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Predictors of Patient and Partner Satisfaction Following Radical Prostatectomy

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Abstract

Introduction—The diagnosis and treatment of prostate cancer adversely affects the physical and emotional well-being of patients and partners, and has been associated with sexual dysfunction in both patients and their intimate partners.

Aim—To identify predictors of sexual satisfaction among prostate cancer survivors and their partners, based on a review of the current literature.

Methods—We performed a comprehensive review of the PubMed database from January 2000 to May 2017, focused on the (i) prevalence of patient and partner sexual dysfunction related to radical prostatectomy (RP), (ii) differences in patient and partner perspectives of sexual function and dysfunction, and (iii) predictors of patient and partner sexual satisfaction following RP.

Main Outcome Measures—Patient and partner reported sexual satisfaction.

Results—There is a paucity of published data examining sexual satisfaction among prostate cancer survivors and their partners. Patients and partners can have different expectations of sexual outcomes following radical prostatectomy, as well as varying attitudes towards the relative importance of recovery of sexual function after surgery. Available data suggests that patients' and partners' mental and physical health, as well as the quality of communication between them, are important contributors to their sexual satisfaction. Patient-perceived partner support is also associated with better patient-reported erectile function, and greater relationship satisfaction.

Conclusion—Mental health, physical health, quality of interpersonal communication, and patient-perceived partner support appear to be the most important predictors of sexual satisfaction for patients and partners in the post-prostatectomy period. There is a definite need for further research on this topic, in order to develop interventions to improve sexual function and quality of life for prostate cancer survivors and their intimate partners.

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Keywords

Sexual dysfunction; Sexual satisfaction; Prostate cancer; Radical prostatectomy; Sexual Partners; Spouses

INTRODUCTION

Erectile dysfunction (ED) has meaningful biological, psychological, and social effects on the quality of life of affected individuals and their sexual partners. Among men undergoing radical prostatectomy (RP), the estimated prevalence of ED varies between 50% and 80%, depending on how ED is defined, when in the post-operative period it is measured, and how successfully it is treated (1–3). Untreated ED can cause frustration, anxiety, and depression for both patients and partners, potentially culminating in separation and/or divorce (4–6). Prostate cancer survivors and their partners are especially at risk for these undesirable outcomes.

The goal of treatment of ED is achievement of a satisfactory sex life for couples engaged sexual relationships. Understanding the predictors of sexual satisfaction for both patients and partners is essential for achieving this overall goal. Demographic factors, such as age, clinical factors, such as overall health, relationship and psychological factors, as well as sexual function, have all shown to be critical predictors of sexual and relationship satisfaction in the general population (7).

A growing body of literature supports the use of sexual partner-engaged approaches to assist ED treatment and rehabilitation (8). Partner involvement in the evaluation and treatment of ED results in increased adherence to ED rehabilitation and treatment, improved sexual function, and better relationship satisfaction for both the patient and the partner (8). Furthermore, patients' and partners' sexual function are correlated. According to a study by Jiann et al, women whose partners were affected by ED scored lower on the Female Sexual Function Index than women whose partners did not have ED (9). Thus, it is likely that a failure to address female sexual function and sexual satisfaction ultimately leads to a failure in adequately treating the male patient.

That said, the sexual history, goals, and expectations of the female partner are often overlooked. Discussion of sexual function is not a comfortable topic for patients, partners, and physicians alike. Physician gender has been shown to independently impact the frequency with which a sexual history is obtained from the female partner of a patient with erectile dysfunction, as well as how detailed that history is (10). As a result, much of the published literature discussing the etiology, prevalence, and treatment of ED excludes the female partner altogether.

It is evident that partners play a critical role in the sexual recovery of prostate cancer survivors by providing both emotional and logistical support (11). Partners' sexual interest has been shown to be important for patients' recovery of sexual function (12). Additionally, partners' level of depression is predictive of the patient's relationship satisfaction, sexual satisfaction, and perceived quality of communication (13). However, our understanding of

the partner's role with respect to survivorship care remains incomplete. There are still gaps in our knowledge about how important erectile function and sexual recovery are to partners, what the determinants of sexual satisfaction are among partners, and how sexual satisfaction correlates between patients and their partners following treatment for prostate cancer.

This goal of this study was to evaluate the published literature in order to identify known predictors of both patient and partner sexual satisfaction following radical prostatectomy, understanding that patient predictors may well differ from those of their partners.

METHODS

We performed a comprehensive review of the PubMed database from January 2000 to May 2017, focused on the (i) prevalence of patient and partner sexual dysfunction related to RP, (ii) differences in patient and partner perspectives of sexual function and dysfunction, and (iii) predictors of patient and partner sexual satisfaction following RP. Specifically, the following search terms were used: “radical prostatectomy AND sexual satisfaction”, “radical prostatectomy AND sexual recovery”, and “radical prostatectomy AND sexual function AND partner OR spouse”. Full length original studies and review articles published in the English language, which addressed both patient and partner sexual function, were considered in the preparation of this manuscript (Figure 1).

RESULTS

There are a limited number of studies examining the impact of post-prostatectomy sexual dysfunction on the partners of prostate cancer survivors. The studies that do exist focus primarily on married heterosexual couples, and provide little to no insight on the experiences of unmarried or same sex partners. Many of these studies comprise qualitative analyses only; few involve quantitative analyses, performed using a variety of validated instruments (Table 1). The studies used in the preparation of this review, and referenced below, are summarized in Table 2.

Prevalence of Patient and Partner Sexual Dysfunction

Sexual dysfunction is the most common health-related quality of life complaint among prostate cancer survivors, and includes not only erectile dysfunction, but also decreased libido, impaired arousal, and muted orgasm (14). Partners of prostate cancer survivors likewise report a negative impact on their sexual function and sexual relationships. In a prospective study of 88 patient-partner pairs undergoing treatment for localized prostate cancer, the proportion of partners reporting problems with their sexual relationship increased substantially from 51% to 71% between 6 and 12 months after treatment (15). In contrast, a minority of partners reported significant negative impacts in other areas involving their relationship, work, or personal activities. Interestingly, partners were significantly more likely to report that their sexual relationship was worse when the patient reported having surgery, compared to other treatments or active surveillance (15). The authors hypothesized that partners' expectations about recovery of sexual function following cancer treatment could explain the worsening impact on partners' sexual relationships over time; partners may have expected a 6-month recovery period following cancer therapy, but lost hope for

their sexual relationship returning to the pre-therapy state by 12 months (15). This reasoning may also explain why partner disappointment was greater after surgery, compared to other treatment modalities.

Patient and partner sexual function following radical prostatectomy are interrelated. Shindel et al. retrospectively assessed sexuality among prostate cancer patients and their female partners using the International Index of Erectile Function (IIEF) and Female Sexual Function Index (FSFI), following RP for localized prostate cancer. Despite a very low response rate, the authors confirmed statistical correlation between IIEF and FSFI domain scores among matched couples (16). In a more recent study, Tran et al. used the IIEF, FSFI, and Lock-Wallace Marital Adjustment Test (MAT) to prospectively evaluate the impact of RP on male, female, and conjugal sexual function by assessing patient and partner sexual function before, and 6-months after, robotic assisted laparoscopic prostatectomy (RALP) with and without nerve sparing (17). IIEF and FSFI scores decreased post-operatively, compared to baseline, and this decrease was associated within the 21 couples included in the study. Bilateral nerve sparing had a protective effect on both patient and partner sexual dysfunction in the early post-prostatectomy period, as demonstrated by significant changes in pre- and post-RALP IIEF and FSFI scores among couples who underwent bilateral versus unilateral nerve sparing surgery (17). Interestingly, conjugal complicity, reflected by MAT scores, remained stable during the study period, despite the decrease in sexual function. It is possible that small sample size and limited study duration precluded detection of a true association between sexual function and couple complicity.

Differences in Patient and Partner Perspectives

Soloway et al. were among the first to investigate disparities in sexual function and psychological distress among prostate cancer patients and their partners using self-reported questionnaires. In addition to perceiving a higher level of distress compared to patients, partners also perceived their sexual performance as being better than that of the patients (18). Additionally, partner ratings of patients' erection quality were lower than those provided by the patients themselves (18). The authors used their findings to emphasize the importance of hearing the voice of the "couple" rather than the patient or partner alone, when designing interventions targeting sexual and psychological functioning among prostate cancer survivors.

Patients and partners may certainly have distinct expectations of sexual outcomes following radical prostatectomy, as well as varying attitudes towards the relative importance of recovery of sexual function following cancer treatment. Sato et al. evaluated sexual function, sexual bother, and expectations for postoperative sexual life among 162 patients and partners following before and after radical prostatectomy, and found a significant dissociation in perspectives of postoperative sexual life between patients and their partners (19). In particular, patients were more likely to verbalize that sexual life was important, hope for preservation of erectile function, and accept use of phosphodiesterase type 5 inhibitor therapy, compared to their partners (19).

It is well documented that partners and spouses place greater value on cancer specific survival than cancer treatment related sexual dysfunction (20, 21). In particular, spouses are

unwilling to trade life expectancy for an improvement in sexual or urinary function (22). Additionally, Tsivian et al. have proposed that patients and partners may interpret differently the same physiological outcomes of prostate cancer surgery. In their study of 28 couples, the authors found that only 40% of men and women were happy with their levels of sexual interest, albeit with 82% concordance (23). Conversely, 86% of men described a change in orgasm experience, compared to 36% of female partners. Nevertheless, patient and partner satisfaction with the ability to climax remained high in this analysis. These data illustrate that patient and partner concordance with respect to sexual function is not necessarily synonymous with patient and partner satisfaction.

Predictors of Patient and Partner Satisfaction

Although much research has focused on predictors of recovery of erectile function following radical prostatectomy, relatively little attention has been paid to how satisfied patients and their partners are with post-operative sexual function. As previously stated, sexuality and related dysfunction encompass more than intercourse, and include physical, behavioral, and cognitive impairments, which are difficult to measure comprehensively. Regret and feelings of loss are commonly reported by both patients and partners with regard to loss of sexual function (11), guaranteeing at least some degree of sexual dissatisfaction at least early in the post-prostatectomy period. No studies have specifically examined whether and how patient and partner satisfaction evolves over time following prostate cancer surgery.

Available data suggests that patients' and partners' mental and physical health (13, 24), as well as the quality of communication between them (25), are important contributors to their sexual satisfaction. Specifically, patients' and partners' mental health is predictive of their respective relationship satisfaction following prostatectomy in prospective studies (24). Partners' mental health is also predictive of patients' relationship satisfaction (24), which reflects the complex and multi-dimensional role that partners play in supporting the recovery of men with prostate cancer. Although one study has demonstrated an association between patient age, patient and partner age difference, and post-prostatectomy erectile function (26), the role of these characteristics as predictors of overall patient and partner satisfaction have not been specifically examined.

Ultimately, patients' acceptance of altered sexual function after RP is highly affected by the attitudes and support provided by their spouses (19, 21). Indeed, patient-perceived partner support is associated with better patient-reported erectile function, and greater relationship satisfaction both before and after prostatectomy (27). In the study by Sato et al., patients who had partners with a negative sexual attitude lost sexual motivation one year after RP. Conversely, patient with cooperative partners maintained sexual motivation, even though they endorsed greater sexual bother one year after RP (19).

It is well accepted that partners provide invaluable emotional and logistical support after prostate cancer surgery, and play a critical role on promoting the recovery of sexual function (12). Both patients and partners identify the partners' own sexual interest, rather than sexual function, as being key for sexual recovery. Some men even endorse feeling insecure about their sexual performance, when faced with partners who take the lead in initiating sexual activities (12).

Partners' attitudes towards the caregiver role may evolve over time. Harden et al. studied quality of life outcomes among 121 partners of prostate cancer survivors, and found that partners developed a more negative view of their caregiving experience, and a lower quality of life, two years following treatment for prostate cancer, compared to their pre-treatment baseline (20). This change in partner attitude may be due to partners' frustration with lack of sexual function recovery, or partners' unmet sexual needs or needs for support (12). Partners are also more likely to hold back their feelings and concerns compared to prostate cancer patients, which has a negative impact on partners' well-being, and is detrimental for couples' intimacy and relationship satisfaction (25).

DISCUSSION

The diagnosis of prostate cancer has a significant impact on the mental and emotional well-being of both prostate cancer patients and their partners (28, 29), with partners often reporting higher levels of stress and anxiety compared to patients (11). Sources of distress include lack of information, fear of the unknown, fear of what the future may hold, and treatment-related concerns (11). Treatment of prostate cancer, similarly, has adverse effects on sexual function, intimacy and communication for both patients and partners, irrespective of treatment modality (13, 30–33).

That said, prostatectomy is specifically associated with impaired quality of life among both patients and partners. Interestingly, in one large cross-sectional survey of prostate cancer patients and their partners, while patients' quality of life was affected by various predictors, including dyadic adjustment and body image, sexual satisfaction emerged as the most important predictor of partners' quality of life (30). Therefore, several authors have advocated for psychosocial interventions that target both patients and their partners following radical prostatectomy, in order to meaningfully promote sexual recovery, and improve quality of life.

Nelson and Kenowitz examined three types of psychosocial interventions aimed at enhancing couples' intimacy following prostate cancer treatment, and found that patients and patients may derive differential benefit from different aspects of the interventions (34). Although results were not consistent within or across studies, the authors concluded that intimacy enhancing interventions can be effective for couples; while patients may benefit more from focus on specific side effects of prostate cancer treatment, partners may benefit more from couples work (34).

CONCLUSION

This review highlights the interrelation of patient and partner sexual function and dysfunction following the diagnosis and treatment of prostate cancer, and its impact on sexual and relationship satisfaction. Identifying the various predictors of patient- and partner-perceived satisfaction remains an active area of research. There is also an unmet need for psychosocial interventions that engage, target, and benefit both prostate cancer patients and their intimate partners.

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Figure 1. Overview of search criteria for identification and selection of published literature for the preparation of this review article.

Table 1

Validated instruments used for the measurement of sexual and relationship satisfaction in studies of prostate cancer survivors and their partners.

Instrument	Respondent	Description
International Index of Erectile Function (IIEF) *	Male	15-item questionnaire addressing five domains of sexual function in men (erectile function, orgasmic function, sexual desire, intercourse satisfaction and overall satisfaction)
Female Sexual Function Index (FSFI)	Female	19-item instrument assessing six domains of sexual function in women (desire, arousal, lubrication, orgasm, satisfaction, and pain)
Locke-Wallace Marital Adjustment Test (MAT)	Male and Female	15-item scale measuring marital satisfaction, including extent of agreement and disagreement
Personal Assessment of Intimacy in Relationships (PAIR)	Male and Female	7-item scale assessing emotional closeness and intimacy among healthy married couples
Dyadic Adjustment Scale (DAS)	Male and Female	32-item scale measuring relationship quality among respondents and their partners across three categories (consensus, satisfaction, and affectional expression)
Index of Sexual Life (ISL)	Female	11-item instrument measuring sexual life satisfaction, sexual drive, and general life satisfaction.
Expanded Prostate Cancer Index (EPIC) **	Male	50-item questionnaire evaluating health-related quality of life outcomes in men treated for organconfined prostate cancer, across five domains (urinary incontinence, urinary irritability, sexual bowel, and hormonal)
University of California Los Angeles Prostate Cancer Index (UCLAPCI)	Male	20-item scale assessing health-related quality of life outcomes in men treated for organ-confined prostate cancer, across three domains (urinary, sexual, and bowel)

* Also available as an abridged 5-item questionnaire (IIEF-5) for determining the presence and severity of erectile dysfunction

** Also available as an abridged 26-item questionnaire (EPIC-26) which evaluates the same urinary, sexual, bowel, and hormonal concerns

Summary of the published literature examining the predictors of patient and partner satisfaction following radical prostatectomy.

Table 2

Authors	Year	Methodology	Findings
Resendes and McCorkle	2006	Literature review conducted using Cinahl, Medline, and Cochrane databases	Spouses are significantly more distressed overall than patients. Sources of distress include lack of information, fear of the unknown, fear of what the future will hold, and treatment related concerns.
Wittmann et al.	2014	Individual interviews of 10 men and 9 partners	Partner's own sexual interest, not function, is critical to the couple's sexual recovery following RP.
Garos et al.	2007	Mail survey completed by 77 patients and 57 partners, including the Beck Depression Inventory, Life Satisfaction Index, Index of Sexual Satisfaction, and Dyadic Adjustment Scale	Patients and partners had higher levels of depression and sexual dissatisfaction compared to the general population. Partner's level of depression was a predictor of patients' relationship satisfaction, sexual satisfaction, and perceived quality of communication about the sexual relationship.
Ramsey et al.	2013	Mail survey completed by 88 patient-partner pairs over 12 months, including the Expanded Prostate Cancer Index Composite questionnaire	From the partners' perspectives, prostate cancer therapy has a negative impact on sexual relationships, which appears to worsen over time.
Shindel et al.	2005	Mail survey completed by 90 patient-partner pairs, including the International Index of Erectile Function and the Female Sexual Function Index	Patient and partner sexual dysfunction is correlated. Evaluation and treatment of sexual dysfunction after RP should involve both patients and partners.
Tran et al.	2015	Standardized questionnaires completed by 21 patient-partners pairs six months before and after RP, including the International Index of Erectile Function, Female Sexual Function Index and the Locke-Wallace Marital Adjustment Test	Both patient and partner sexual function declined after RP, but marital satisfaction remained stable. Bilateral nerve sparing surgery was associated with preservation of patient and partner sexual function.
Soloway et al.	2005	Standardized questionnaires completed by 103 patient-partners pairs, including the Beck Depression Inventory, Visual Analog Scales of Distress, Sexual Adjustment Questionnaire, and Dyadic Adjustment Scale	There were significant differences in patient and partner perceived distress, depression, and sexual dysfunction, with partners consistently rating patients lower than they rated themselves in terms of sexual performance.
Sato et al.	2013	UCLA Prostate Cancer Index completed by 162 patient-partner pairs before and 12 months after RP	There were significant differences in patient and partner perceived sexual life after RP. Partners' cooperative attitude may help maintain patients' sexual desire and motivation.
Tsivian et al.	2009	Mail survey of 28 patient-partner pairs, including the International Index of Erectile Function and the Female Sexual Function Index	Patients and partners may interpret the changes in sexual function associated with RP differently. Despite this, the majority of men and women reported being satisfied with their ability to climax.
Ross et al.	2016	Standardized questionnaires completed by 159 patient-partner pairs, including the Marital Quality Index	Patients and partners had a decline on physical and mental health following RP. Patients' and partners mental health consistently related to their own relationship satisfaction. Patients' and partners' physical health had an effect on each other's relationship satisfaction.
Manne et al.	2015	Standardized questionnaires completed by 139 patient-partner pairs, including the Mental Health Inventory, International Index of Erectile Function, Personal Assessment of Intimacy in Relationships, UCLA Prostate Cancer Index, and Dyadic Adjustment Scale	Holding back (not sharing concerns) was particularly detrimental for couples' intimacy and relationship satisfaction.
Knoll et al.	2009	Standardized questionnaires completed by 139 patient-partner pairs before and 12 months after RP, including the International Index of Erectile Function	Patient reported spousal support was associated with better relationship satisfaction and better erectile function before and after RP.