
| | Quadratic BB | 0.205 | .935 | 4, 141 | .006 | .002 | .042 | .626 |
| *Sexual Bother* | Centered SB | | | | | | −.126 | .161 |
| | Quadratic SB | 0.539 | .707 | 4, 132 | .016 | .003 | .060 | .504 |

Note.

[a] Abbreviations for the PCI are as follows: UF = Urinary Function, BF = Bowel Function, SF = Sexual Function, UB = Urinary Bother, BB = Bowel Bother, SB = Sexual Bother.

* $p < .05$,

** $p < .01$,

*** $p < .001$

**Table 5**

Hierarchical regression analysis for (dis)agreement scores on PCI predicting partner HRQOL outcomes (physical and mental health, marital strength).

| Outcome | Predictor[a] | F | p | df | $R^2$ | $\Delta R^2$ | β | p |
|---|---|---|---|---|---|---|---|---|
| Physical Health | | | | | | | | |
| *Urinary Function* | Centered UF | | | | | | .192 | .020 |
| | Quadratic UF | 3.745 | .006 | 4, 138 | .098 | .039 | −.197 | .016 |
| *Bowel Function* | Centered BF | | | | | | .015 | .866 |
| | Quadratic BF | 2.333 | .059 | 4, 138 | .063 | .033 | −.197 | .030 |
| *Sexual Function* | Centered SF | | | | | | .046 | .605 |
| | Quadratic SF | 0.815 | .518 | 4, 123 | .026 | .003 | −.060 | .508 |
| *Urinary Bother* | Centered UB | | | | | | .213 | .012 |
| | Quadratic UB | 2.489 | .046 | 4, 137 | .068 | .000 | −.001 | .987 |
| *Bowel Bother* | Centered BB | | | | | | .024 | .773 |
| | Quadratic BB | 1.778 | .137 | 4, 140 | .048 | .022 | −.152 | .074 |
| *Sexual Bother* | Centered SB | | | | | | −.096 | .282 |
| | Quadratic SB | 1.535 | .196 | 4, 131 | .045 | .018 | −.137 | .122 |
| Mental Health | | | | | | | | |
| *Urinary Function* | Centered UF | | | | | | .047 | .578 |
| | Quadratic UF | 1.646 | .166 | 4, 138 | .046 | .001 | .031 | .714 |
| *Bowel Function* | Centered BF | | | | | | .125 | .166 |
| | Quadratic BF | 2.027 | .094 | 4, 138 | .055 | .000 | −.006 | .951 |
| *Sexual Function* | Centered SF | | | | | | .004 | .962 |
| | Quadratic SF | 1.419 | .232 | 4, 123 | .044 | .012 | .111 | .219 |
| *Urinary Bother* | Centered UB | | | | | | .079 | .336 |
| | Quadratic UB | 3.931 | .005 | 4, 137 | .103 | .050 | −.228 | .006 |
| *Bowel Bother* | Centered BB | | | | | | .098 | .245 |
| | Quadratic BB | 1.952 | .105 | 4, 140 | .053 | .003 | .053 | .528 |
| *Sexual Bother* | Centered SB | | | | | | .166 | .060 |
| | Quadratic SB | 2.388 | .054 | 4, 131 | .068 | .011 | −.109 | .212 |
| Marital Strength | | | | | | | | |

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| Outcome | Predictor[a] | F | p | df | $R^2$ | $\Delta R^2$ | β | p |
|---|---|---|---|---|---|---|---|---|
| *Urinary Function* | Centered UF | | | | | | .108 | .211 |
| | Quadratic UF | 0.605 | .660 | 4, 136 | .017 | .005 | .071 | .404 |
| *Bowel Function* | Centered BF | | | | | | .054 | .560 |
| | Quadratic BF | 0.235 | .918 | 4, 136 | .007 | .005 | .076 | .417 |
| *Sexual Function* | Centered SF | | | | | | .166 | .061 |
| | Quadratic SF | 1.944 | .107 | 4, 122 | .060 | .028 | .172 | .058 |
| *Urinary Bother* | Centered UB | | | | | | .123 | .152 |
| | Quadratic UB | 1.597 | .179 | 4, 135 | .045 | .024 | −.158 | .067 |
| *Bowel Bother* | Centered BB | | | | | | .074 | .392 |
| | Quadratic BB | 1.496 | .207 | 4, 138 | .042 | .039 | .205 | .019 |
| *Sexual Bother* | Centered SB | | | | | | −.046 | .615 |
| | Quadratic SB | 0.299 | .878 | 4, 130 | .009 | .006 | .083 | .359 |

Note.

[a] Abbreviations for the PCI are as follows: UF = Urinary Function, BF = Bowel Function, SF = Sexual Function, UB = Urinary Bother, BB = Bowel Bother, SB = Sexual Bother.

* $p < .05$,

** $p < .01$,

*** $p < .001$