Survivorship After Prostate Cancer Treatment: Spouses' Quality of Life at 36 Months

Janet Harden, PhD, RN, Martin G. Sanda, MD, John Thomas Wei, MD, Hossein N. Yarandi, PhD, Larry Hembroff, PhD, Jill Hardy, BA, and Laurel Northouse, PhD, RN

Purpose/Objectives: To determine the long-term effects of prostate cancer treatment on spouse quality of life (QOL) at 36 months following treatment.

Design: Descriptive-exploratory; community-based study.

Setting: Telephone interviews.

Sample: 95 female spouses of men treated for early-stage prostate cancer.

Methods: A computer-assisted telephone interview was used to evaluate QOL among spouses of prostate cancer survivors at 36 months after initial prostate cancer treatment.

Main Research Variables: Lymphedema, demographic information, self-reported comorbid diseases or medical issues, and medication usage.

Findings: Spouses who had more negative appraisal of caregiving had lower sexual satisfaction, poorer cancer-specific QOL, and poorer mental QOL. Spouses who perceived bother related to the patient's sexual or hormone function reported more threatening appraisals of caregiving, less sexual satisfaction, and poorer QOL.

Conclusions: Spouses continued to experience negative appraisal of caregiving, which affected QOL 36 months after their husbands' treatment for prostate cancer. Additional studies related to factors that influence spouse QOL during survivorship will help guide clinical practice.

Implications for Nursing: Healthcare providers must help spouses find strategies that promote positive coping and lessen negative appraisal. Giving caregivers information early in the treatment process will help them understand what to expect over time. Supporting caregivers and helping them manage stress will enhance QOL during survivorship.

Knowledge Translation: Spouses who experienced more bother related to urinary, sexual, and hormonal function experience more stress and worse QOL at 36 months post-treatment. Spouse appraisal can have a significant effect on QOL. Offering counseling to couples following treatment for prostate cancer may improve QOL by helping couples manage relationship intimacy.

Prostate cancer remains the most common form of noncutaneous cancer affecting men, with a five-year survival rate of more than 99% and a 10-year survival rate of 98% (American Cancer Society, 2013). Spouses reported more emotional distress associated with a diagnosis of prostate cancer than the husbands (Crowe & Costello, 2003; Ko et al., 2005), but the duration of spouses' distress seldom is examined. Men with prostate cancer and their partners live with symptoms associated with the disease and the outcomes of treatment over an extended period of time. Outcomes vary according to the type of treatment received, with prostate cancer survivors often reporting negative urinary, bowel, and sexual function outcomes that persist years after treatment has ended (Namiki & Arai, 2010; Northouse et al., 2007). The purpose of this study was to determine long-term quality of life (QOL) for spouses at 36 months following their husbands' treatment for prostate cancer.

QOL includes an overall experience of physical, functional, psychological, and social well-being (Zhan, 1992). Ferrans (1990) defined QOL as "a person's sense of well-being that stems from satisfaction or dissatisfaction with the areas of life that are important to him or her" (p. 15). Research has shown that cancer, in general, affects the QOL of the patient's family (Kornblith, Herr, Ofman, Scher, & Holland, 1994); however, prostate cancer so strongly affects patients' spouses that it has been referred to as a relationship disease (Gray, Fitch, Phillips, Labrecque, & Klotz, 1999). Marital satisfaction, a factor in QOL, is of special interest to patients with prostate cancer because of the sexual side effects that can result from treatment. In Harden et al.'s (2008) study of couples in the early post-treatment phase, problems with sexual function were reported most often by the spouses. Research on the effects of prostate cancer on the QOL of men is increasing (Lee, Marien, Laze, Agalliu, & Lepor, 2012; Rivers et al., 2011; Sanda et al., 2008; Segrin, Badger, & Harrington, 2012). However, less research has been conducted on the effect prostate cancer and its treatment have on the QOL of spouses.

Appraisal of a situation can affect QOL negatively or positively. Appraisal of caregiving refers to caregiver evaluations of their caregiving situation (Oberst, 1991). The degree of perceived stress and threat to personal

Table 1. Characteristics of Female Spouses (N = 95)

Characteristic	n
Education	
High school or less	22
Some college or college degree	41
Graduate degree	32
Race	
Caucasian	88
African American	5
Asian	1
Missing data	1
Employment status	
Unemployed	59
Part-time	15
Full-time	21
Combined income ($)	
10,000–30,000	9
30,001–100,000	45
Greater than 100,001	37
Missing data	4
Spouse treatment type	
Prostatectomy	59
Radiation therapy	14
Brachytherapy	14
Neoadjuvant and radiation therapy	6
Neoadjuvant and brachytherapy	2
Spouse total Gleason score (severity)	
6	60
7	30
8	4
9	1

Note. Lower total Gleason scores indicate less severity.

well-being may increase negative appraisal, and perceived benefit may decrease it. Negative appraisal has been associated with poorer QOL outcomes in patients with cancer and their caregivers (Kornblith et al., 1994; Northouse, Mood, Templin, Mellon, & George, 2000). Research has shown that patients and partners experience appraisal and cope with prostate cancer as individuals and as a couple (Kershaw et al., 2008).

Caregiving needs may vary among prostate cancer survivors and their partners. The type of treatment men receive for prostate cancer determines the symptoms they experience. Studies report that bowel problems and bladder difficulties can occur following radiation therapy, sexual dysfunction can occur following surgery, and fatigue can occur following radiation therapy or surgery (Badr & Taylor, 2009; Casas et al., 2010; Namiki & Arai, 2010). Treatment symptoms can cause issues with survivor functional ability and normal body function, which in turn can affect family and interpersonal roles by changing responsibilities within the family unit (Harden, Northouse, & Mood, 2006).

Prior research seldom addresses QOL of spouses in long-term survivorship despite evidence showing that QOL of one member in a couple affects that of the other (Northouse et al., 2000). An increasing number of couples live with the side effects of treatment, and little information is available related to spousal response to treatment outcomes during survivorship. For those reasons, researchers must work to broaden the understanding of factors that affect QOL of the spouses of men with prostate cancer.

Methods

Design

The current study was the second phase of a longitudinal study of spouses of men with prostate cancer and a companion study within a prospective longitudinal cohort study of men undergoing treatment for localized prostate cancer and their spouses (Sanda et al., 2008). After providing informed consent for the supplemental questions of the companion study, spouses completed a battery of questionnaires in a computer-assisted telephone interview.

Sample

Spouses of men participating in the parent study were recruited to participate in the companion study at 24 and 36 months following patient diagnosis. Results at 24 months were reported previously (Harden et al., 2013). Spouses were eligible to participate if they were identified by the patient as a spouse (including women or men with or without marital ties who were involved with the patient for more than one year and lived in the same household), were mentally and physically able, and spoke and understood sufficient English to participate.

Of the 121 spouses who participated in the 24-month study (Harden et al., 2013), 24 did not complete the 36-month study interview (80% retention rate). Reasons for attrition included ineligibility because the couple dropped out of the parent study (n = 10), missing the 36-month interview for both the parent study and the current study (n = 2), and declining participation in the 36-month data collection (n = 12), which resulted in a sample size of 97. Because only two male spouses participated, these data were not included, leaving a final sample of 95 female spouses who completed data collection at the 36-month time point.

Instruments

QOL was measured using two scales, a general scale called the **Medical Outcomes Study Short-Form Health Survey (SF-12)** (Ware, Kosinski, & Keller, 1996) and a cancer-specific scale developed for caregivers of patients with cancer called the **Caregiver Quality of Life Index–Cancer (CQOLC)** scale (Weitzner, Jacobsen, Wagner, Friedland, & Cox, 1999). The SF-12 consists of 12 items that form physical component (PCS) and mental component (MCS) summary scales. The CQOLC consists

of 35 items, and higher scores reflect poorer QOL. The alpha coefficient reliability for this study was 0.88, which is considered good for clinical research.

Satisfaction with marital relationships was assessed with the brief version of the **Dyadic Adjustment Scale (DAS-4)** (Sabourin, Valois, & Lussier, 2005; Spanier, 1976), a four-item instrument that measures couple satisfaction. The alpha coefficient for the DAS-4 was 0.47. Because the alpha coefficient was less than 0.5, which is considered unreliable, marital satisfaction results were not used in the analysis.

Satisfaction with sexual relationships was measured with an investigator-developed **sexual satisfaction scale (SSS)**. The three-item questionnaire measures satisfaction with relationship intimacy, the effect of prostate cancer treatment on sexual relationships, and overall sexual satisfaction. Higher scores indicated greater sexual satisfaction. Internal consistency reliability for this study was 0.88.

Appraisal was measured using the **Appraisal of Caregiving Scale (ACS)** (Oberst, 1991), which was modified for the telephone survey. A brief version of the ACS was used and consisted of nine items that measured two types of stressful appraisals (i.e., general stressfulness and perceived threat) and one type of nonstressful appraisal (i.e., perceived benefit). The three subscales (i.e., general stressfulness, perceived threat, and perceived benefit) were used separately in subsequent analyses. The alpha coefficient was 0.71 for the general stressfulness subscale, 0.67 for the perceived threat subscale, and 0.8 for the perceived benefit subscale.

Demographics were measured using two parts (demographic information and health history) of the **Omega Screening Questionnaire** (Mood & Bickes, 1989; Weisman & Worden, 1976). The demographic section included questions about participant age, education, and income at the time of treatment. The health history included questions about health issues that participants might experience, such as hypertension and diabetes.

Spouse bother was measured using the **Spouse Expanded Prostate Cancer Index Composite (S-EPIC)** (Northouse et al., 2007). This instrument consists of six questions that measure spouse perception of bother caused by the patient's treatment symptoms (e.g., urinary, sexual, bowel, hormonal function). Scores range from 1 (no problem) to 5 (big problem).

Table 2. Relationship of Appraisal to Marital Satisfaction, Sexual Satisfaction, and Quality of Life: Spearman Correlation Coefficients

Appraisal	SSS	CQOLC	SF-12 MCS	SF-12 PCS
Benefit	0.06	–0.29**	0.03	0.04
Stress	–0.23*	0.54**	–0.41*	–0.09
Threat	–0.28**	0.53**	–0.36**	0.007

* $p < 0.05$; ** $p < 0.01$

CQOLC—Caregiver Quality of Life Index–Cancer scale; MCS—mental component summary; PCS—physical component summary; SF-12—Medical Outcomes Study Short-Form Health Survey; SSS—sexual satisfaction survey

Note. Higher scores on the SSS indicate more sexual satisfaction. Higher scores on the CQOLC indicate poorer quality of life.

Table 3. Relationship of Spouse Perceptions of Symptom Bother and Appraisal of Caregiving Subscales

Symptom	Stress	Threat	Benefit
Bowel habits	0.16	0.19	0.03
Hormone function	0.18	0.32**	0.03
Overall urinary function	0.08	0.12	–0.22*
Sexual function	0.05	0.23*	–0.19
Urinary incontinence	–0.005	0.16	–0.04
Urinary irritation or blockage	0.24*	0.11	–0.01

* $p < 0.05$; ** $p < 0.01$

Procedures

Descriptive statistics were generated for all variables in the data set. To describe spouse sexual satisfaction and QOL, summary scores for the SSS, SF-12, and the CQOLC were used. Spearman correlation coefficients were used to examine relationships among variables. Multiple linear regressions were conducted to determine whether spouse bother was associated with the appraisal of caregiving, sexual satisfaction, or QOL.

Results

Most of the 95 female participants were Caucasian and had at least some college education. The average age was 61 years (see Table 1). Prostatectomy was the most common treatment for the 95 male patients. For analysis, patients who had radiation (n = 14) and radiation plus adjuvant androgen deprivation therapy (n = 6) were merged into one category, and those who had brachytherapy (n = 14) and brachytherapy plus adjuvant androgen deprivation therapy (n = 2) were merged into a third category. Adjuvant androgen deprivation after initial treatment with radiotherapy in patients with localized prostate cancer has been shown to improve long-term survival (Pagliarulo et al., 2012). At the time of diagnosis and treatment, 60 patients had a total Gleason score of six, indicating low-risk prostate cancer, and 35 had a total Gleason score greater than six, indicating greater severity (intermediate- to high-risk prostate cancer). No men in the sample had a Gleason score of less

Table 4. Relationship of Spouse Symptom Bother to Sexual Satisfaction and Quality of Life

Symptom	SSS	CQOLC	SF-12 MCS	SF-12 PCS
Bowel habits	–0.19	0.22*	–0.11	–0.07
Irritation or blockage	–0.06	0.14	–0.14	–0.22
Hormone function	–0.25*	0.23*	–0.26*	–0.08
Overall urinary function	–0.18	0.18	–0.13	–0.07
Sexual function	–0.46**	0.29*	–0.07	–0.01
Urinary incontinence	–0.03	0.1	–0.04	0.12

* $p < 0.05$; ** $p < 0.01$

CQOLC—Caregiver Quality of Life Index–Cancer scale; MCS—mental component summary; PCS—physical component summary; SF-12—Medical Outcomes Study Short-Form Health Survey; SSS—sexual satisfaction survey

Note. Higher scores on the SSS indicate more sexual satisfaction. Higher scores on the CQOLC indicate poorer quality of life.

than six. Of the men who received radiation therapy plus androgen deprivation therapy, one had a total Gleason score of six, two had a score of seven, two had a score of eight, and one had a score of nine. Of those who received brachytherapy plus androgen deprivation therapy, one had a total Gleason score of six, and one had a score of seven. Only one patient had a recurrence of prostate cancer by the 36-month assessment period.

To determine relationships among appraisal of caregiving, sexual satisfaction, and QOL, the authors examined bivariate correlations among study variables (see Table 2). Spouses with more negative perceptions of caregiving on the perceived threat and general stressfulness subscales had lower sexual satisfaction, poorer cancer-specific QOL, and poorer mental QOL. Spouses with more positive perceptions of the caregiving benefit had higher cancer-specific QOL. Physical QOL was not related to the appraisal variables.

Spouses who perceived more bother related to patient symptoms of urinary irritation perceived more caregiving stress ($p < 0.05$), and those who perceived more bother related to patient overall urinary function perceived less caregiving benefit ($p < 0.05$) (see Table 3). Spouses who perceived more bother related to patient sexual ($p < 0.05$) or hormone function ($p < 0.01$) perceived more threat associated with caregiving.

Correlation analyses indicated that spouses who perceived more bother related to patient sexual and hormone function (vitality) had less sexual satisfaction ($p < 0.01$) and poorer cancer-specific QOL ($p < 0.05$) (see Table 4). Spouse perception of bother with hormone function also was related to poorer mental QOL ($p < 0.05$). Symptom bother was not related to physical QOL. Although the strength of the correlations is low to moderate in the study findings, the p values indicate that the findings are statistically significant.

Multiple regression analyses were used to examine how much variance appraisal of caregiving accounted for sexual satisfaction and QOL, revealing several significant effects (see Table 5). The appraisal of caregiving subscales in the CQOLC accounted for 52% of the variance in cancer-specific QOL. The variance in cancer-specific caregiver QOL was explained by perceptions of stress ($t = 5.07$, $p < 0.0001$), threat ($t = 4.23$, $p < 0.0001$), and benefit ($t = –4.98$, $p < 0.0001$) associated with caregiving. Perceptions of threat ($t = –1.96$, $p = 0.05$) and stress ($t = –2.91$, $p = 0.004$), measured by the SF-12, also explained 18% of variance in mental QOL.

Spouse symptom bother associated with patient sexual function accounted for 9% of the variance in spouse sexual satisfaction ($t = –3.12$, $p = 0.002$) and 15% of the variance in cancer-specific QOL ($t = 2.62$, $p = 0.01$) (see Table 6). Symptom bother related to hormone therapy accounted for 9% of the variance in mental QOL using the SF-12 ($t = –2.55$, $p = 0.01$).

To determine the effect of patients receiving adjuvant androgen deprivation therapy on spouse QOL, a t test was performed comparing spouses of those who received the therapy to spouses of those who did not. Although mean scores for spouses of men who received the therapy tended to be slightly more negative, no statistical difference was found between the groups. The group receiving adjuvant androgen deprivation therapy was very small ($n = 8$), which may have contributed to the lack of findings in this group.

Table 5. Results From Regression Analysis Using Appraisal Variables as the Predictors

	SSS		CQOLC		SF-12 MCS		SF-12 PCS	
Variable	B	SE	B	SE	B	SE	B	SE
Benefit	0.06	0.07	–1.39**	0.28	0.17	0.96	0.14	0.51
Stress	–0.16	0.13	2.83**	0.56	–1.01**	0.35	–0.56	0.55
Threat	–0.27*	0.15	2.6**	0.62	–0.75*	0.38	0.31	0.61
Adj R^2	0.06		0.52		0.18		0.02	
F	2.74*		29.97**		7.09**		0.4	

* $p < 0.05$; ** $p < 0.01$

B—unstandardized regression coefficient; CQOLC—Caregiver Quality of Life Index–Cancer scale; MCS—mental component summary; PCS—physical component summary; SE—standard error of the regression coefficient; SF-12—Medical Outcomes Study Short-Form Health Survey; SSS—sexual satisfaction survey

Table 6. Results From Regression Analysis Using Symptom Bother as a Predictor

	SSS		CQOLC		SF-12 MCS		SF-12 PCS	
Symptom	**B**	**SE**	**B**	**SE**	**B**	**SE**	**B**	**SE**
Bowel habits	–0.15	0.5	4.86	2.77	0.38	1.45	2.02	0.23
Hormone-related symptoms	–0.19	0.22	2	1.23	1.64**	0.64	0.89	0.64
Intercept	11.46	0.71	41.79	3.94	55.85	2.05	45.18	2.87
Overall urinary function	0.79	0.49	–2.55	2.73	–0.78	1.43	1.99	1.7
Sexual function	–0.54**	0.17	2.5**	0.96	–0.21	0.5	0.69	–0.66
Urinary incontinence	0.02	0.38	0.41	2.1	1.66	1.09	–1.37	1.53
Urinary irritation	–0.41	0.049	3.02	2.74	–2.08	1.42	1.99	–1.66
Adj R^2	0.09		0.15		–0.09		–0.01	
F	2.36*		3.49**		2.35*		0.85	

* $p < 0.05$; ** $p < 0.01$

B—unstandardized regression coefficient; CQOLC—Caregiver Quality of Life Index–Cancer scale; MCS—mental component summary; PCS—physical component summary; SE—standard error of the regression coefficient; SF-12—Medical Outcomes Study Short-Form Health Survey; SSS—sexual satisfaction survey

Note. Higher scores on the SSS indicate more sexual satisfaction. Higher scores on the CQOLC indicate poorer quality of life.

Because the spouses were part of a longitudinal cohort followed over time, the authors used paired t tests to compare scores on study variables obtained at the 36-month assessment with those obtained one year earlier at the 24-month assessment. No significant differences were found in appraisals of caregiving, sexual satisfaction, and mental QOL scores from 24–36 months. However, cancer-specific QOL was significantly better at 36 months than at 24 months ($t = 2.19$, $p = 0.03$). In contrast, physical QOL decreased significantly from 24–36 months ($t = 5.8$, $p < 0.0001$).

Discussion

The most significant finding of the current study is that spouses experienced negative appraisal (i.e., perceived stress and threat) that affected sexual satisfaction and QOL 36 months following the patient's treatment for prostate cancer. This study contributes to findings of continued distress in spouses at six months (Couper et al., 2009), 18 months (Baider, Walach, Perry, & Kaplan De-Nour, 1998), and 24 months (Harden et al., 2013) when no systematic intervention existed to mitigate the distress. In the current study, 52% of the variance in cancer-specific QOL and 18% of mental QOL was explained by negative appraisal. Negative appraisal has been linked to lower QOL in spouses (Kornblith et al., 1994), and spousal distress can affect patient QOL (Segrin et al., 2012). Those findings underscore the importance of assessing spouse appraisals of caregiving because negative appraisal directly affects patient QOL. Studies indicate that interventions offering information and support for spouses can lessen negative appraisal of illness and enhance QOL (Northouse et al., 2007). Interventions that help to diminish negative appraisal of caregiving, particularly if introduced early in survivorship, could make life after cancer treatment more manageable for the spouse and have a positive effect on both members of the couple.

Spouse-perceived benefits of caregiving had a small positive effect on cancer-specific caregiver QOL. Some evidence exists that stressful events can cause personal growth through alteration in self-understanding or an increase in perceived value of being with family and friends (Antoni et al., 2001; de Sales & Cox, 2004; Joseph, 2004; Thornton & Perez, 2006; Tomich & Helgeson, 2004; Woodward & Joseph, 2003). Positive effects reported by survivors and spouses in previous studies included the development of closer relationships, more appreciation of life, recognition of positive qualities and strengths, and improved health practices (Manne et al., 2004; Petrie, Buick, Weinman, & Booth, 1999; Schulz & Mohamed, 2004; Weiss, 2002). Although caregiving benefit had only a small positive effect in the current study, helping spouses perceive benefit from the cancer experience may decrease negative appraisal, facilitate coping with treatment outcomes, and lead to a more positive influence on QOL.

Results showed no significant difference between sexual satisfaction and mental QOL over time (24–36 months). Spouses had improved cancer-specific QOL at 36 months compared to 24 months. With the passage of time, spouses may have adjusted to the situation. Of note, physical QOL decreased over time. Aging spousal caregivers may have less physical stamina to provide care to aging husbands. Interventions are needed to assist spouses and patients in maintaining physical well-being by performing healthy lifestyle behaviors (e.g., nutritious diet, exercise).

Spouse symptom bother as related to sexual and hormone function continued to affect sexual satisfaction and QOL at 36 months. Spouses who reported more symptom bother related to sexual function also reported more stress and threat appraisal, which is similar to other research findings (Badr & Taylor, 2009; Wootten et al., 2007). Feelings of stress and threat could be related to changes within the relationship. Previous research has shown that decreased sexual function affects men's concept of masculinity and the ability to relate to their spouses (Rivers et al., 2011). That finding emphasizes the need to include spouses in treatment discussions throughout the cancer continuum, so they are aware of potential outcomes and how to manage the possibilities. The current study also suggests that offering counseling to couples following treatment for prostate cancer may improve QOL by helping couples manage intimacy.

Implications for Practice

A better understanding of appraisal in the relationship between spouses during and after prostate cancer treatment will help healthcare providers suggest strategies to promote positive coping, an approach that lessens negative appraisal. Providing caregivers with information early in the treatment process will let them know what to expect over time. That sense of empowerment may help them view caregiving in a more positive light. Supporting caregivers and helping them manage stress will enhance QOL during survivorship. Additional studies related to factors that influence spouse QOL during survivorship will help guide clinical practice.

Conclusions

Findings in the current study add to the research on how spouses of men treated for prostate cancer are affected during survivorship. In this study, negative appraisals of the caregiving experience continued to have an effect on QOL; more negative appraisal resulted in lower cancer-specific QOL and lower mental QOL. A need exists for continued assessment of spouses of patients with prostate cancer to better understand the long-term effects of treatment outcomes on spouse QOL.

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Janet Harden, PhD, RN, is an assistant professor in the College of Nursing at Wayne State University in Detroit, MI; Martin G. Sanda, MD, is a professor in the Division of Urology at the Beth Israel Deaconess Medical Center and Harvard Medical School in Boston, MA; John Thomas Wei, MD, is a professor in the Medical School at the University of Michigan in Ann Arbor; Hossein N. Yarandi, PhD, is a professor in the College of Nursing at Wayne State University; Larry Hembroff, PhD, is the director and Jill Hardy, BA, is a research assistant III, both in the Office of Survey Research at Michigan State University in East Lansing; and Laurel Northouse, PhD, RN, is the Mary Lou Willard French Professor of Nursing in the School of Nursing at the University of Michigan. Support for this research was provided through the National Institutes of Health (Nos. 5R03CA119764, R01-CA95662, and 1RC1CA146596). Harden can be reached at jharden@wayne.edu, with copy to editor at ONFEditor@ons.org. (Submitted September 2012. Accepted for publication February 4, 2013.)

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For Further Exploration

Use This Article in Your Next Journal Club Meeting

Journal club programs can help to increase your ability to evaluate literature and translate findings to clinical practice, education, administration, and research. Use the following questions to start discussion at your next journal club meeting. Then, take time to recap the discussion and make plans to proceed with suggested strategies.

1. How do you ask patients and their spouse/partner if they are coping with their cancer? Does this change over the cancer trajectory?
2. The spouses of men with prostate cancer experienced significant negative coping at 36 months after treatment in this study. How can we as nurses support them?
3. There was a small positive effect of caregiving in this study. How do you talk to the partners/spouses of your patients about post-treatment growth (or post-treatment stress)?
4. How often do you assess patients and partners/spouses for changes in sexual functioning? What are the barriers to this and why?
5. Is it enough to provide anticipatory guidance to the partners of men with prostate cancer as the authors of this study suggest? What else can be done to support them and help them cope with their altered life and relationship?